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PATENT APPLICATION

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APPLICATION FOR U.S. PATENT UNDER 37 C.F.R. § 1.53(b) TRANSMITTAL FORM



Box Patent Application ASSISTANT COMMISSIONER FOR PATENTS Washington, D.C. 20231

Sir:

Transmitted herewith for filing is the patent application of:

Inventor or Application

Identifier:

Casimir M. Kaczmarczyk, et al.

Entitled:

SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT

PROTOCOLS

Enclosed are:

- X Specification (39 Total Pages)
- X Drawing(s) (12 Total Sheet(s) of Formal X Informal)
- X Combined Declaration and Power of Attorney (5 Total Pages)
 - X Newly executed (original or copy) (UNSIGNED)
 - __ Copy from a prior application (for continuation/divisional only)
- An Assignment of the invention to <u>telecom technologies</u>, inc. is attached. A separate cover sheet in compliance with 37 C.F.R. § 3.28 and § 3.31 is included with an Assignment recordal fee of \$40.00 pursuant to 37 C.F.R. § 1.21(h).
- Information Disclosure Statement (IDS) PTO-1449Copies of IDS Citations.
- ____ Preliminary Amendment
- X Certificate of Mailing
- X Return Receipt Postcard
- X Other This application claims the benefit of U.S. Provisional Application No. 60/127,169 filed March 30, 1999.

DAL01:515798.1

Applicant is:

__ Large Entity

X Small Entity

___ Small Entity Statement enclosed

X Small Entity Statement filed in prior application.

Status still proper and desired.

The accompanying application is:

X Original

__Continuation __ Divisional __ Continuation-In-Part (CIP)
of prior application No. _____ which is hereby incorporated by reference

therein.

FEE CALCULATION					FEE
The state of the s			Number		Basic Fee
B C C	Number		Extra	Rate	\$ 345.00
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X Enclosed is a check in the amount of \$624.00 to satisfy filing fee requirements under 37 C.F.R. § 1.16. Please charge any additional fees or credit any overpayment to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P. A duplicate copy of this sheet is enclosed.

Respectfully submitted, BAKER BOTTS L.L.P. Attorneys for Applicant

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Casimir M. Kaczmarczyk, et al.

Date Filed:

March 29, 2000

Title:

SYSTEM AND METHOD TO

INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS

NETWORKS OF DIFFERENT PROTOCO

Box Patent Application

Assistant Commissioner for Patents

Washington, D.C. 20231

Dear Sir:

CERTIFICATE OF MAILING BY EXPRESS MAIL

I hereby certify that the attached Application Transmittal Form, Verified Statement Claiming Small Entity Status, Patent Application, Declaration and Power of Attorney, Drawings, and Check Number 102818 in the amount of \$624.00, are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on this 29th day of March, 2000, addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

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DAL01:515801.1

SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS

RELATED PATENT APPLICATION

This application claims benefit of U.S. Serial No. 60/127,169, entitled INtelligentIP, filed on March 30, 1999.

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TECHNICAL FIELD OF THE INVENTION

This invention is related in general to the field of telecommunications. More particularly, the invention is related to system and method to internetwork telecommunication networks of different protocols.

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BACKGROUND OF THE INVENTION

In the short span of five years, the Internet has and changed inter-personal inter-organizational communication. This phenomenon is largely the result of an open control language of protocol, the Internet Protocol (IP). The introduction of new control vocabularies and syntax, such as the Hypertext Transfer Protocol (HTTP), expanded the Internet into the World Wide Web (WWW), a multimedia communications distribution network with any-to-any connectivity. manifestations or generations of IP are evolving, which will have equally profound impact, such as one that is transforming the public switched telephone network (PSTN).

The command and control of the PSTN is built around a connection-oriented class structure. Call processing is completed by a complex array of switches, processors, and control networks, such as the Signaling System 7 or SS7. The PSTN is built on a class structure of specialized devices that perform single-purpose functions. For example, a Class 5 switch provides local access and call waiting; a Class 4 switch provides long distance, toll calls, and billing. Connectivity is also connection-oriented, where two devices must establish a discrete, deterministic connection or voice channel before communication can begin. The voice channel also must remain in place for the duration of the call. PSTN is also a hierarchical one-to-many network that may result in traffic congestion, or blocking, thus creating the need for centralized control to proactively re-route the traffic. New service and feature development on this complex network is time consuming and strenuous, requiring 12-18 months of development. Service providers are spending billions of dollars annually to support this

specialized infrastructure, as margin continues to erode and new development has stagnated.

The expanding interest in IP telephony has been driven by the opportunity to reduce network costs. IPbased communication is both classless and connectionless. IP networks deconstruct the class-based switch hierarchy into a powerful, any-to-any, class-independent network of packet transfer devices. Every packet of information carries all the necessary control information "connect" the originating device to the destination device using only the needed resources. The convergence of transport and access networks, increased resource utilization through packet switching, and favorable regulatory conditions have propelled IP telephony to the many competitive service providers' top of network aqenda. While technology cost reduction is still important, the competitive service providers have learned to focus on service differentiation in order to sustain competitive advantage. Service differentiation occurs at a high level than network interconnection. It requires transparent bridging of the media, control application layers between IN (Intelligent Network) and IP networks.

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SUMMARY OF THE INVENTION

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Accordingly, a need has arisen for a device that is able to seamlessly internetwork networks using different signaling and transport protocols. The softswitch of the present invention allows service providers to interconnect intelligent control and signaling systems between networks, so that new flexible, open services can be created, and integrated to generate new revenue sources.

In an embodiment of the present invention, softswitch interconnecting networks of different transport protocols is provided. The softswitch includes a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate incoming signaling messages to a call model event, and The softswitch further route the call model event. includes a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent. The signaling agent then terminates the data sessions on the requested outgoing resources.

In another embodiment of the present invention, a method of internetworking between networks of different transport protocols is provided. The method includes the steps of receiving signaling messages from a signaling network, translating the signaling messages into call events, and processing the call events. The method further includes requesting outgoing resources establishing data sessions with devices coupled to a transport network, and terminating the data sessions on the requested outgoing resources.

In yet another embodiment of the present invention, a softswitch interconnecting networks of different

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transport and signaling protocols is provided. The softswitch includes a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call event, and route the call event. The softswitch further includes a call agent in communication with the signaling agent and operable to receive the call event, verify the validity of incoming circuits of inbound calls, and generate a request for an outgoing resources for establishing data sessions. The softswitch also includes a network directory server in communication with the call agent and operable to receive the request for an outgoing resource, and provide information on the outgoing resource. The softswitch also includes network gateway agent operable to receive a request to establish a data session on the selected outgoing resource, and set up an open session. The call agent is operable to terminate the data sessions on the requested outgoing resources, and generate a call detail record in response to disconnecting the data session.

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BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the present invention, reference may be made to the accompanying drawings, in which:

FIGURE 1 is a block diagram of a network topology based on the softswitch of the present invention;

FIGURE 2 is a block diagram illustrating the present Internet telephony network architecture;

FIGURE 3 is a block diagram of the Internet telephony network architecture using the softswitch of the present invention;

FIGURE 4 is a simplified top-level block diagram of an embodiment of the softswitch constructed according to the teaching of the present invention;

FIGURE 5 is a more detailed block diagram of an embodiment of the softswitch constructed according to the teaching of the present invention;

FIGURE 6 is a simplified internal call flow diagram of an embodiment of the softswitch constructed according to the teaching of the present invention;

FIGURES 7-13 are call flow diagrams illustrating the operations of the call logic control subsystem of the present invention;

FIGURE 14 is a logic diagram of the operations of a protocol-independent logic engine for processing call events; and

FIGURE 15 is a more detailed logic diagram of the operations of the protocol-independent logic engine for processing call events.

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DETAILED DESCRIPTION OF THE INVENTION

FIGURE 1 is a block diagram of a network topology 5 the softswitch of the present Network topology 5 includes several interconnected softswitches (SS) 10, 12 and 14, each of which interconnect several media switches 16. communication between the softswitches may be through the use of ISUP+ (ISDN user part+), which is based on International Telecommunications Union (ITU) broadband ISDN user part (B-ISUP). Media switches 16 interconnect various network media, such as PSTN (public switched telephone network) 18, IP (Internet Protocol) 20, MGCP, and others thus enabling the transport of calls or sessions across different network domains. For example, a call may originate on a PSTN 18 and be routed to a media switch 16 via the SS7 network. Depending on the session transaction, features may be added to the call session, such as bandwidth allocation (compression) or security (encryption), or virtual private network (authentication). The call or session may then be transported across another media network, such as an IP network, for completion on another media switch across town, across the country, or in another part of the The softswitch configuration controls the end-toend transport of the call through integration of the network intelligence between the two media switches. call session may then be converted back to a PSTN network for termination at a remote branch office. In this way, service portability is enabled. The services can be distributed to any device anywhere in the network over different media without the limitations of a CLASS-based network topology.

FIGURE 2 is a block diagram illustrating the present Internet telephony network architecture 30. In today's Internet telephony network 30, broadband Internet service

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providers 32 and 34, and Internet service providers (ISP) 36 installed high bandwidth access pipes from the Internet 38 to the users 40. Today's technology utilizes a number of different transport mechanisms to accomplish this link to the Internet, including cable modem 42, DSL modem 44, router 46, and dial-up access (not explicitly shown). These modems translate Internet traffic between the desktop (TCP/IP port) and the transport medium (cable, DSL, T1).

The telephony interfaces on the modems are supported by the ISP with interconnect to the PSTN. As a result, these ISPs are known as competitive local exchange carriers or CLECs. The only entity that can provide telephony services to users 40 are the ISP/CLEC provider that installed and own the modems. The users are charged separated for each provided service. For example, Internet TCP/IP access is charged separately from telephony services, which is also charged separately from cable video services.

The users in this scenario are also forced to make a technology decision for his telephony services. For example, if a user subscribes to a cable ISP, he cannot take his telephony service equipment and change over to a DSL ISP provider. The current technology does not provide the user to have geographic portability or fully take advantage of the flexibility of the Internet.

FIGURE 3 is a block diagram of the Internet telephony network architecture 50 using an Internet-based softswitch 52 of the present invention. Softswitch 52 functions as an Internet central office that provide traditional central office functions and capabilities to the Internet user community. Therefore, any IP-enabled user 40 has access to telephony services, without regard to the underlying transport technology. Users 40 are coupled to the Internet central office via a residential

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service gateway 56. Residential service gateway 56 provides proxy server, TCP/IP hub, firewall, residential gateway, and residential service client software functionality. The proxy server function allows the user to only require one IP address from the ISP for multiple devices and improves performance for a group of users. The TCP/IP hub function allows for connectivity from one to multiple TCP/IP devices. The firewall function protects the customer devices from fraudulent access originating in the Internet. The residential gateway functions convert the analog telephony services from the user into TCP/IP for transport through the Internet. Additionally, the Internet central office is operable to control and communicate with residential service gateway client software 56 for call state control. residential service client software is a companion client application to the Internet central office. This client allows the user (telephony subscriber) to solicit or initiate service from the Internet central office. This client provides a secure, encrypted dialog between the Internet central office and the user's client for call control (registration, addressing and supervision). Another feature of the residential service client software is that user's service profiles may be uploaded or downloaded to a database in the residential service gateway through a local area network (LAN), serial port, smart card, or an infra-red interface into a third party application and device. This functionality allows the user to be fully mobile by connecting to any residential service gateway, download their profile into residential service gateway, and personalize it.

Residential service gateway 56 may be a stand-alone hardware/software combination equipment or be in the form of a software application running on a user's personal computer. As a software application, it has the added

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advantage of being downloadable and run locally on the user's computers.

central office The Internet implemented with softswitch 52 allows the establishment of CLECs on the Users who own residential service gateway equipment or software can subscribe to telephony services directly from the Internet central office-enabled CLEC. The customer's ISP transports this service as though it were normal IP traffic. The Internet central office and residential service gateway interoperate at the IP level and are therefore compatible with any IP transport medium. The Internet central office can switch telephony traffic from one Internet-based residential gateway to another, or connect calls between the PSTN and an Internet-based residential service gateway customer. A subscriber may relocate his/her residential service qateway, ortransfer his/her profile to geographical location, and his/her telephone number and services will follow to any location in the world without the need for traditional number portability systems. Internet central office service is completely (carrier, service, and geographic) portable.

Upon initialization, residential service gateway 56 is assigned an IP address from the ISP. Residential service gateway 56 then automatically locates Internet central office on the Internet. Residential service gateway 56 then registers with an existing account or is directed to an automated provisioning system to establish new services. New provisioning may allow the user to port his/her existing telephone number, or select an area code for a serving city where he/she desires service to be established.

Station identifiers or telephone numbers are a function of the Internet central office's point of presence. For example, if an Internet central office

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were interconnected to city A PSTN, it may offer city A telephone numbers to its subscribers regardless of the geographical location of the customer's residential service gateway. Calls that originate and terminate to and from Internet central offices can be considered within the network and thus know no limit to the calling area. Such a configuration would motivate flat rate pricing.

It may be seen that the residential service gateway includes network registration, call control/supervision, subscriber services, client security, and user profile database functionalities.

Internet central office providers may negotiate first tier interconnect agreements with the broadband ISPs to provide a higher quality of service. An Internet central office may also interconnect to another Internet central office using a managed IP network to maintain a high quality of service.

Therefore, by adopting the network topology shown in FIGURE 3, a number of advantages are obtained. Internet telephony market is opened to competition and allows for cost reduction of telephony services. Internet central office and residential service gateway interoperate using any broadband Internet technology so that service is portable from one transport to another. The user's telephone service becomes geographically and service portable to any location. The Internet central office allows existing CLECs to extend the reach of their telephony network into the broadband user's premise without investment in broadband technology. technology also eliminates the need for unbundling the broadband ISP to telephony carriers. Flat rate calling service plans become available for calls that stay within the Internet central office network. Furthermore, the

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Internet graphical user interfaces can be leveraged to automatically provision services.

FIGURE 4 is a simplified top-level block diagram of an embodiment of the softswitch 100 constructed according to the teaching of the present invention. Softswitch 100 is based on the session layer of the OSI model. session layer is where the network intelligence resides, not at the transport or application layers. The network structure for telecommunications is evolving to have three distinct functional layers: access 102, control 104, and services 106. Access layer 102 is responsible for media transport of calls and sessions, and includes packet (IP) network 110, wireless 112. (community antenna television) 114, etc. Control layer 104 is responsible for controlling the elements of the access level and operating in concert with the service level as calls or sessions require interaction with services available in the network. Services layer 106 is responsible for defining the services through databases and service logic. Examples of services are unified messaging 116, operator services 118, local number portability 120, call center 122, network management 124, toll call services 126, virtual private network (VPN) specialized routing (time-of-day, calling party area, etc.), unified messaging, etc. It may be seen that softswitch 100 resides in control layer 104.

Softswitch 100 is preferably built on open protocols to set-up and control media sessions, i.e. any combination of voice, data and video flows. Some open protocols used by the media switches 130 are IPDC (IP device control protocol), MGCP (media gateway control protocol), and SGCP (simple gateway control protocol). Softswitch 100 includes six main functional components: signaling agent 108, call agent 110, resource manager

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112, network directory server 114, network gateway 116, and network management 118.

With reference to FIGURE 5, signaling agent 138 communicates with call agent 140 and access network 102, such as media switch 130, SS7 network, and SIP (session initiation protocol) end users. Signaling agent 138 translates incoming signaling messages to the appropriate call model event to be sent to call agent 140. of signaling agent 138 is to receive any type of access protocol, communicate with call agent 140, terminate the call to the appropriate network using the applicable protocol as instructed by call agent 140. example, signaling agent 138 may receive an SS7 IAM and be able to terminate the call to an IP network user. call agent 140, events from signaling agent 138 appear as if it is just another client/server that is capable of originating and terminating sessions.

signaling agent 138 is operable to support standard MTP and physical level interfaces as required by the The processing of the SS7/C7 interfaces are networks. handled within signaling agent 138. The session or call processing protocol on signaling agent 138 is session initiation protocol (SIP). By utilizing a native packetcontrol protocol out of the edge signaling agent 138 are able to represent the control of the media switch packet capabilities in native form. Thus, capabilities and interaction of call agent 140 and signaling agent 138 are not constrained to a legacy interface as the packet-switched network and services continue to evolve. A number of existing IP telephony products are controlled or interoperate with the H.323 protocol. The softswitch provides interoperability between H.323 and SIP. H.323 can remain configured in access networks, grouping together several devices into domains. The softswitch adds the extensibility found in

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SIP protocols to provide simplified interaction with the call session engine, which in turn interacts with the policy/directory server and feature application servers. In this way, investments in H.323 are protected without compromising future development brought about by new applications. Multi-network service datagram transmission protocol (MDTP) is an application level protocol designed to provide a fault-tolerant, real-time reliable data transfer between endpoints communicating over an IP network. It is used to provide call control and signaling for Internet telephony. It is scalable to support different signaling transport requirements based on the different interfaces to the telephony network.

Call agent 140 is responsible for managing the endto-end control of the sessions or calls between packetswitched elements. As a central element architecture, call agent 140 is a focal point of access to intelligent services as required by the sessions under its control. Billing data consolidation of services provided and entities involved in the call will be performed in call agent 140. Interworking translation for the SS7/C7 events to SIP and the implemented gateway control protocol will be performed with the relevant state data maintained in call agent 140. The media switch chosen for any particular implementation of the softswitch is dependent upon the transport requirements of the service provider's network. The control of the media switch has the following minimum criteria for interworking with the softswitch: gateway control protocol of MGCP, registration configured ports through the gateway control protocol, SNMP (simple network management protocol) trap support, web-based configuration mechanism, minimum of support on circuit-switched connectivity. The above attributes allows signaling agent 138 the capability to

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manage the circuit-switched ports on one or more media switches. The limit of the ports managed will depend on the density of ports in each media switch and the hardware configuration of the signaling agent. The packet-switched interface of the media switch is directed by the gateway control protocol. This control allows the RTP or other streams to be connected between the media gateway and the other media devices as directed by the signaling agent.

The IP device control (IPDC) protocol is used between the media gateway controller call agent 140 and the media gateway. It is used to provide connection control, media control, and signaling transport. In order to support different service provider media gateways, the softswitch supports MGCP and IPDC to communicate and control the media gateway.

Call agent 140 provides the raw data to the service providers down stream billing systems for call detail records (CDR), and other billing functions. The raw data can be customized per interface.

The main responsibility of resource manager 142 is to validate the incoming circuit, and to provide resource availability information for the outgoing call from the media switch. Resource manager 142 is responsible for maintaining circuit state and relative information, for all circuit-switched entities on the media switches. addition, resource manager 142 is responsible for managing virtual ports (DSP, echo cancellers) on the switch, depending the on media switch implementation. Also, resource manager 142 is operable to determine aggregated bandwidth allocation on the media switch.

Network directory server 144 is responsible for managing user profiles, such as access authorization, call barring, dial plan, etc. and providing routing

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and instruction for local external (local portability, 1-800) calls. Network directory server 144 is also operable to provide address resolution and translation, and accessing subscriber services (special tones and treatments) by sending requests to network functions element 152 and subscriber services element Network directory server 144 also handles scripts distribution to by accepting, acting, and Network directory server 144 is accessed destinations. agent 140 to receive routing instructions. by call Network directory server 144 may reside on the same platform as call agent 140 or may be distributed. Network directory server 144 may also provide enhanced routing function, such as time-of-day routing, percent allocation routing, dial plan, route choice, etc.

Network gateway 146 is responsible for interconnecting the softswitch network to an external Call agent 140 accesses network gateway 146 to determine a location of a user and he/her privileges in order to route the call to the external network. example, if a user is not within the softswitch domain, call agent 140 is prompted by network directory servers 144 to request instructions from network gateway 146. this point, call agent 140 requests instructions on where to route the call, different rate structures associated with the call, and determine if the external network is willing to accept the call. If all conditions are satisfied the external network gateway will provide network gateway 146 with routing instructions.

Network management 148 is responsible for provisioning, monitoring, alarm generation, performance and trouble shooting management, reporting, system maintenance and administration, configuration management. The various control elements reside in an IP network. They utilize SNMP and remote monitoring (RMON) agents to

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collect, store, trap, and monitor data/trends on network performance, availability, utilization, etc. information is combined with configuration attributes from each device into a user-friendly, browser-enabled network management interface, using HTML. In this way, have control, administrative, and monitoring capability from anywhere in the network. This format allows for integration with other web-enabled network management systems and provides the ability to push service administration to customers without compromising operational integrity of the production network.

FIGURE 6 is a more detailed block diagram of an embodiment of the softswitch 100 constructed according to the teaching of the present invention. Signaling agent 138 of softswitch 100 includes a virtual signal interface (VSI) 160, which provides an interface to call agent 140. Signaling agent 138 includes a number of signaling agents 162-164 operable to interface with SS7 interface, SIP devices or interface, H.323 devices or interface, Q.931 interfaces and devices, and others. Each signaling agent includes a respective logic control 166-168 executing logic control program, filter processor 170-172, and codecs (coders/decoders) 174-176. Codecs are specialized communication modules. Network gateway 146 includes gateway agents 180 for interfacing with MGCP media gateway switch, IPDC media gateway switch, etc. Each gateway agent 180 each also includes a logic control 182 executing a logic control program, a filter processor 183, and a codec 184. Network gateway 146 further includes a virtual media gateway interface (VMI) 186 for interfacing with call agent 140.

Call agent 140 includes event codecs 190 for interfacing with network directory server 144, signaling agent 138, and network gateway 146. Call agent further includes a logic control 193 executing call logic control

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programs, and filters 192 and 194. Logic controls 166-168 and 182 and call logic control 193 make up logic engine 195. Logic engine 195 is a protocol-independent, multi-threaded data-configurable, state processor. The details of logic engine 195 are set forth below with reference to FIGURES 14 and 15. Call agent 140 also communicates with a billing sub-system 196, which stores CDRs and other billing information in a billing server 198. Network directory server 144 includes a network directory service 200 and a virtual data interface (VDI) 201. Virtual data interface 201 interfaces with call agent 140. Network directory service 200 accesses in-memory tables 202, which store routing instructions, profiles, addresses, subscriber services. Network directory service 200 further accesses external data servers 203. Network directory service 200 also communicates with resource manager 142 and network management 148. management 148 includes OA&M (operations, administration and maintenance) sub-system, which communicates with an HTML server 206 and a web-based OA&M database 207.

It may be seen that call agent 140 interfaces with interface 160, virtual media gateway virtual signal interface 186, and virtual data interface 201. Signaling events are received through VSI 160 and the specific protocol events are normalized. The key to routing messages between logic control programs is the message type (call set up, disconnect, etc.) and subsystem type (SS7, SIP). The normalized signaling event is sent to call agent 140 for processing. Assuming proper message formatting, a route is selected, the media gateway agent is contacted, the call is terminated through the media gateway agent and the call control processing is complete until one of the calling parties terminates the call.

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During the course of processing the event the message goes through the following stages:

- 1. A normalized message is received from the VSI.
- 2. The data contained in the message goes through basic validation to confirm that the contents have not been modified or lost. The call is abandoned if the data is invalid.
- 3. The inbound circuit is queried, through the VDI, to confirm the call is being processed from a circuit in a valid state. This is to prevent processing a call from a circuit that has been administratively locked or through fault management that has been disabled.
- 4. Query the VDI to select a route for the call based on the called number, which may be a SS7 circuit or an IP address for SIP.
- 5. For a successful route, contact the media gateway agent and open a session. Send a CallSetup message to the VSI. If the route failed, play an announcement and abandon the call.
- 6. Upon receipt of the alert message from the VSI, the media gateway agent is updated to add the termination leg to the existing call session. The alert message is sent to the VSI.
- 7. Upon receipt of the answer message from the VSI, the media gateway agent is updated to cut the voice path between the originator and the terminator for the existing call session. The answer message is sent to the VSI. The call is now setup and waiting for one of the calling parties to disconnect.
- 8. Received a message that one of the calling parties disconnected. Tell the VDI to release the resource, cut a billing record.

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9. When all the calling parties have disconnected, a final billing record is cut. The call model logic control program exits.

7-13 are exemplary detailed call diagrams illustrating the call logic control subsystem of the present invention. FIGURE 7 is a call flow diagram FIGURE 8 shows the call of a normal call processing. flow in which the in bound resource/circuit is in an invalid state to process the call. The call VSI is notified that the call has been abandoned. A billing record is produced to indicate that an error occurred. FIGURE 9 is a call flow diagram of a route request that The failure cause code returned from the VDI is mapped to a normalized cause code that VSI and call control agree upon. FIGURE 10 is a call flow diagram illustrating the call flow in which the terminating side FIGURE 11 is a call flow diagram showing the is busy. media gateway agent returning a failure code for the session setup request. An announcement is played to the caller and the call is abandoned. FIGURE 12 is a call flow diagram showing the media gateway returning a failure code for the add termination request. An announcement is played to the caller and the call is abandoned. FIGURE 13 is a call flow diagram showing the media gateway returning a failure code for the make connection request. The originator and terminator are played an announcement and the call is abandoned.

FIGURE 14 is a logic diagram of logic engine 195 according to the teachings of the present invention. Logic engine 195 is operable to allow applications 300-303 to download and retrieve the status of logic control programs. Logic engine 195 is a configurable state machine processor that is responsible for carrying out

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This includes sending and the logic control program. appropriate communication messages on the receiving links, generating events for the application, maintaining operating statistics on each logic control program, and communicating with other logic engines. Logic engine 195 with many to communicate specialized operable communicator modules or codecs (162-164, 180). codecs are responsible for handling the formatting and parsing of the messages for the protocol each specializes as well as dealing with the transmission to and reception of the messages from the outside world. Furthermore, a maverick codec may be employed which is responsible for performing tasks not associated with a standard protocol, such as billing, statistics, or provisioning. Each logic engine component (logic controls, codec, filters) running in a separate thread. It is therefore possible to configure what threads are in the logic engine at run time so that functionality in the form of different codecs can be easily added.

Logic engine applications 300-303 are external processes that communicate with logic engine 195. Since a logic engine 195 has no built in algorithms for performing any specific process, it is applications 300-303 that supply application-specific functionality. The applications may establish and maintain a TCP/IP socket connection with the logic engine, generate appropriate logic control programs and downloading them to the logic engines, and monitoring event and statistic data.

Referring to FIGURE 15, a block diagram of the basic architecture of a network of logic engines 310-313 is shown. It may be seen that one single application 316 can communicate with one or more logic engines 310-316 and the logic engines themselves can be grouped in a

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hierarchy. When the logic engines are grouped in a hierarchy, it uses pass-through logic controls to pass messages that are intended to one logic engine from another logic engine.

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Logic controls 315-321 are the data-configurable generic state machine processors that execute logic A logic control program defines how control programs. the logic engine is to operate. A logic control program contains actions (i.e. send an event to the application, transmit a message, etc.), transitions (which define what to do given a certain external event, i.e. received, timer timed out, etc.), and data (i.e. lists of phone numbers or circuits, application identification on connection, timer values, etc.). A logic control program is a series of data items or independent building blocks that define what a logic engine application is perform, such as message definition, data items, when to send a message, etc. Logic engines 310-313 also includes filters 324-327 that filter and route messages that originate from codecs 330-333 destined for logic controls The logic engine can be distributed over many 315-321. links, in multiple locations, to accomplish the tasks needed for a given application. In this manner distributed links can be monitored for one (or more) application, without the application needing distribute itself over the links.

After an application is initiated and connecting to the logic engine, the application identifies itself by sending an application item to the logic engine. The application item identifies the application and specifies how to handle any downloaded data in the event the application disconnects. The application item may be the only item in the packet sent to the logic engine. The

logic engine then checks to determine whether the application is allowed to download data to the logic

This requires that the application's identifier

in the application item is not currently in use and is 5 valid.

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The application downloads a logic control program or multiple logic control programs to the logic engine to accomplish its desired tasks. The download process occurs after the application has established a socket connection with the logic engine. The logic control program data are preferably sent to the logic engine in the following order so ID references can be resolved properly:

- 1. Network Item(s)
- 2. Debug Item(s)
- 3. Match Item(s)
- 4. Column Item(s)
- 5. Counter Item(s)
- 6. Timer Item(s)
- 7. Load Item(s)
 - 8. Key Item(s)
 - 9. Event Data Item(s)
 - Event Item(s) 10.
 - 11. Message Item(s)
- 25 12. Action Item(s)
 - 13. Transition Item(s)
 - Logic Item(s) 14.
 - Logic Control Program Item(s) 15.
 - Download Complete Control Item

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All items in the download list are optional. application has already downloaded a complete set of logic control program data, only new or changed items

logic

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need to be re-downloaded to the logic engine. If a logic control program does not use a certain item type, such as a column or counter, the downloaded data does not need to include any item of that type.

Control commands are used to instruct the

engine what to do with the downloaded data.

commands will only make sense to the logic engine if all the logic control program data has been downloaded by the The start command is used to instruct the application. logic engine to start executing a given logic control program according to the load rate(s) specified in the The stop command is used to logic control program. instruct the logic engine to stop executing a given logic When this happens, all currently control program. executing instances of the logic control program will continue to execute until they have completed. instances of the logic control program will be allowed to start once this command has been received. The continue command is used to tell the logic engine to start running a given logic control program from the point at which it In this case the logic engine will start was stopped. running the logic control program at the point along the The burst command is load curve at which it was stopped. used to instruct the logic engine to start running several instances of a logic control program at once. the burst value is set to zero, the burst value stored from the logic control program download item will be The statistic commands are used to instruct the logic engine what to do with the current statistical

start the statistical

These commands should not be issued until all the

reporting,

stop

the

logic control program data has been downloaded to the logic engine. With these commands the logic engine can

data

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statistical data reporting, clear the statistical data, or set the reporting frequency of the logic engine.

When a logic control program has been defined to transition based on input from the application, the application must be certain to send this event at the logic control program will appropriate time so the of actions. This transition set to the next transition/event combination is mostly useful situation that requires user interaction and the logic control program is the only instance that is running. more than one instance of the logic control program is running, the application must be certain to send the correct key data to the logic engine so the event is passed to the correct instance of the logic control program.

following describes exemplary types of The communication the logic engine sends to the application. An acknowledgement message is returned for every item the application that has the sent to acknowledgement flag set in its identifier. The item that requires acknowledgement will be checked for proper formatting, and data validity. If there are any errors the acknowledgement item will return an error code to indicate the type of error. The acknowledgement may not be returned immediately if certain data elements cannot be resolved at the time an item is downloaded. It may be possible to resolve these items when the download is complete, if the unresolved data item was downloaded later. Therefore, an application does not wait on the acknowledgement before continuing with its Rather, the application "remembers" which download. items were to be acknowledged and verify that it receives an acknowledgement for each item.

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An event message item is returned whenever a send event action item is processed. This item will contain all the data specified in the event action. In this manner, an application can retrieve and store pertinent data from multiple instances of a logic control program for processing and/or for future reference.

are sent to the Statistics reporting messages application after a start statistics reporting command is These statistics will indicate the number of received. instances of a logic control program that have been started, how many passed and failed, and how many A stop reporting command will stop these completed. These messages will be sent on the interval messages. defined in either the statistics frequency data item of the logic control program, or the set frequency command, whichever was received most recently.

provides а rich set of The logic engine functionality for the processing of state data necessary This functionality is in switching and other systems. provided by a specialized, graphical protocol programming language. The graphical programming environment is used to generate the logic control programs. A logic control program contains actions, transitions, and data. possible to quickly and efficiently build applications using the graphical programming environment. with graphically-based service creation environments, the programmer may drag, drop and link graphical representing logic building blocks to create a logic control program.

It may be seen from the foregoing the softswitch of the present invention provides an integrated hardware and software solution set that provides the capability to receive signaling messages from any type of network and

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transmit the messages across a different network, while keeping the existing customer feature set. This solution bridges the gap between packet-based networks and traditional PSTN communications to advance lower cost, and high revenue value-added services.

This solution set allows for the decoupling of service intelligence from transport equipment and unburdens the switch and router hardware of sophisticated call processing tasks, freeing them to concentrate on their main task - transmitting information across a network with minimal transmission delay.

Furthermore, the softswitch of the present invention allows the telecommunications companies, such as CLECs and LECs (competitive local exchange companies and local exchange companies), to use the cheaper Internet protocol/packet networks for transmission of their voice traffic while maintaining features and quality of service where applicable.

In the wireless arena, the softswitch may use multipoint wireless T1 radios from the traditional CDMA (code division multiple access) base station system (BSS) radio to the mobile-service switching center (MSC) or switching vehicle. The protocol used on the wireless T1 radios will be TCP/IP (transmission control protocol/internet protocol) with the wireless gateway located at the CDMA BSS radio facility. Additionally, the softswitch may build the switching vehicle (MSC replacement) in an LAN/WAN (local area network/wide area network) configuration. PSTN (public switched telephone network) gateways will be located on the MSC LAN/WAN. softswitch allows for a faster radio turn up, seamless hand over within one providers network as well as long

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distance call capabilities internal to the providers LAN/WAN network.

The solution set also comprises of network management, billing, and LDAP (lightweight directory access protocol) servers. The software development for the solution set (applications, servers, interfaces, translation and routing, etc.) may use object oriented programming software and techniques, such as CORBA, C++, JAVA, ObjectStore (OODBMS), and VisiBroker (CORBA), and the like.

This invention may be used by data communication companies, voice communication companies, ISPs, CLECs, LECs, long distance providers, wireless communication companies, etc., to interface to other networks such as ATM (asynchronous transfer mode), frame relay, SIP, H.323, Internet, voice, wireless, etc. Although the description of the invention and claims describe specific signaling and transport protocols, it is contemplated that the present invention is designed to interface with and handle emerging and future protocols. In addition, the present invention may be implemented in hardware, software or a combination of hardware and software. should be noted that many of the block diagrams illustrate functional groupings which may be implemented in alternative embodiments.

Although several embodiments of the present invention and its advantages have been described in detail, it should be understood that mutations, changes, substitutions, transformations, modifications, variations, and alterations can be made therein without departing from the teachings of the present invention, the spirit and scope of the invention being set forth by the appended claims.

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WHAT IS CLAIMED IS:

- 1. A softswitch interconnecting networks of different transport protocols, comprising:
- a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event; and
- a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent, the signaling agent further terminating the data sessions on the requested outgoing resources.

2. The softswitch, as set forth in claim 1, further comprising a resource manager operable to receive outgoing resource requests from the call agent, and provide outgoing resource availability responses to the

call agent.

- 3. The softswitch, as set forth in claim 1, further comprising a network directory server operable to receive requests for routing information to establish data sessions from the call agent, and provide routing information to the call agent.
- 4. The softswitch, as set forth in claim 1, further comprising a network directory server operable to receive requests for address resolution to establish data sessions from the call agent, and provide address resolution responses to the call agent.

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- 5. The softswitch, as set forth in claim 1, further comprising a network gateway operable to receive requests for address locations of called parties in external networks to establish data sessions from the call agent, and provide the address locations to the call agent.
- 6. The softswitch, as set forth in claim 1, wherein the signaling agent comprises:
- a logic control executing a logic control program and operable to process signaling messages of a particular signaling protocol;
- a codec specialized in the signaling protocol of an access network and operable to parse and format signaling messages according to the signaling protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 7. The softswitch, as set forth in claim 6, wherein the signaling protocol is SS7.
- 8. The softswitch, as set forth in claim 6, wherein the signaling protocol is session initiation protocol.
- 9. The softswitch, as set forth in claim 6, wherein the signaling protocol is $\rm H.323$.

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- 10. The softswitch, as set forth in claim 1, further comprising a network gateway which comprises:
- a logic control executing a logic control program and operable to process messages of a particular transport protocol;
- a codec specialized in the transport protocol of a media gateway and operable to parse and format the messages according to the transport protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
 - 11. The softswitch, as set forth in claim 10, wherein the transport protocol is media gateway control protocol.
 - 12. The softswitch, as set forth in claim 10, wherein the transport protocol is Internet protocol device control protocol.
- 20 13. The softswitch, as set forth in claim 10, wherein the transport protocol is simple gateway control protocol.
- 14. The softswitch, as set forth in claim 1, wherein the networks comprise a public switched telephone network.
 - 15. The softswitch, as set forth in claim 1, wherein the networks comprise a packet network.
 - 16. The softswitch, as set forth in claim 1, wherein the networks comprise a wireless network.

17. The softswitch, as set forth in claim 1, wherein the call agent comprises a protocol-independent logic engine operable to execute a function-specific logic control program.

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18. The softswitch, as set forth in claim 1, further comprising a billing sub-system in communication with the call agent and operable to generate call detail records.

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- 19. A method of internetworking between networks of different transport protocols, comprising:
- receiving signaling messages from a signaling network;
 - translating the signaling messages into call events; processing the call events;

requesting outgoing resources for establishing data sessions with devices coupled to a transport network;

terminating the data sessions on the requested outgoing resources.

- 20. The method, as set forth in claim 19, further comprising requesting for and receiving routing information to establish the data sessions.
- 21. The method, as set forth in claim 19, further comprising requests for and receiving address resolution to establish the data sessions.
- 20 22. The method, as set forth in claim 19, further comprising requesting for and receiving address locations of called parties in external networks to establish the data sessions.
- 25 23. The method, as set forth in claim 19, further comprising:

executing a logic control program and processing the signaling messages of a particular signaling protocol; and

- parsing and formatting signaling messages according to the signaling protocol.
- 24. The method, as set forth in claim 19, further comprising receiving and transmitting SS7 signaling messages.

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- 25. The method, as set forth in claim 19, further comprising receiving and transmitting session initiation protocol signaling messages.
- 26. The method, as set forth in claim 19, further comprising receiving and transmitting H.323 signaling messages.
- 10 27. The method, as set forth in claim 19, wherein translating the messages comprises:

executing a logic control program and processing messages of a particular transport protocol;

parsing and formatting the messages according to the transport protocol; and

filtering and routing the translated messages.

- 28. The method, as set forth in claim 19, further comprising receiving and transmitting media gateway control protocol messages.
- 29. The method, as set forth in claim 19, further comprising receiving and transmitting Internet protocol device control protocol messages.
- 30. The method, as set forth in claim 19, further comprising receiving and transmitting simple gateway control protocol messages.
- 31. The method, as set forth in claim 19, further comprising receiving and transmitting public switched telephone network messages.

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- 32. The method, as set forth in claim 19, further comprising receiving and transmitting packet network messages.
- 5 33. The method, as set forth in claim 19, further comprising receiving and transmitting wireless network messages.
- 34. The method, as set forth in claim 19, further comprising using a protocol-independent logic engine to execute a function-specific logic control program to process the call events.
 - 35. The method, as set forth in claim 19, wherein processing the call events comprises generating call detail records.
 - 36. The method, as set forth in claim 19, further comprising verifying an incoming circuit is in a valid state.

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- 37. A softswitch interconnecting networks of different transport and signaling protocols, comprising:
- a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call event, and route the call event;
- a call agent in communication with the signaling agent and operable to receive the call event, verify the validity of incoming circuits of inbound calls, generate a request for an outgoing resources for establishing data sessions;
- a network directory server in communication with the call agent and operable to receive the request for an outgoing resource, and provide information on the outgoing resource;
- a network gateway agent operable to receive a request to establish a data session on the selected outgoing resource, and set up an open session; and
- the call agent operable to terminate the data sessions on the requested outgoing resources, and generate a call detail record in response to disconnecting the data session.
- 38. The softswitch, as set forth in claim 37, further comprising a resource manager operable to receive outgoing resource requests from the call agent, and provide outgoing resource availability responses to the call agent.
- 39. The softswitch, as set forth in claim 37, wherein the network directory server is further operable to receive requests for address resolution to establish data sessions from the call agent, and provide address resolution responses to the call agent.

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- 40. The softswitch, as set forth in claim 37, wherein the signaling agent comprises:
- a logic control executing a logic control program and operable to process signaling messages of a particular signaling protocol;
- a codec specialized in the signaling protocol of an access network and operable to parse and format signaling messages according to the signaling protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
 - 41. The softswitch, as set forth in claim 40, wherein the signaling protocol is SS7.
 - 42. The softswitch, as set forth in claim 40, wherein the signaling protocol is session initiation protocol.
 - 43. The softswitch, as set forth in claim 40, wherein the signaling protocol is H.323.
 - 44. The softswitch, as set forth in claim 37, wherein the network gateway comprises:
 - a logic control executing a logic control program and operable to process messages of a particular transport protocol;
 - a codec specialized in the transport protocol of a media gateway and operable to parse and format the messages according to the transport protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 45. The softswitch, as set forth in claim 44, wherein the transport protocol is media gateway control protocol.

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- 46. The softswitch, as set forth in claim 44, wherein the transport protocol is Internet protocol device control protocol.
- 47. The softswitch, as set forth in claim 44, wherein the transport protocol is simple gateway control protocol.
- 10 48. The softswitch, as set forth in claim 37, wherein the networks comprise a public switched telephone network.
 - 49. The softswitch, as set forth in claim 37, wherein the networks comprise a packet network.
 - 50. The softswitch, as set forth in claim 37, wherein the networks comprise a wireless network.
 - 51. The softswitch, as set forth in claim 37, wherein the call agent comprises a protocol-independent logic engine operable to execute a function-specific logic control program.

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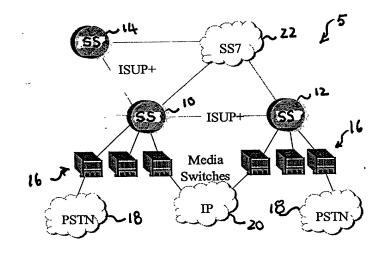
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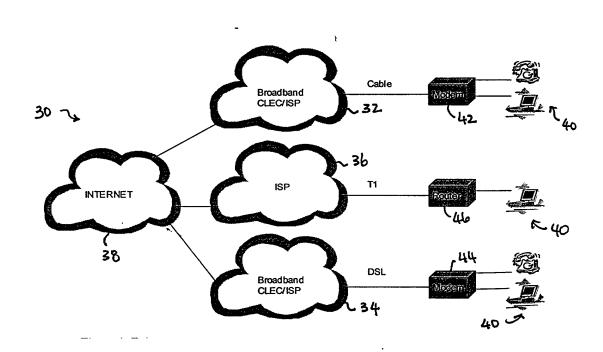
SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS

ABSTRACT OF THE INVENTION

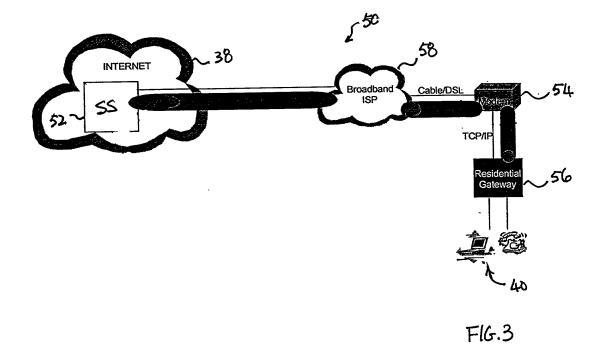
A softswitch interconnecting networks of different transport protocols is provided. The softswitch includes a signaling agent coupled to the networks and operable to signaling messages, translate incoming incoming signaling messages to a call model event, and route the call model event. The softswitch further includes a call agent in communication with the signaling agent and operable to receive the call model event, for establishing resources request outgoing sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent. The signaling agent then terminates the data sessions on the requested outgoing resources.

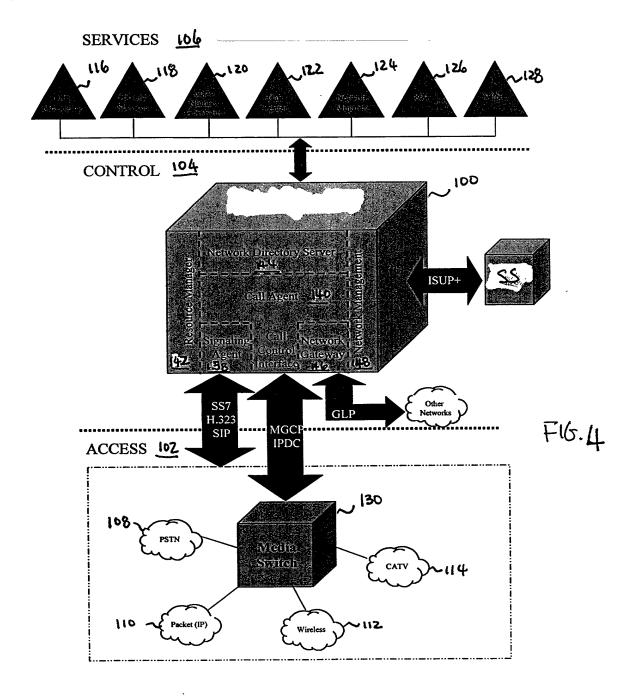
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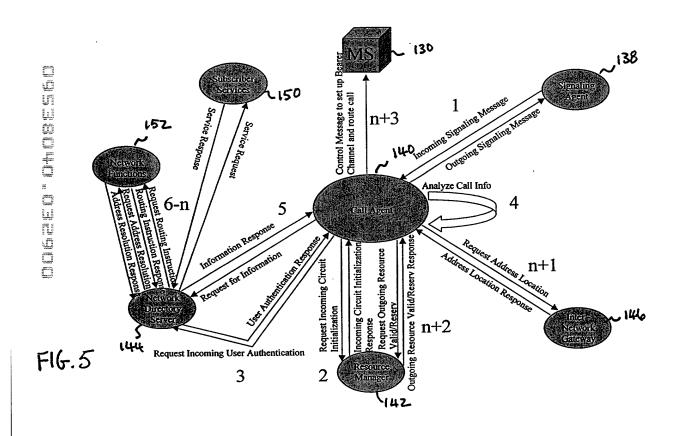


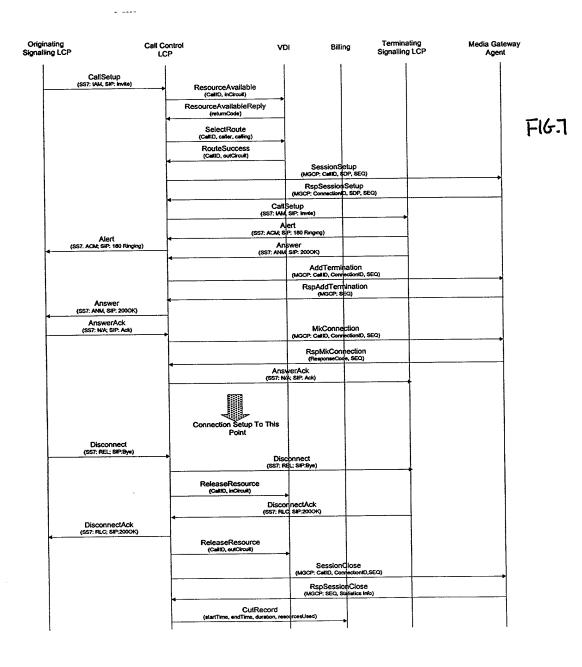


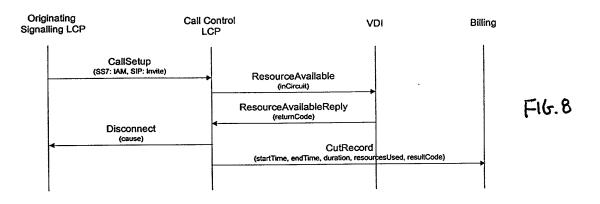
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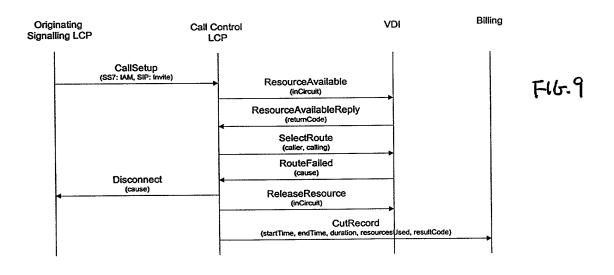


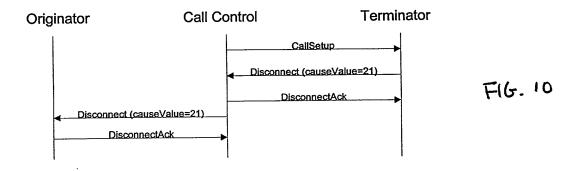


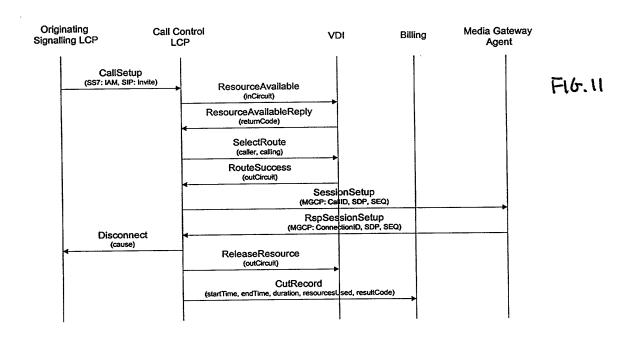


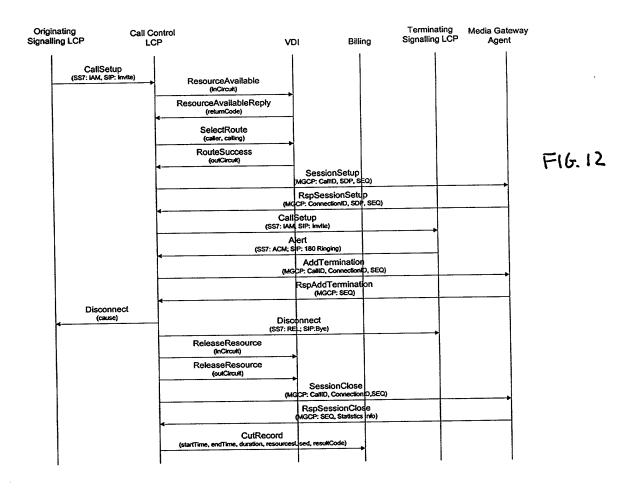


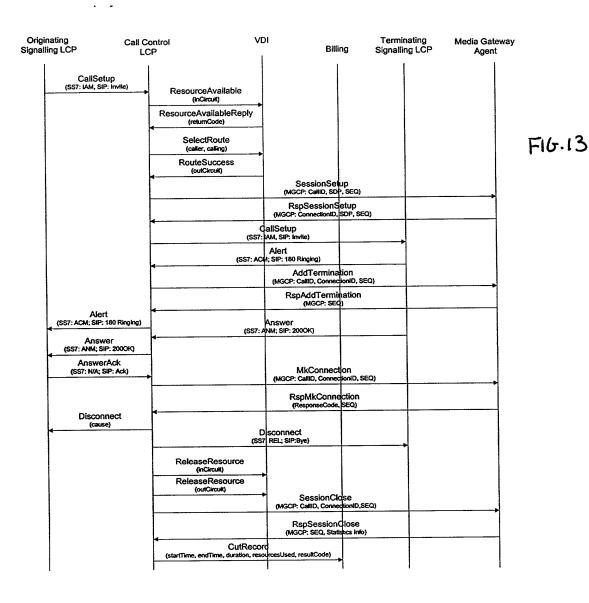




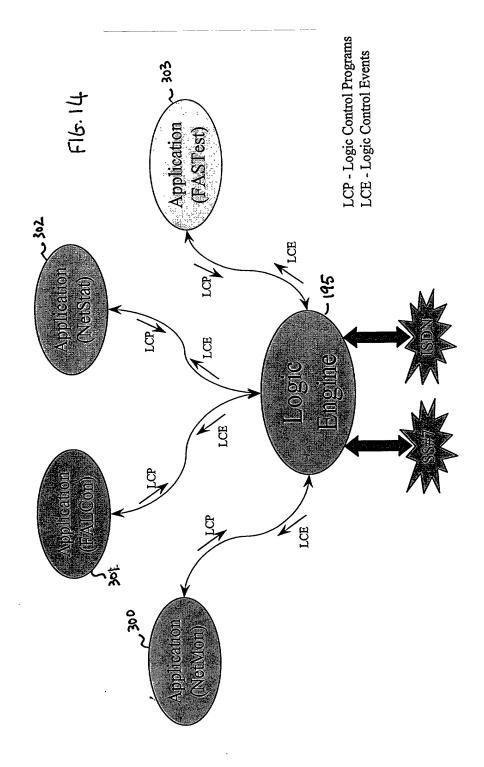


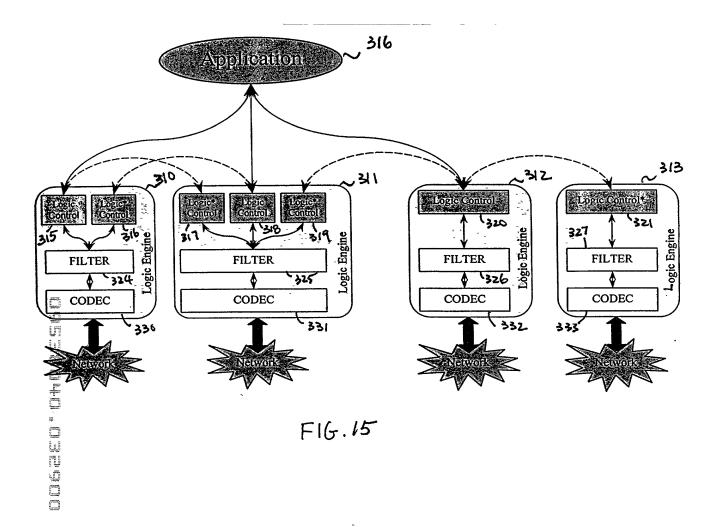






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DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I declare that:

My residence, post office address and citizenship are as stated below next to my name, that I believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention or design entitled SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS, the specification of which (check one):

$\underline{\mathbf{X}}$ is attached hereto; or	
was filed on	as Application Serial No.
and was amended on	(if applicable);

that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above; and that I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

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37 1	imed <u>) (No)</u>

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of

Application

35 U.S.C. § 112, I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

Serial Number	Date Filed	Status
60/127,169	March 30, 1999	Provisional
I hereby appoint:		
Jerry W. Mills	Reg. No. 2	3,005
Robert M. Chiaviello, Jr.	Reg. No. 3	2,461
Ann C. Livingston	Reg. No. 3	2,479
Thomas R. Felger	Reg. No. 2	8,842
Charles S. Fish	Reg. No. 3	5,870
Wei Wei Jeang	Reg. No. 3	3,305
Kevin J. Meek	Reg. No. 3	3,738
T. Murray Smith	Reg. No. 3	
Barton E. Showalter	Reg. No. 3	8,302
David G. Wille	Reg. No. 3	8,363
Bradley P. Williams	Reg. No. 4	
Terry J. Stalford	Reg. No. 3	•
Christopher W. Kennerly	Reg. No. 4	0,675
Harold E. Meier	Reg. No. 2	
Douglas M. Kubehl	Reg. No. 4	
Samir A. Bhavsar	Reg. No. 4	•
Thomas R. Nesbitt, Jr.	Reg. No. 2	
James J. Maune	Reg. No. 2	•
Roger J. Fulghum	Reg. No. 3	•
Rodger L. Tate	Reg. No. 2	•
Scott F. Partridge	Reg. No. 2	
James B. Arpin	Reg. No. 3	3,470
James Remenick	Reg. No. 3	·
Jay B. Johnson	Reg. No. 3	
Robert W. Holland	Reg. No. 4	
Floyd B. Chapman	Reg. No. 4	•
Randall W. Mishler	Reg. No. 42	•
Robert A. King	Reg. No. 42	•
James L. Baudino	Reg. No. 4	•
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David M. Doyle	Reg.No. 43,596
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Brian A. Dietzel	Reg. No. 44,656
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all of the firm of Baker Botts L.L.P., my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith, and to file and prosecute any international patent applications filed thereon before any international authorities.

Send Correspondence To:	Direct Telephone Calls To:

Baker Botts L.L.P. Wei Wei Jeang 2001 Ross Avenue at (214) 953-6690

Dallas, Texas 75201-2980 Atty. Docket No. 065968.0104

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full name of the first inventor

Casimir M. Kaczmarczyk

Inventor's signature

Date

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ISSUE SLIP STAPLE AREA (for additional cross references)

POSITION	INITIALS	ID NO.	DATE/
	***		04/105/00
FEE DETERMINATION			177
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FORMALITY REVIEW		61001	5/3//W)
RESPONSE FORMALITY REVIEW			10/0/00

INDEX OF CLAIMS

~	Rejected	N	Non-elected
=	Allowed	1	Interference
_	(Through numeral) Canceled	Α	Appeal
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Claim	т.	- }					\neg	Claim Date										_	Claim															
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ATTORNEY'S DOCKET NO. 065968.0104

PATENT APPLICATION

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APPLICATION FOR U.S. PATENT UNDER 37 C.F.R. § 1.53(b) TRANSMITTAL FORM



Sir:

Transmitted herewith for filing is the patent application of:

Inventor or Application Identifier:	Casimir M. Kaczmarczyk, et al.
Entitled:	SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS
Enclosed are:	
X Combined Declaration a	Sheet(s) of Formal _X_ Informal) nd Power of Attorney (<u>5</u> Total Pages) (original or copy) (UNSIGNED) application
cover sheet in comp	the invention to <u>telecom technologies</u> , inc. is attached. A separate liance with 37 C.F.R. § 3.28 and § 3.31 is included with an fee of \$40.00 pursuant to 37 C.F.R. § 1.21(h).
Information Disclosu	re Statement (IDS) PTO-1449

X Certificate of Mailing

_ Copies of IDS Citations.

Preliminary Amendment

X Return Receipt Postcard

X Other - This application claims the benefit of U.S. Provisional Application No. 60/127,169 filed March 30, 1999.

DAL01:515798.1

PATENT APPLICATION

ATTORNEY'S DOCKET NO. 065968.0104

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- Large Entity
- X Small Entity
 - __ Small Entity Statement enclosed
 - X Small Entity Statement filed in prior application. Status still proper and desired.

The accompanying application is:

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_ Continuation _ Divisional _ Continuation-In-Part (CIP) of prior application No. _____ which is hereby incorporated by reference therein.

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ŭ		Number		Extra	Rate	\$ 345.00	
	Total Claims:	51	-20 =	31	X \$9 =	\$279.00	
Ó	Independent Claims		- 3 =	0	X \$39 =	\$ -0-	
		\$624.00					
	X Enclosed is a check in the amount of \$624.00 to satisfy filing fee requirements under 37 C.F.R. § 1.16. Please charge any additional fees or credit any overpayment to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P. A duplicate copy of this sheet is enclosed.						

> Respectfully submitted, BAKER BOTTS L.L.P. Attorneys for Applicant

Wei Wei Jeang

Reg No. 33,305 March 29, 2000

Correspondence Address: Wei Wei Jeang, Esq. Baker Botts L.L.P. 2001 Ross Avenue Dallas, Texas 75201-2980 (214) 953-6690

DAL01:515798.1

Attorney's Docket: 065968.0104

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Casimir M. Kaczmarczyk, et al.

Date Filed:

March 29, 2000

Title:

SYSTEM AND METHOD TO

INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

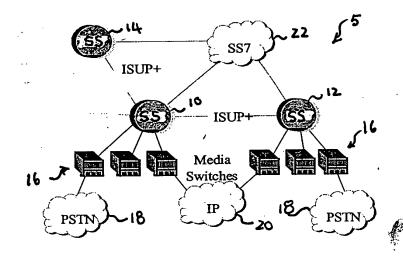
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I hereby certify that the attached Application Transmittal Form, Verified Statement Claiming Small Entity Status, Patent Application, Declaration and Power of Attorney, Drawings, and Check Number 102818 in the amount of \$624.00, are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on this 29th day of March, 2000, addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

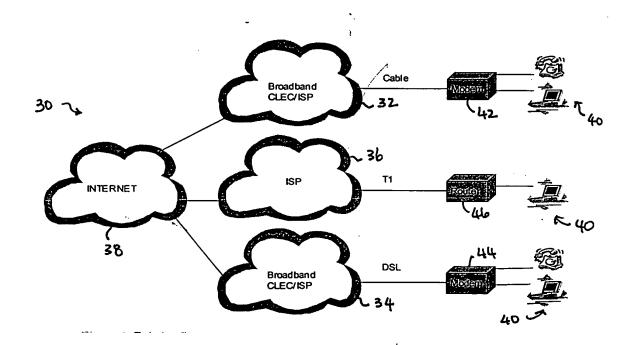
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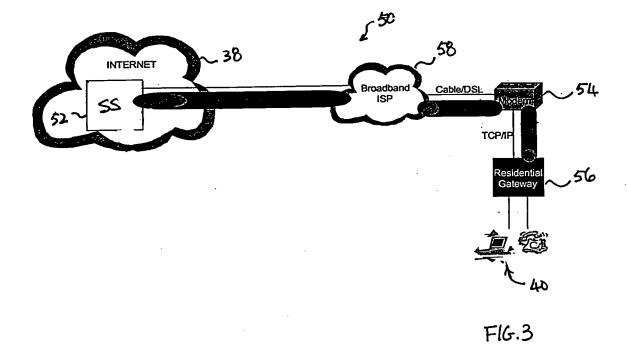
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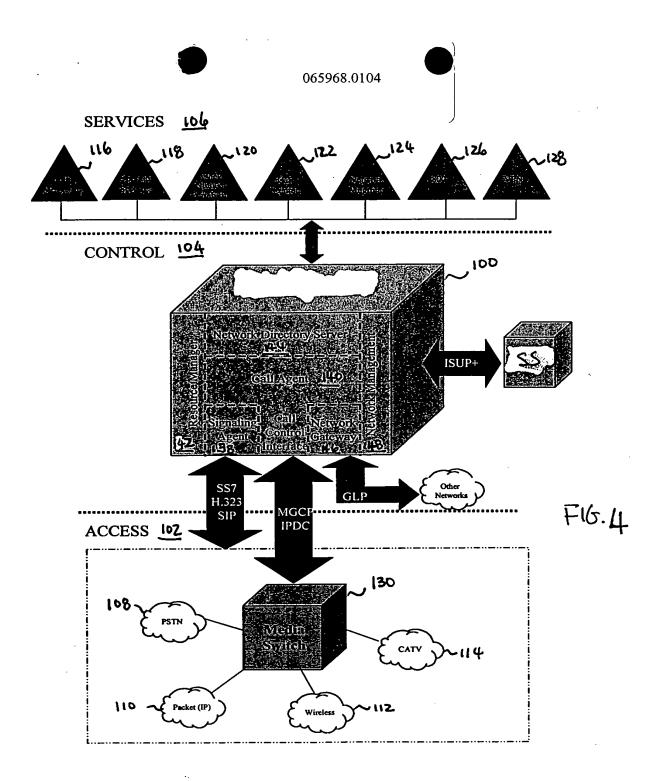


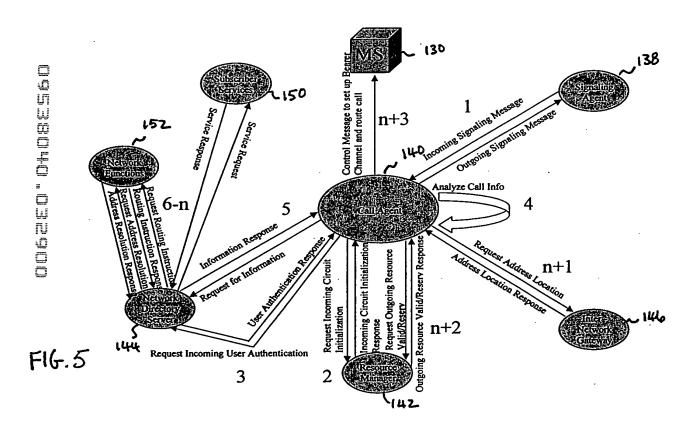


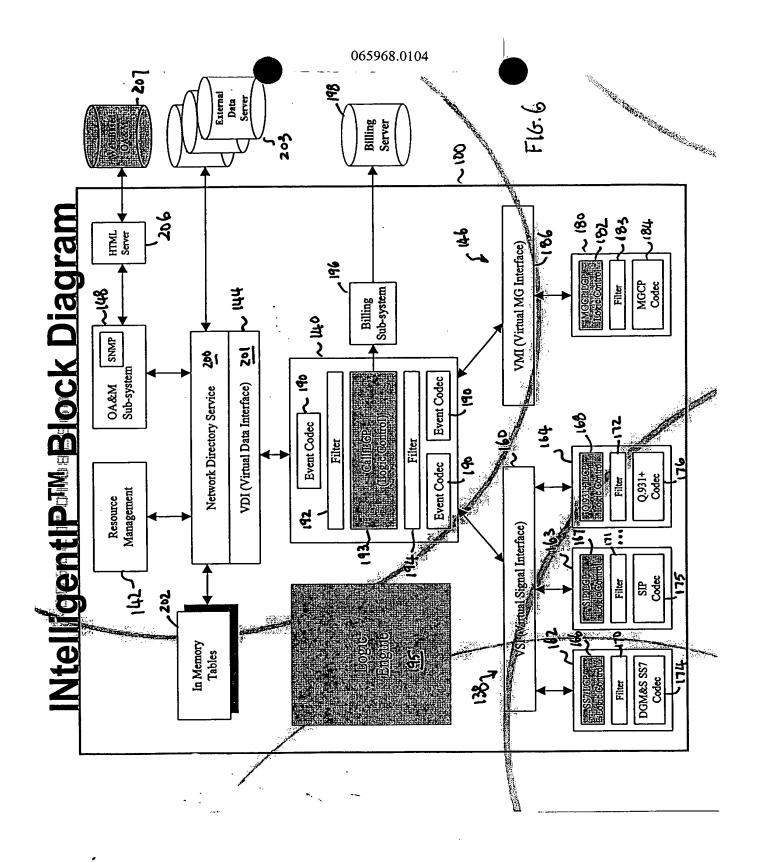


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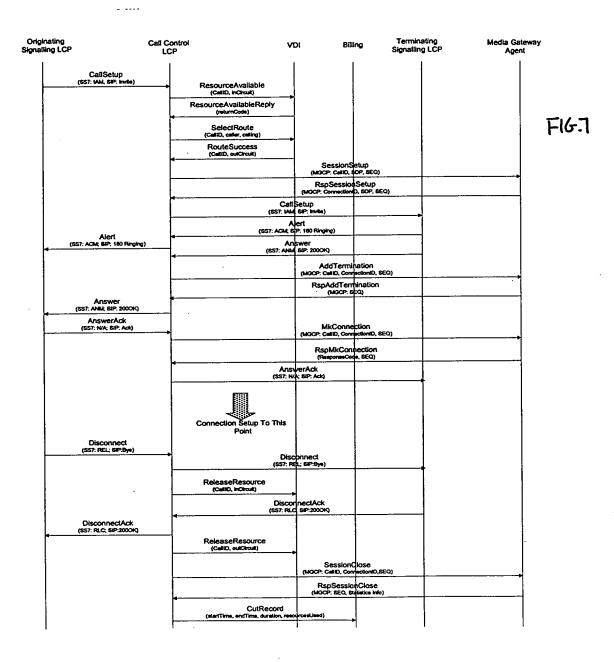


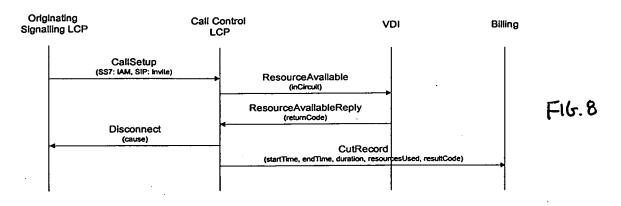


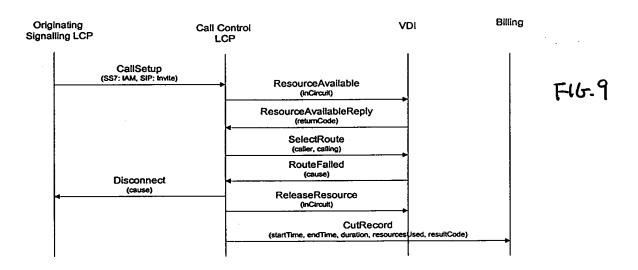




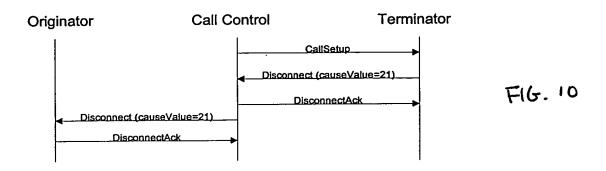


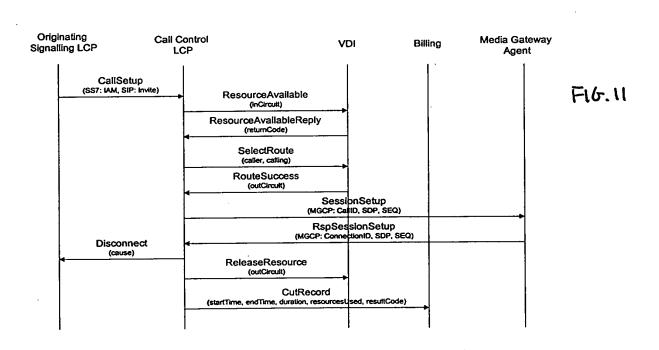


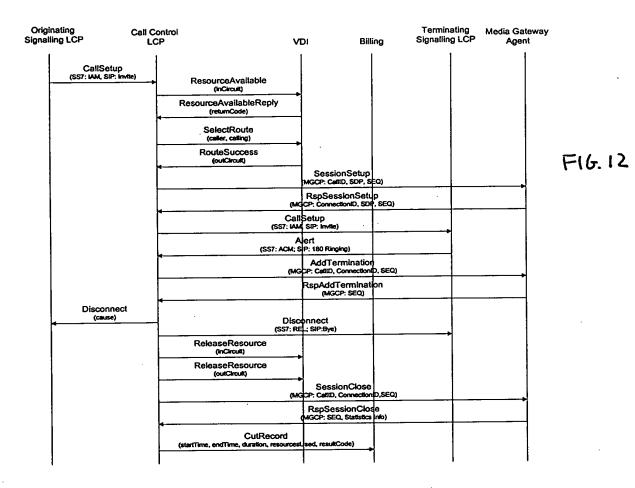




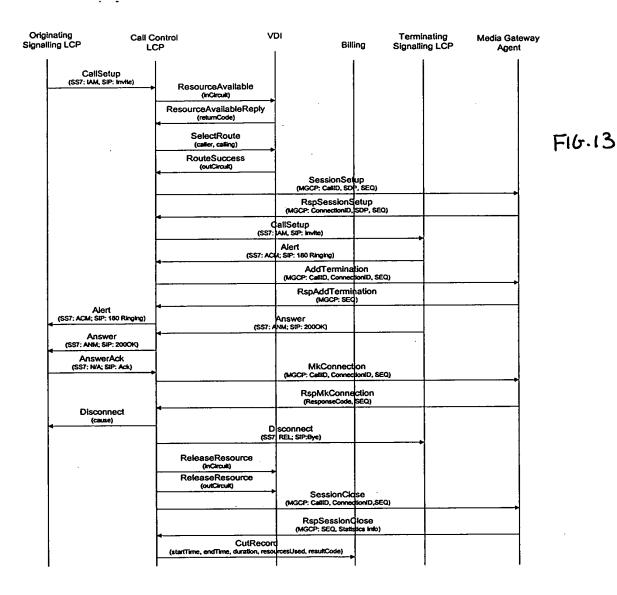


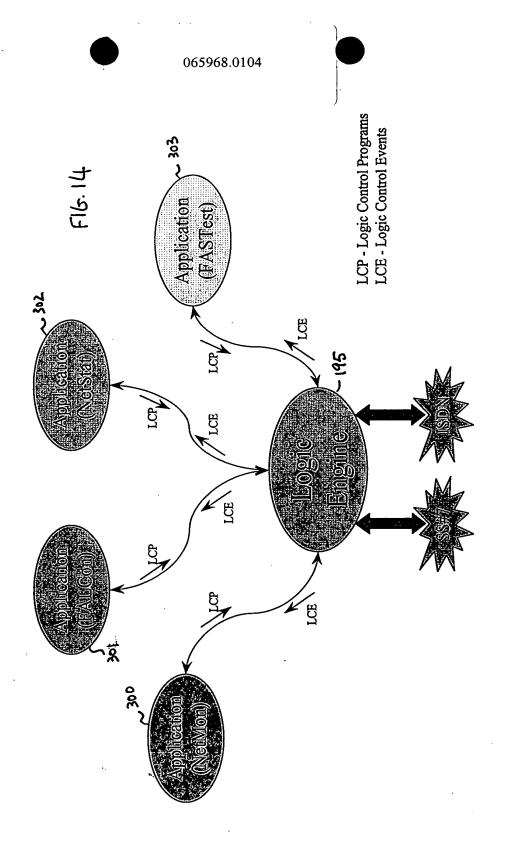


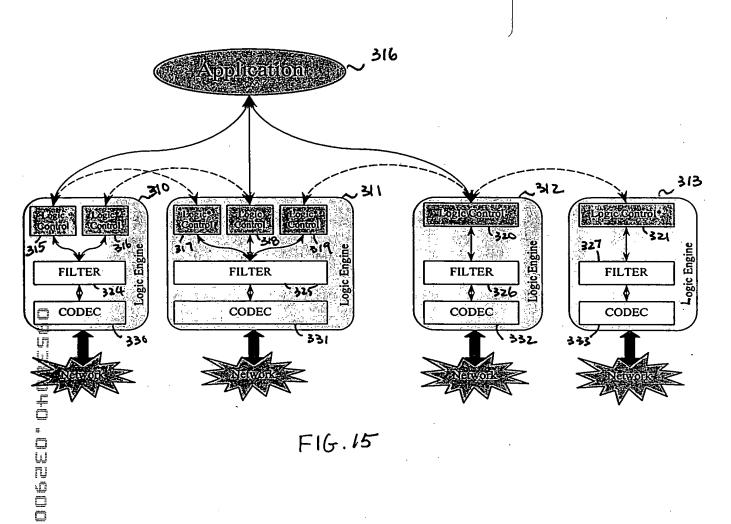












SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS

RELATED PATENT APPLICATION

This application claims benefit of U.S. Serial No. 60/127,169, entitled *INtelligentIP*, filed on March 30, 1999.

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TECHNICAL FIELD OF THE INVENTION

This invention is related in general to the field of telecommunications. More particularly, the invention is related to system and method to internetwork telecommunication networks of different protocols.

BACKGROUND OF THE INVENTION

In the short span of five years, the Internet has changed inter-personal and inter-organizational This phenomenon is largely the result of communication. an open control language of protocol, the Internet (IP). introduction of Protocol The new control vocabularies and syntax, such as the Hypertext Transfer (HTTP), expanded the Internet into the World Protocol Wide Web (WWW), a multimedia communications distribution any-to-any connectivity. network with manifestations or generations of IP are evolving, which will have equally profound impact, such as one that is transforming the public switched telephone network (PSTN).

The command and control of the PSTN is built around a connection-oriented class structure. Call processing is completed by a complex array of switches, processors, and control networks, such as the Signaling System 7 or SS7. The PSTN is built on a class structure of specialized devices that perform single-purpose functions. For example, a Class 5 switch provides local access and call waiting; a Class 4 switch provides long distance, toll calls, and billing. Connectivity is also

discrete, deterministic connection or voice before communication can begin. The voice channel also must remain in place for the duration of the call. PSTN is also a hierarchical one-to-many network that may result in traffic congestion, or blocking, thus creating the need for centralized control to proactively re-route the traffic. New service and feature development on this consuming complex network is time and strenuous, requiring 12-18 months of development. Service providers are spending billions of dollars annually to support this

connection-oriented, where two devices must establish a

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specialized infrastructure, as margin continues to erode and new development has stagnated.

The expanding interest in IP telephony has driven by the opportunity to reduce network costs. based communication is both classless and connectionless. IP networks deconstruct the class-based switch hierarchy into a powerful, any-to-any, class-independent network of packet transfer devices. Every packet of information the necessary control information carries all the originating device to the destination "connect" device using only the needed resources. The convergence of transport and access networks, increased resource utilization through packet switching, and favorable regulatory conditions have propelled IP telephony to the competitive service providers' many network agenda. While technology cost reduction is still important, the competitive service providers have learned to focus on service differentiation in order to sustain competitive advantage. Service differentiation occurs at a high level than network interconnection. It requires bridging transparent οf the media, control and application layers between IN (Intelligent Network) and IP networks.

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SUMMARY OF THE INVENTION

Accordingly, a need has arisen for a device that is able to seamlessly internetwork networks using different signaling and transport protocols. The softswitch of the present invention allows service providers to interconnect intelligent control and signaling systems between networks, so that new flexible, open services can be created, and integrated to generate new revenue sources.

the embodiment of present invention, In an networks of different softswitch interconnecting transport protocols is provided. The softswitch includes a signaling agent coupled to the networks and operable to incoming signaling messages, translate incoming signaling messages to a call model event, and route the call model event. The softswitch further includes a call agent in communication with the signaling agent and operable to receive the call model event, resources for establishing outgoing sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent. The signaling agent then terminates the data sessions on the requested outgoing resources.

In another embodiment of the present invention, a method of internetworking between networks of different transport protocols is provided. The method includes the steps of receiving signaling messages from a signaling translating the signaling messages into call network, events, and processing the call events. The method includes requesting outgoing resources establishing data sessions with devices coupled to a transport network, and terminating the data sessions on the requested outgoing resources.

In yet another embodiment of the present invention, a softswitch interconnecting networks of different

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transport and signaling protocols is provided. softswitch includes a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call event, and route the call event. The softswitch further includes a call agent in communication with the signaling agent and operable to receive the call event, verify the validity of incoming circuits of inbound calls, and generate a request for an outgoing resources for establishing data sessions. The softswitch also includes a network directory server in communication with the call agent and operable to receive the request for an and provide information on outgoing resource, The softswitch also includes outgoing resource. network gateway agent operable to receive a request to establish a data session the selected on resource, and set up an open session. The call agent is operable to terminate the data sessions on the requested outgoing resources, and generate a call detail record in response to disconnecting the data session.

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PATENT APPLICATION

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BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the present invention, reference may be made to the accompanying drawings, in which:

FIGURE 1 is a block diagram of a network topology based on the softswitch of the present invention;

FIGURE 2 is a block diagram illustrating the present Internet telephony network architecture;

FIGURE 3 is a block diagram of the Internet telephony network architecture using the softswitch of the present invention;

FIGURE 4 is a simplified top-level block diagram of an embodiment of the softswitch constructed according to the teaching of the present invention;

FIGURE 5 is a more detailed block diagram of an embodiment of the softswitch constructed according to the teaching of the present invention;

FIGURE 6 is a simplified internal call flow diagram of an embodiment of the softswitch constructed according to the teaching of the present invention;

FIGURES 7-13 are call flow diagrams illustrating the operations of the call logic control subsystem of the present invention;

FIGURE 14 is a logic diagram of the operations of a protocol-independent logic engine for processing call events; and

FIGURE 15 is a more detailed logic diagram of the operations of the protocol-independent logic engine for processing call events.

DETAILED DESCRIPTION OF THE INVENTION

FIGURE 1 is a block diagram of a network topology 5 based on the softswitch of the present topology 5 includes several interconnected softswitches (SS) 10, 12 14, each of and which interconnect several media switches 16. communication between the softswitches may be through the use of ISUP+ (ISDN user part+), which is based on International Telecommunications Union (ITU) ISDN user part (B-ISUP). Media switches 16 interconnect various network media, such as PSTN (public switched telephone network) 18, IP (Internet Protocol) 20, MGCP, and others thus enabling the transport of calls or sessions across different network domains. For example, a call may originate on a PSTN 18 and be routed to a media switch 16 via the SS7 network. Depending on the session transaction, features may be added to the call session, such as bandwidth allocation (compression) or security (encryption), or virtual private network (authentication). The call or session may then transported across another media network, such as an IP network, for completion on another media switch across town, across the country, or in another part of the The softswitch configuration controls the end-toend transport of the call through integration of the network intelligence between the two media switches. call session may then be converted back to a PSTN network for termination at a remote branch office. In this way, service portability is enabled. The services can be distributed to any device anywhere in the network over different media without the limitations of a CLASS-based network topology.

FIGURE 2 is a block diagram illustrating the present Internet telephony network architecture 30. In today's Internet telephony network 30, broadband Internet service

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providers 32 and 34, and Internet service providers (ISP) 36 installed high bandwidth access pipes from the Internet 38 to the users 40. Today's technology utilizes a number of different transport mechanisms to accomplish this link to the Internet, including cable modem 42, DSL modem 44, router 46, and dial-up access (not explicitly shown). These modems translate Internet traffic between the desktop (TCP/IP port) and the transport medium (cable, DSL, T1).

The telephony interfaces on the modems are supported by the ISP with interconnect to the PSTN. As a result, these ISPs are known as competitive local exchange carriers or CLECs. The only entity that can provide telephony services to users 40 are the ISP/CLEC provider that installed and own the modems. The users are charged separated for each provided service. For Internet TCP/IP access is charged separately telephony services, which is also charged separately from cable video services.

The users in this scenario are also forced to make a technology decision for his telephony services. For example, if a user subscribes to a cable ISP, he cannot take his telephony service equipment and change over to a DSL ISP provider. The current technology does not provide the user to have geographic portability or fully take advantage of the flexibility of the Internet.

FIGURE 3 is a block diagram of the Internet telephony network architecture 50 using an Internet-based softswitch 52 of the present invention. Softswitch 52 functions as an Internet central office that provide traditional central office functions and capabilities to the Internet user community. Therefore, any IP-enabled user 40 has access to telephony services, without regard to the underlying transport technology. Users 40 are coupled to the Internet central office via a residential

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PATENT APPLICATION

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service gateway 56. Residential service gateway 56 provides proxy server, TCP/IP hub, firewall, residential qateway, and residential service client functionality. The proxy server function allows the user to only require one IP address from the ISP for multiple devices and improves performance for a group of users. The TCP/IP hub function allows for connectivity from one function to multiple TCP/IP devices. The firewall protects the customer devices from fraudulent access originating in the Internet. The residential gateway functions convert the analog telephony services from the user into TCP/IP for transport through the Internet. Additionally, the Internet central office is operable to control and communicate with residential service gateway software for call client 56 state control. residential service client software is a companion client application to the Internet central office. This client allows the user (telephony subscriber) to solicit or initiate service from the Internet central office. client provides a secure, encrypted dialog between the Internet central office and the user's client for call control (registration, addressing and supervision). Another feature of the residential service software is that user's service profiles may be uploaded or downloaded to a database in the residential service gateway through a local area network (LAN), serial port, smart card, or an infra-red interface into a third party application and device. This functionality allows the user to be fully mobile by connecting to any residential service gateway, download their profile into residential service gateway, and personalize it.

Residential service gateway 56 may be a stand-alone hardware/software combination equipment or be in the form of a software application running on a user's personal computer. As a software application, it has the added

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advantage of being downloadable and run locally on the user's computers.

The Internet central office implemented with softswitch 52 allows the establishment of CLECs on the Users who own residential service gateway equipment or software can subscribe to telephony services directly from the Internet central office-enabled CLEC. The customer's ISP transports this service as though it were normal IP traffic. The Internet central office and residential service gateway interoperate at the IP level are therefore compatible with any IP transport medium. The Internet central office can switch telephony from one Internet-based residential traffic gateway to another, or connect calls between the PSTN and an Internet-based residential service gateway customer. A subscriber may relocate his/her residential service profile transfer his/her to another orgeographical location, and his/her telephone number and services will follow to any location in the world without the need for traditional number portability systems. Internet central office service is completely (carrier, service, and geographic) portable.

Upon initialization, residential service gateway 56 is assigned an IP address from the ISP. Residential service gateway 56 then automatically locates Internet central office on the Internet. Residential service gateway 56 then registers with an is directed to an automated provisioning account or establish new services. New system to provisioning may allow the user to port his/her existing telephone number, or select an area code for a serving city where he/she desires service to be established.

Station identifiers or telephone numbers are a function of the Internet central office's point of presence. For example, if an Internet central office

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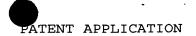
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were interconnected to city A PSTN, it may offer city A telephone numbers to its subscribers regardless of the geographical location of the customer's residential service gateway. Calls that originate and terminate to and from Internet central offices can be considered within the network and thus know no limit to the calling area. Such a configuration would motivate flat rate pricing.

It may be seen that the residential service gateway includes network registration, call control/supervision, subscriber services, client security, and user profile database functionalities.

Internet central office providers may negotiate first tier interconnect agreements with the broadband ISPs to provide a higher quality of service. An Internet central office may also interconnect to another Internet central office using a managed IP network to maintain a high quality of service.

Therefore, by adopting the network topology shown in FIGURE 3, a number of advantages are obtained. Internet telephony market is opened to competition and allows for cost reduction of telephony services. Internet central office and residential service gateway interoperate using any broadband Internet technology so that service is portable from one transport to another. The user's telephone service becomes geographically and service portable to any location. The Internet central office allows existing CLECs to extend the reach of their telephony network into the broadband user's premise without investment in broadband technology. technology also eliminates the need for unbundling the broadband ISP to telephony carriers. Flat rate calling service plans become available for calls that stay within the Internet central office network. Furthermore, the

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Internet graphical user interfaces can be leveraged to automatically provision services.

FIGURE 4 is a simplified top-level block diagram of an embodiment of the softswitch 100 constructed according to the teaching of the present invention. Softswitch 100 is based on the session layer of the OSI model. session layer is where the network intelligence resides, not at the transport or application layers. The network structure for telecommunications is evolving to have three distinct functional layers: access 102, 104, and services 106. Access layer 102 is responsible for media transport of calls and sessions, and includes PSTN, packet (IP) network 110, wireless 112, (community antenna television) 114, etc. Control layer 104 is responsible for controlling the elements of the access level and operating in concert with the service level as calls or sessions require interaction with services available in the network. Services layer 106 is responsible for defining the services through databases and service logic. Examples of services are unified local 116, operator services 118, portability 120, call center 122, network management 124, toll call services 126, virtual private network (VPN) specialized routing (time-of-day, calling party area, etc.), unified messaging, etc. It may be seen that softswitch 100 resides in control layer 104.

Softswitch 100 is preferably built on open protocols to set-up and control media sessions, i.e. any combination of voice, data and video flows. Some open protocols used by the media switches 130 are IPDC (IP device control protocol), MGCP (media gateway control protocol), and SGCP (simple gateway control protocol). Softswitch 100 includes six main functional components: signaling agent 108, call agent 110, resource manager



112, network directory server 114, network gateway 116, and network management 118.

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With reference to FIGURE 5, signaling agent communicates with call agent 140 and access network 102, such as media switch 130, SS7 network, and SIP (session initiation protocol) end users. Signaling agent 138 translates incoming signaling messages to the appropriate call model event to be sent to call agent 140. The role of signaling agent 138 is to receive any type of access communicate with call agent 140, protocol, terminate the call to the appropriate network using the applicable protocol as instructed by call agent 140. example, signaling agent 138 may receive an SS7 IAM and be able to terminate the call to an IP network user. call agent 140, events from signaling agent 138 appear as if it is just another client/server that is capable of originating and terminating sessions.

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signaling agent 138 is operable to support standard MTP and physical level interfaces as required by the networks. The processing of the SS7/C7 interfaces are handled within signaling agent 138. The session or call processing protocol on signaling agent 138 is session initiation protocol (SIP). By utilizing a native packetcontrol protocol out of the edge signaling agent 138 are able to represent the control of the media switch packet capabilities in native form. Thus, capabilities and interaction of call agent 140 and signaling agent 138 are not constrained to a legacy interface as the packet-switched network and services continue to evolve. A number of existing IP telephony products are controlled or interoperate with the H.323 The softswitch provides interoperability between H.323 and SIP. H.323 can remain configured in access networks, grouping together several devices into domains. The softswitch adds the extensibility found in

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SIP protocols to provide simplified interaction with the call session engine, which in turn interacts with the policy/directory server and feature application servers. In this way, investments in H.323 are protected without compromising future development brought about by Multi-network service applications. datagram transmission protocol (MDTP) is an application level protocol designed to provide a fault-tolerant, real-time reliable data transfer between endpoints communicating over an IP network. It is used to provide call control and signaling for Internet telephony. It is scalable to support different signaling transport requirements based on the different interfaces to the telephony network.

Call agent 140 is responsible for managing the endto-end control of the sessions or calls between packetswitched elements. As a central element architecture, call agent 140 is a focal point of access to intelligent services as required by the sessions under Billing data consolidation of services its control. provided and entities involved in the call will performed in call agent 140. Interworking and translation for the SS7/C7 events to SIP the implemented gateway control protocol will be performed with the relevant state data maintained in call agent The media switch chosen for any particular implementation of the softswitch is dependent upon the transport requirements of the service provider's network. The control of the media switch has the following minimum criteria for interworking with the softswitch: gateway control protocol of MGCP, registration configured ports through the gateway control protocol, SNMP (simple network management protocol) trap support, web-based configuration mechanism, minimum of support on circuit-switched connectivity. The above attributes allows signaling agent 138 the capability to

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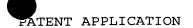
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manage the circuit-switched ports on one or more media switches. The limit of the ports managed will depend on the density of ports in each media switch and the hardware configuration of the signaling agent. The packet-switched interface of the media switch is directed by the gateway control protocol. This control allows the RTP or other streams to be connected between the media gateway and the other media devices as directed by the signaling agent.

The IP device control (IPDC) protocol is between the media gateway controller call agent 140 and the media gateway. It is used to provide connection control, media control, and signaling transport. to support different service provider order gateways, the softswitch supports MGCP and IPDC communicate and control the media gateway.

Call agent 140 provides the raw data to the service providers down stream billing systems for call detail records (CDR), and other billing functions. The raw data can be customized per interface.

The main responsibility of resource manager 142 is to validate the incoming circuit, and to provide resource availability information for the outgoing call from the media switch. Resource manager 142 is responsible for maintaining circuit state and relative information, for all circuit-switched entities on the media switches. addition, resource manager 142 is responsible for (DSP, echo cancellers) managing virtual ports on the media switch, depending on the media switch implementation. Also, resource manager 142 is operable to determine aggregated bandwidth allocation on the media switch.

Network directory server 144 is responsible for managing user profiles, such as access authorization, call barring, dial plan, etc. and providing routing

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instruction for local and external (local number portability, 1-800) calls. Network directory server 144 is also operable to provide address resolution and translation, and accessing subscriber services (special tones and treatments) by sending requests to network functions element 152 and subscriber services Network directory server 144 also handles scripts distribution accepting, acting, and to destinations. Network directory server 144 is accessed agent 140 to receive routing instructions. Network directory server 144 may reside on the same platform as call agent 140 ormay be distributed. Network directory server 144 may also provide enhanced routing function, such as time-of-day routing, percent allocation routing, dial plan, route choice, etc.

Network qateway 146 is responsible interconnecting the softswitch network to an external network. Call agent 140 accesses network gateway 146 to determine a location of a user and he/her privileges in order to route the call to the external network. example, if a user is not within the softswitch domain, call agent 140 is prompted by network directory servers 144 to request instructions from network gateway 146. this point, call agent 140 requests instructions on where to route the call, different rate structures associated with the call, and determine if the external network is willing to accept the call. If all conditions are the external network gateway will satisfied network gateway 146 with routing instructions.

Network management 148 is responsible for provisioning, monitoring, alarm generation, performance shooting management, reporting, maintenance and administration, configuration management. The various control elements reside in an IP network. They utilize SNMP and remote monitoring (RMON) agents to collect, store, trap, and monitor data/trends on network performance, availability, information is combined with configuration attributes from each device into a user-friendly, browser-enabled network management interface, using HTML. In this way, have control, administrative, and monitoring This format capability from anywhere in the network. allows for integration with other web-enabled network management systems and provides the ability to push service administration to customers without compromising operational integrity of the production network.

FIGURE 6 is a more detailed block diagram of an embodiment of the softswitch 100 constructed according to the teaching of the present invention. Signaling agent 138 of softswitch 100 includes a virtual signal interface (VSI) 160, which provides an interface to call agent 140. Signaling agent 138 includes a number of signaling agents 162-164 operable to interface with SS7 interface, SIP devices or interface, H.323 devices or interface, Q.931 interfaces and devices, and others. Each signaling agent includes a respective logic control 166-168 executing logic control program, filter processor 170-172, and codecs (coders/decoders) 174-176. Codecs are specialized communication modules. Network gateway 146 includes gateway agents 180 for interfacing with MGCP media gateway switch, IPDC media gateway switch, Each gateway agent 180 each also includes a logic control 182 executing a logic control program, a filter processor and a codec 184. Network gateway 146 further includes a virtual media gateway interface (VMI) 186 for interfacing with call agent 140.

Call agent 140 includes event codecs 190 interfacing with network directory server 144, signaling agent 138, and network gateway 146. Call agent further includes a logic control 193 executing call logic control

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programs, and filters 192 and 194. Logic controls 166-168 and 182 and call logic control 193 make up logic engine 195. Logic engine 195 is a protocol-independent, data-configurable, multi-threaded state machine The details of logic engine 195 are set forth processor. below with reference to FIGURES 14 and 15. Call agent 140 also communicates with a billing sub-system 196, which stores CDRs and other billing information in a Network directory billing server 198. includes a network directory service 200 and a virtual data interface (VDI) 201. Virtual data interface 201 interfaces with call agent 140. Network directory service 200 accesses in-memory tables 202, which store profiles, routing instructions, addresses, subscriber services. Network directory data servers 203. further accesses external Network directory service 200 also communicates with resource manager 142 and network management 148. management 148 includes OA&M (operations, administration and maintenance) sub-system, which communicates with an HTML server 206 and a web-based OA&M database 207.

It may be seen that call agent 140 interfaces with virtual signal interface 160, virtual media gateway interface 186, and virtual data interface 201. Signaling events are received through VSI 160 and the specific protocol events are normalized. The key to messages between logic control programs is the message type (call set up, disconnect, etc.) and subsystem type The normalized signaling event is sent to (SS7, SIP). call agent 140 for processing. Assuming proper message formatting, a route is selected, the media gateway agent is contacted, the call is terminated through the media gateway agent and the call control processing is complete until one of the calling parties terminates the call.

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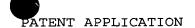
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During the course of processing the event the message goes through the following stages:

- 1. A normalized message is received from the VSI.
- 2. The data contained in the message goes through basic validation to confirm that the contents have not been modified or lost. The call is abandoned if the data is invalid.
- 3. The inbound circuit is queried, through the VDI, to confirm the call is being processed from a circuit in a valid state. This is to prevent processing a call from a circuit that has been administratively locked or through fault management that has been disabled.
- 4. Query the VDI to select a route for the call based on the called number, which may be a SS7 circuit or an IP address for SIP.
- 5. For a successful route, contact the media gateway agent and open a session. Send a CallSetup message to the VSI. If the route failed, play an announcement and abandon the call.
- 6. Upon receipt of the alert message from the VSI, the media gateway agent is updated to add the termination leg to the existing call session.

 The alert message is sent to the VSI.
- 7. Upon receipt of the answer message from the VSI, the media gateway agent is updated to cut the voice path between the originator and the terminator for the existing call session. The answer message is sent to the VSI. The call is now setup and waiting for one of the calling parties to disconnect.
- 8. Received a message that one of the calling parties disconnected. Tell the VDI to release the resource, cut a billing record.



9. When all the calling parties have disconnected, a final billing record is cut. The call model logic control program exits.

7-13 are exemplary detailed call diagrams illustrating the call logic control subsystem of the present invention. FIGURE 7 is a call flow diagram of a normal call processing. FIGURE 8 shows the call flow in which the in bound resource/circuit is in an invalid state to process the call. The call VSI is notified that the call has been abandoned. A billing record is produced to indicate that an error occurred. FIGURE 9 is a call flow diagram of a route request that The failure cause code returned from the VDI is mapped to a normalized cause code that VSI and call control agree upon. FIGURE 10 is a call flow diagram illustrating the call flow in which the terminating side FIGURE 11 is a call flow diagram showing the media gateway agent returning a failure code for the session setup request. An announcement is played to the caller and the call is abandoned. FIGURE 12 is a call flow diagram showing the media gateway returning failure code for the add termination request. An announcement is played to the caller and the call is abandoned. FIGURE 13 is a call flow diagram showing the media gateway returning a failure code for the make connection request. The originator and terminator are played an announcement and the call is abandoned.

FIGURE 14 is a logic diagram of logic engine 195 according to the teachings of the present invention. Logic engine 195 is operable to allow applications 300-303 to download and retrieve the status of logic control programs. Logic engine 195 is a configurable state machine processor that is responsible for carrying out

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the logic control program. This includes sending and messages on the appropriate communication links, generating events for the application, maintaining operating statistics on each logic control program, and communicating with other logic engines. Logic engine 195 with operable to communicate many specialized communicator modules or codecs (162-164, 180). codecs are responsible for handling the formatting and parsing of the messages for the protocol each specializes as well as dealing with the transmission to and reception of the messages from the outside world. Furthermore, a maverick codec may be employed which is responsible for performing tasks not associated with a standard protocol, such as billing, statistics, or provisioning. Each logic engine component (logic controls, codec, filters) running in a separate thread. It is therefore possible to configure what threads are in the logic engine at run time so that functionality in the form of different codecs can be easily added.

Logic engine applications 300-303 are external processes that communicate with logic engine 195. Since a logic engine 195 has no built in algorithms for performing any specific process, it is applications 300-303 that supply application-specific functionality. The applications may establish and maintain a TCP/IP socket connection with the logic engine, generate appropriate logic control programs and downloading them to the logic engines, and monitoring event and statistic data.

Referring to FIGURE 15, a block diagram of the basic architecture of a network of logic engines 310-313 is shown. It may be seen that one single application 316 can communicate with one or more logic engines 310-316 and the logic engines themselves can be grouped in a

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hierarchy. When the logic engines are grouped in a hierarchy, it uses pass-through logic controls to pass messages that are intended to one logic engine from another logic engine.

Logic controls 315-321 are the data-configurable generic state machine processors that execute logic A logic control program defines how control programs. the logic engine is to operate. A logic control program contains actions (i.e. send an event to the application, transmit a message, etc.), transitions (which define what to do given a certain external event, i.e. message received, timer timed out, etc.), and data (i.e. lists of phone numbers or circuits, application identification on connection, timer values, etc.). A logic control program is a series of data items or independent building blocks define what a logic engine application perform, such as message definition, data items, when to send a message, etc. Logic engines 310-313 also includes filters 324-327 that filter and route messages that originate from codecs 330-333 destined for logic controls The logic engine can be distributed over many links, in multiple locations, to accomplish the tasks for given application. In this distributed links can be monitored for one (or more) application, without the application needing distribute itself over the links.

After an application is initiated and connecting to the logic engine, the application identifies itself by sending an application item to the logic engine. The application item identifies the application and specifies how to handle any downloaded data in the event the application disconnects. The application item may be the only item in the packet sent to the logic engine. The

logic engine then checks to determine whether the application is allowed to download data to the logic engine. This requires that the application's identifier in the application item is not currently in use and is valid.

The application downloads a logic control program or multiple logic control programs to the logic engine to accomplish its desired tasks. The download process occurs after the application has established a socket connection with the logic engine. The logic control program data are preferably sent to the logic engine in the following order so ID references can be resolved properly:

- 1. Network Item(s)
- 2. Debug Item(s)
- 3. Match Item(s)
- 4. Column Item(s)
- 5. Counter Item(s)
- 6. Timer Item(s)
- 7. Load Item(s)
- 8. Key Item(s)
- 9. Event Data Item(s)
- 10. Event Item(s)
- 11. Message Item(s)
- 12. Action Item(s)
 - 13. Transition Item(s)
 - 14. Logic Item(s)
 - 15. Logic Control Program Item(s)
 - 16. Download Complete Control Item

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All items in the download list are optional. If an application has already downloaded a complete set of logic control program data, only new or changed items

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need to be re-downloaded to the logic engine. If a logic control program does not use a certain item type, such as a column or counter, the downloaded data does not need to include any item of that type.

Control commands are used to instruct the logic engine what to do with the downloaded data. commands will only make sense to the logic engine if all the logic control program data has been downloaded by the application. The start command is used to instruct the logic engine to start executing a given logic control program according to the load rate(s) specified in the logic control program. The stop command is used to instruct the logic engine to stop executing a given logic control program. When this happens, all currently executing instances of the logic control program will continue to execute until they have completed. instances of the logic control program will be allowed to start once this command has been received. The continue command is used to tell the logic engine to start running a given logic control program from the point at which it In this case the logic engine will start was stopped. running the logic control program at the point along the load curve at which it was stopped. The burst command is used to instruct the logic engine to start running several instances of a logic control program at once. the burst value is set to zero, the burst value stored from the logic control program download item will be The statistic commands are used to instruct the logic engine what to do with the current statistical These commands should not be issued until all the logic control program data has been downloaded to the logic engine. With these commands the logic engine can start the statistical data reporting, stop the

statistical data reporting, clear the statistical data, or set the reporting frequency of the logic engine.

When a logic control program has been defined to transition based on input from the application, application must be certain to send this event at the logic appropriate time so the control program of transition to the next set actions. transition/event combination is mostly useful in situation that requires user interaction and the logic control program is the only instance that is running. more than one instance of the logic control program is running, the application must be certain to send the correct key data to the logic engine so the event is passed to the correct instance of the logic control program.

following describes exemplary The types of communication the logic engine sends to the application. An acknowledgement message is returned for every item sent to the application that has the acknowledgement flag set in its identifier. The item that requires acknowledgement will be checked for proper formatting, and data validity. If there are any errors the acknowledgement item will return an error code to indicate the type of error. The acknowledgement may not be returned immediately if certain data elements cannot be resolved at the time an item is downloaded. possible to resolve these items when the download is complete, if the unresolved data item was simply downloaded later. Therefore, an application does not wait on the acknowledgement before continuing with its download. Rather, the application "remembers" which items were to be acknowledged and verify that it receives an acknowledgement for each item.

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An event message item is returned whenever a send event action item is processed. This item will contain all the data specified in the event action. In this manner, an application can retrieve and store pertinent data from multiple instances of a logic control program for processing and/or for future reference.

Statistics reporting messages are. sent application after a start statistics reporting command is received. These statistics will indicate the number of instances of a logic control program that have been started, how many passed and failed, and how many completed. A stop reporting command will stop these These messages will be sent on the interval messages. defined in either the statistics frequency data item of the logic control program, or the set frequency command, whichever was received most recently.

The logic engine provides a rich of set functionality for the processing of state data necessary in switching and other systems. This functionality is provided by a specialized, graphical protocol programming The graphical programming environment is used language. to generate the logic control programs. A logic control program contains actions, transitions, and data. possible to quickly and efficiently build applications using the graphical programming environment. with graphically-based service creation environments, the programmer may drag, drop and link graphical representing logic building blocks to create a logic control program.

It may be seen from the foregoing the softswitch of the present invention provides an integrated hardware and software solution set that provides the capability to receive signaling messages from any type of network and

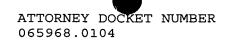
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transmit the messages across a different network, while keeping the existing customer feature set. This solution bridges the gap between packet-based networks and traditional PSTN communications to advance lower cost, and high revenue value-added services.

This solution set allows for the decoupling of service intelligence from transport equipment and unburdens the switch and router hardware of sophisticated call processing tasks, freeing them to concentrate on their main task - transmitting information across a network with minimal transmission delay.

Furthermore, the softswitch of the present invention allows the telecommunications companies, such as CLECs and LECs (competitive local exchange companies and local exchange companies), to use the cheaper Internet protocol/packet networks for transmission of their voice traffic while maintaining features and quality of service where applicable.

In the wireless arena, the softswitch may use multipoint wireless T1 radios from the traditional CDMA (code division multiple access) base station system (BSS) radio to the mobile-service switching center (MSC) or switching vehicle. The protocol used on the wireless T1 radios will be TCP/IP (transmission control protocol/internet protocol) with the wireless gateway located at the CDMA BSS radio facility. Additionally, the softswitch may build the switching vehicle (MSC replacement) in an area LAN/WAN (local network/wide area network) configuration. PSTN (public switched telephone network) gateways will be located on the MSC LAN/WAN. softswitch allows for a faster radio turn up, seamless hand over within one providers network as well as long

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distance call capabilities internal to the providers LAN/WAN network.

solution set also comprises The of network management, billing, and LDAP (lightweight directory access protocol) servers. The software development for solution set (applications, servers, translation and routing, etc.) may use object oriented programming software and techniques, such as CORBA, C++, JAVA, ObjectStore (OODBMS), and VisiBroker (CORBA), and the like.

This invention may be used by data communication companies, voice communication companies, ISPs, CLECs, long distance providers, wireless communication companies, etc., to interface to other networks such as (asynchronous transfer mode), frame relay, H.323, Internet, voice, wireless, etc. Although the description of the invention and claims describe specific signaling and transport protocols, it is contemplated that the present invention is designed to interface with and handle emerging and future protocols. In addition, the present invention may be implemented in hardware, software or a combination of hardware and software. noted that many of the block diagrams illustrate functional groupings which may be implemented in alternative embodiments.

Although several embodiments of the present invention and its advantages have been described in detail, it should be understood that mutations, changes, substitutions, transformations. modifications. variations, and alterations can be made therein without departing from the teachings of the present invention, the spirit and scope of the invention being set forth by the appended claims.

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WHAT IS CLAIMED IS:

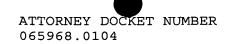
- A softswitch interconnecting networks of different transport protocols, comprising:
- a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event; and
- a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent, the signaling agent further terminating the data sessions on the requested outgoing resources.
- 2. The softswitch, as set forth in claim 1, further comprising a resource manager operable to receive outgoing resource requests from the call agent, and provide outgoing resource availability responses to the call agent.
- 3. The softswitch, as set forth in claim 1, further comprising a network directory server operable to receive requests for routing information to establish data sessions from the call agent, and provide routing information to the call agent.
- 4. The softswitch, as set forth in claim 1, further comprising a network directory server operable to receive requests for address resolution to establish data sessions from the call agent, and provide address resolution responses to the call agent.

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- 5. The softswitch, as set forth in claim 1, further comprising a network gateway operable to receive requests for address locations of called parties in external networks to establish data sessions from the call agent, and provide the address locations to the call agent.
- 6. The softswitch, as set forth in claim 1, wherein the signaling agent comprises:
- a logic control executing a logic control program and operable to process signaling messages of a particular signaling protocol;
- a codec specialized in the signaling protocol of an access network and operable to parse and format signaling messages according to the signaling protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 7. The softswitch, as set forth in claim 6, wherein the signaling protocol is SS7.
- 8. The softswitch, as set forth in claim 6, wherein the signaling protocol is session initiation protocol.
- 9. The softswitch, as set forth in claim 6, wherein the signaling protocol is H.323.

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PATENT APPLICATION

- 10. The softswitch, as set forth in claim 1, further comprising a network gateway which comprises:
- a logic control executing a logic control program and operable to process messages of a particular transport protocol;
- a codec specialized in the transport protocol of a media gateway and operable to parse and format the messages according to the transport protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
 - 11. The softswitch, as set forth in claim 10, wherein the transport protocol is media gateway control protocol.
 - 12. The softswitch, as set forth in claim 10, wherein the transport protocol is Internet protocol device control protocol.
- 13. The softswitch, as set forth in claim 10, wherein the transport protocol is simple gateway control protocol.
- 14. The softswitch, as set forth in claim 1,25 wherein the networks comprise a public switched telephone network.
 - 15. The softswitch, as set forth in claim 1, wherein the networks comprise a packet network.
 - 16. The softswitch, as set forth in claim 1, wherein the networks comprise a wireless network.





17. The softswitch, as set forth in claim 1, wherein the call agent comprises a protocol-independent logic engine operable to execute a function-specific logic control program.

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18. The softswitch, as set forth in claim 1, further comprising a billing sub-system in communication with the call agent and operable to generate call detail records.

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- 19. A method of internetworking between networks of different transport protocols, comprising:
- receiving signaling messages from a signaling network;
- translating the signaling messages into call events; processing the call events;

requesting outgoing resources for establishing data sessions with devices coupled to a transport network;

terminating the data sessions on the requested outgoing resources.

- 20. The method, as set forth in claim 19, further comprising requesting for and receiving routing information to establish the data sessions.
- 21. The method, as set forth in claim 19, further comprising requests for and receiving address resolution to establish the data sessions.
- 22. The method, as set forth in claim 19, further comprising requesting for and receiving address locations of called parties in external networks to establish the data sessions.
- 25 23. The method, as set forth in claim 19, further comprising:

executing a logic control program and processing the signaling messages of a particular signaling protocol; and

- parsing and formatting signaling messages according to the signaling protocol.
- 24. The method, as set forth in claim 19, further comprising receiving and transmitting SS7 signaling 35 messages.

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- 25. The method, as set forth in claim 19, further comprising receiving and transmitting session initiation protocol signaling messages.
- 26. The method, as set forth in claim 19, further comprising receiving and transmitting H.323 signaling messages.
- 10 27. The method, as set forth in claim 19, wherein translating the messages comprises:

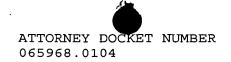
executing a logic control program and processing messages of a particular transport protocol;

parsing and formatting the messages according to the transport protocol; and

filtering and routing the translated messages.

- 28. The method, as set forth in claim 19, further comprising receiving and transmitting media gateway control protocol messages.
- 29. The method, as set forth in claim 19, further comprising receiving and transmitting Internet protocol device control protocol messages.
- 30. The method, as set forth in claim 19, further comprising receiving and transmitting simple gateway control protocol messages.
- 31. The method, as set forth in claim 19, further comprising receiving and transmitting public switched telephone network messages.

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- 32. The method, as set forth in claim 19, further comprising receiving and transmitting packet network messages.
- 5 33. The method, as set forth in claim 19, further comprising receiving and transmitting wireless network messages.
- 34. The method, as set forth in claim 19, further comprising using a protocol-independent logic engine to execute a function-specific logic control program to process the call events.
 - 35. The method, as set forth in claim 19, wherein processing the call events comprises generating call detail records.
 - 36. The method, as set forth in claim 19, further comprising verifying an incoming circuit is in a valid state.

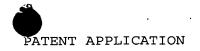
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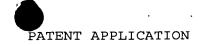
- 37. A softswitch interconnecting networks of different transport and signaling protocols, comprising:
- a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call event, and route the call event;
- a call agent in communication with the signaling agent and operable to receive the call event, verify the validity of incoming circuits of inbound calls, generate a request for an outgoing resources for establishing data sessions;
- a network directory server in communication with the call agent and operable to receive the request for an outgoing resource, and provide information on the outgoing resource;
- a network gateway agent operable to receive a request to establish a data session on the selected outgoing resource, and set up an open session; and
- agent operable to terminate the data call sessions on the requested outgoing resources, and generate a call detail record in response to disconnecting the data session.
- 38. The softswitch, as set forth in claim 37, further comprising a resource manager operable to receive outgoing resource requests from the call agent, and provide outgoing resource availability responses to the call agent.
- 39. The softswitch, as set forth in claim 37, wherein the network directory server is further operable to receive requests for address resolution to establish data sessions from the call agent, and provide address resolution responses to the call agent.

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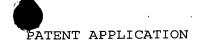
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- 40. The softswitch, as set forth in claim 37, wherein the signaling agent comprises:
- a logic control executing a logic control program and operable to process signaling messages of a particular signaling protocol;
- a codec specialized in the signaling protocol of an access network and operable to parse and format signaling messages according to the signaling protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
 - 41. The softswitch, as set forth in claim 40, wherein the signaling protocol is SS7.
- 15 42. The softswitch, as set forth in claim 40, wherein the signaling protocol is session initiation protocol.
 - 43. The softswitch, as set forth in claim 40, wherein the signaling protocol is H.323.
 - 44. The softswitch, as set forth in claim 37, wherein the network gateway comprises:
 - a logic control executing a logic control program and operable to process messages of a particular transport protocol;
 - a codec specialized in the transport protocol of a media gateway and operable to parse and format the messages according to the transport protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 45. The softswitch, as set forth in claim 44, wherein the transport protocol is media gateway control protocol.





46. The softswitch, as set forth in claim 44, wherein the transport protocol is Internet protocol device control protocol.

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47. The softswitch, as set forth in claim 44, wherein the transport protocol is simple gateway control protocol.

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48. The softswitch, as set forth in claim 37, wherein the networks comprise a public switched telephone network.

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49. The softswitch, as set forth in claim 37, wherein the networks comprise a packet network.

wherein the networks comprise a wireless network.

The softswitch, as set forth in claim 37,

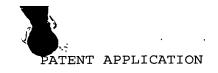
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51. The softswitch, as set forth in claim 37, wherein the call agent comprises a protocol-independent logic engine operable to execute a function-specific logic control program.

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SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS

ABSTRACT OF THE INVENTION

A softswitch interconnecting networks of different transport protocols is provided. The softswitch includes a signaling agent coupled to the networks and operable to incoming signaling messages, translate receive incoming signaling messages to a call model event, and route the call model event. The softswitch further includes a call agent in communication with the signaling agent and operable to receive the call model event, outgoing resources for establishing request sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent. The signaling agent then terminates the data sessions on the requested outgoing resources.

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I declare that:

My residence, post office address and citizenship are as stated below next to my name, that I believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention or design entitled SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS, the specification of which (check one):

$\underline{\mathbf{X}}$ is attached hereto; or	
was filed on	_ as Application Serial No
and was amended on	(if applicable);

that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above; and that I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

		Date	Priority Claimed
Number	Country	<u>Filed</u>	(Yes) (No)
	N A		

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of

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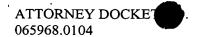
35 U.S.C. § 112, I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

Application Serial Number	Date Filed		Status
60/127,169	March 30, 1999		Provisional
I hereby appoint:			
Jerry W. Mills Robert M. Chiaviello, Jr. Ann C. Livingston Thomas R. Felger Charles S. Fish Wei Wei Jeang Kevin J. Meek T. Murray Smith Barton E. Showalter David G. Wille Bradley P. Williams Terry J. Stalford Christopher W. Kennerly Harold E. Meier Douglas M. Kubehl Samir A. Bhavsar Thomas R. Nesbitt, Jr. James J. Maune Roger J. Fulghum Rodger L. Tate Scott F. Partridge James B. Arpin James Remenick Jay B. Johnson Robert W. Holland Floyd B. Chapman Randall W. Mishler Robert A. King		Reg. No. 23,005 Reg. No. 32,461 Reg. No. 32,479 Reg. No. 28,842 Reg. No. 35,870 Reg. No. 33,305 Reg. No. 30,222 Reg. No. 38,302 Reg. No. 38,363 Reg. No. 40,227 Reg. No. 40,675 Reg. No. 22,428 Reg. No. 41,915 Reg. No. 22,475 Reg. No. 22,075 Reg. No. 22,075 Reg. No. 22,075 Reg. No. 27,399 Reg. No. 27,399 Reg. No. 28,142 Reg. No. 33,470 Reg. No. 33,470 Reg. No. 36,902 Reg. No. 38,193 Reg. No. 40,020 Reg. No. 40,020 Reg. No. 40,555 Reg. No. 42,006 Reg. No. 42,738	
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DAL01:515754.1

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David M. Doyle	Reg.No. 43,596
Patent Agents:	
Brian A. Dietzel	Reg. No. 44,656
Kevin R. Imes	Reg. No. 44,795

all of the firm of Baker Botts L.L.P., my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith, and to file and prosecute any international patent applications filed thereon before any international authorities.

<u>Send Correspondence To</u>: <u>Direct Telephone Calls To</u>:

Baker Botts L.L.P. Wei Wei Jeang 2001 Ross Avenue at (214) 953-6690

Dallas, Texas 75201-2980 Atty. Docket No. 065968.0104

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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Inventor's signature	
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Post Office Address	2141 Los Rios Blvd.

Full name of additional joint inventor, if any

Inventor's signature

Date
Residence (City, County, State)

Dublin, Delaware County, Ohio

Citizenship

India

Post Office Address

5711 D Heathstead Dr.
Dublin, Ohio 43016

COCHEC CACACO









UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

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SERIAL NUMBER 09/538,040	FILING DATE 03/29/2000 RULE _	CLASS 455	GROUP ART (2749	UNII	ATTORNEY DOCKET NO. 065968.0104
APPLICANTS					
Casimir M. Ka Sivakumar Ra	czmarczyk, Plano, TX ; vikumar, Dublin, OH ;		•	• • • • • • • • • • • • • • • • • • • •	,
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Baker & Botts LLP		-			
2001 Ross Avenue					
Dallas ,TX 75201-29)80 		***************************************		
TITLE					
System and method	to internetwork telecomn	nuication networks of c	lifferent protocol	ls	
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Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION SERIAL NO.

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE FEE RECORD SHEET

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UNITED STATES DEPARTMENT OF COMMERCE

Patent and Trademark Office

Address: COMMISSIONER OF PATENT AND TRADEMARKS Washington, D.C. 20231

APPLICATION NUMBER

FILING/RECEIPT DATE

FIRST NAMED APPLICANT

ATTORNEY DOCKET NUMBER

09/538,040

03/29/2000

Casimir M. Kaczmarczyk

065968.0104

Baker & Botts LLP 2001 Ross Avenue Dallas, TX 75201-2980

Date Mailed: 05/31/2000

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given TWO MONTHS from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The signature of the following inventor(s) is missing from the oath or declaration: Casimir M Kaczmarczyk et al.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- The balance due by applicant is \$ 65.

A copy of this notice MUST be returned with the reply.

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY

Attorney's Docket: 065968.0104 /



Sector \$ PATENT #3 09/538,040

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Casimir M. Kaczmarczyk, et al.

Serial No.:

09/538,040

Filing Date:

March 29, 2000

Title:

SYSTEM AND METHOD TO INTERNETWORK

TELECOMMUNICATION NETWORKS OF DIFFERENT

PROTOCOLS

Atten: Box Missing Parts

Assistant Commissioner for

Patents

Washington, DC 20231

Dear Sir:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Attn: Box Missing Parts, Assistant Commissioner for Patents, Washington, DC 20231, on the date shown below:

Elizabeth A. Turlo

Date

Date

RESPONSE TO NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

This is in response to the Notice to File Missing Parts of Nonprovisional Application Under 37 CFR 1.53(b) – Filing Date Granted, mailed May 31, 2000. Applicant(s) submit herewith:

- a) A copy of the Notice to File Missing Parts of Application Filing Date Granted;
- b) Executed Declaration and Power of Attorney document for the abovereferenced patent application, which was filed March 29, 2000.
- c) A check in the amount of \$65.00 is enclosed for the payment of the surcharge as a small entity; and
- d) Executed Assignment for the above-referenced patent application. The Assignment Transmittal Form and filing fee in the amount of \$40.00 are included herewith.

DAL01:533730

The Commissioner is hereby authorized to charge any additional fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P. Attorneys for Applicants

Robin A. Brooks Reg. No. 44,563

/bt

2001 Ross Avenue, 6th Floor Dallas, Texas 75201-2980 (214) 953-6748

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Date

FORMALITIES LETTER *OC000000005148782*



UNITED STATES DEPARTMENT OF COMMERCE

Patent and Trademark Office

Address: COMMISSIONER OF PATENT AND TRADEMARKS Washington, D.C. 20231

APPLICATION NUMBER

FILING/RECEIPT DATE

FIRST NAMED APPLICANT

ATTORNEY DOCKET NUMBER

09/538,040

______JUL 0 6 2

Casimir M. Kaczmarczyk

065968.0104

Baker & Botts LLP 2001 Ross Avenue Dallas, TX 75201-2980

1



Date Mailed: 05/31/2000

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given TWO MONTHS from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The signature of the following inventor(s) is missing from the oath or declaration: Casimir M Kaczmarczyk et al.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- The balance due by applicant is \$ 65.

A copy of this notice MUST be returned with the reply.

Customer Service Center

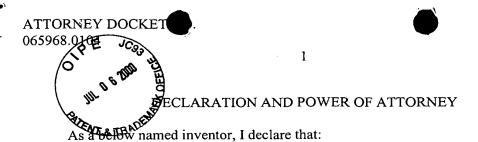
Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

07/07/2000 WKURUMA 00000032 09538040

01 FC:205

65.00 DP



My residence, post office address and citizenship are as stated below next to my name, that I believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention or design entitled SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS, the specification of which was filed on March 29, 2000 as Application Serial No. 09/538,040; that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above; and that I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56.

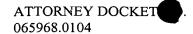
I hereby claim foreign priority benefits under 35 U.S.C. § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Number	Country	Date <u>Filed</u>	Claimed (Yes) (No)
	NA		

Ihereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

Application Serial Number	Date Filed_	Status
	NA	

DAL01:515754



I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

60/127,169	March 30, 1999
(Application No.)	(Filing Date)

I hereby appoint:

Jerry W. Mills	Reg. No. 23,005
Robert M. Chiaviello, Jr.	Reg. No. 32,461
Ann C. Livingston	Reg. No. 32,479
Thomas R. Felger	Reg. No. 28,842
Charles S. Fish	Reg. No. 35,870
Kevin J. Meek	Reg. No. 33,738
T. Murray Smith	Reg. No. 30,222
Barton E. Showalter	Reg. No. 38,302
David G. Wille	Reg. No. 38,363
Bradley P. Williams	Reg. No. 40,227
Terry J. Stalford	Reg. No. 39,522
Christopher W. Kennerly	Reg. No. 40,675
Harold E. Meier	Reg. No. 22,428
Douglas M. Kubehl	Reg. No. 41,915
Samir A. Bhavsar	Reg. No. 41,617
Thomas R. Nesbitt, Jr.	Reg. No. 22,075
James J. Maune	Reg. No. 26,946
Roger J. Fulghum	Reg. No. 39,678
Rodger L. Tate	Reg. No. 27,399
Scott F. Partridge	Reg. No. 28,142
James B. Arpin	Reg. No. 33,470
James Remenick	Reg. No. 36,902
Jay B. Johnson	Reg. No. 38,193
Robert W. Holland	Reg. No. 40,020
Floyd B. Chapman	Reg. No. 40,555
Robert A. King	Reg. No. 42,738
James L. Baudino	Reg. No. 43,486
Tara D. Knapp	Reg. No. 43,723
William R. Borchers	Reg. No. 44,549
Robin A. Brooks	Reg. No. 44,563
Darren W. Collins	Reg. No. 44,625
Brian W. Oaks	Reg. No. 44,981
Luke K. Pedersen	Reg. No. 45,003
Matthew B. Talpis	Reg. No. 45,152
David M. Doyle	Reg. No. 43,596
Keiko Ichiye	Reg. No. 45,460
Russell W. White	Reg. No. 45,691
Jeffery D. Baxter	Reg. No. 45,560

DAL01:515754

ATTORNEY DOCKET 065968.0104

Patent Agents:

Brian A. Dietzel Kevin R. Imes Reg. No. 44,656 Reg. No. 44,795

all of the firm of Baker Botts L.L.P., my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith, and to file and prosecute any international patent applications filed thereon before any international authorities.

Send Correspondence To:

Direct Telephone Calls To:

Baker Botts L.L.P. 2001 Ross Avenue Dallas, Texas 75201-2980 Robin A. Brooks at (214) 953-6748 Atty. Docket No. 065968.0104

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

DAL01:515754

Full name of the first inventor

Casimir M. Kaczmarczyk

Inventor's signature

Date

Residence (City, County, State)

Citizenship

Post Office Address

04 17 00

Plano, Collin County, Texas 75074

USA

2141 Los Rios Blvd.

Plano, Collin County, Texas 75074

DAL01:515754.1

Full name of additional joint inventor, if any

Sivakumar (NMI) Ravikumar

Inventor's signature

Date

Residence (City, County, State)

Citizenship

Post Office Address

04/17/00

Dublin, Delaware County, Ohio

India

5711 D Heathstead Dr. Dublin, Ohio 43016

DAL01:515754.1

FURTHER EXPLANATION IF NEEDED:

A. Art Unit:

C Subclass:

B. Class:

C. See Abstract

D. See Claim(s):

(check box)

Attorney's Docket: 065968.0104



PATENT 2749 09/538,040

#4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Casimir M. Kaczmarczyk, et al.

Serial No.:

09/538,040

Filing Date:

March 29, 2000

Title:

SYSTEM AND METHOD TO INTERNET WORK

TELECOMMUNICATION NETWORKS OF

DIFFERENT PROTOCOLS

Honorable Assistant Commissioner

for Patents

Washington, DC 20231

Dear Sir:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail n an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231, on the date shown below:

Signatur

Date

INFORMATION DISCLOSURE STATEMENT

Applicants respectfully request pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, that the references listed on the attached PTO-1449 form be considered and cited in the examination of the above-identified application. Copies of the art are enclosed for the convenience of the Examiner. Pursuant to 37 C.F.R. §§ 1.97(h), no representation is made that these references qualify as prior art or that these references are material to the patentability of the present invention.

Applicants believe that this Information Disclosure Statement has been filed before the mailing date of the first Office Action in this case. Pursuant to 37 C.F.R. § 1.97(b),

DAL01:543221

Applicants believe that no fee is due. The Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.

Robin A. Brooks Reg. No. 44,563

Attorneys for Applicants

/bt

2001 Ross Avenue Dallas, Texas 75201-2980

(214) 953-6748

067710.0104

Date: 8 3 0

ATTORNEY DOCKET NO.

1

968.0104

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Kaczmarczyk, Casimir M., et al.

RECEIVED

Serial No:

09/538,040

APR 0 2 2003

Date Filed:

Title:

March 29, 2000

Technology Center 2600

Group Art Unit:

SYSTEM AND METHOD TO INTERNETWORK **TELECOMMUNICATION**

NETWORKS

DIFFERENT PROTOCOLS

Assistant Commissioner of Patents and Trademarks Washington, D.C. 20231

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231 on the date shown below.

Date:

REQUEST FOR STATUS

Please advise the status of the above-identified patent application. The Filing Receipt was mailed by the Patent Office on March 31, 2000. Applicants are currently awaiting a response from the Examiner in charge.

REMARKS

Under 37 C.F.R. § 1.702(a)(l), it has been over thirteen months since the filing date of this Application and a Notification under 35 U.S.C. § 132 has not been received. Thus, a period of adjustment of patent term due to examination delay is accruing in accordance with 37 C.F.R. § 1.703(a)(l).

TC 2600 CSO: STATUS RESPONSE DATE

APR 2 1 2003

TC 2600 CSO STATUS INCUIRY RECEIVED

MAILED PHONE

Initials:

DAL01:727610.1

If there are any matters that can be cleared up through a telephone conversation, please contact the undersigned attorney for Applicants at the telephone number listed below.

Respectfully submitted,

BAKER BOTTS L.L.P. Attorneys for Applicants

Brackey P. Williams Reg. No. 40,227

2001 Ross Avenue, Suite 600 Dallas, Texas 75201-2980

Tel.: 214.953.6447

Date: March 24, 2003

L Number	Hits	Search Text	DB	Time stamp
-	128	b-isup	USPAT;	2003/12/16 13:21
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	126	b-isup and (protocol network)	USPAT;	2003/12/16 12:34
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!			EPO; JPO;	
	. =	2 /	DERWENT	
-	45	b-isup and (switch same (ip mgcp pstn))	USPAT;	2003/12/16 12:37
			US-PGPUB;	
[i			EPO; JPO; DERWENT	
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			EPO; JPO;	
			DERWENT	
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		phone pstn)))	US-PGPUB;	1
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			DERWENT	
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		<pre>protocol))same (telephon\$1 phone pstn)))</pre>	US-PGPUB;	
			EPO; JPO;	
	٠.		DERWENT	0000/10/
-	24	b-isup and (((ip (internet adj1 protocol	USPAT;	2003/12/16 13:21
))same (telephon\$1 phone pstn)))	US-PGPUB;	
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1		†	EPO; JPO;	
			DERWENT	
-	135	b adj1 isup\$	USPAT;	2003/12/16 13:21
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	
1-	135	(b adj1 isup\$) b-isup\$	USPAT;	2003/12/16 13:22
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			EPO; JPO;	
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			DERWENT	
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		(telephon\$1 phone pstn)))	US-PGPUB;	
			EPO; JPO;	
			DERWENT	
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			EPO; JPO;	
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			DERWENT	
_	1	6480493.pn. and "125"	USPAT;	2003/12/16 16:01
	_	_	US-PGPUB;	
			EPO; JPO;	
			DERWENT	
j -	1	6480493.pn. and "115"	USPAT;	2003/12/16 14:40
	:		US-PGPUB;	
			EPO; JPO;	
	_	C100100	DERWENT	
-	1	6480493.pn. and "125"	USPAT;	2003/12/16 14:41
			US-PGPUB;	
			EPO; JPO;	
L			DERWENT	l

Search History 12/18/03 7:46:42 AM Page 1 C:\APPS\EAST\Workspaces\09538040.wsp

-	108	DMS-250	USPAT;	2003/12/16 14:53
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	0	DMS-250 same (multi adj1 protocol)	USPAT;	2003/12/16 14:43
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	
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1			EPO; JPO;	
			DERWENT	
-	1	,	USPAT;	2003/12/16 14:53
1		adj1 "512"))	US-PGPUB;	
			EPO; JPO;	
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			US-PGPUB;	
			EPO; JPO;	
	_	2 / 11 - 2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	DERWENT	·
-	1	6480493.pn. and ("110" with "125")	USPAT;	2003/12/16 16:08
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1			EPO; JPO;	
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-	1	6480493.pn. and (ss7 "110")	USPAT;	2003/12/16 16:22
			US-PGPUB;	
			EPO; JPO;	
_	070	gg7 gamo torminatés	DERWENT	2002/20/20 25 55
_	8/9	ss7 same terminat\$3	USPAT;	2003/12/16 16:22
			US-PGPUB;	
			EPO; JPO;	
	508	ss7 same (call with terminat\$3)	DERWENT	2002/12/16 16 22
-	308	ss/ same (call with terminats)	USPAT;	2003/12/16 16:23
			US-PGPUB;	
			EPO; JPO; DERWENT	
_	217	ss7 with (call with terminat\$3)		2002/12/16 16:22
_	21,	ss/ with (tall with terminats)	USPAT; US-PGPUB;	2003/12/16 16:23
			EPO; JPO;	
			DERWENT	1
_	1	6480493.pn.	USPAT	2003/12/17 08:32
_	ī		USPAT	2003/12/17 08:41
_	108		USPAT;	2003/12/17 08:42
			US-PGPUB;	2003, 12, 1, 00:12
		,	EPO; JPO;	
			DERWENT	
-	1	dms-250 same (resource)	USPAT;	2003/12/17 08:53
1		·	US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	0	kaczmarczyk and ravikumar	USPAT;	2003/12/17 08:44
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	0	(kaczmarczyk and ravikumar).inv.	USPAT;	2003/12/17 08:45
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	78	(kaczmarczyk).inv.	USPAT;	2003/12/17 08:45
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	208	(ravikumar).inv.	USPAT;	2003/12/17 08:45
ļ		•	US-PGPUB;	
			EPO; JPO;	
			DERWENT	
j -	0	dms-250 same (bandwidth)	USPAT;	2003/12/17 08:55
-			US-PGPUB;	
			EPO; JPO;	
1	l		DERWENT	

Search History 12/18/03 7:46:42 AM Page 2 C:\APPS\EAST\Workspaces\09538040.wsp

-	5	dms-250 same (manag\$)	USPAT; US-PGPUB;	2003/12/17	08:53
			EPO; JPO;	}	
			DERWENT		
-	35	dms-250 and (bandwidth)	USPAT;	2003/12/17	08:58
			US-PGPUB;		
			EPO; JPO;		
			DERWENT		
-	31	dms-250 and (switch same bandwidth)	USPAT;	2003/12/17	09:02
			US-PGPUB;		
			EPO; JPO; DERWENT		
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		bandwidth))	US-PGPUB;	2003/12/17	05.05
		,	EPO; JPO;		
			DERWENT		
-	0	dms-250 same (bod bond (bandwidth with	USPAT;	2003/12/17	09:09
		demand))	US-PGPUB;		
			EPO; JPO;		
	0	(dm= 050 dm= 500) (had hand (hand) data	DERWENT	0000/00/0	
-		(dms-250 dms-500) same (bod bond (bandwidth with demand))	USPAT;	2003/12/17	09:10
		with admand//	US-PGPUB; EPO; JPO;		
] ,			DERWENT		
-	0	((dms-250 dms\$) same (bod bond (bandwidth	USPAT;	2003/12/17	09:11
		with demand))) and nortel	US-PGPUB;		
			EPO; JPO;		
			DERWENT		
-	1235	, , , , , , , , , , , , , , , , , , , ,	USPAT;	2003/12/17	09:12
		with demand))	US-PGPUB;		
			EPO; JPO;		
_	0	(dms-250 (dms adj1 "250")) same (bod bond	DERWENT	2002/12/17	12 - 26
		(bandwidth with demand))	USPAT; US-PGPUB;	2003/12/17	13:36
		demand)	EPO; JPO;		
			DERWENT		
-	0	(dms-250 (dms adj1 "250")) same (bod bond	USPAT;	2003/12/17	09:13
		(bandwidth with (allocat\$3 demand)))	US-PGPUB;		
			EPO; JPO;		
		(3 000 (3 3)0 0000000	DERWENT		
_	0	(dms-250 (dms adj1 "250")) same bandwidth	USPAT;	2003/12/17	09:14
			US-PGPUB;		
			EPO; JPO; DERWENT		
_	47	(dms-250 (dms adj1 "250")) and bandwidth	USPAT;	2003/12/17	09.14
		(time to the day 2 200), and bandwiden	US-PGPUB;	2005/12/17	07.14
			EPO; JPO;		
			DERWENT		
-	43		USPAT;	2003/12/17	09:24
		(bandwidth with (allocat\$3 demand)))	US-PGPUB;		
			EPO; JPO;		
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1		0200037.pm. and (resource with manager)	USPAT; US-PGPUB;	2003/12/17	09:27
1			EPO; JPO;		
[DERWENT		
-	0	dms-250 same (resource with avail\$)	USPAT;	2003/12/17	09:28
			US-PGPUB;	-, -,	
			EPO; JPO;	1	
			DERWENT		
	1	dms-250 same (resource)	USPAT;	2003/12/17	09:28
-			US-PGPUB;		
-			EPO; JPO;		
-					
-	1	6480493.pn. and ("110" same "125")	DERWENT	2003/12/17	10.10
-		6480493.pn. and ("110" same "125") 6480493.pn. and (rout\$3 same "125")	DERWENT USPAT	2003/12/17	
-	0	6480493.pn. and (rout\$3 same "125") 6480493.pn. and (rout\$3)	DERWENT	2003/12/17	11:19
-	0	6480493.pn. and (rout\$3 same "125") 6480493.pn. and (rout\$3) 6480493.pn. and ("125")	DERWENT USPAT USPAT		11:19 10:03
-	0 1	6480493.pn. and (rout\$3 same "125") 6480493.pn. and (rout\$3)	DERWENT USPAT USPAT USPAT	2003/12/17 2003/12/17	11:19 10:03 10:03
-	0 1 1	6480493.pn. and (rout\$3 same "125") 6480493.pn. and (rout\$3) 6480493.pn. and ("125")	DERWENT USPAT USPAT USPAT USPAT; USPAT; US-PGPUB;	2003/12/17 2003/12/17 2003/12/17	11:19 10:03 10:03
-	0 1 1	6480493.pn. and (rout\$3 same "125") 6480493.pn. and (rout\$3) 6480493.pn. and ("125")	DERWENT USPAT USPAT USPAT USPAT USPAT;	2003/12/17 2003/12/17 2003/12/17	11:19 10:03 10:03

Search History 12/18/03 7:46:42 AM Page 3 C:\APPS\EAST\Workspaces\09538040.wsp

-	1	6480493.pn.	USPAT	2003/12/17 10:19
-	1		USPAT	2003/12/17 13:31
-		white.inv.	USPAT	2003/12/17 10:46
j -	361		USPAT	2003/12/17 10:46
-	19		USPAT	2003/12/17 10:47
-	84	(dms-250 (dms adj1 "250")) and gateway	USPAT;	2003/12/17 10:48
			US-PGPUB;	
			EPO; JPO;	
	1		DERWENT	
-	5	(dms-250 (dms adj1 "250")) same gateway	USPAT;	2003/12/17 12:19
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			EPO; JPO;	
			DERWENT	1
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			EPO; JPO;	
			DERWENT	
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			US-PGPUB;	2003/12/1/ 11:14
			EPO; JPO;	
-			DERWENT	
_	0	6654366.pn. and server	USPAT;	2003/12/17 11:14
		dos 1500. pm. and betver	US-PGPUB:	2003/12/17 11:14
			EPO; JPO;	
			DERWENT	
l _	93	h.323 with gateway with server	1	2002/12/12 11 15
	33	11.323 With gateway with server	USPAT;	2003/12/17 11:15
			US-PGPUB;	
	ł		EPO; JPO;	
	١ ,	(6490402 pp. and /gat up gatus /gat add)	DERWENT	2002/10/15 12 12
-	1	6480493.pn. and (set-up setup (set adj1 up)	USPAT	2003/12/17 11:19
	,	signal\$3)		
-	1		USPAT	2003/12/17 11:26
		(set adj1 up) signal\$3))		
-		6480493.pn. and ss7	USPAT	2003/12/17 13:11
-	1		USPAT	2003/12/17 11:31
-	1		USPAT	2003/12/17 11:34
-	76		USPAT	2003/12/17 11:51
-	7	(session adj1 initiation adj1 protocol) with	USPAT	2003/12/17 11:49
		ss7	1	
-	0	(session adj1 initiation adj1 protocol)same	USPAT	2003/12/17 11:48
		(dms-250(dms adj1 "250"))		
-	0	(======= ============================	USPAT;	2003/12/17 11:49
		(dms-250(dms adj1 "250"))	US-PGPUB;	1
			EPO; JPO;	
			DERWENT	
-	5	· · · J · · · · · · · · · · · · ·	USPAT	2003/12/17 11:49
		with ss7) same internet		
-	38	((session adj1 initiation adj1 protocol) with	USPAT;	2003/12/17 11:55
1		ss7)	US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	61	((session adj1 initiation adj1 protocol)same	USPAT;	2003/12/17 11:56
1		ss7)	US-PGPUB;	
1			EPO; JPO;	
1	1		DERWENT	
-	23		USPAT;	2003/12/17 11:56
		protocol)same ss7)) not (((session adj1	US-PGPUB;	
1		initiation adj1 protocol) with ss7))	EPO; JPO;	į
			DERWENT	
] -	0	(dms-250 (dms adj1 "250")) same (mgcp (media	USPAT;	2003/12/17 12:20
		adj1 gateway))	US-PGPUB;	,,,
	1	_ -	EPO; JPO;	
	[DERWENT	
_	1040	(mgcp (media adjl qateway))	USPAT;	2003/12/17 12:21
	-5.5	. 2.7	US-PGPUB;	-000, 12, 1, 12.21
			EPO; JPO;	
			DERWENT	
_	421	(mgcp (media adj1 gateway adj1 control adj1	USPAT;	2003/12/17 12:22
		protocol))	US-PGPUB;	2003/12/1/ 12:22
	j	F		
i .	i .		EPO; JPO;	
	1		DERWENT	

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-	77	(mgcp (media adj1 gateway adj1 control adj1	USPAT;	2003/12/17 12:41
		protocol))with voip	US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	1	6654366.pn.	USPAT	2003/12/17 12:42
-	1	6654366.pn. and ip	USPAT	2003/12/17 12:42
-	0	6480493.pn. and pstn	USPAT	2003/12/17 13:22
-	1	6480493.pn. and (phone telephone)	USPAT	2003/12/17 13:22
-	1	6480493.pn. and (billing)	USPAT	2003/12/17 13:31
-	4	(dms-250 (dms adj1 "250")) same (protocol)	USPAT;	2003/12/17 15:45
			US-PGPUB;	1
			EPO; JPO;	1
1			DERWENT	
-	1	("6041109").PN.	USPAT	2003/12/17 15:46

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L Number	Hits	Search Text	DB	Time stamp
1	50	corvis.asn.	USPAT;	2003/12/23 07:28
			US-PGPUB	
2	1	6614781.pn.	USPAT;	2003/12/23 07:28
			US-PGPUB	
3	1		USPAT	2003/12/23 07:59
		(soft adj1 switch\$3)) same (gateway		
	_	gatekeeper))		
4	1	1	USPAT	2003/12/23 08:01
5	0		USPAT	2003/12/23 08:01
6	1		USPAT	2003/12/23 08:11
7	1	l + · · · · · · · · · · · · · · · · · ·	USPAT	2003/12/23 08:11
8	1		USPAT	2003/12/23 08:13
9	1	1	USPAT	2003/12/23 08:17
10	0	· · · · · · · · · · · · · · · · · · ·	USPAT	2003/12/23 08:17
11 12	1	1 3 4:	USPAT	2003/12/23 08:24
13	1		USPAT	2003/12/23 08:29
14	1		USPAT	2003/12/23 08:32
	1	radio satellite)	USPAT	2003/12/23 08:37
15	1	· ·	USPAT	2002/12/22 00 15
* -	1	independen\$))	USFAI	2003/12/23 08:46
16	1		USPAT	2003/12/22 00:50
17	1	1 2	USPAT	2003/12/23 08:50 2003/12/23 09:20
18	1		USPAT	2003/12/23 09:20
	128		USPAT;	2003/12/23 09:21 2003/12/16 13:21
	120	2 25 up	US-PGPUB;	2003/12/16 13:21
			EPO; JPO;	
]			DERWENT	
_	126	b-isup and (protocol network)	USPAT;	2003/12/16 12:34
		12	US-PGPUB;	2003, 22, 10 12.31
			EPO; JPO;	
			DERWENT	
-	45	b-isup and (switch same (ip mgcp pstn))	USPAT;	2003/12/16 12:37
			US-PGPUB;	' '
			EPO; JPO;	
			DERWENT	
-	1	b-isup and mgcp	USPAT;	2003/12/16 12:36
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	13		USPAT;	2003/12/16 12:40
		phone pstn)))	US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	13		USPAT;	2003/12/16 13:06
		<pre>protocol))same (telephon\$1 phone pstn)))</pre>	US-PGPUB;	
			EPO; JPO;	
<u>-</u>	24	haisun and (((in /internet adia ametera)	DERWENT	2002/12/16 12 65
	24	b-isup and (((ip (internet adj1 protocol))same (telephon\$1 phone pstn)))	USPAT;	2003/12/16 13:21
	:	(terebuoust buone bacu))	US-PGPUB;	
			EPO; JPO; DERWENT	
_	128	b-isup\$	USPAT;	2003/12/16 12:21
	120	~	US-PGPUB;	2003/12/16 13:21
			EPO; JPO;	
			DERWENT	
_	135	b adjl isup\$	USPAT;	2003/12/16 13:21
			US-PGPUB;	2003/12/10 13:21
			EPO; JPO;	
			DERWENT	
-	135	(b adj1 isup\$) b-isup\$	USPAT;	2003/12/16 13:22
		~	US-PGPUB;	
			EPO; JPO;	
			DERWENT	
-	25	(b adj1 isup\$) and (((ip (internet adj1	USPAT;	2003/12/16 13:28
-	25	<pre>(b adj1 isup\$) and (((ip (internet adj1 protocol))same (telephon\$1 phone pstn)))</pre>	1	2003/12/16 13:28
-	25		USPAT;	2003/12/16 13:28

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Second						
Company	-	38	((session adj1 initiation adj1 protocol)with	USPAT;	2003/12/17 11:5	5
Company Comp			ss7)	US-PGPUB;		
Company Comp				EPO; JPO;		
Section 2011 initiation adj1 protocol)same Section 3 Section						- 1
US-PGFUB; CPO, JPO; DERMENT US-PGFUB; CPO; JPO;	-	61	((session adj1 initiation adj1 protocol)same		2003/12/17 11:5	6
Comparison of the protocol page of the protocol protoco						1
DERNENT USPAT; 2003/12/17 11:56		1				
23 (((session adji initiation adji protocol)same say)) not ((session adji US-PGFUB; initiation adji protocol)with se7))		1				ļ
	_	23	(((session adil initiation adil		2003/12/17 11.5	٦
Initiation adji protocol)with se7)		"			2003/12/1/ 11:5	۲
O (dms-250 (dms adj1 "250")) same (mgcp (media adj1 gateway))						
- 0			iniciacion adji prococol/with 88///			
adj1 gateway))		_	/dmg_050 /dmg_odil "050"\\ ==== /==== /===		2002/10/15 10 =	ا ر
1040	_		1	,	2003/12/17 12:2	υ
1040 mgcp (media adj1 gateway) DERMENT US-PGPUB; PGO, JPO, JPO, DERMENT US-PGPUB; PGO,			acli dacemak))			J
- 1040 (mgcp (media adj1 gateway)) - 221 (mgcp (media adj1 gateway adj1 control adj1 protocol)) - 77 (mgcp (media adj1 gateway adj1 control adj1 protocol)) - 78 (mgcp (media adj1 gateway adj1 control adj1 protocol)) - 79 (mgcp (media adj1 gateway adj1 control adj1 protocol)) - 1 6654366.pn 1 6654366.pn. and iprotocol) - 1 6654366.pn. and ipsn uspar uspar 2003/12/17 12:42 - 1 6654366.pn. and ipsn uspar 2003/12/17 12:42 - 1 6664369.pn. and psn uspar 2003/12/17 12:42 - 1 6664369.pn. and psn uspar 2003/12/17 12:42 - 1 ("6041109").PN. uspar 2003/12/17 13:42 - 1 ("6041109").PN. uspar 2003/12/17 13:45 - 2		1				
- 421 (mgcp (media adj1 gateway adj1 control adj1 protocol)) - 77 (mgcp (media adj1 gateway adj1 control adj1 protocol)) with voip - 78 (mgcp (media adj1 gateway adj1 control adj1 protocol)) with voip - 79 (mgcp (media adj1 gateway adj1 control adj1 protocol)) with voip - 1 6654366.pn. and ip - 1 6654366.pn. and ip - 1 6654366.pn. and pstn - 1 6480493.pn. and pstn - 1 6480493.pn. and (phone telephone) - 1 6480493.pn. and (plane adj1 media) - 1 6480493.pn. and (plane adj1 media) - 1 ("6041109").PN 1780 soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 sup\$) - 1 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 switch\$3) and switch\$3 softswitch\$3 (soft adj1 switch\$3) and switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 switch\$3) and switch\$3 (soft adj1 switch\$3) and sw		1				+
- 421 (mgcp (media adj1 gateway adj1 control adj1 protocol)) - 77 (mgcp (media adj1 gateway adj1 control adj1 US-APT;	-	1040	(mgcp (media adj1 gateway))	USPAT;	2003/12/17 12:2	1
A21				US-PGPUB;		
A21				EPO; JPO;		
- 421 (mgcp (media adj1 gateway adj1 control adj1 US-PGPUB, PPO, JPO, DERMENT US-PGPUB, PPO, JPO, JPO, DERMENT US-PGPUB, PPO, JPO, DERMENT US-PGPUB, PPO, JPO, JPO, DERMENT US-PGPUB, PPO, JPO, JPO, JPO, JPO, JPO, JPO, JPO				1 '		
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- 777 (mgcp (media adj1 gateway adj1 control adj1 protocol)) with voip					,,	-
Transfer		1	<u> </u>			
- 77 (mgcp (media adj1 gateway adj1 control adj1 uSPAT; uS-PGPUB; EPO; JPO; DREWENT uSPAT uSPAT; uS-PGPUB; EPO; JPO; DERWENT uSPAT; uSPAT		1				ļ
	-] 77	(mgcp (media adil gateway adil control adil		2003/12/17 12:4	,
- 1 6654366.pn. d654366.pn. and ip		· ' '			2003/12/1/ 12:4	⁴
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- 1 6654366.pn. and ip - 2003/12/17 12:42 - 0 6480493.pn. and (phone telephone) - 1 6480493.pn. and (phone telephone) - 1 6480493.pn. and (billing) - 2003/12/17 13:32 - 2003/12/17 13:45 - 2003/12/17 13:32 - 2003/12/17 13:45 - 200						
- 1 6654366.pn. and jpsn USPAT 2003/12/17 12:42 2003/12/17 12:42 2003/12/17 12:42 2003/12/17 12:42 2003/12/17 12:42 2003/12/17 13:42 2003/12/17 13:42 2003/12/17 13:42 2003/12/17 13:42 2003/12/17 13:42 2003/12/17 13:42 2003/12/17 13:45 2003/12/17 13:		_	6654366 77		0000/10/1= 15	
- 1 6480493.pn. and pstn 1 6480493.pn. and (phone telephone) 1 6480493.pn. and (phone telephone) 2 6480493.pn. and (phone telephone) 3 6480493.pn. and (phone telephone) 4 (dms-250 (dms adj1 "250")) same (protocol) 5 2003/12/17 13:21 1	_				1	- 1
- 1 6480493.pn. and (phone telephone) - 1 6480493.pn. and (billing) - 4 (dms-250 (dms adj1 "250")) same (protocol) - 1 ("6041109").PN 1780 soft-switch\$3 softswitch\$3 (soft adj1 switch\$3) - 3080 isup\$ b-isup\$ bisup\$ (b adj1 isup\$) - 34 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 sup\$) - 52274 (pstn pbx phone telephon\$1 pots)same (ip internet) - 194 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet)) - 162 ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet)) - 162 ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet)) - 162 ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet)) - 162 ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet)) - 163 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet)) - 164 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet)) - 165 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet)) - 166 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 uspAr; us-pGPUB; EPO; JPO; DERWENT - 175 (us-pGPUB; EPO; JPO; DERWENT - 186 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 uspAr; us-pGPUB; EPO; JPO; DERWENT - 187 (us-pGPUB; EPO; JPO; DERWENT - 188 (usp\$) (usp\$) (usp\$) (usp\$) (uspAr; us-pGPUB; EPO; JPO; DERWENT - 188 (usp\$) (usp\$) (uspAr; us-pGPUB; EPO; JPO; DERWENT - 189 (uspAr; us-pGPUB; EPO; JPO; DERWENT - 189 (uspAr; us-pGPUB; EPO; JPO; DERWENT - 189 (uspAr; us-pGPUB; EPO; JPO; DERWENT) - 189 (uspAr; us-pGPUB; EPO; JPO; DERWENT) - 189 (uspAr; us-pGPUB; EPO; JPO; DERWENT) - 180 (usp\$) (uspa*) (us	-					
1 6480493.pn. and (billing) USPAT 2003/12/17 13:31 2003/12/17 15:45 USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; USPA	-	J				
- 4	-	ž				
US-PGPUB; EPO, JPO; DERWENT USPAT; Switch\$3 softswitch\$3 (soft adj1 sup\$) US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB	-	•	6480493.pn. and (billing)			
Continue	-	4	(dms-250 (dms adj1 "250")) same (protocol)	USPAT;	2003/12/17 15:4	5
Continue				US-PGPUB;		
1 ("6041109").PN. Soft-switch\$3 softswitch\$3 (soft adj1 US-PAT; US-POPUB; EPO; JPO; DERWENT US-PAT; US-PAT; US-PAT; US-PAT; US-PAT; US-PAT						
- 1780 soft-switch\$3 softswitch\$3 (soft adj1 uspAT; us-PGPUB; EPG; JPG; DERWENT uspAT;						-
1780 soft-switch\$3 softswitch\$3 (soft adj1 USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT;	-	1	("6041109").PN.	i e	2003/12/17 15:40	6
Switch\$3 US-PGPUB; EPO; JPO; DERWENT USPAT; US-	-	1780		1		
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3080 isup\$ b-isup\$ bisup\$ (b adj1 isup\$) DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; JPO; DERWENT US-PGPUB; EPO; JPO; DERWENT US-PGPUB; EPO; JPO; JPO; JPO; DERWENT US-PGPUB; EPO; JPO; JPO; JPO; DERWENT US-PGPUB; EPO; JPO; JPO; JPO; JPO; JPO; JPO; JPO; J						ļ
3080 isup\$ b-isup\$ bisup\$ (b adj1 isup\$)		1		1 ' '		
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34 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$)) USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; DOS) same (ip internet)) not ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots) same (ip internet))) not ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$)) USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; USP						
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isup\$) EPO; JPO; DERWENT USPAT;	-	34			2003/12/22 14:4	5
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52274			isup\$))	EPO; JPO;		ı
internet) (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots) same (ip internet)) ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots) same (ip internet)) not ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots) same (ip internet)) not ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$))) (3 6614781.pn. 1 6614781.pn. and (resource bandwidth) 1 6614781.pn. and (resource bandwidth) USPAT; USPA				DERWENT		- 1
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- 194 (soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots) same (ip internet)) - 162 ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots) same (ip internet))) not ((soft-switch\$3)) and ((pstn pbx phone telephon\$1 pots) same (ip internet))) not ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3))) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$))) - 3 6614781.pn. 1 6614781.pn. and (resource bandwidth) DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT DERWENT 2003/12/22 15:02 USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT DERWENT 2003/12/22 15:02 USPAT; US-PGPUB; EPO; JPO; DERWENT DERWENT 2003/12/22 15:02						- 1
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- 162 ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet))) not ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$))) - 3 6614781.pn. 1 6614781.pn. and (resource bandwidth) Comparison of the property of						
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pots)same (ip internet))) not ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$))) - 3 6614781.pn. USPAT; US-PGPUB; EPO; JPO; DERWENT - 1 6614781.pn. and (resource bandwidth) USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT	'	162			2003/12/22 15:0	۷
((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$))) - 3 6614781.pn. USPAT; US-PGPUB; EPO; JPO; DERWENT - 1 6614781.pn. and (resource bandwidth) USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT						
switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$))) - 3 6614781.pn. USPAT; US-PGPUB; EPO; JPO; DERWENT						-
isup\$))) 6614781.pn. USPAT; US-PGPUB; EPO; JPO; DERWENT US-PGPUB; EPO; JPO; DEPO; JPO; DEPO; JPO; DEPO; JPO; DEPO; JPO; DEPO; JPO; DEPO; JPO; DERWENT	1			DERWENT		
- 3 6614781.pn. USPAT; 2003/12/22 15:02 US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT	1	ĺ				
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EPO; JPO; DERWENT 1 6614781.pn. and (resource bandwidth) USPAT; US-PGPUB; EPO; JPO; DERWENT USPAT; US-PGPUB; EPO; JPO; DERWENT				US-PGPUB;		
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- 1 6614781.pn. and (resource bandwidth) USPAT; 2003/12/22 15:21 US-PGPUB; EPO; JPO; DERWENT						
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-	1	6614781.pn. and ((resource	USPAT;	2003/12/22 15:21
		bandwidth) same (soft-switch\$3 softswitch\$3	US-PGPUB;	
1		(soft adj1 switch\$3)))	EPO; JPO;	
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-	2	6614781.pn. and (terminat\$3)	USPAT;	2003/12/22 15:47
			US-PGPUB;	
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-	1	6614781.pn. and (address\$3)	USPAT;	2003/12/22 15:58
			US-PGPUB;	
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	_		DERWENT	
-	1	6614781.pn. and (address\$3 same network)	USPAT;	2003/12/22 16:08
			US-PGPUB;	
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-	1	6614781.pn. and ("238" "240")	USPAT;	2003/12/22 16:10
			US-PGPUB;	
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-	1	6614781.pn. and (("238" "240")same	USPAT;	2003/12/22 16:10
		address\$3)	US-PGPUB;	
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1		86	(((soft-switch\$3 softswitch\$3 (soft adj1	USPAT	2004/01/08	12:37	
			switch\$3)(software adj1				
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			switch\$3) (software adj1	US-PGPUB;			Ą
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		2	and protocol	DERWENT		' '	Ó
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			and protocol) not ((((soft-switch\$3				
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	soar		switch\$3)(software adj1	US-PGPUB;			
ł			switch\$3)(software-switch\$3))) and agent)	EPO; JPO;			
			and protocol) not ((((soft-switch\$3	DERWENT		ŀ	
1			softswitch\$3 (soft adj1 switch\$3)(software				
1			<pre>adj1 switch\$3)(software-switch\$3))) and</pre>				
			agent) and protocol)				

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Г	APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
	09/538,040	03/29/2000	Casimir M. Kaczmarczyk	065968.0104	6127
	7.	590 01/21/2004		EXAMI	NER
	Baker & Botts 2001 Ross Ave			ABELSON, F	RONALD B
	Dallas, TX 75			ART UNIT	PAPER NUMBER
				2666	<u></u>
				DATE MAILED: 01/21/2004	•

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summany	09/538,040	KACZMARCZYK ET AL.
Office Action Summary	Examiner	Art Unit
	Ronald Abelson	2666
The MAILING DATE of this communication app Period for Reply	pears on the cover sheet with the	correspondence address
A SHORTENED STATUTORY PERIOD FOR REPL THE MAILING DATE OF THIS COMMUNICATION. - Extensions of time may be available under the provisions of 37 CFR 1.1 after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a repl - If NO period for reply is specified above, the maximum statutory period of - Failure to reply within the set or extended period for reply will, by statute - Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b). Status	36(a). In no event, however, may a reply be to within the statutory minimum of thirty (30) day will apply and will expire SIX (6) MONTHS from a cause the application to become ABANDON.	imely filed ays will be considered timely. In the mailing date of this communication. ED (35 U.S.C. § 133)
1) Responsive to communication(s) filed on 29 M	larch 2000.	
2a) This action is FINAL . 2b) ⊠ This	action is non-final.	
Since this application is in condition for alloware closed in accordance with the practice under E	nce except for formal matters, pr Ex parte Quayle, 1935 C.D. 11, 4	osecution as to the merits is IS3 O.G. 213.
Disposition of Claims		
4)⊠ Claim(s) <u>1-51</u> is/are pending in the application	,	
4a) Of the above claim(s) is/are withdraw		
5) Claim(s) <u>1-18 and 37-51</u> is/are allowed.		
6)⊠ Claim(s) <u>19-26,28-33,35 and 36</u> is/are rejected	I .	
7)⊠ Claim(s) <u>27 and 34</u> is/are objected to.		
8)☐ Claim(s) are subject to restriction and/o	r election requirement.	
Application Papers		
9)☐ The specification is objected to by the Examine	r.	
10)⊠ The drawing(s) filed on 29 March 2000 is/are:	a)∏ accepted or b)⊠ objected	to by the Examiner.
Applicant may not request that any objection to the		
Replacement drawing sheet(s) including the correct		
11)☐ The oath or declaration is objected to by the Ex	aminer. Note the attached Offic	e Action or form PTO-152.
Priority under 35 U.S.C. §§ 119 and 120		
12) Acknowledgment is made of a claim for foreigr a) All b) Some * c) None of:		a)-(d) or (f).
1. Certified copies of the priority document2. Certified copies of the priority document		tion No.
3. Copies of the certified copies of the prior	rity documents have been receiv	ed in this National Stage
application from the International Bureau	ı (PCT Rule 17.2(a)).	-
 * See the attached detailed Office action for a list 13) Acknowledgment is made of a claim for domesti 	of the certified copies not receive	ed.
since a specific reference was included in the fire 37 CFR 1.78.	st sentence of the specification of	or in an Application Data Sheet.
a) The translation of the foreign language pro		
14) Acknowledgment is made of a claim for domesti reference was included in the first sentence of th	e specification or in an Applicati	on Data Sheet. 37 CFR 1.78.
Attachment(s)		
Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) Notice of Informal	y (PTO-413) Paper No(s) Patent Application (PTO-152)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4	. 6) Other: .	

U.S. Patent and Trademark Office PTOL-326 (Rev. 11-03)

Office Action Summary

Part of Paper No. 5

· Application/Control Number: 09/538,040

Art Unit: 2666

Claim Rejections - 35 USC § 102

Page 2

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 19-24, 26, 28-33, 35, and 36 rejected under 35
 U.S.C. 102(e) as being anticipated by Elliott (US 6,614,781).

Regarding claim 19, Elliott teaches a method and apparatus for of different transport protocols (IPDC, TCP/IP, fig. 4A box 204, col. 31 lines 51-53, fig. 6C box 620, INAP/IP, col. 42 lines 60-62).

The system comprises translating the incoming signaling messages into call events (call event, col. 60 line 56 - col. 61 line 5).

The system comprises processing the call events (fig. 4C box 422 getRoute()).

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Art Unit: 2666

The system comprises requesting outgoing resources for establishing data sessions (allocates internal resources, col. 52 lines 57-62).

Page 3

The system comprises terminating the data sessions on the requested outgoing resources (col. 5 lines 15-24).

Regarding claim 20, requesting (fig. 4C box 422 getRoute()) and receiving routing information (fig. 4C box 430).

Regarding claim 21, requests for and receiving address resolution to establish the data sessions (col. 52 lines 63-67).

Regarding claim 22, requesting and receiving address locations of called parties in external networks (col. 204 lines 10-15).

Regarding claim 23, processing signaling messages of a particular protocol and parsing and formatting the messages according to the protocol. Elliott teaches a particular protocol

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SS7 (fig. 4A box 208, 210). The steps of processing, parsing, and formatting are inherent.

Regarding claim 24, SS7 (fig. 4A box 208, 210).

Regarding claim 26, receiving and transmitting H.323 signaling messages (fig. 6B col. 40 lines 46-47).

Regarding claim 28, receiving and transmitting MGCP signaling messages (col. 5 lines 22-24).

Regarding claim 29, receiving and transmitting IPDC signaling messages (col. 5 lines 17-21).

Regarding claim 30, receiving and transmitting SGCP signaling messages (col. 140 lines 28-33).

Regarding claim 31, receiving and transmitting PSTN network messages (col. 18 lines 26-29).

Regarding claim 32, receiving and transmitting packet network messages (col. 4 lines 31-34).

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Art Unit: 2666

Regarding claim 33, receiving and transmitting wireless network messages (GSM, col. 33 lines 55-56).

Regarding claim 35, processing call events to generate records (col. 5 lines 53-56).

Regarding claim 36, verifying an incoming circuit is in a valid state (error message information, col. 59 line 64 - col. 60 line 3).

Claim Rejections - 35 USC § 103

- 3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 4. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott as applied to claim 19 above, and further in view of Doshi (US 6,529,499).

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Art Unit: 2666

Although Elliott teaches IP (col. 19 lines 63-66), the reference is silent on session initiation protocol 'SIP'

Doshi teaches, in IP, session management is typically performed using SIP (col. 3 lines 19-20.

Therefore it would have been obvious to one of ordinary skill in the art, having both Elliott and Doshi before him/her and with the teachings [a] as shown by Elliott, a method and apparatus for a softswitch interconnecting networks of different transport protocols, and [b] as shown by Doshi, in IP, session management is typically performed using SIP, to be motivated to modify the system of Elliott by augmenting the signal system to support SIP. This modification can be performed in software. This would improve the system since SIP is better suited to handle IP packet switching than SS7.

Allowable Subject Matter

5. Claims 1-18 and 37-51 are allowed.

 \mathcal{N}

6. Claims 27 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Art Unit: 2666

Regarding claims 1, 19, Elliott teaches a method and apparatus for a softswitch (fig. 4A box 204) interconnecting networks of different transport protocols (IPDC, TCP/IP, fig. 4A box 204, col. 31 lines 51-53, fig. 6C box 620, INAP/IP, col. 42 lines 60-62).

The system comprises a signaling agent coupled to the networks and operable to receive incoming signaling messages (fig. 4B box 422 receiveMsg()), translate the incoming signaling messages to a call model event (call event, col. 60 line 56 - col. 61 line 5), and route the call model event (fig. 4C box 422 getRoute()).

Although Elliott teaches agents (col. 74 lines 16-19), none of the prior art of record teaches the limitations a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent.

In contrast, regarding allocation of resources, Elliott teaches the gateway allocates resources and is controlled by the soft switch (col. 52 lines 57-62, col. 53 lines 12-16).

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Art Unit: 2666

Regarding claim 27, nothing in the prior art of the record teaches or fairly suggests parsing, formatting, filtering, and routing, in combination with all the other limitations listed in the claim.

Regarding claim 34, although Ellicott teaches a protocol independent communication (PIM, col. 78 lines 47-50), nothing in the prior art of the record teaches or fairly suggests a protocol-independent logic engine for processing call events.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

. Application/Control Number: 09/538,040

Art Unit: 2666

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

De C

Ronald Abelson Examiner

MAL

Page 9

Art Unit 2666

* * *

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Notice of References Cited

Application/Control No.

09/538,040

Applicant(s)/Patent Under Reexamination KACZNARCZYK ET AL.

Examiner

Ronald Abelson

Art Unit 2666

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	Α	US-6,614,781 B1	09-2003	Elliott et al.	370/352
	В	US-6,529,499 B1	03-2003	Doshi et al.	370/352
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FOREIGN PATENT DOCUMENTS

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NON-PATENT DOCUMENTS

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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).) Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office PTO-892 (Rev. 01-2001)

Notice of References Cited

Part of Paper No. 5

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TO-	1449			Application No. 09/538,040	Applicant(s) Kaczmarczy	uk etal	/o\	PE
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U.S. Patent and Trademark Office

ATTORNEY DOCKET 065968.0104



PATENT 09/538,040



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Kaczmarczyk, Casimir M., et al.

Serial No:

09/538,040

Date Filed:

March 29, 2000

Group Art Unit:

2749

Confirmation No.:

6127

Technology Center 2600

APR 2 3

Examiner:

Ronald B. Abelson

Title:

SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF

DIFFERENT PROTOCOLS

Mail Stop -Amendment

Commissioner for Patents P.O. Box 1450

P.O. BOX 1430

Alexandria, VA 22313-1450

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I hereby certify that this paper is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Willie Yiles

Willie lile

Date: April 21, 2004

Dear Sir:

RESPONSE PURSUANT TO 37 C.F.R. 1.111

In response to the Office Action mailed January 21, 2004, Applicants respectfully request the Examiner to reconsider the rejection of the claims in view of the following amendments thereto, and the comments as set forth below. Please amend the application as follows:

Amendments to the Claims

ATTORNEY DOCKET

For the convenience of the Examiner, all pending claims of the present Application are shown below whether or not an amendment has been made.

1. (Original) A softswitch interconnecting networks of different transport protocols, comprising:

a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event; and

a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent, the signaling agent further terminating the data sessions on the requested outgoing resources.

2. (Original) The softswitch, as set forth in claim 1, further comprising a resource manager operable to receive outgoing resource requests from the call agent, and provide outgoing resource availability responses to the call agent.



- 3. (Original) The softswitch, as set forth in claim 1, further comprising a network directory server operable to receive requests for routing information to establish data sessions from the call agent, and provide routing information to the call agent.
- 4. (Original) The softswitch, as set forth in claim 1, further comprising a network directory server operable to receive requests for address resolution to establish data sessions from the call agent, and provide address resolution responses to the call agent.
- 5. (Original) The softswitch, as set forth in claim 1, further comprising a network gateway operable to receive requests for address locations of called parties in external networks to establish data sessions from the call agent, and provide the address locations to the call agent.
- 6. (Original) The softswitch, as set forth in claim 1, wherein the signaling agent comprises:
- a logic control executing a logic control program and operable to process signaling messages of a particular signaling protocol;
- a codec specialized in the signaling protocol of an access network and operable to parse and format signaling messages according to the signaling protocol; and

a filter operable to filter and route signaling messages from the codec to the logic control.

- 7. (Original) The softswitch, as set forth in claim 6, wherein the signaling protocol is SS7.
- 8. (Original) The softswitch, as set forth in claim 6, wherein the signaling protocol is session initiation protocol.
- 9. (Original) The softswitch, as set forth in claim 6, wherein the signaling protocol is H.323.
- 10. (Original) The softswitch, as set forth in claim 1, further comprising a network gateway which comprises:
- a logic control executing a logic control program and operable to process messages of a particular transport protocol;

a codec specialized in the transport protocol of a media gateway and operable to parse and format the messages according to the transport protocol; and

a filter operable to filter and route signaling messages from the codec to the logic control.

- 11. (Original) The softswitch, as set forth in claim 10, wherein the transport protocol is media gateway control protocol.
- 12. (Original) The softswitch, as set forth in claim 10, wherein the transport protocol is Internet protocol device control protocol.
- 13. (Original) The softswitch, as set forth in claim 10, wherein the transport protocol is simple gateway control protocol.
- 14. (Original) The softswitch, as set forth in claim 1, wherein the networks comprise a public switched telephone network.
- 15. (Original) The softswitch, as set forth in claim 1, wherein the networks comprise a packet network.

16. (Original) The softswitch, as set forth in claim 1, wherein the networks comprise a wireless network.

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- 17. (Original) The softswitch, as set forth in claim 1, wherein the call agent comprises a protocol-independent logic engine operable to execute a function-specific logic control program.
- 18. (Original) The softswitch, as set forth in claim 1, further comprising a billing sub-system in communication with the call agent and operable to generate call detail records.
 - 19. (Canceled)
- 20. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising requesting for and receiving routing information to establish the data sessions.
- 21. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising requests for and receiving address resolution to establish the data sessions.
- 22. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising requesting for and receiving address locations of called parties in external networks to establish the data sessions.
- 23. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising:

executing a logic control program and processing the signaling messages of a particular signaling protocol; and

parsing and formatting signaling messages according to the signaling protocol.

- 24. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising receiving and transmitting SS7 signaling messages.
- 25. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising receiving and transmitting session initiation protocol signaling messages.
- 26. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising receiving and transmitting H.323 signaling messages.

27. (Currently Amended) The method, as set forth in claim 19; A method of internetworking between networks of different transport protocols, comprising:

receiving signaling messages from a signaling network;

translating the signaling messages into call events;

processing the call events;

requesting outgoing resources for establishing data sessions with devices coupled to a transport network;

terminating the data sessions on the requested outgoing resources;

wherein translating the messages comprises:

executing a logic control program and processing messages of a particular transport protocol;

parsing and formatting the messages according to the transport protocol; and filtering and routing the translated messages.

- 28. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising receiving and transmitting media gateway control protocol messages.
- 29. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising receiving and transmitting Internet protocol device control protocol messages.
- 30. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising receiving and transmitting simple gateway control protocol messages.
- 31. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising receiving and transmitting public switched telephone network messages.
- 32. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising receiving and transmitting packet network messages.
- 33. (Currently Amended) The method, as set forth in elaim 19 claim 27, further comprising receiving and transmitting wireless network messages.
- 34. (Currently Amended) The method, as set forth in claim 19, A method of internetworking between networks of different transport protocols, comprising:

receiving signaling messages from a signaling network;

translating the signaling messages into call events;

processing the call events;

requesting outgoing resources for establishing data sessions with devices coupled to a transport network;

terminating the data sessions on the requested outgoing resources; and

further comprising using a protocol-independent logic engine to execute a functionspecific logic control program to process the call events.

- 35. (Currently Amended) The method, as set forth in elaim-19 claim 34, wherein processing the call events comprises generating call detail records.
- 36. (Currently Amended) The method, as set forth in elaim 19 claim 34, further comprising verifying an incoming circuit is in a valid state.
- 37. (Original) A softswitch interconnecting networks of different transport and signaling protocols, comprising:
- a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call event, and route the call event;
- a call agent in communication with the signaling agent and operable to receive the call event, verify the validity of incoming circuits of inbound calls, generate a request for an outgoing resources for establishing data sessions;
- a network directory server in communication with the call agent and operable to receive the request for an outgoing resource, and provide information on the outgoing resource;
- a network gateway agent operable to receive a request to establish a data session on the selected outgoing resource, and set up an open session; and

the call agent operable to terminate the data sessions on the requested outgoing resources, and generate a call detail record in response to disconnecting the data session.

- 38. (Original) The softswitch, as set forth in claim 37, further comprising a resource manager operable to receive outgoing resource requests from the call agent, and provide outgoing resource availability responses to the call agent.
- 39. (Original) The softswitch, as set forth in claim 37, wherein the network directory server is further operable to receive requests for address resolution to establish data sessions from the call agent, and provide address resolution responses to the call agent.
- 40. (Original) The softswitch, as set forth in claim 37, wherein the signaling agent comprises:

- a logic control executing a logic control program and operable to process signaling messages of a particular signaling protocol;
- a codec specialized in the signaling protocol of an access network and operable to parse and format signaling messages according to the signaling protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 41. (Original) The softswitch, as set forth in claim 40, wherein the signaling protocol is SS7.
- 42. (Original) The softswitch, as set forth in claim 40, wherein the signaling protocol is session initiation protocol.
- 43. (Original) The softswitch, as set forth in claim 40, wherein the signaling protocol is H.323.
- 44. (Original) The softswitch, as set forth in claim 37, wherein the network gateway comprises:
- a logic control executing a logic control program and operable to process messages of a particular transport protocol;
- a codec specialized in the transport protocol of a media gateway and operable to parse and format the messages according to the transport protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 45. (Original) The softswitch, as set forth in claim 44, wherein the transport protocol is media gateway control protocol.
- 46. (Original) The softswitch, as set forth in claim 44, wherein the transport protocol is Internet protocol device control protocol.
- 47. (Original) The softswitch, as set forth in claim 44, wherein the transport protocol is simple gateway control protocol.
- 48. (Original) The softswitch, as set forth in claim 37, wherein the networks comprise a public switched telephone network.

49. (Original) The softswitch, as set forth in claim 37, wherein the networks comprise a packet network.



- 50. (Original) The softswitch, as set forth in claim 37, wherein the networks comprise a wireless network.
- 51. (Original) The softswitch, as set forth in claim 37, wherein the call agent comprises a protocol-independent logic engine operable to execute a function-specific logic control program.

REMARKS

This application has been carefully reviewed in light of the Office Action mailed January 21, 2004. Claims 1-18 and 37-51 have been allowed. Claims 27, 34, 20-26, 28-33, and 35-36 have been amended. Claim 19 has been canceled. Applicants respectfully request reconsideration and favorable action of all pending claims in view of the following remarks.

Allowable Subject Matter

Applicants appreciate the indication by the Examiner that Claims 1-18 and 37-51 are allowed, and that Claims 27 and 34 would be allowable if rewritten in independent form. In response, Applicants rewrite Claims 27 and 34 to include all of the limitations of independent Claim 19. Further, dependent Claims 20-26 and 28-33 have been amended to depend from rewritten Claim 27, and dependent Claims 35-36 have been amended to depend from rewritten Claim 34.

The Office Action also offers a statement of reasons why Claims 1, 27, and 34 are considered to recite allowable subject matter. Applicants agree that Claims 1, 27, and 34, along with Claims 2-18 and 37-51, recite allowable subject matter. However, Applicants do not agree with the statement of reasons for allowance to the extent that it attempts to paraphrase the claimed subject matter using terminology and/or language which differs in some respects from the specific terminology and language that was selected for use in Applicants' claims. Applicants believe that the scope and interpretation of the claims should be determined by the terminology and language of the claims themselves, rather than language selected by the PTO to attempt to paraphrase the recited subject matter. Further, Applicants believe that the statement of reasons for allowance should not be interpreted to mean that the Examiner's stated reasons are the only reasons supporting allowance and that there are no other reasons supporting the allowance of various claims. Favorable action is requested.

Section 102 and 103 Rejections

The Office Action rejects Claims 19-24, 26, 28-33, 35, and 36 under 35 U.S.C. § 102(e) as being anticipated over U.S. Pat. No. 6,614,781 to Elliott ("Elliott"), and Claim 25 under 35 U.S.C. § 103. To advance the prosecution of this case, Claim 19 has been canceled. As suggested by the Examiner, Claims 27 and 34 have been rewritten to include all of the

limitations of independent Claim 19. Dependent Claims 20-26 and 28-33 have been amended to depend from rewritten Claim 27, and dependent Claims 35-36 have been amended to depend from rewritten Claim 34. Thus, the rejections of Claims 19-26, 28-33, 35, and 36 are considered moot. Favorable action is requested.

PATENT 09/538,040

11

CONCLUSION

Applicants have now made an earnest attempt to place this case in condition for immediate allowance. For the foregoing reasons and for other apparent reasons, Applicants respectfully request allowance of all pending claims.

If the Examiner feels that prosecution of the present Application may be advanced in any way by a telephone conference, the Examiner is invited to contact the undersigned attorney at 214-953-6447.

Applicants do not believe that any fees are due. However, the Commissioner is hereby authorized to charge these fees and any extra fee or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P. Attorneys for Applicants

Bradley F. Williams Reg. No. 40, 227

Date: April 21, 2004

Correspondence Address: 2001 Ross Avenue, Suite 600 Dallas, Texas 75201-2980 Phone: (214) 953-6447

Customer Number: 05073

ATTORNEY DOCKE



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Kaczmarczyk, Casimir M., et al. March 29, 2000

Serial No:

09/538,040

Date Filed: Group Art Unit:

Confirmation No.:

Mail Stop -Amendment Commissioner for Patents

Alexandria, VA 22313-1450

2749

6127

Technology Center 2600

PATENT 09/538,040

Examiner:

Ronald B. Abelison

Title:

SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF

DIFFERENT PROTOCOLS

JI AVAILABLE COPY

"EXPRESS MAIL"

Express Mailing Label Number EV 324620761 US I hereby certify that this paper is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: April 21, 2004

Dear Sir:

P.O. Box 1450

RESPONSE PURSUANT TO 37 C.F.R. 1.111

In response to the Office Action mailed January 21, 2004, Applicants respectfully request the Examiner to reconsider the rejection of the claims in view of the following amendments thereto, and the comments as set forth below. Please amend the application as follows:

01/11/2005 THITCHER 00000005 020384 09538040

01 FC:2201

43.00 DA

ATTORNEY DOCKE 065959.0104

CONCLUSION

Applicants have now made an earnest attempt to place this case in condition for immediate allowance. For the foregoing reasons and for other apparent reasons, Applicants respectfully request allowance of all pending claims.

If the Examiner feels that prosecution of the present Application may be advanced in any way by a telephone conference, the Examiner is invited to contact the undersigned attorney at 214-953-6447.

Applicants do not believe that any fees are due. However, the Commissioner is hereby authorized to charge these fees and any extra fee or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS LLP. Attorneys for Applicants

Reg. No. 40, 227

Date: April 21, 2004

Correspondence Address: 2001 Ross Avenue, Suite 600 Dallas, Texas 75201-2980 Phone: (214) 953-6447

Customer Number: 05073

PATENT APPLICATION 09/538,040

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

1

RECEIVED

In re Application of:

Kaczmarczyk, Casimir M., et al.

APR 2 6 2004

Serial No:

09/538,040

Technology Center 2600

Date Filed:

March 29, 2000

Group Art Unit:

2666

Confirmation No.:

Commissioner for Patents

Alexandria, VA 22313-1450

6127

Examiner:

Ronald B. Abelson

Title:

SYSTEM AND METHOD TO INTERNETWORK TELECOMMUNICATION NETWORKS OF

DIFFERENT PROTOCOLS

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Express Mailing Label Number

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Dear Sir:

P.O. Box 1450

Willie Jiles

Date: April 22, 2004

INFORMATION DISCLOSURE STATEMENT

Applicants respectfully request, pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, that the references listed on the attached PTO-1449 form be considered and cited in the examination of the above-identified application. Copies of these references are enclosed for the convenience of the Examiner. Pursuant to 37 C.F.R. § 1.97(g) and (h), no representation is made that these references are material to patentability of the present application or that a search has been made.

DAL01:792885.1

04/26/2004 SSITHIB1 00000022 09538040

ATTORNEY DOCKET NO. 065968.0104

PATENT APPLICATION 09/538,040

2

Applicants respectfully submit that the claims of Applicants' above-referenced patent application are patentably distinguishable from these references.

This Information Disclosure Statement is being submitted pursuant to 37 C.F.R. § 1.97(c). The stipulated fee of \$180.00 is enclosed herewith. The Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted, BAKER BOTTS L.L.P. Attorneys for Applicants

Bradley P. Williams Reg. No. 40,227

2001 Ross Avenue Dallas, Texas 75201-2980 (214) 953-6447

Date: April 22, 2004

Correspondence Address:

· X Customer Number: 05073

L Number		Search Text	DB	Time stamp
1	7473	(370/352 370/401 370/410 370/465-467).ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/07 08:09
2	160	((370/352 370/401 370/410 370/465-467).ccls.) and (softswitch\$3 soft-switch\$3 (soft\$4 adj1 switch\$3))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/07 08:47
3	153	(((370/352 370/401 370/410 370/465-467).ccls.) and (softswitch\$3 soft-switch\$3 (soft\$4 adj1 switch\$3))) and protocol	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/07 08:11
4	34	("6704287" "6134589" "6373817" "6252952" "6570855" "6301609" "5022024" "6459708" "6522876" "6185292" "6445784" "20030058277" "20020120691" "20010054085" "20030140121" "20030028561" "6434143").pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/07 08:41
5	17	· •	USPAT; US-PGPUB	2004/07/07 08:42
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7 8	116 116	(kaczmarczyk ravikumar).inv. (kaczmarczyk ravikumar).inv.	USPAT USPAT	2004/07/07 08:45
9	323	(kaczmarczyk ravikumar).inv.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/07 08:46
10	0	((kaczmarczyk ravikumar).inv.) and (((370/352 370/401 370/410 370/465-467).ccls.) and (softswitch\$3 soft-switch\$3 (soft\$4 adj1 switch\$3)))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/07 08:46
11	°		USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/07 08:47

updated inventor name search

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-	50	corvis.asn.	USPAT; US-PGPUB	2003/12/23	07:28
-	1	6614781.pn.	USPAT; US-PGPUB	2003/12/23	07:28
-	1	6614781.pn. and ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) same (gateway	USPAT	2003/12/23	07:59
1_	1	gatekeeper)	USPAT	2003/12/23	08 - 01
1-	0	6614781.pn. and (session adjl initiation)	USPAT	2003/12/23	
1 -	1	6614781.pn. and (h.323 h323)	USPAT	2003/12/23	
-	1	6614781.pn. and (filter)	USPAT	2003/12/23	
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-	1	6614781.pn. and (sgcp)	USPAT	2003/12/23	
-	1	6614781.pn. and (pstn)	USPAT	2003/12/23	
-	1 1	6614781.pn. and (packet) 6614781.pn. and (wireless cellular mobile	USPAT	2003/12/23	
-	1	radio satellite)	USPAT	2003/12/23	08:37
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	1	independen\$))	00171	2003/12/23	JU.#0
-	1	l	USPAT	2003/12/23	08:50
-	ī	1	USPAT	2003/12/23	
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1-	259	· · · · · · · · · · · · · · · · · · ·	USPAT;	2004/01/08	12:31
		switch\$3)(software adj1 switch\$3)(software-switch\$3))) and agent	US-PGPUB; EPO; JPO;		
1		Switches, (Boltware-Switches,) and agent	DERWENT		
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		switch\$3)(software-switch\$3))) and agent)	EPO; JPO;		
		and protocol	DERWENT		
-	86		USPAT	2004/01/08	12:37
		switch\$3) (software adj1			
		switch\$3)(software-switch\$3))) and agent)			
1_	200	and protocol (((soft-switch\$3 softswitch\$3 (soft adj1	USPAT;	2004/01/08	12.20
1	200	switch\$3) (software adj1	US-PGPUB;	2004/01/08	13:36
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		and protocol	DERWENT		
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		switch\$3)(software adj1	US-PGPUB;		
		<pre>switch\$3)(software-switch\$3))) and agent)</pre>	EPO; JPO;		
		and protocol	DERWENT		
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		switch\$3)(software ad]1 switch\$3)(software-switch\$3))) and agent)	1		
		and protocol) not ((((soft-switch\$3			
1		softswitch\$3 (soft adj1 switch\$3)(software			
		adj1 switch\$3)(software-switch\$3))) and			
		agent) and protocol)			
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		switch\$3)(software adj1	US-PGPUB;		
}		<pre>switch\$3)(software-switch\$3))) and agent)</pre>	EPO; JPO;]	
		and protocol) not ((((soft-switch\$3	DERWENT	1	
	1	softswitch\$3 (soft adj1 switch\$3)(software adj1 switch\$3)(software-switch\$3))) and		1	
1		agent) and protocol)		1	
- 101	323	(kaczmarczyk ravikumar).inv.	USPAT;	2004/07/01	14:08
JUN			US-PGPUB;	, 0., 01	
V V			EPO; JPO;		
Jume.	h		DERWENT		
M	//\	((kaczmarczyk ravikumar).inv.) and (call	USPAT;	2004/07/01	14:08
James Sever		adj1 model)	US-PGPUB;		
J-			EPO; JPO;		
	1		DERWENT	L	

Search History 7/7/04 7:54:41 AM Page 6 C:\APPS\EAST\Workspaces\09538040.wsp

-	0	((kaczmarczyk ravikumar).inv.) and (call with model)	USPAT; US-PGPUB;	2004/07/01 14:08
		with modely	EPO; JPO;	
			DERWENT	
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	1		US-PGPUB;	
1			EPO; JPO; DERWENT	
_		(call adj1 model adj1 event) and	USPAT;	2004/07/01 14:12
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		switch\$3))	EPO; JPO;	
	_		DERWENT	
-	5	call adj1 model adj1 event	USPAT;	2004/07/01 15:48
			US-PGPUB; EPO; JPO;	
			DERWENT	
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	,	-	US-PGPUB;	
			EPO; JPO;	
	.	6614701 pp and #204#	DERWENT	0004/07/07 17 ==
_	1	6614781.pn. and "204"	USPAT; US-PGPUB;	2004/07/01 15:53
			EPO; JPO;	
			DERWENT	
-	2014		USPAT;	2004/07/01 16:22
		switch\$3)	US-PGPUB;	
			EPO; JPO;	
_	399	(softswitch\$3 soft-switch\$3 (soft adj1	DERWENT	2004/07/01 16:21
	333	switch\$3)) and protocol	USPAT; US-PGPUB;	2004/07/01 16:21
İ			EPO; JPO;	
			DERWENT	
-	207		USPAT;	2004/07/01 16:05
		switch\$3)) and ((multiple plurality different several second) with protocol)	US-PGPUB;	
		different several second, with protocol,	EPO; JPO; DERWENT	
-	1647	software adj1 switch\$3	USPAT;	2004/07/01 16:05
		_	US-PGPUB;	, , ,
	ļ		EPO; JPO;	
_	285	(coftware adil cwitch(2) and //multiple	DERWENT	2004/07/01 16 10
-	203	(software adj1 switch\$3) and ((multiple plurality different several second) with	USPAT; US-PGPUB;	2004/07/01 16:19
		protocol)	EPO; JPO;	
			DERWENT	
-	271	((software adj1 switch\$3) and ((multiple	USPAT;	2004/07/01 16:19
		plurality different several second) with	US-PGPUB;	
		<pre>protocol)) not ((softswitch\$3 soft-switch\$3 (soft adj1 switch\$3)) and ((multiple</pre>	EPO; JPO; DERWENT	
		plurality different several second) with	DERMENT	
		protocol))		
-	203	(softswitch\$3 soft-switch\$3 (soft adj1	USPAT;	2004/07/01 16:22
		switch\$3)) and (isp (service adj1 provider))	US-PGPUB;	
			EPO; JPO;	
_	3683	softswitch\$3 soft-switch\$3 (soft\$4 adj1	DERWENT USPAT;	2004/07/01 16:22
		switch\$3)	US-PGPUB;	2004/07/01 10:22
			EPO; JPO;	
İ	_		DERWENT	
-	60	(softswitch\$3 soft-switch\$3 (soft\$4 adj1	USPAT;	2004/07/01 16:23
		<pre>switch\$3)) same (isp (service adj1 provider))</pre>	US-PGPUB; EPO; JPO;	
	ľ	E-4.500511	DERWENT	l



United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/538,040	03/29/2000	Casimir M. Kaczmarczyk	065968.0104	6127
7	7590 07/19/2004		EXAM	NER
Baker & Bott			ABELSON, RONALD B	
2001 Ross Ave Dallas, TX 7			ART UNIT	PAPER NUMBER
		4	2666	0
		•	DATE MAILED: 07/19/2004	, ' 🛆

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)					
Office Action Summany	09/538,040	KACZMARCZYK ET AL.4					
Office Action Summary	Examiner	Art Unit					
	Ronald Abelson	2666					
The MAILING DATE of this communication app Period for Reply	ears on the cover sheet with the c	orrespondence address					
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).							
Status							
1) ☐ Responsive to communication(s) filed on 21 April 2004. 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final. 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.							
Disposition of Claims							
 4) Claim(s) 1-18 and 20-51 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) Claim(s) 37-51 is/are allowed. 6) Claim(s) 1, 2, 7-9, 14-18, and 20-36 is/are rejected. 7) Claim(s) 3-6 and 10-13 is/are objected to. 8) Claim(s) are subject to restriction and/or election requirement. 							
Application Papers							
 9) ☐ The specification is objected to by the Examiner. 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. 							
Priority under 35 U.S.C. § 119							
 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some color None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. 							
Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7.	4) Interview Summary Paper No(s)/Mail Da 5) Notice of Informal P 6) Other:						

U.S. Patent and Trademark Office PTOL-326 (Rev. 1-04)

Office Action Summary

Part of Paper No./Mail Date 8

Art Unit: 2666

Page 2

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
- Claims 1, 7, 9, 14-18, 20-24, 26-35 are rejected under
 U.S.C. 102(e) as being anticipated by Elliott (US
 6,614,781).

Regarding claim 1, Elliott teaches a method and apparatus for a soft switch (fig. 4A box 204) interconnecting networks of different transport protocols (IPDC, NMI, MGCP, col. 19 lines 41-43).

The system comprises a signaling agent (fig. 2B box 204) coupled to the networks and operable to receive incoming signaling messages (signaling information is processed by soft switch, col. 32 lines 51-54), translate the incoming signaling messages to a call model event (establish the originating call-half, determine the

Art Unit: 2666

Page 3

identity of terminating soft switch, col. 32 lines 51-56), and route the call model event (col. 32 lines 58-60).

The system comprises a call agent (fig. 2B box 304) in communication with the signaling agent and operable to receive the call model event (col. 32 lines 54-57), request outgoing resources for establishing data sessions (fig. 62: see connection between soft switch box 204 and resource management box 6204), generate outgoing signaling messages (signaling information is processed by soft switch, col. 32 lines 51-54), and send the outgoing signaling messages to the signaling agent (note bi-directional flow of signaling messages between soft switches 204 and 304), the signaling agent further terminating the data sessions on the requested outgoing resources (tear down, col. 32 lines 5-7).

Regarding claim 27, Elliott teaches a method and apparatus for interconnecting networks of different transport protocols (IPDC, NMI, MGCP, col. 19 lines 41-43).

The system comprises receiving incoming signaling messages (signaling information is processed by soft switch, col. 32 lines 51-54).

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Page 4

The system comprises translating the incoming signaling messages to a call model event (establish the originating call-half, determine the identity of terminating soft switch, col. 32 lines 51-56)

The system comprises processing / routing the call model events (col. 32 lines 58-60).

The system comprises requesting outgoing resources for establishing data sessions (fig. 62: see connection between soft switch box 204 and resource management box 6204).

The system comprises terminating the data sessions on the requested outgoing resources (tear down, col. 32 lines 5-7).

The system comprises executing a logic control program and processing messages of a particular transport protocol. Note, as stated previously, the system processes messages a multiple protocols (IPDC, NMI, MGCP, col. 19 lines 41-43).

The system parses and formats the messages according to the transport protocol (IPDC, NMI, MGCP, col. 19 lines 41-43). Note, if this were not the case, the soft switch would not understand the messages.

The system filters (col. 226 lines 49-50) and routes the translated messages. Regarding routing, the soft switch

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is an interconnection between gateways (fig. 1, col. 19 lines 41-43).

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Regarding claim 34, Elliott teaches a method and apparatus for interconnecting networks of different transport protocols (IPDC, NMI, MGCP, col. 19 lines 41-43).

The system comprises receiving incoming signaling messages (signaling information is processed by soft switch, col. 32 lines 51-54).

The system comprises translating the incoming signaling messages to a call model event (establish the originating call-half, determine the identity of terminating soft switch, col. 32 lines 51-56)

The system comprises processing / routing the call model event (col. 32 lines 58-60).

The system comprises requesting outgoing resources for establishing data sessions (fig. 62: see connection between soft switch box 204 and resource management box 6204).

The system comprises terminating the data sessions on the requested outgoing resources (tear down, col. 32 lines 5-7).

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The system comprises using a protocol-independent logic engine to execute a function specific logic control program to process the call events. Elliott teaches processing of the call events is protocol dependent (ISSC protocol, col. 32 lines 58-60). Note, the examiner maintains that the ISSC protocol is protocol-independent since it is only used for transmitting messages between soft switches and is not used for communication with external networks.

Regarding claims 7 and 24, the signaling protocol is SS7 (col. 4 lines 66-67).

Regarding claims 9 and 26, the signaling protocol is H.323 (col. 40 lines 46-47).

Regarding claims 14 and 31, the networks comprise a PSTN (col. 4 lines 31-34).

Regarding claims 15 and 32, the networks comprise a packet network (col. 4 lines 31-34).

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Regarding claims 16 and 33, the networks comprise a wireless network (cellular (col. 226 lines 45-48).

Regarding claim 17, the call agent / soft switch comprises using a protocol-independent logic engine to execute a function specific logic control program to process the call events. Elliott teaches processing of the call events is protocol dependent (ISSC protocol, col. 32 lines 58-60). Note, the examiner maintains that the ISSC protocol is protocol-independent since it is only used for transmitting messages between soft switches and is not used for communication with external networks.

Regarding claims 18 and 35, the soft switch comprises a billing sub-system in communication with the call agent / soft switch and operable to generate call detail records (col. 21 lines 11-15).

Regarding claim 20, requesting and receiving routing information to establish data sessions (fig. 62 box 212).

Regarding claim 21, requesting and receiving address resolution to establish data sessions (fig. 62 box 212).

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Regarding claim 22, requesting and receiving address locations of called parties in external networks to establish data sessions (fig. 62 box 212).

Regarding claim 23, executing a logic control program and processing the signaling messages of a particular signaling protocol (signaling information is processed by soft switch, col. 32 lines 51-54) and parsing and formatting signaling messages according to the signaling protocol (signaling information is processed by soft switch, col. 32 lines 51-54). Note, given the soft switch processes the signaling information, the examiner maintains the soft switch is performing the steps of parsing and formatting.

Regarding claim 28, receiving and transmitting MGCP messages (col. 5 lines 23-25).

Regarding claim 29, receiving and transmitting IPDC messages (col. 5 lines 17-21).

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Regarding claim 30, receiving and transmitting SGCP messages (col. 140 lines 28-33).

- 3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott as applied to claim 1 above, and further in view of Hayter (GB 2,326,054).
- 4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Regarding claim 2, although Elliott teaches a soft switch (fig. 62 box 62) in communication with an external resource manager (fig. 62 box 6204) operable to receive outgoing resource requests from the call agent / soft

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switch, and provide outgoing resource availability to the call agent / soft switch, Elliott fails to teach the soft switch comprises a resource manager.

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Hayter teaches a switch comprising a resource manager / bandwidth allocator operable to receive requests and provide availability responses (fig. 1 box 24, pg. 12 lines 19-26).

Therefore it would have been obvious to one of ordinary skill in the art, having both Elliott and Hayter before him/her and with the teachings [a] as shown by Elliott, a soft switch interconnecting networks of different transport protocols, and [b] as shown by Hayter, a switch comprising a resource manager / bandwidth allocator operable to receive requests and provide availability responses, to be motivated to modify the system of Elliott by integrating the resource manager (Elliott: fig. 62 box 6204) within the soft switch. This modification can be performed in software. This would improve the system since information regarding the resource management would be obtained internally and would no longer be dependent on an external source.

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5. Claims 8 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott as applied to claim 1 and 27 above, and further in view of Schuster (US 6,650,619).

Elliott is silent on signaling protocol is session initiation protocol.

Schuster teaches session initiation protocol (col. 1 lines 40-42).

Therefore it would have been obvious to one of ordinary skill in the art, having both Elliott and Schuster before him/her and with the teachings [a] as shown by Elliott, a soft switch interconnecting networks of different transport protocols, and [b] as shown by Schuster, session initiation protocol, to be motivated to modify the system of Elliott by performing a software upgrade to the soft switch to allow the soft switch to process session initiation protocol. This would improve the system since session initiation protocol can support Internet telephony.

6. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott as applied to claim 34 above, and further in view of Capers (US 6,418,205).

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in a valid state.

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Elliott is silent on verifying an incoming circuit is

Capers teaches verifying an incoming circuit is in a valid state (col. 9 lines 21-24).

Therefore it would have been obvious to one of ordinary skill in the art, having both Elliott and Capers before him/her and with the teachings [a] as shown by Elliott, a soft switch interconnecting networks of different transport protocols, and [b] as shown by Capers, general validation to ensure that the SS7 ISUP message does not include a CIC of a circuit not equipped for the platform, to be motivated to modify the system of Elliott by incorporating a software routine to the soft switch to ensure that the SS7 ISUP message does not include a CIC of a circuit not equipped for the soft switch. This would improve the system by ensuring that the soft switch is capable of processing the SS7 ISUP messages sent to it.

Allowable Subject Matter

- 7. Claims 37-51 are allowed.
- 8. Claims 3-6 and 10-13 are objected to as being dependent upon a rejected base claim, but would be

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allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Regarding claim 3, although Elliott teaches an external network directory server operable to receive request for routing information (fig. 62 box 212) in communication with the soft switch, nothing in the prior art of the record teaches or fairly suggests the soft switch comprises a network directory server operable to receive requests for routing information to establish data sessions from the call agent, and provide routing information to the call agent.

Regarding claim 4, although Elliott teaches an external network directory server operable to receive request for address resolution (fig. 62 box 212) in communication with the soft switch, nothing in the prior art of the record teaches or fairly suggests the soft switch comprises a network directory server operable to receive requests for address resolution to establish data sessions from the call agent, and provide address resolution responses to the call agent.

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Regarding claim 5, although Elliott teaches an external network gateway operable to receive requests for address locations of called parties in external networks to establish data sessions and provide address locations (fig. 2B box 232, 234), nothing in the prior art of the record teaches or fairly suggests the soft switch comprises a network gateway operable to receive requests for address locations of called parties in external networks to establish data sessions from the call agent, and provide address locations to the call agent.

Regarding claims 6 and 10, although Elliott teaches parsing and formatting signaling messages according to the signaling protocol, (IPDC, NMI, MGCP, col. 19 lines 41-43), nothing in the prior art of reference teaches or fairly suggests the soft switch comprising a codec specialized in the signal protocol of an access network and operable to parse and format signaling messages according to the signaling protocol and a filter operable to route signaling messages from the codec to the logic control.

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Regarding claim 37, Elliott teaches a method and apparatus for interconnecting networks of different signaling protocols (SS7, ISDN, col. 32 lines 7-10).

The system comprises a signaling agent (fig. 2B box 204) receiving incoming signaling messages (signaling information is processed by soft switch, col. 32 lines 51-54), translating the incoming signaling messages to a call model event (establish the originating call-half, determine the identity of terminating soft switch, col. 32 lines 51-56), and routing the call model event (col. 32 lines 58-60).

The system comprises a call agent (fig. 2B box 304) in communication with the signaling agent and operable to receive the call model event (col. 32 lines 54-57), generate a request outgoing resources for establishing data sessions (fig. 62: see connection between soft switch box 204 and resource management box 6204).

The network gateway agent operable to receive a request to establish a data session on the selected outgoing resource, and set up an open session (set up, col. 32 lines 5-7).

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The call agent is operable to terminate the data sessions on the requested outgoing resources (tear down, col. 32 lines 5-7).

Although Elliott teaches a soft switch (fig. 62 box 204) server (fig. 62 box 254), nothing in the prior art of the record teaches or fairly suggests a softwsitch comprising a network directory server in communication with the call agent and operable to receive the request for an outgoing resource, and provide information on the outgoing resource in view of the prior art teachings of Elliott, in combination with all the other limitations listed in the claim. Note, the prior art does not teach a soft switch comprising a server.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the

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organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pairdirect.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

> Ronald Abelson Examiner Art Unit 2666

7/12/04

SUPERVISORY PATENT EXAMINER

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Notice of References Cited

Applicant(s)/Patent Under Application/Control No. Reexamination 09/538,040 KACZMARCZYK ET AL.4 Examiner Art Unit Page 1 of 1 Ronald Abelson 2666

U.S. PATENT DOCUMENTS

O.S. FALLY BOOMETTO					
	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification	
А	US-6,650,619 B1	11-2003	Schuster et al.	370/230	
В	US-6,418,205 B2	07-2002	Capers et al.	379/112.01	
С	US-		F 9-9		
D	US-				
Е	US-				
F	US-				
G	US-				
н	US-				
ı	US-	-			
J	US-	****			
к	US-				
L	US-				
М	US-				
	B C D E F G H I J K L	A US-6,650,619 B1 B US-6,418,205 B2 C US- D US- E US- F US- G US- H US- I US- J US- K US- L US-	Country Code-Number-Kind Code MM-YYYY A US-6,650,619 B1 11-2003 B US-6,418,205 B2 07-2002 C US- D US- E US- F US- G US- H US- I US- J US- K US- L US-	Document Number Country Code-Number-Kind Code MM-YYYY Name	

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	2326054	12-1998	Great Britain	Hayter	H04L 12/56
	0					
	Р					
	Q					
	R					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).) Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office PTO-892 (Rev. 01-2001)

Notice of References Cited

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- (51) INT CL⁶ H04L 12/56 , H04Q: 11/04
- (52) UK CL (Edition P) H4K KTK
- (56) Documents Cited GB 2307823 A

US 5517495 A

GB 2272820 A

EP 0783915 A2

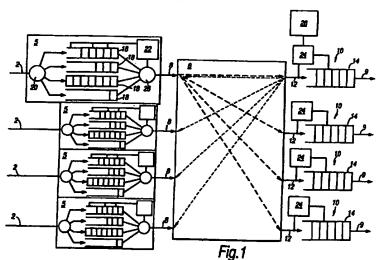
(58) Field of Search

UK CL (Edition O) H4K KTK

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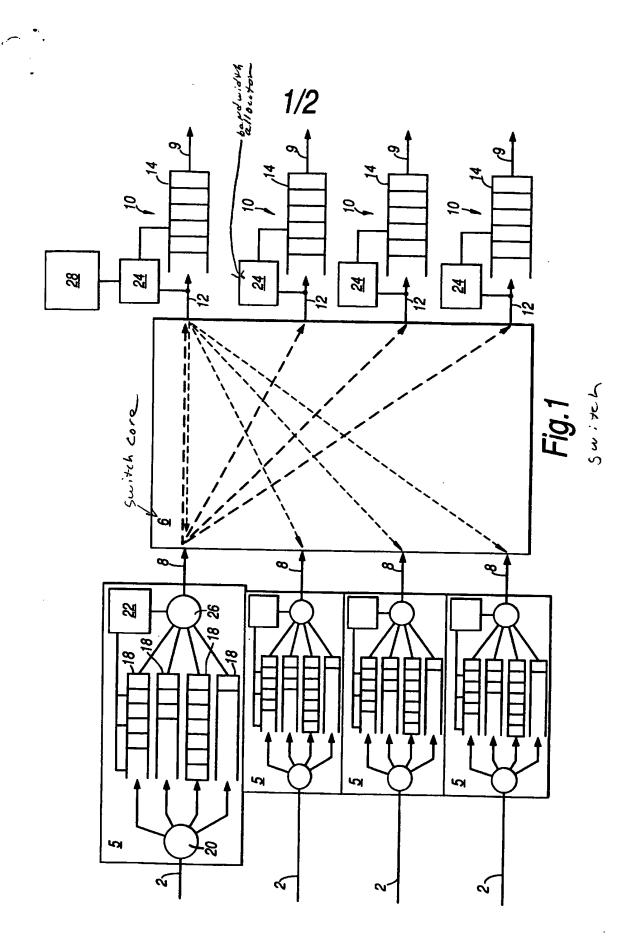
(54) Abstract Title Broadband switch

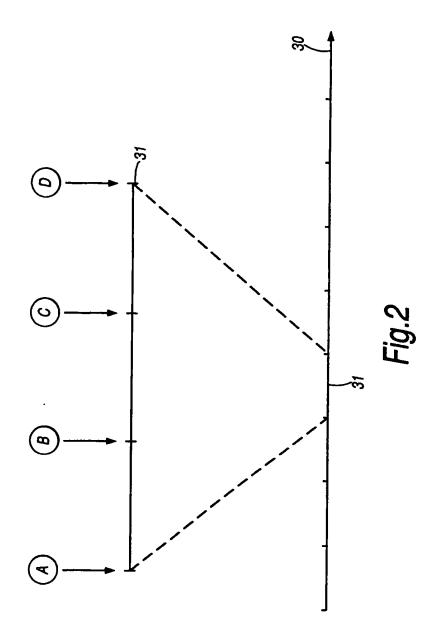
(57) A broadband telecommunications switch (1), for switching packets of data received on a plurality of input ports (5) to plurality of bandwidth limited output ports (10), comprising for each input port (5) a control processor (22) which operates to send request data for each of a plurality of switching periods to each output port (10), which request data is representative of a requirement for communications bandwidth from said output ports (10) sufficient to accommodate packets of data received at said input ports (5) for switching to said output ports (10) for the switching period. Each of said bandwidth allocators (24) responds to said request data by generating bandwidth allocation data appertaining to an allocation of a share of the bandwidth of the output port (10) to the input port (5), which share of bandwidth said input port (5) uses to switch data from said input ports to said output ports during said switching period.



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

GB 2326054





BROADBAND TELECOMMUNICATIONS SWITCH

The present invention relates to broadband telecommunications switches which operate to switch packets or cells of data from a plurality of input ports to a plurality of output ports. In particular, but not exclusively, the present invention relates to broadband telecommunications switches which operate in accordance with Asynchronous Transfer Mode (ATM) principles.

Telecommunications systems which communicate data at rates in the order of mega bits per second are known as broadband telecommunications systems. In order to effect communication of data at such high rates between a plurality of sources and a plurality of receivers, telecommunications systems are adapted to make optimum use of an amount of data communications bandwidth provided by a telecommunications network. To this end, broadband telecommunications systems operate to communicate data in a form of discrete packets or cells which carry a predetermined amount of information. An example of such a broadband telecommunications system is an Asynchronous Transfer Mode (ATM) telecommunications system. wherein data is conveyed in ATM cells. Each ATM cell comprises a predetermined quantity of data as well as a cell header, which contains a virtual channel identifier and a virtual path identifier which are used by nodes or switches of a telecommunications network to route the ATM cells between sources and receivers.

To achieve an efficient utilisation of a data communications bandwidth provided by a telecommunications network, tele-

communications systems may further operate to provide a predetermined series of data transport media characterised by predefined data transmission parameters such as delay, integrity and cell rate. The telecommunications system is therefore arranged to provide a series of virtual communications paths, each of which is arranged to communicate data in accordance with the predetermined transmission parameters. Such communications paths are known as bearers, each of which is defined by the attributes of the data which it is to communicate. Hence, by selecting an appropriate bearer, a user of the telecommunications network is provided with a cost effective means for communicating broadband data in accordance with the type and attributes of data the user is generating.

Bearer types may include Constant Bit Rate (CBR) which may be delay and integrity critical. An example of a service carried by a CBR bearer is voice or speech data. Other bearer types include Variable Bit Rate (VBR) which is provided for data sensitive to losses and some tolerance to delay, and Available Bit Rate (ABR) which is loss sensitive but comparatively delay insensitive. There is also a data bearer type for data which is insensitive to both delay and integrity, which is known as Unspecified Bit Rate (UBR). CBR, ABR, VBR and UBR are defined for ATM in accordance with the ATM Forum.

In order to switch data received on an input port of a broadband telecommunications switch to a plurality of output ports, the broadband telecommunications switch must operate at a substantially higher rate than the rate at which data is received

on the input port. To effect the switching operation, a core of the broadband telecommunications switch operates to interrogate packets of data received from an input port to determine which of the plurality of output ports the data packets should be sent, and routes the packets from the input port to the corresponding output port. If there are n output ports associated with a broadband telecommunications switch, then the core must operate at a rate of n multiplied by the bit rate or bandwidth associated with any input port, if no delay or loss of data is to be incurred in association with the switching operation. Furthermore, if there are n input ports, then the rate of processing of the switch core must be n^2 multiplied by the bit rate or bandwidth of receiving data on any one input port.

In order to reduce the processing rate required of the switch core, known ATM switches are provided with data buffers which are operatively associated with each of the input ports, and which operate to store ATM cells at the input port until an output port to which they are to be switched has sufficient capacity to receive these ATM cells. This allows for a substantial reduction in the processing rate of the switch core. An example of a known ATM switch is disclosed in granted UK patent number 2272820B.

As with the input ports, a data rate or bandwidth limit for communicating data is associated with each of the output ports. Typically, but not exclusively, the data rate of the input ports is equal to the data rate of the output ports which are also equal to each other. As such, communications bandwidth associated with the output port is bandwidth limited, so that a technical problem

exists in arranging for data packets received on the input port to be switched between the output ports whilst accommodating the bandwidth limit associated with each output port, and insuring that no data packet is lost in communication between the input ports and the output ports.

The technical problem of switching data packets from a plurality of input ports to a plurality of output ports, which output ports are bandwidth limited, is addressed by the present invention.

According to the present invention there is provided a broadband telecommunications switch for switching packets of data received on a plurality of input ports to a plurality of bandwidth limited output ports, said switch comprising for each input port a control processor which operates to communicate request data for each of a plurality of switching periods to each of a plurality of bandwidth allocators operatively associated with said output ports, which request data is representative of a request for communications bandwidth from said output ports sufficient to accommodate packets of data received at said input ports during a corresponding switching period, wherein each of said bandwidth allocators responds to said request data by generating bandwidth allocation data appertaining to an allocation of a share of the bandwidth of the output port to the input port and communicates bandwidth allocation data to each of said input ports, which share of bandwidth said input port uses to switch said data packets from said input ports to said output ports.

The request data may represent a number of data packets received at the input port during the corresponding switching period.

Each of said input ports may further include for each output port a data store for buffering data packets received at the input port before being communicated to a respective output port via said switch core. The control processor associated with each input port may operate to generate request data in accordance with a number of data packets present in said data stores for communication to said output ports.

Switching of data packets between input ports and the output ports of a broadband telecommunications switch represents a task of some considerable complexity. This is because there is not only a wide variation in data rates of data arriving at the input ports of the switch, but also a plurality of bearer types with different integrity and delay sensitivities. By arranging for a control processor associated with each input port to periodically transmit to each of the output ports request data representative of a bandwidth requirement from the corresponding output port sufficient to egress the data received at the input port for a given switching period, the allocation of the bandwidth of the output ports to the input ports may be effected in a quasi synchronous manner, the effect of which is to substantially reduce the complexity of the switch compared to a switch where bandwidth allocation is executed asynchronously.

Although allocation of the bandwidth of the output ports is effected in a quasi synchronous manner, switching of data packets is effected asynchronously.

The switching period is a period of time for which the bandwidth allocation of the output ports to each of the input ports is substantially constant. Determination of the bandwidth allocation of the output ports to the input ports for the associated switching period may be determined in correspondence with a predetermined temporal position within the corresponding switching period. The corresponding switching period and the associated switching period may be the same switching period.

The temporal position within the corresponding switching period at which the bandwidth of the output ports is allocated to the input ports, may be determined by a polling event.

The polling event may be determined by an common clock which generates synchronisation signals fed to each of said control processors.

Each input port may be co-located with an associated output port so that the control processor of an input port may be operatively associated with a bandwidth allocator of a corresponding output port. The polling events may be determined by a temporal position at which each of the plurality of bandwidth allocators receives a request data communication from one of said control processors, in response to which each of the control processors operatively associated with the bandwidth allocators also communicate a request data.

Each of the bandwidth allocators may further include a data store for storing limit table data appertaining to a predefined relationship between an amount of data to be switched from an input port to an output port for a switching period in correspondence with a bandwidth of the output port to be allocated to the input port for switching said data. Each of the control processors associated with the output ports may furthermore operate in combination with the limit table data to generate a limited bandwidth allocation determined in dependence upon a number of data packets to be communicated from the input port to the output port.

Advantageously, the telecommunications switch may further operate to switch data from a Constant Bit Rate bearer across the switch core in preference to other data and to the request data.

The bandwidth of the output ports allocated to the input ports for switching Variable Bit Rate and Available Bit Rate (ABR) data, may be that which remains when bandwidth allocated to CBR bearers is subtracted from a total link bandwidth associated with the output ports.

The telecommunications switch may further operate to allocate surplus bandwidth to Unspecified Bit Rate bearers appertaining to the bandwidth of the output ports which has not been allocated to the input ports, as a result of a bandwidth allocation limit determined in dependence upon the limit table.

Advantageously, the control processors may operate to weight each share of the allocated bandwidth from the output ports, so that a total of each share of the bandwidth of the output

ports does not exceed a total link bandwidth of a link communicating the input port to the switch core.

According to an aspect of the present invention there is provided a method of switching data packets from a plurality of input ports to a plurality of output ports across a switch core, comprising the steps of,

- (i) for each input port generating request data representative of a number of data packets to be switched by said input port to respective output ports,
- (ii) for each input port contemporaneously switching the request data generated in step (i) across the switch to said respective output ports,
- (iii) for each output port determining a share of the bandwidth of the output port to provide said input ports in accordance with said request data received from the input ports, and conveying bandwidth allocation data corresponding to the bandwidth of the output port allocated to each input port across the switch core to each of the input ports, thereby allocating the bandwidth of the output ports to the input ports for a predetermined switching period to effect egress communication of the data packets.

One embodiment of the present invention will now be described by way of example only with reference to the accompanying drawing, wherein,

FIGURE 1 shows a schematic conceptual diagram of a broadband tele-communications switch;

FIGURE 2 shows a schematic timing diagram of events which occur during a switching period.

The example embodiment provided is a broadband telecommunications switch operating in accordance with Asynchronous Transfer Mode (ATM) principles. To this end, Figure 1 shows a schematic block diagram of an ATM telecommunications switch, designated generally as 1.

In Figure 1, four input transmission means represented as lines 2, are shown to feed each of four input ports designated generally 5. Each of the input ports 5, are coupled to an ATM switch core 6, by conductors 8. Data traversing the switch core 6 is fed to one of the four output ports designated generally 10, which is thereafter egressed on an output transmission line 9, which communicates with the rest of a broadband telecommunications system.

In this example embodiment of the invention, each of the transmission lines 2, on the input side of the switch, and the output side of the switch 9, communicate ATM cells at a rate of 150 mega bits per second. As such it is the function of the switch 1, to switch ATM cells from the input conductors 2 to the output conductors 9, in accordance with the connection identifying information provided in the header of the ATM cells, which header contains the virtual path and virtual channel identifiers. Within the ATM switch 1, the switch core 6 operates to switch the ATM cells between the input conductors 8 and the output conductors 12, in accordance with the switching operation. As hereinbefore explained, the switch core 6, acts as a routing or switching processor. The switch core 6, is provided with some data storage capacity (not shown) for storing data packets to be

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switched to output ports, in a situation in which input ports send data packets to the same output port contemporaneously. The data storage capacity of the switch core 6, therefore operates to de-couple the switching of data packets between input ports and output ports.

Each of the output transmission lines 9, has a data capacity of 150 mega bits per second and are therefore bandwidth limited. Each output port further includes a data store 14, which acts as a buffer for ATM cells which are egressed from the output port 10. The data stores 14, serve to re-shape ATM cell traffic which is egressed from the output port 10.

As has been previously explained, in order to arrange for the ATM cells received on each of the input lines 2, to be switched to the output ports 10 without loss of ATM cells or delay, the switch core 6, would have to be arranged to switch ATM cells at a rate proportional to the square of the number of input lines 2, multiplied by the communication data rate bandwidth on any one of the input ports. This is because in order to switch data from all of the input ports to one of the output port, the ATM switch port 6, would have to operate at a rate proportional to n multiplied by the data rate of the input line, where n is the number of input ports, and this data rate would have to be provided for each of the output ports, hence, the rate of switching of the ATM switch core 6, would be proportional to n^2 multiplied by the data rate on any one of the input lines. However, in each of the input ports 5, there is provided a data store 18, for each of the output ports 10. Furthermore, there is also provided a switching node 20, which

serves to switch ATM cells received on the input line 2, to each of the buffers 18, in accordance with the output port to which the ATM cells are to be switched. This arrangement of the switching node 20 and the data stores 18, for each of the output ports, has an effect such that switching of data from the input port to each of the output ports need only be performed at a rate which is on average proportional to the data rate of the input line 2. Therefore, in this case, the rate of operation of the switch core may be reduced to n multiplied by the communications data rate bandwidth of any of the input lines 2, and since n = 4, the rate in this case is 600 mega bits per second.

The ATM switch 1, thus far described, is provided with a means to separate ATM cells destined for each of the output ports, into a corresponding number of data stores 18, at each of the input ports 5. The arrangement by which the ATM switch 1, switches the ATM cells present in the input buffers of the input port 5, to the output ports 10, whilst accommodating the bandwidth limitation of the output ports 10 will now be described.

Each of the input ports 5, is provided with a control processor 22, which operates to interrogate each of the input data stores 18, to assess the number of cells present in the data stores at the start of a switching period. The switching period may, for example, be in the order of 7ms. The control processor 22, determines the number of cells stored in data stores 18, which are to be switched for the current switching period. After determining the number of cells present in each of the input data stores 18, the control processor 22 generates an ATM cell which

contains request data representative of the number of ATM cells in the data stores 18, at a predetermined temporal position within the corresponding switching period. This ATM cell containing request data, hereafter referred to as the request data cell, is fed via conductor 8, to the ATM switch core 6, which thereafter performs a multicast operation, wherein the request data cell is replicated and switched to each of the output ports 10. This operation is repeated by each of the control processors 22 in each of the input ports 5.

At each of the output ports 10, a bandwidth allocator 24, receives the request data cells via conductor 12, from each of the input ports 5. As hereinbefore mentioned, the bandwidth of the output port is limited to the link bandwidth of the conduct 12, which is 150 mega bits per second. However, a portion of this bandwidth may be allocated to a Constant Bit Rate (CBR) bearer and so the bandwidth of the link 12, remaining, after subtraction of the portion allocated to CBR bearers is that which is available to be shared amongst the input ports in accordance with the request data cell. The bandwidth allocator 24, operates to apportion the 19 share of this available bandwidth between the respective input ports 5, in accordance with the request data cells received therefrom. The bandwidth allocator 24, then transmits a bandwidth allocation ATM cell containing data representative of the bandwidth allocated to each of the input ports 5, by the output ports (10), and the bandwidth allocation cell is multicast across the ATM switch core 6, so that the same cell is communicated to each of the input ports 5. This operation is performed by each

bandwidth allocator 24, for each of the output ports 10. The bandwidth allocation cells are received by each of the input ports 5, and fed to the control processor 22.

After receiving the bandwidth allocation cells, the control processors 22, are in receipt of the necessary information to switch the ATM cells in the input data buffers 18, across the ATM switch for an associated switching period which may be a next subsequent switching period. However, the control processor 22, must perform one further operation before configuring the input port to switch ATM cells at a desired rate appertaining to the bandwidth allocation. The further operation is required to ensure that a total of the shares of allocated bandwidth from each output port does not exceed a total link bandwidth of the communication links 8, between the input ports 5 and the switch core 6. To do this the control processors 22, sum each share of the bandwidth allocations from the output ports, and when the sum exceeds the total link bandwidth, scales the bandwidth share so that the total link bandwidth is not exceeded. For example, if three output ports operate to provide an input port with a share of 75 mega bits per second, then the total bandwidth allocated to the input port would be 225 mega bits per second. Therefore, in this example, the control processor 22, would be configured in combination with switching node 26, so that the rate of transmitting ATM cells across the switch core 6, to each of these output ports is reduced to 50 mega bits per second. This, of course, will result in some surplus bandwidth being unused at the output ports. However, it would present a further level of complexity to re-allocate this

bandwidth, and since this will only remain unused for one switching period, this wasted capacity is minimised.

In accordance with the bandwidth allocation, the control processor 22, operates to feed ATM cells from each of the input data stores 18, via a switching node 26, to the ATM switching core 6, which thereafter switches the ATM cells to the respective output ports.

The process of allocating bandwidth of the output ports to the input ports hereinbefore described is performed for each of a plurality of switching periods. During a current switching period a polling event at a predetermined temporal position synchronises the transmission of the request data by each of the control processors 22, to the bandwidth allocators 24. This is indicated conceptually by a timing diagram shown in Figure 2. In Figure 2, line 30 represents time which increases from left to right. The time line 30, is divided into a plurality of switching periods of which switching period 31 is one example. Switching period 31, is also shown in Figure 2 in an expanded form, in which four events designated A, B, C and D are indicated conceptionally. Event A is representative of the transmission of request data by each of the input ports to each of the output ports. Event B is representative of the sharing by the bandwidth allocators 24, of the available bandwidth of the output port amongst the input ports, and the transmission of the allocation data to the control processors 22, within the input ports 5. Event C is representative of the new allocation of bandwidth to input ports becoming established,

whereas event D is representative of the new allocation being effective for the subsequent switching period.

The arrangement for switching ATM cells between a plurality of input ports and a plurality of output ports, as hereinbefore described with reference to Figure 1, is suitable for ATM cells which are tolerant to delay. As such, if ATM cells are being communicated in association with a Constant Bit Rate (CBR) bearer, which are therefore delay sensitive, the ATM switch operates to switch these ATM cells, through the switch core 6, to the corresponding output ports 10, without buffering in any of the input ports 5 or the output ports 10. It is for this reason that bandwidth allocated to CBR bearers is subtracted from the total link bandwidth of the output port to establish the bandwidth available for sharing with the input ports. The arrangement of buffering data at the input ports and output ports as hereinbefore described, is therefore only appropriate for ATM cells conveyed in association with a Variable Bit Rate (VBR) or Available Bit Rate (ABR) bearers, wherein the bearer provides for a degree of delay insensitivity. Furthermore, ATM cells conveyed in association with an Unspecified Bit Rate (UBR) bearer, will be both delay and loss insensitive. Therefore, ATM cells conveyed in association with VBR and ABR bearers will be given priority over ATM cells conveyed in association with a UBR bearer. As such, the arrangement for allocating bandwidth of the output ports 10, to the input ports 5, may be extended to allocating bandwidth to UBR ATM cells, where surplus bandwidth is available at an output port 10. Surplus bandwidth may be made available by an output port

10 in a situation in which there is a demand for a share of the bandwidth of an output port from one or more of the input ports, for only a comparatively small number of ABR or VBR ATM cells for a switching period. If the entire bandwidth of the output port 10, were to be allocated to these input ports 5, then the ATM cells in the input data stores 18, of each input port would be switched to the output port in a comparatively small portion of the switching period. Therefore, in this situation, the capacity of the output port would remain unused for a substantial portion of a switching period, whereas it could in fact be used for switching UBR ATM cells.

To utilise the available surplus bandwidth at any of the output ports 10, each of the bandwidth allocators 24, is further provided with a date store 28, which is shown by example for one of the bandwidth allocators only. Each data store 28, is provided with data representative of a limit table. The limit table is a predetermined relationship between an amount of bandwidth of the output ports to be allocated to the input ports 5, and the amount of data present in the input data buffers 18, to be switched to the output ports 10, such that in the event that a substantial portion of the bandwidth of an output port is to be allocated to an input port for which only a relatively small amount of data is to be switched during a switching period, the limit table determines a limited bandwidth to be allocated to the input port 5, in proportion to the amount of data to be switched. So, for example, where the bandwidth of 150 mega bits per second associated with an output port is to be shared equally between

two input ports, then without the operation of the limit table, each port would have a share of 75 mega bits per second. However, where a relatively small number of cells are present at the input buffer associated with the input port, the limit table operates to reduce the 75 mega bits per second to, for example, 10 mega bits per second, thus freeing a further 65 mega bits per second for allocation to UBR data services.

An arrangement of input data buffers 18, associated with the input ports 5, is also provided for switching UBR ATM cells in a substantially similar manner to that described for VBR and ABR ATM cells, although input data buffers 18, for switching UBR ATM cells are not shown in Figure 1.

As an alternative arrangement, the output ports may be provided with a common data store, wherein the limit table data is stored and accessed by each bandwidth allocator 24.

As will be appreciated by those skilled in the art, various modifications may be made to the embodiments hereinbefore described without departing from the scope of the present invention. In particular, the broadband ATM switch may be any broadband telecommunications switch which requires packetised data to be switched between a plurality of input ports to a plurality of output ports, wherein the bandwidth at the output port is substantially limited.

CLAIMS

- 1. A broadband telecommunications switch for switching packets of data received on a plurality of input ports to a plurality of bandwidth limited output ports, said switch comprising for each input port a control processor which operates to communicate request data for each of a plurality of switching periods to each of a plurality of bandwidth allocators operatively associated with said output ports, which request data is representative of a request for communications bandwidth from said output ports sufficient to accommodate packets of data received at said input ports during a corresponding switching period, wherein each of said bandwidth allocators responds to said request data by generating bandwidth allocation data appertaining to an allocation of a share of the bandwidth of the output port to the input port and communicates bandwidth allocation data to each of said input ports, which share of bandwidth said input port uses to switch data from said input ports to said output ports.
- 2. A broadband telecommunications switch as claimed in Claim1, wherein each of said input ports further includes for each output port a data store for buffering data packets received at the input port before being communicated to a respective output port via said switch core.
- 3. A broadband telecommunications switch as claimed in Claim 2, wherein the request data is generated in accordance with an

amount of data packets present in said data stores of said input ports for communication to said output ports, at a first predetermined temporal position within said corresponding switching period.

- 4. A broadband telecommunications switch as claimed in any preceding Claim, wherein said bandwidth allocation data is generated by said bandwidth allocators in correspondence with a second predetermined temporal position within said corresponding switching period.
- 5. A broadband telecommunications switch as claimed in any preceding Claim, wherein said input ports are configured in accordance with said bandwidth allocation data substantially for the duration of an associated switching period.
- 6. A broadband telecommunications switch as claimed in Claim 5, wherein said corresponding switching period and said associated switching period are contiguous.
- 7. A broadband telecommunications switch as claimed in Claim 5, wherein said corresponding switching period and said associated switching period are the same switching period.
- 8 A broadband telecommunications switch as claimed in any of Claims 3 to 7, wherein said first predetermined temporal position

within said corresponding switching period is determined by a polling event.

- 9. A broadband telecommunications switch as claimed in Claim 8, wherein said polling event is determined by a common clock coupled to said control processors, which operates to generate a synchronised polling signal.
- 10. A broadband telecommunications switch as claimed in any preceding Claim, wherein each input port is co-located with an output port, so that each control processor of an input port is operatively associated with a bandwidth allocator of a corresponding output port.
- 11. A broadband telecommunications switch as claimed in Claim 10, wherein the poling event is determined by a temporal position at which each of said bandwidth allocators receives request data from one of said control processors, in response to which each of the other of said control processors operatively associated with said bandwidths allocators generate and communicate request data.
- 12. A broadband telecommunications switch as claimed in any preceding Claim, wherein each of said bandwidth allocators further includes a data store for storing limit table data appertaining to a predefined relationship between an amount of data to be switched from an input port to an output port in

correspondence with a bandwidth of the output port to be allocated to the input port for switching said data.

- 13. A broadband telecommunications switch as claimed in any of Claims 1 to 11, further comprising a common data store coupled to each of said bandwidth allocators in which limit table data is stored, which limit table data appertaining to a predefined relationship between an amount of data to be switched from an input port to an output port in correspondence with a bandwidth of the output port to be allocated to the input port for switching said data, thereby providing a common limit table.
- 14. A broadband telecommunications switch as claimed in Claims 12 or 13, wherein each of said bandwidth allocators associated with said output ports operates in combination with said limit table data to generate a limited bandwidth allocation determined in dependence upon an amount of data to be switched from said data stores of said input ports and a share of the bandwidth of said output ports to be allocated to said input ports, so that a situation where an inordinate amount of bandwidth of the output port is allocated to one of said input port for switching a substantially small quantity of data packets is obviated.
- 15. A broadband telecommunications switch as claimed in any preceding Claim, wherein said switch further includes means to switch data packets from a Constant Bit Rate bearer across said

switch core in priority to other data packets and to said request data.

- 16. A broadband telecommunications switch as claimed in any preceding Claim, wherein the bandwidth of the output ports allocated to the input ports for switching Variable Bit Rate and Available Bit Rate data packets, is calculated by subtracting from a total link bandwidth of the output port, bandwidth allocated to Constant Bit Rate bearers.
- 17. A broadband telecommunications switch as claimed in any preceding Claim, wherein the bandwidth allocators associated with said output ports further operate to allocate surplus bandwidth of said output ports to input ports for switching data packets conveyed in accordance with an Unspecified Bit Rate (UBR) service across said switch.
- 18. A broadband telecommunications switch as claimed in any preceding Claim, wherein the bandwidth allocators operate to calculate surplus bandwidth appertaining to the bandwidth of the output ports which has not been allocated to the input ports as a result of an allocation limited in accordance with said limit table.
- 19. A broadband telecommunications switch as claimed in Claim 18, wherein the bandwidth allocators associated with said output ports further operate to allocate said surplus bandwidth of said output ports to input ports for switching data packets conveyed in

accordance with an Unspecified Bit Rate (UBR) service across said switch.

- 20. A broadband telecommunications switch as claimed in any preceding Claim, further comprising for each output port a data store operatively associated therewith for buffering data packets to be egressed from said switch from said output ports.
- 21. A broadband telecommunications switch as claimed in any preceding Claim, wherein each of said control processors further operates to weight each share of the allocated bandwidth from each of the output ports, so that a total of each of share of the bandwidth of the output ports does not exceed a total link bandwidth of a link communicating the input port to said switch core.
- 22. A broadband telecommunications switch as claimed in any preceding Claim, wherein said broadband telecommunications switch is an Asynchronous Transfer Mode (ATM) telecommunications switch, and said data packets are ATM cells.
- 23. A broadband telecommunications switch as hereinbefore described with reference to the accompanying drawing.
- 24. A method of switching data packets from a plurality of input ports to a plurality of output ports across a switch core, comprising the steps of,

- (i) for each input port generating request data representative of a number of data packets to be switched by said input port to respective output ports,
- (ii) for each input port contemporaneously switching the request data generated in step (i) across the switch to said respective output ports,
- (iii) for each output port determining a share of the bandwidth of the output port to provide said input ports in accordance with said request data received from the input ports, and conveying bandwidth allocation data corresponding to the bandwidth of the output port allocated to each input port across the switch core to each of the input ports, thereby allocating the bandwidth of the output ports to the input ports for a predetermined switching period to effect egress communication of the data packets.
- 25. A method of switching data packets as claimed in Claim 24, further comprising the steps of,
- (iv) for each input port, consequent upon receipt of bandwidth allocations from said output ports, weighting the bandwidth allocated so that a total link bandwidth for communicating data packets from the input port to the output port is not exceeded, and.
- (v) communicating data packets to said output ports from said input ports in accordance with bandwidth allocated in step (iv).
- 26. A method of switching data packets as claimed in Claim 25, further comprising the steps of,

- (vi) repeating steps (i) to (v), for each of a plurality of switching periods.
- 27. A method of switching data packets as claimed in any of Claims 24 or 26, wherein step (i) of said method includes the step of storing data packets received at said input ports in each of a plurality of data stores associated with each of said input ports, each of which data stores corresponds to one of said output ports.
- 28. A method of switching data packets as claimed in any of Claim 27, wherein said request data generated in step (ii) of said method is representative of a number of data packets present in said data stores at a predetermined temporal position within one of said switching periods.
- 29. A method of switching data packets as claimed in any of Claims 24 to 28, wherein said switching period is determined with reference to a time when request data from one of said input ports is received at said output ports.
- 30. A method of switching data packets as claimed in any of Claims 25 to 29, wherein step (iv) further includes the steps of, (vii) comparing the bandwidth of said output ports allocated to said input ports and the number of data packets to be switched in the switching period, with a predetermined relationship in a form of a limit table representative of a predetermined limited

allocated bandwidth of said output ports and numbers of data packets to be switched from said input ports, and (viii) where the bandwidth of said output ports to be allocated to said input ports exceeds said predetermined relationship, limiting said bandwidth allocation in accordance with said limit table.

- 31. A method of switching data packets as claimed in Claim 30, further including the steps of,
- (ix) for each output port calculating surplus bandwidth representative of a difference between the bandwidth allocated to said input ports in accordance with step (viii) and a total available bandwidth of said output port, and,
- (x) allocating said surplus bandwidth to switch data packets associated with Unspecified Bit Rate (UBR) bearer.
- 32. A method of switching data packets as claimed in Claim 31, wherein said total available bandwidth in step (ix) of said method is calculated by subtracting bandwidth allocated to constant Bit Rate bearers from a total link bandwidth of said output ports.
- 33. A method of switching data packets as claimed in any of Claims 24 to 32, wherein the data packets are ATM cells, said method being performed by an ATM switch.





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Application No: Claims searched:

GB 9711396.3

All

Examiner:

Al Strayton

Date of search:

19 August 1997

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): H4K: KTK

Int Cl (Ed.6): H04L

Other:

Documents considered to be relevant:

Category	Identity of docume	nt and relevant passage	Relevant to claims
A	GB 2 307 823 A	(DATACOMM)	
A	GB 2 272 820 A	(ROKE MANOR)	ľ
A	EP 0 763 915 A2	(TOSHIBA)	
_A	US 5 517 495	(LUND)	

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X Document indicating tack of novelty or inventive step
 Y Document indicating tack of inventive step if combined with one or more other documents of same category.

A Document indicating technological background and/or state of the art.

P Document published on or after the declared priority date but before
the filling date of this immedian

[&]amp; Member of the same patent family

the filing date of this invention.

E Patent document published on or after, but with priority date earlier than, the filing date of this application.

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Information Disclosure Citation in an Application

Application No. 09/538,040	Applicant(s) Kaczmarczyk, C	asimir M., et al.	
Docket Number	Group Art Unit	Filing Date	
065968.0104	2666	March 29, 2000	

U.S. PATENT DOCUMENTS

		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
RH	Α.	6,704,287	03/09/2004	Moharram	370	242	08/31/1999
	В.	6,134,589	10/17/2000	Hultgren	709	227	05/06/1998
	C.	6,373,817	04/16/2002	Kung et al	370	217	12/30/1999
1	D.	6,252,952	06/26/2001	Kung et al	379	114	12/30/1999
	E.	6,570,855	05/27/2003	Kung et al	370	237	12/30/1999
	F.	6,301,609	10/09/2001	Aravamudan et al.	709	207	09/08/1999
	G.	5,022,024	06/04/1991	Paneth et al	370	50	05/08/1989
	H.	6,459,708	10/01/2002	Cox et al	370	537	12/21/1999
П	I.	6,522,876	02/18/2003	Weiland et al	455	414	10/04/1999
	J.	6,185,292	02/06/2001	Miloslavsky	379	265	02/10/1997
	K.	6,445,784 B2	09/03/2002	Uppaluru et al	379	220.01	02/27/2001
71	L.	2003/0058277	03/27/2003	Bowman-Amuah	345	765	08/31/1999

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLA YES	ATIO NO
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DOCUMENT (Including Author, Title, Source, and Pertinent Pages)							DATE	
	P.	Casimer M. Kaczmarczyk, Intelligence Engine, USSN 09/821,507; pending.						
	Q.			stem And Method To Int N 09/821,508; pending.	ernetwork Wirel	ess	3/29/2001	
	R.	James J. Lu, Metho		or Inhibiting Softswitch	Overload, USSN	.09/821,509;	03/29/2001	
S. Doan, Tuan, Method And System For Providing Fail-Over Redundancy in a-Network, USSN 09/944,775; pending.								
	T.			Rosenberg, Signaling for	Internet Teleph	опу —		
U. XTML: Extensible Telephony Mark-Up Language, A Unified Framework for Delivery Next Generation-Enhanced Telecommunication Services, Pactolus Communication Software								

itation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

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DAL01:792890.1 U.S. Patent and Trademark Office

P		ation Disclosure in an Applicatio	Citation				
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		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DAT
Ta IS	ADEMA	2002/0120691	08/29/2002	Patil et al	709	206	02/23/2001
1	В.	2001/0054085	12/20/2001	Kurganov	709	218	02/06/2001
H	C.	2003/0140121	07/24/2003	Adams	709	219	09/27/2002
$\dagger \dagger$	D.	2003/0028561	02/06/2003	Gounares et al	707	513	05/19/1999
1	E.	6,434,143	08/13/2002	Donovan	370	356	11/08/1999
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DAL01:792890.1 U.S. Patent and Trademark Office

EXAMINER

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

DATE CONSIDERED

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Kaczmarczyk, Casimir M., et al.

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Confirmation No.:

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Examiner:

Ronald B. Abelson

Title:

SYSTEM AND METHOD TO INTERNETWORK

TELECOMMUNICATION NETWORKS OF

DIFFERENT PROTOCOLS

Mail Stop -Amendment

Commissioner for Patents

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I hereby certify that this paper is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Willie Jile:

Date: October 19, 2004

Dear Sir:

RESPONSE PURSUANT TO 37 C.F.R. 1.111

In response to the Office Action mailed July 19, 2004, Applicants respectfully request the Examiner to reconsider the rejection of the claims in view of the following amendments thereto, and the comments as set forth below. Please amend the application as follows:

10/22/2004 AWONDAF1 00000084 09538040

01 FC:2201

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DAL01:815460.1

Claims

- 1. (Canceled)
- 2. (Currently Amended) The softswitch, as set forth in claim 4, 3, further comprising a resource manager operable to receive outgoing resource requests from the call agent, and provide outgoing resource availability responses to the call agent.
- 3. (Currently Amended) <u>A softswitch interconnecting networks of different transport protocols, comprising:</u>

a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event; and

a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent, the signaling agent further terminating the data sessions on the requested outgoing resources; and

The softswitch, as set forth in claim 1, further comprising a network directory server operable to receive requests for routing information to establish data sessions from the call agent, and provide routing information to the call agent.

4. (Currently Amended) <u>A softswitch interconnecting networks of different transport protocols, comprising:</u>

a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event; and

a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent, the signaling agent further terminating the data sessions on the requested outgoing resources; and

The softswitch, as set forth in claim 1, further comprising a network directory server operable to receive requests for address resolution to establish data sessions from the call agent, and provide address resolution responses to the call agent.

5. (Currently Amended) A softswitch interconnecting networks of different transport protocols, comprising:

a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event; and

a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent, the signaling agent further terminating the data sessions on the requested outgoing resources; and

The softswitch, as set forth in claim 1, further comprising a network gateway operable to receive requests for address locations of called parties in external networks to establish data sessions from the call agent, and provide the address locations to the call agent.

- 6. (Currently Amended) <u>A softswitch interconnecting networks of different transport protocols, comprising:</u>
- a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event; and
- a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent, the signaling agent further terminating the data sessions on the requested outgoing resources; and

The softswitch, as set forth in claim 1, wherein the signaling agent comprises:

- a logic control executing a logic control program and operable to process signaling messages of a particular signaling protocol;
- a codec specialized in the signaling protocol of an access network and operable to parse and format signaling messages according to the signaling protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 7. (Original) The softswitch, as set forth in claim 6, wherein the signaling protocol is SS7.
- 8. (Original) The softswitch, as set forth in claim 6, wherein the signaling protocol is session initiation protocol.
- 9. (Original) The softswitch, as set forth in claim 6, wherein the signaling protocol is H.323.

10. (Currently Amended) <u>A softswitch interconnecting networks of different transport protocols, comprising:</u>

a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event; and

a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent, the signaling agent further terminating the data sessions on the requested outgoing resources; and

The softswitch, as set forth in-claim 1, further comprising a network gateway which comprises:

- a logic control executing a logic control program and operable to process messages of a particular transport protocol;
- a codec specialized in the transport protocol of a media gateway and operable to parse and format the messages according to the transport protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 11. (Original) The softswitch, as set forth in claim 10, wherein the transport protocol is media gateway control protocol.
- 12. (Original) The softswitch, as set forth in claim 10, wherein the transport protocol is Internet protocol device control protocol.
- 13. (Original) The softswitch, as set forth in claim 10, wherein the transport protocol is simple gateway control protocol.
- 14. (Currently Amended) The softswitch, as set forth in claim 1, 3, wherein the networks comprise a public switched telephone network.
- 15. (Currently Amended) The softswitch, as set forth in claim 1, 3, wherein the networks comprise a packet network.
- 16. (Currently Amended) The softswitch, as set forth in claim 4, 3, wherein the networks comprise a wireless network.

- 17. (Currently Amended) The softswitch, as set forth in claim 1, 3, wherein the call agent comprises a protocol-independent logic engine operable to execute a function-specific logic control program.
- 18. (Currently Amended) The softswitch, as set forth in claim 1, 3, further comprising a billing sub-system in communication with the call agent and operable to generate call detail records.

Claims 19.-36. (Canceled)

- 37. (Original) A softswitch interconnecting networks of different transport and signaling protocols, comprising:
- a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call event, and route the call event;
- a call agent in communication with the signaling agent and operable to receive the call event, verify the validity of incoming circuits of inbound calls, generate a request for an outgoing resources for establishing data sessions;
- a network directory server in communication with the call agent and operable to receive the request for an outgoing resource, and provide information on the outgoing resource;
- a network gateway agent operable to receive a request to establish a data session on the selected outgoing resource, and set up an open session; and

the call agent operable to terminate the data sessions on the requested outgoing resources, and generate a call detail record in response to disconnecting the data session.

- 38. (Original) The softswitch, as set forth in claim 37, further comprising a resource manager operable to receive outgoing resource requests from the call agent, and provide outgoing resource availability responses to the call agent.
- 39. (Original) The softswitch, as set forth in claim 37, wherein the network directory server is further operable to receive requests for address resolution to establish data sessions from the call agent, and provide address resolution responses to the call agent.
- 40. (Original) The softswitch, as set forth in claim 37, wherein the signaling agent comprises:
- a logic control executing a logic control program and operable to process signaling messages of a particular signaling protocol;

- a codec specialized in the signaling protocol of an access network and operable to parse and format signaling messages according to the signaling protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 41. (Original) The softswitch, as set forth in claim 40, wherein the signaling protocol is SS7.
- 42. (Original) The softswitch, as set forth in claim 40, wherein the signaling protocol is session initiation protocol.
- 43. (Original) The softswitch, as set forth in claim 40, wherein the signaling protocol is H.323.
- 44. (Original) The softswitch, as set forth in claim 37, wherein the network gateway comprises:
- a logic control executing a logic control program and operable to process messages of a particular transport protocol;
- a codec specialized in the transport protocol of a media gateway and operable to parse and format the messages according to the transport protocol; and
- a filter operable to filter and route signaling messages from the codec to the logic control.
- 45. (Original) The softswitch, as set forth in claim 44, wherein the transport protocol is media gateway control protocol.
- 46. (Original) The softswitch, as set forth in claim 44, wherein the transport protocol is Internet protocol device control protocol.
- 47. (Original) The softswitch, as set forth in claim 44, wherein the transport protocol is simple gateway control protocol.
- 48. (Original) The softswitch, as set forth in claim 37, wherein the networks comprise a public switched telephone network.
- 49. (Original) The softswitch, as set forth in claim 37, wherein the networks comprise a packet network.

- 50. (Original) The softswitch, as set forth in claim 37, wherein the networks comprise a wireless network.
- 51. (Original) The softswitch, as set forth in claim 37, wherein the call agent comprises a protocol-independent logic engine operable to execute a function-specific logic control program.

REMARKS

This application has been carefully reviewed in light of the Office Action mailed July 19, 2004. Claims 1-18 and 20-52 are pending in the application. Claims 37-51 have been allowed. Claims 2-6, 10, and 14-18 have been amended. Claims 19-36 have been canceled. Applicants respectfully request reconsideration and favorable action of all pending claims in view of the following remarks.

Rejections Under 35 U.S.C. § 102

The Office Action rejects Claims 1, 7, 9, 14-18, 20-24, 26-35 under 35 U.S.C. § 102(e) as being anticipated over U.S. Pat. No. 6,614,781 to Elliott ("Elliott"). Applicants' amendments to the claims have rendered these rejections moot.

Allowable Subject Matter

Applicants appreciate the indication in the Office Action that Claims 37-51 are allowed.

Claim Objections

Applicants further thank the Examiner for indicating that Claims 3-6 and 10-13 "would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." Applicants have rewritten Claims 3-6 and 10 in independent form, which makes these claims, and the claims that now depend from these claims, allowable, including Claims 10-13. Favorable action is respectfully requested.

Information Disclosure Statement

Applicants submitted an Information Disclosure Statement on April 22, 2004. Applicants did not receive a completely initialed form PTO-1449. In particular the documents corresponding to items P through U on that form were marked through. Applicants respectfully request that the Examiner confirm consideration of all documents listed in the Information Disclosure Statement submitted April 22, 2004, by returning a completely initialed PTO-1449 form. A clean copy of the PTO Form 1449 and copies of the references corresponding to items P through U are provided for the convenience of the Examiner.

DAL01:815460.1

PATENT 09/538,040

ATTORNEY DOCKET 065968.0104

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CONCLUSION

Applicants have now made an earnest attempt to place this case in condition for immediate allowance. For the foregoing reasons and for other apparent reasons, Applicants respectfully request allowance of all pending claims.

If the Examiner feels that prosecution of the present Application may be advanced in any way by a telephone conference, the Examiner is invited to contact the undersigned attorney at 214-953-6447.

Applicants enclose a check in the amount of \$88.00 as filing fees. However, the Commissioner is hereby authorized to charge any extra fee or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P. Attomeys for Applicants

Bradley P. William Reg. No. 40, 227

Date: October 19, 2004

Correspondence Address:

Customer Number: 05073





Information Disclosure Citation in an Application

Applicant(s)
Kaczmarczyk, Casimir M., et al. Application No. 09/538,040

Docket Number **Group Art Unit** 065968.0104

Filing Date

U.S. PATENT DOCUMENTS

	DOCUMENT NO.	DATE	NAME	CLASS	BANGLASS.	FILING DATE
A.	6,704,287	03/09/2004	Moharram	370	Technogy	
B.	6,134,589	10/17/2000	Hultgren	709	227	05/06/1998
C.	6,373,817	04/16/2002	Kung et al	370	217	12/30/1999
D.	6,252,952	06/26/2001	Kung et al	379	114	12/30/1999
E.	6,570,855	05/27/2003	05/27/2003 Kung et al 370		237	12/30/1999
F.	6,301,609	10/09/2001	Aravamudan et al.	709	207	09/08/1999
G.	5,022,024	06/04/1991	Paneth et al	370	50	05/08/1989
H.	6,459,708	10/01/2002	Cox et al	370	537	12/21/1999
I.	6,522,876	02/18/2003	Weiland et al	455	414	10/04/1999
J.	6,185,292	02/06/2001	Miloslavsky	379	265	02/10/1997
K.	6,445,784 B2	09/03/2002	Uppaluru et al	379	220.01	02/27/2001
L.	2003/0058277	03/27/2003	Bowman-Amuah	345	765	08/31/1999

FOREIGN PATENT DOCUMENTS										
DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSL	ATION				
					YES	NO				
										
	DOCUMENT NO.					DOCUMENT NO. DATE COUNTRY CLASS SUBCLASS TRANSL				

NON-PATENT DOCUMENTS

	DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
P. ,	Casimer M. Kaczmarczyk, Intelligence Engine, USSN 09/821,507; pending.	3/29/2001
Q.	Casimer M. Kaczmarczyk, et al., System And Method To Internetwork Wireless Telecommunication Networks, USSN 09/821,508; pending.	3/29/2001
R	James J. Lu, Method And System For Inhibiting Softswitch Overload, USSN 09/821,509; pending.	03/29/2001
S	Doan, Tuan, Method And System For Providing Fail-Over Redundancy in a Network, USSN 09/944,775; pending.	08/30/2001
T.	Henning Schulzrinne and Jonathan Rosenberg, Signaling for Internet Telephony	
U.	XTML: Extensible Telephony Mark-Up Language, A Unified Framework for Delivery Next- Generation-Enhanced Telecommunication Services, Pactolus Communication Software	2000

DATE CONSIDERED **EXAMINER**

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

DAL01:792890.1 U.S. Patent and Trademark Office

O	CT 1 9 2004	esion Disclosure	Citation	Application No. 09/538,040 Docket Number 065968.0104	Applitum(s) Kaczmarczyk, C Group Art Unit 2666	Filing Date March 29, 20	000	
TCAN D	PADEMARY			U.S. PATENT DOCUMEN	TS			
		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING	
	A.	2002/0120691	08/29/2002	Patil et al	709	206	02/23/	2001
	B.	2001/0054085	12/20/2001	Kurganov	709	218	02/06/	2001
	C.	2003/0140121	07/24/2003	Adams	709	219	09/27/	2002
	D.	2003/0028561	02/06/2003	Gounares et al	707	513	05/19/	1999
	E.	6,434,143	08/13/2002	Donovan	370	356	11/08/	
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FORM PTO-875 (Rev. 8/01)

Ref #	Hits	Scarn Query	D. 3	Default Operator	Plurals	Time Stamp
L1	10	("20030058277" "20020120691" "2001 054085" "20030140121" "2001 028561").pn;	US-PGPUB; UTP/T; E=2; JPO; D=2' /ENT	OR	ON	2005/01/28 11:06
L2	0	1 and (softswitch\$3 soft-switch\$3 (soft adj1 switch\$3))	UE PGPUB; U. PT; EPT; JPO; DERMENT	OR	ON	2005/01/28 11:08
L3	13	("570/287" "6134589" "6373817" "6253952" "6570855" "6301609" "5020 24" "6459708" "6522876" "618 22" "6445784" "6434143" "665 31").pn.	T.653Ü	OR	ON	2005/01/28 11:21
L4	3	3 an: (softswitch\$3 soft-switch\$3 (soft 号1 switch\$3))	U MAPUB; U.M.T; E 1; JPO; D.L.W.ENT	OR	ON	2005/01/28 11:22
L5	4964	(370 : . 72 370/401 370/410 370/	U. MT	OR	ON	2005/01/28 11:21
L6	13	5 an isoftswitch\$3 soft-switch\$3 (soft is 1 switch\$3))	U PGPUB; U_101; E ;;	OR	ON	2005/01/28 11:22



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		10	("20030058277" "20020120691" "20010054085" "20030140121" "20030028561").pn.	US-PGPUB; USP/.T; EPO: JPO; DER:WENT	OR	ON	2005/01/28 11:06
ا	2	0	1 and (softswitch\$3 soft-switch\$3 (soft adj1 switch\$3))	US-PGPUB; USP/T; EPO JPO; DERWENT	OR	ON	2005/01/28 11:08
	3	13	("6704287" "6134589" "6373817" "6252952" "6570855" "6301609" "5022024" "6459708" "6522876" "6185292" "6445784" "6434143" "5650731").pn.	USPAT	OR	ON	2005/01/28 11:10
L	1	3	3 and (softswitch\$3 soft-switch\$3 (soft adj1 switch\$3))	US-P 3/UB; USP/T; EPO, JPO; DERWENT	OR	ON	2005/01/28 11:09
S		, 128	b-isup	US-F GPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2003/12/16 13:21
SZ	2	126	b-isup and (protocol network)	US-PGPUB; USP/T; EPO; JPO; DERMENT	OR	ON	2003/12/16 12:34
S	3	45	b-isup and (switch same (ip mgcp pstn))	US-PGPUB; USPAT; EPO; JPO; DER: VENT	OR	ON	2003/12/16 12:37
S ²	1	1	b-isup and mgcp	US-FGPUB; USPAT; EPO; JPO; DER //ENT	OR	ON	2003/12/16 12:36
S	5	13	b-isup and (switch same (ip same (telephon\$1 phone pstn)))	US-F SPUB; USPAT; EPO JPO; DERWENT	OR	ON	2003/12/16 12:40
Se	5	. 13	b-isup and (switch same ((ip (internet adj1 protocol))same (telephon\$1 phone pstn)))	US-FGPUB; USP. IT, EPO; JPO; DERMENT	OR	ON	2003/12/16 13:06
S7	,	24	b-isup and (((ip (internet adj1 protocol))same (telephon\$1 phone pstn)))	US-: RPUB; USP: I; EPO; JPO; DER:VENT	OR	ON	2003/12/16 13:21

58	128	b-isup\$	US-PEPUB; USPAT; EPO; JPO; DERIMENT	OR	OFF	2003/12/16 13:21
S9	135	b adj1 isup\$	US-! RPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2003/12/16 13:21
S10	135	(b adj1 isup\$) b-isup\$	US-PGPUB; USPAT; EPC; JPO; DERMENT	OR	ON	2003/12/16 13:22
S11	25	(b adj1 isup\$) and (((ip (internet adj1 protocol))same (telephon\$1 phone pstn)))	US-FGPUB; USP: T; EPO; JPO; DERWENT	OR	ON	2003/12/16 13:28
S12	30	(b adj1 isup\$) and (((ip (internet))same (telephon\$1 phone pstn)))	US-PGPUB; USPAT; EPO; JPO; DER'MENT	OR	ON	2003/12/16 14:10
S13	2	"6480493".pn,	US- BPUB; USF ; EPC JPO; DEF. ENT	OR	ON	2003/12/16 14:10
S14	1	"6480493".pn. and "110"	US-PGPUB; USPAT; EPO; JPO; DERMENT	OR	ON	2003/12/16 16:18
S15	1	"6480493".pn. and "125"	US-TOPUB; USP/T, EPC; JPO; DER "ENT	OR	ON	2003/12/16 16:01
S16	1.	"648 0493".pn. and "115"	US-PGPUB; USPAT; EPO; JPO; DERMENT	OR	ON	2003/12/16 14:40
S17	1	"6480493".pn. and "125"	US-FGPUB; USFAT; EPC PO; DER ENT	OR	ON	2003/12/16 14:41
S18	108	E₁MS-250	US-: GPUB; USP: T; EPO: JPO; DERWENT	OR	ON	2003/12/16 14:53
S19	0	DMS-250 same (multi adj1 protocol)	US-MGPUB; USP. T; EPO, JPO; DER MENT	OR	ON	2003/12/16 14:43

S20	3	DMS 250 same (protect)	He second	OR	ON	2002/12/16 14:42
	3	DMS-250 same (protocol)	US-PAPUB; USPAT; EPO: JPO; DER VENT	UK	ON	2003/12/16 14:43
S21	1	(DMS-250 (ds adj1 "250")) same (DS512 (ds adj1 "512"))	US-PGPUB; USP. T; EPC. JPO; DER WINT	ÖR	ON	2003/12/16 14:53
S22	1	"6480493".pn. and ("110" same "125")	US-E SPUB; USF-T; EPO; JPO; DERWENT	OR	ON	2003/12/16 16:08
S23	1	"6480493":pn. and ("110" with "125")	US-PGPUB; USPAT; EPO: JPO; DER: VENT	OR	ON	2003/12/16 16:08
S24	1	"6480493".pn. and (ss7 "110")	US-" EPUB; USPAT; EPC 120; DERWENT	OR	ON	2003/12/16 16:22
S25	879	ss7. same terminat\$3	US-TGPUB; USPAT; EPO; JPO; DER'√ENT	OR	ON	2003/12/16 16:22
S26	508	ss7 same (call with terminat\$3)	US-PRPUB; USP T; EPG DPO; DEF TENT	OR	ON	2003/12/16 16:23
S27	217	ss7 with (call with terminat\$3)	US-73ºUB; USPAT; EPO; JPO; DERWENT	OR	ON	2003/12/16 16:23
S28	1	"6480493".pn.	USP 1	OR	OFF	2003/12/17 08:32
S29	1	"6480493".pn. and "125"	USPAT #	OR	OFF	2003/12/17 08:41
S30	108	dms-250	US-JGPUB; USPGG EPC; JPO; DERWENT	OR	ON	2003/12/17 08:42
S31	1	dms-250 same (resource)	US-PGPUB; USPAT; EPO: JPO; DER: WENT	OR	ON	2003/12/17 08:53
S32	0	kaczmarczyk and ravikumar	US-TEPUB; USPUT; EPC: PO; DET: ENT	OR	ON	2003/12/17 08:44
S33	0	(kaczmarczyk and ravikumar).inv.	US- 37UB; USPAT; EPO; JPO; DERMENT	OR	ON	2003/12/17 08:45

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534	78	(kaczmarczyk).inv.	US-PGPUB; USPIC; EPC; JPO; DER MENT	OR	ON	2003/12/17 08:45
S35	208	(-avikumar).inv.	US- DPUB; USF ; EAC DPO; DEF VENT	OR	ON	2003/12/17 08:45
S36	0	dms-250 same (bandwidth)	US-FGPUB; USP/GT: EPC JOPO; DEF/ V ENT	OR	ON	2003/12/17 08:55
S37	5	dms-250 same (manag\$)	US- 3 UB; USF T; EPC, PPO; DER WENT		ON	2003/12/17 08:53
S38	35	dms-250 and (bandwidth)	US-: GPUB; USPAT; EPO, JPO; DEEMENT	OR	ÓN	2003/12/17 08:58
S39	31	oms-250 and (switch same bandwidth)	US-T TOUB; USF 1; EPC I PO; DELV ENT	OR	ON	2003/12/17 09:02
S40	33	dms-250 and (allocat\$4 with(resource bandwidth))	US-TGPUB; USPAT; EPO: JPO; DEBUGENT	OR	ON	2003/12/17 09:09
S41	0	dms-250 same (bod bond (bandwidth with demand))	US-C 2-UB; USF; E-PC - O; DE: ENT	OR	ON	2003/12/17 09:09
S42	0	(dms-250 dms-500) same (bod bond (bandwidth with demand))	UG-GPUB; USPAT; EPO, JPO; DERWENT	OR	ON	2003/12/17 09:10
S43	0	((dms-250 dms\$) same (bod bond (bandwidth with demand))) and nortel	US-L B-UB; USP-17; EPG; PPO; DEN MENT	OR	ON	2003/12/17 09:11
S44	1235	(dms-250 dms\$) same (bod bond (bandwidth with demand))	US- PUB; USPAT; EPO; JPO; DERWENT	OR	ON	2003/12/17 09:12
S45	0	(dms-250 (dms adj1 "250")) same (bod bond (bandwidth with demand))	US-PGPUB; USTAT; EPC PO; DEF NOT	OR	ON	2003/12/17 13:36

S46	0	(dms-250 (dms adj1 "250")) same (bod bond (bandwidth with (allocat\$3 demand)))	US-1 POUB; UR ELCOLOPO; DERMENT	OR	ON	2003/12/17 09:13
547	0	(dms-250 (dms adj1 "250")) same bandwidth	US-TUPUB; USPAT: ECOO; DE:::NT	OR	ON	2003/12/17 09:14
S48	47	(dms-250 (dms adj1 "250")) and চandwidth	U.S- 127UB; U.S. 25; ETC CC; D.E. ENT	OR	ON	2003/12/17 09:14
549	43	(rms-250 (dms adj1 "250")) and (lod bond (bandwidth with (allocat\$3 demand)))	US 2UB; US: 1; EPO: 12O; E : NT	OR	ON	2003/12/17 09:24
S50	1	"5208657".pn. and (resource with manager)	UGF 203; UGF 1. EDC 20; DE ENT	OR	ON	2003/12/17 09:27
S51	O	dms-250 same (resource with avail\$)	U.A- CPUB; U31:-7; EPO; JPC; DERMENT	OR	ON	2003/12/17 09:28
S52	1	dms-250 same (resource)	US-1 PUB; US1 T: EMC PO; DECEMENT	OR	ON	2003/12/17 09:28
S53	1	"5480493":pn. and ("110" same ": 25")	U.	OR	OFF	2003/12/17 10:18
S54	0	"5480493".pn. and (rout\$3 same "25")	USPAC	OR	OFF	2003/12/17 11:19
S55		".480493":pn. and (rout\$3)	U	OR	OFF	2003/12/17 10:03
S56	1	"6480493".pn. and ("125")	U.T.	OR	OFF	2003/12/17 10:03
S57	2	(cms-250 (dms adj1 "250")) same (eddress)	UD UB; UD S EN PO; DEFICENT	OR	ON	2003/12/17 10:48
S58	1	"6480493".pn.	USPUT	OR	OFF	2003/12/17 10:19
S59	1	"6480493".pn. and (wireless	USPAT	OR	OFF	2003/12/17 13:31
S60	6483	white.inv.	UDIT T	OR	OFF	2003/12/17 10:46
S61	361	white.inv. and (protocol)	junt 🦠 🤼	OR	OFF	2003/12/17 10:46
S62	19	(white.inv. and (protocol)) and bell.asn.	un i	OR	OFF	2003/12/17 10:47

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S63	84	(dms-250 (dms adj1 "250")) and gateway	US-PGPUB; USPVIT; ENCINEO; DELIVENT	OR	ON	2003/12/17 10:48
S64	5	্(crns-250 (dms adj1:"250")) same gateway	UU- EFUB; US- ; EFU- IPO; DHA ENT	OR	ON	2003/12/17 12:19
S65	1	"665 4366 ".pn.	US-POPUB; USPAT; Enc Dio; DE WENT	OR	ON	.2003/12/17 11:03
S66	1	"6654366".pn. and "116"	USA PUB; USA PA ETTA FO: DE MENTA	OR	ON	2003/12/17 11:14
S67	0	"6654366".pn. and server	U. HIGHUB; USPICT; EPOLIPO; ETALMENT	OR	ON	2003/12/17 11:14
S68	93	"n.323" with gateway with server	US- MUB; UM : ET DMO; DM - MT	OR	ON	2003/12/17 11:15
S69	1	"ය්480493".pn. and (set-up setup (set adj1 up) signal\$3)	U.Ph. C	OR	ON	2003/12/17 11:19
S70	<u>1</u>	"6480493".pn. and ("125" same(set-up setup (set adj1 up) signal\$3))	USPAT	OR	ON	2003/12/17 11:26
S71	1	"6480493".pn. and ss7	UM T	OR	ON	2003/12/17 13:11
S72	1	"6480493".pn. and session	us- T	OR	ON	2003/12/17 11:31
S73	1	"5480493".pn. and protocol	1,	OR	ON	2003/12/17 11:34
S74	76	session adj1 initiation adj1 protocol	U.	OR	ON	2003/12/17 11:51
S75	7	(session adj1 initiation adj1 p.:otocol) with ss7	USPAT	OR	ON	2003/12/17 11:49
S76	0	(session adj1 initiation adj1 protocol)same (dms-250(dms adj1 "250"))	-Usi -	OR	ON	2003/12/17 11:48
S77	0	(session adj1 initiation adj1 protocol)same (dms-250(dms adj1 "250"))	UG- PUB; UG-M; ECC; JPO; DERMENT	OR	ON	2003/12/17 11:49
S78	5	((session adj1 initiation adj1 protocol) with ss7) same internet	USPAT	OR	ON	2003/12/17 11:49

S79	.38	('session adj1 initiation adj1 protocol)with ss7)	UTW TOUB; UT ; E TOOK D SEASO	OR	ON	2003/12/17 11:55
S80	61	((session adj1 initiation adj1 protocol)same ss7)	USPAT; USPAT; EPO: JPO; DE: VENT	OR	ON	2003/12/17 11:56
S81	23	(((session adj1 initiation adj1 protocol)same ss7)) not (((session adj1 initiation adj1 protocol)with sc7))	U.F. TRUB; URRAU; EFT TO; DUT SAME	OR	ON	2003/12/17 11:56
S82	O	(cms-250 (dms adj1 "250")) same (rngcp (media adj1 gateway))	UC- CPUB; UC-AT; EPO; JPO; DERWENT	OR	ON	2003/12/17 12:20
S83	1040	(mgcp (media adj1 gateway))	US -PUB; US -PUB; E FO -PO; DE FENT	OR	ON	2003/12/17 12:21
S84	421	('gcp (media adj1 gateway adj1 control adj1 protocol))	U 263; U 550; DECVENT	OR	ON	2003/12/17 12:22
S85	77	(ingcp (media adj1 gateway adj1 control adj1 protocol))with voip	US-TYTUB; USPIT; ETC IPO; DAST TENT	OR	ON	2003/12/17 12:41
S86	1	". 554 3 66".pn.	it.	OR	OFF	2003/12/17 12:42
S87	1	"6654366".pn. and ip	ti, wii	OR	OFF	2003/12/17 12:42
S88	0	"6480493".pn. and pstn	USP/T	OR	ON	2003/12/17 13:22
S89	. 1	"6480493".pn. and (phone telephone)	USP/\T	OR	ON	2003/12/17 13:22
S90	1	"5480493".pn. and (billing)	US" T	OR	OFF	2003/12/17 13:31
S91	4	(dms-250 (dms adj1 "250")) same (protocol)	US CAPUB; Un T; ES 20; DE MENT	OR	ON	2003/12/17 15:45
S92	1	(' 5041109").PN:	USOLA S	OR	OFF	2003/12/17 15:46
S93	1780	sr©-switch\$3 softswitch\$3 (soft acij1 switch\$3)	UTH THUB; UDM II, ETTH TO; EMIL FENT	OR	ON	2003/12/22 14:43
S94	3080	isup\$ b-isup\$ bisup\$ (b adj1 isup\$)	U U3; U ; E I PO; DE WENT	OR .	ON	2003/12/22 14:44

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S95	34	(roft-switch\$3 softswitch\$3 (soft a:31 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$))	USPAC; USPAC; EPC PO; EFC CENT	OR	ON	2003/12/22 14:45
S96	52274	(: stn pbx phone telephon\$1 p.:ts)same (ip internet)	E(************************************	OR	ON	2003/12/22 14:49
S97	194	(soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx phone telephon\$1 pots)same (ip internet))	USA COUB; USPACT; EPO; JPO; DECIMENT	OR	ON	2003/12/22 14:49
S98	162	('coft-switch\$3 softswitch\$3 (soft adj1 switch\$3)) and ((pstn pbx prone telephon\$1 pots)same (ip ir rernet))) not ((soft-switch\$3 sr ftswitch\$3 (soft adj1 switch\$3)) and (isup\$ b-isup\$ bisup\$ (b adj1 isup\$)))	US -748; US NT: End -20; PA -16NT	OR	ON	2003/12/22 15:02
S99	3	"C614781".pn.	US-MAPUB; USAAT; E PO; DE MINT	OR .	ON	2003/12/22 15:02
S10 0	1	": 514781" pn. and (resource Eandwidth)	U. PUB; UT SO; DEFENT	OR	ON	2003/12/22 15:21
S10 1	1	" 514781".pn. and ((resource bundwidth)same(soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)))	USAT; USAT; EPO: IPO; DECEMENT	OR	ON	2003/12/22 15:21
S10 2	2	"6514781" pn. and (terminat\$3)	En (20)	OR	ON	2003/12/22 15:47
S10 3	1	"C514781".pn. and (address\$3)	UCH ARUB; UBC T; EPO, JPO; DEAWENT	OR	ON	2003/12/22 15:58
S10 4	1	"1514781".pn. and (address\$3 s: me network)	UCH PUB; (MONEY) 1 (MONEY) 1 (MONEY) 1 (MONEY) 1	OR	ON	2003/12/22 16:08
S10 5	1	"3514781".pn. and ("238" "240")	TUP PUB; THE TY TO TUPPO: DERWENT	OR	ON	2003/12/22 16:10
S10 6	1	"C314781".pn. and (("238" "240")same address\$3)	UC 1 UB; U.11; E 270; 1: EV.7	OR	ON	2003/12/22 16:10

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S10 7	50	c…vis.asn.	I s. UB;	OR	OFF	2003/12/23 07:28
S10 8	1	"∵514781".pn.	U. 4757)	OR	OFF	2003/12/23 07:28
S10 9	1	"3514781".pn. and ((soft-switch\$3 s %switch\$3 (soft adj1 switch\$3)) some (gateway gatekeeper))		OR	ON	2003/12/23 07:59
S11	1	" - 14781".pn. and (sips)		OR	ON	2003/12/23 08:01
S11 1	0	" 314781".pn. and (session adj1 in: diation)		OR	ON	2003/12/23 08:01
S11 2	1	":14781".pn. and ("h.323" h323)	. ::	OR	ON	2003/12/23 08:11
S11	1	"614781".pn. and (filter)	Ustr	OR	ON	2003/12/23 08:11
S11 4	1	"' 14781".pn. and (filter\$3)		OR	ON	2003/12/23 08:13
S11 5	1	"6614781".pn. and (mgcp)	1	OR	ON	2003/12/23 08:17
S11 6	0	" 114781".pn. and (sgmp)	il i	OR	ON	2003/12/23 08:17
S11	1	"(514781".pn. and (sgcp)	13 7	OR	ON	2003/12/23 08:24
S11 8	i	"' 51.4781".pn. and (pstn)	13 7	OR	ON	2003/12/23 08:29
S11 9	1	"6314781".pn. and (packet)	۲.	OR	ON	2003/12/23 08:32
S12 0	1	". 14781".pn. and (wireless c. jular mobile radio satellite)	•	OR	ON	2003/12/23 08:37
S12 1	1	"6614781".pn. and (protocol same (generic\$ independen\$))	:	OR	ON	2003/12/23 08:46
S12 2	1	"6314781",pn. and (call adj1 e-cnt)	HICKIT A	OR	ON	2003/12/23 08:50
S12 3	1	" 14781".pn. and (error verif\$)	!	OR	ON	2003/12/23 09:20
S12 4	1	"、514781":pn. and (ip)	₹ 7	OR	ON	2003/12/23 09:21
S12 5	3265	(soft-switch\$3 softswitch\$3 (soft a: 1 switch\$3)(software adj1 switch\$3)(software-switch\$3))	L - CPUB; C T; EFT: JPO; L - CNT	OR	OFF	2004/01/08 12:27
S12 6	259	(oft-switch\$3 softswitch\$3 (soft switch\$3)(software adj1	. UB;	OR	OFF	2004/01/08 12:31
		s ch\$3)(software-switch\$3))) ເ agent	G;			

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S12 7	200	((`coft-switch\$3 softswitch\$3 (soft a: 1. switch\$3)(software adj1 switch\$3)(software-switch\$3))) and agent) and protocol	P PUS; P P PO; DELWENT	OR	OFF	2004/01/08 12:32
S12 8	86	(_oft-switch\$3 softswitch\$3 (soft a switch\$3)(software adj1 softch\$3)(software-switch\$3))) a agent) and protocol		OR	OFF	2004/01/08 12:37
S12 9	200	(soft-switch\$3 softswitch\$3 (soft a 10 switch\$3)(software adj1 switch\$3)(software-switch\$3))) a agent) and protocol	1 - 193; 11 - 10; 12 - ENT	OR ,	OFF	2004/01/08 13:36
S13 0	235	(''.coft-switch\$3 softswitch\$3 (soft switch\$3)(software adj1 sich\$3)(software-switch\$3)))) a agent) and protocol	Un TSPUB;	OR	ON	2004/01/08 13:36
S13 1	15	((((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)(software adj1 switch\$3)(software-switch\$3))) ard agent) and protocol) not ((('(soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)(software adj1 switch\$3)(software-switch\$3))) ard agent) and protocol)	1	OR	OFF	2004/01/08 13:37
S13 2	35	('('soft-switch\$3 softswitch\$3 (soft-switch\$3)(software adj1 softch\$3)(software-switch\$3))) a agent) and protocol) not (('('soft-switch\$3 softswitch\$3 (soft-switch\$3)(software adj1 softssitch\$3)(software-switch\$3))) a agent) and protocol)	1 79.3;	OR	OFF	2004/01/08 13:37
S13 3	323	(:zmarczyk ravikumar).inv.	i "UB; i "" i" "C; "V"	OR	ON	2004/07/01 14:08
S13 4	0	(czmarczyk ravikumar).inv.) ar (call adj1 model)	U3; FO; DE CVENT	OR	ON	2004/07/01 14:08
S13 5	0	((inczmarczyk ravikumar).inv.) a া (call with model)	15 7 記UB; 11 : 17 : 20; 1 : 27T	OR	ON ·	2004/07/01 14:08
S13 6	9	(''~czmarczyk ravikumar).inv.) a. (call)	20;	OR	ON	2004/07/01 14:11

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S13 7		(c.il adj1 model adj1 event) and (softswitch\$ soft-switch\$3 (soft adj1 switch\$3))	USECUTE: USECUTE: ETT TPO; Lut JENT	OR	ON	2004/07/01 14:12
S13 8	5	c adj1 model adj1 event	U3;	OR	ON	2004/07/01 15:48
S13 9	3	"6514781".pn.	US PROUB; US T; ET JO; I. SENT	OR	ON	2004/07/01 15:48
S14 0	1	"G314781".pn. and "204"	UB; →O;	OR	ON	2004/07/01 15:53
S14 1	2014	sr (switch\$3 soft-switch\$3 (soft ar (3 switch\$3)	1 PUB; 15 77 7: 10 TO;	OR	ON	2004/07/01 16:22
S14 2	399	(รากิรwitch\$3 soft-switch\$3 (soft ละวิ. switch\$3)) and protocol	UB;	OR	ON	2004/07/01 16:21
S14 3	207	(coftswitch\$3 soft-switch\$3 (soft ac]1 switch\$3)) and ((multiple plorality different several second) with protocol)	USTAT; EPT EPO; L ENT	OR	ON	2004/07/01 16:05
S14 4	1647	sc `ware adj1 switch\$3	TU3; F C;	OR	ON	2004/07/01 16:05
S14 5	285	(software adj1 switch\$3) and ((coultiple plurality different second) with protocol)	IN LOUB; NA T; EDD, JPO; DELIVENT	OR	ON	2004/07/01 16:19
S14 6	271	('c_itware adj1 switch\$3) and (: ultiple plurality different scienal second) with protocol)) no: ((softswitch\$3 soft-switch\$3 (c_itadj1 switch\$3)) and ((roultiple plurality different scienal second) with protocol))	JB;	OR	ON	2004/07/01 16:19
S14 7	203	(softswitch\$3 soft-switch\$3 (soft action switch\$3)) and (isp (service action provider))	L'S-PGPUB;	OR	ON	2004/07/01 16:22
S14 8	3683	รา "switch\$3 soft-switch\$3 (soft\$4 อาวั. switch\$3)	"UB; C;	OR	ON	2004/07/01 16:22

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S14 9	60	(c switch\$3 soft-switch\$3 (c \$4 adj1 switch\$3)) same (isp	UB;	OR	ON	2004/07/01 16:23
		(s wice adj1 provider))	O;			i
S15 0	7473	(3 · 0/352 370/401 370/410 37 /465-467).ccls.	UT GPUB;	OR	ON	2004/07/07 08:09
			F ' 0;			
S15 1	160	((; 70/352 370/401 370/410 (; 70/352 467).ccls.) and (; switch\$3 soft-switch\$3 (s : \$4 adj1 switch\$3))	ני ייט אינ; כי אור - אור.	OR	ON	2004/07/07 08:47
S15 2	153	((70/352 370/401 370/410 370/465-467).ccls.) and (c switch\$3 soft-switch\$3 (c \$4 adj1 switch\$3))) and pricocol	L_ PUB;	OR	ON	2004/07/07 08:11
S15 3	34	("<704287" "6134589" "6373817" "62952" "6570855" "6301609" "62024" "6459708" "6522876" "635292" "6445784" "730058277" "20020120691" "730054085" "20030140121" "73030028561" "6434143").pn.	C;	OR	ON	2004/07/07 08:41
S15 4	17	(" -04287" "6134589" "6373817" "632952" "6570855" "6301609" "5 .22024" "6459708" "6522876" "6 .3292" "6445784" "2 .30058277" "20020120691" "2 .010054085" "20030140121" "2 .30028561" "6434143").pn.	, J3;	OR	ON	2004/07/07 08:42
S15 5	1	(("5704287" "6134589" "6373817" "6 -2952" "6570855" "6301609" "F 2024" "6459708" "6522876" "6. 85292" "6445784" "2. 030058277" "20020120691" "2. 1010054085" "20030140121" "5 30028561" "6434143").pn.) at (((370/352 370/401 370/410 37 /465-467).ccls.) and (c Iswitch\$3 soft-switch\$3 (s \$4 adj1 switch\$3)))	US PGPUB;	OR	ON	2004/07/07 08:42
S15 6	116	(i _marczyk ravikumar),inv.	•	OR	OFF	2004/07/07 08:45
S15 7	116	(kazamarczyk ravikumar).inv.	. ·	OR	ON	2004/07/07 08:45
S15 8	323	(k zmarczyk ravikumar).inv.	FOR WENT	OR	ON	2004/07/07 08:46

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S15 9	0	((laczmarczyk ravikumar).inv.) ar (((370/352 370/401 370/410 37 (655-467).ccls.) and (s awitch\$3 soft-switch\$3 (s \$4 adj1 switch\$3)))	US-PGPUB;	OR	ON	2004/07/07 08:46
S16 0	0	((:2marczyk ravikumar).inv.) : 3oftswitch\$3 soft-switch\$3 (s \$4 adj1 switch\$3))	10 UB;	OR	ON	2004/07/07 10:55
S16 1	5	"9 ½ 0089".pn.	US-PGPUB; USDIT; EF 1 PO; DER KAT	OR	ON	2004/07/07 10:56
S16 2	3	(n on and barnes and smith) inv.	US; UC E C; OL FNT	OR	ON	2004/07/07 10:56
S16 3	3	"6 ∴4781".pn.	US - GPUB; US - T; GP - TO; DE CUENT	OR	ON	2004/07/08 13:25
S16 4	1	"6 4781":pn. and protocol	IX	OR	ON	2004/07/08 14:13
S16 5	2	"6 1781".pn. and signal\$3	US B; US T; EP D; JPO; Dr VENT	OR	ON	2004/07/08 14:14
S16 6	2	"6 4781".pn. and (signal\$3 same sc :)	115 1 PUB; US 1 TO; DE 1 MTA	OR	ON	2004/07/08 15:12
S16 7	0	"6 14781".pn. and ("6200")	TE US; US?(; UP D. UFO; DERMENT	OR	ON	2004/07/08 15:12
S16 8	1	"E 14781".pn. and ("protocol cc trol")	THE TUB; HIS C., DIL TO ENT	OR	ON	2004/07/08 15:15
S16 9	0	"5 14781".pn. and ("6204")	77 37 ANN.L FL 237 6 Ó: 11 4 13	OR	ON	2004/07/08 15:15
S17 0	1	"6 4781".ph. and ("resource n gement")	TIS - TEPUB;	OR	ON	2004/07/08 15:15

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S17 1	3	"6:14781".pn.	US (F FRUB; US 2. F) ISF : FC; D. REFENT	OR	ON	2004/07/09 09:32
S17 2	1	"6 11781" pn. and (soft same (s. :up tear disconnect\$4 hang))	US + 3PUB; USPAT; EPO: JPO; DE A TAIT	OR	ON	2004/07/09 11:15
S17 3	0	"6-14781".pn. and (soft same (reneurce adj1 management))	#500 #3; #500 O; 時でし O; po 100 #47	OR	ON	2004/07/09 10:05
S17 4	1	"6 14781" pn: and ((resource adj1 rn: nagement))	US TOUB; US AT; EPD; JFO; DE RWENT	OR	ON	2004/07/09 10:13
S17 5	1	"6.114781".pn. and (switch with selver)	US-FUMUB; US-FUMUB; ELD: FO; DHI MINT	OR	ON	2004/07/09 10:54
S17 6	6	((cnCswitch soft-switch (soft adj1 sv."ch)) with server with infograt\$3)	UE 1 - 2UB; UE 2 EF 21 3FO; DERVENT	OR	ON	2004/07/09 10:18
S17 7	1	"6 14781".pn. and (ISSC)	US FERUB; US 1 1 EF 1 CC: UN FERE	OR	ON	2004/07/09 10:46
S17 8	1	"6 14781",pn. and(switch with に な)	UC + UB; UC -E) O; DERMENT	OR	ON	2004/07/09 10:54
S17 9	93	((softswitch soft-switch (soft adj1 switch)) with server)	US-PGPUB; UC 2-17 EP 1 FO; DE2 MAY	OR	ON	2004/07/09 10:54
S18 0	2	"6' 14781".pn. and (signal\$3)	US : TPUB; Uf EE / PC; DLR ENT	OR	ON	2004/07/09 11:16
S18 1	1	"6 ⁻ 14781".pn. and (ss7)	US-I GPUB; USPAT; EPO: ITO; DE 7 EVT	OR	ON	2004/07/09 11:31
S18 2	1	"6 14781".pn. and ("254")	US-4 13 US; US 13 US 15 US 15 OS U 15 OS	OR.	ON	2004/07/09 11:32

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S18 3	1	"6@14781".pn. and (soft with "2.3名")	US PGCUB; U. A. ; EPD; PPC; DERVIENT	OR	ON	2004/07/09 13:08
S18 4	1	"6 14781".pn. and (codec)	US PUB; US ; EF) PC; DE L'ENT	OR	ON	2004/07/09 13:14
S18 5	3	"6°15 781 ".pn.	U. PUB; U ; EFO; IPO; DER'VENT	OR	ON	2004/07/09 13:14
S18 6	0	"6 : 781".pn. and "6204"	US PUB; UL;; PO; LENT	OR	ON	2004/07/09 13:14
S18 7	1	"6::14781".pn. and ("6204"	UCA PUB; III ; III ; PO; III (VENT	OR	ON	2004/07/09 13:14
S18 8	3636	(soft-switch\$3 softswitch\$3 (soft ad 1 switch\$3)(software adj1 sviich\$3)(software-switch\$3))	US PGPUB; US 2/1; EF 1 PO; DE 1 ENT	OR	OFF	2004/07/10 12:48
S18 9	49	((coft-switch\$3 softswitch\$3 (soft adid switch\$3)(software adj1 switch\$3)(software-switch\$3))) with (resource bandwidth)	US TO PUB; US TO ; EF PO; DO TIVENT	OR	OFF	2004/07/10 10:51
S19 0	100	((coft-switch\$3 softswitch\$3 (soft ad 1 switch\$3)(software adj1 switch\$3)(software-switch\$3)))) sa	US PUB; US PA () EP) PO; D ENT	OR	OFF	2004/07/10 10:51
S19 1	56	((non-switch\$3 softswitch\$3 (soft acrid switch\$3)(software adj1 switch\$3)(software-switch\$3)))	US TOUB; US TOUB; ET PO; ENT ENT	OR	ON	2004/07/10 10:51
S19 2	145	((::-switch\$3 softswitch\$3 (soft a. : switch\$3)(software adj1 ::svitch\$3)(software-switch\$3)))) saine (resource bandwidth)	EF); JPO; DERMENT	OR	ON	2004/07/10 10:51
S19 3	89	(((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)(software adj1 switch\$3)(software-switch\$3))) same (resource bandwidth)) not (((soft-switch\$3 softswitch\$3 (software adj1 switch\$3)(software adj1 switch\$3)(software-switch\$3))) with (resource bandwidth))	HS PUB; HD PT; EPP PO; DERMENT	OR	ON	2004/07/10 10:58

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S19 4	601	gyriin a with ((resource ਿ ਦੀ ਸੰਕੰਧੀ)adj1 (controller ਨਾ ਸਵਰger allocat\$3))	13' PUB; 110' ; 110' ; 110' PO; 13' ENT	OR	ON	2004/07/10 10:59
S19 5	46	switch with compris\$3 with ((it usuarce bandwidth)adj1 (controller mananger allocat\$3))	US PUB; I'; E' > JPO; D= ENT	OR	ON	2004/07/10 11:01
S19 6	23	switch with contain\$3 with ((nature bandwidth)adj1 (controller mananger allocat\$3))	US POPUB; US FO; EPOS PO; DESTENT	OR	ON	2004/07/10 11:43
S19 7	31	oxcell.inv.	US PUB; US IPO; DE VENT	OR	ON	2004/07/10 11:13
S19 8	6	em ellinv. and broadband	US AGPUB; US AT; Final PO; December	OR	ON.	2004/07/10 11:13
S19 9	3	"6 i4781".pn	PUB; PO;	OR	ON	2004/07/10 11:44
S20 0	1	"6614781".pn. and rout\$3	USPAT; USPAT; EPD: JPO; DIF 'ENT	OR	ON	2004/07/10 13:38
S20 1	1	"6:1.(781".pn. and (rout\$3 same so.:)	PUB; ; E IPO; ENT	OR	ON	2004/07/10 12:24
S20 2	1	"6(14781".pn. and (eb)	U. F. TPUB; U. F. T; EPD; JPO; DUTMENT	OR	ON	2004/07/10 12:06
S20 3	1	"ś si.".pn. and (codec)	PUB; PO; ENT	OR	ON	2004/07/10 12:24
S20 4	1	"টেটেএ 781".pn. and (codec with জালু ক্ষাষ্ট্ৰ3)	PUB; ; ; ; DE RWENT	OR	ON:	2004/07/10 12:25
S20 5	1	"ເວັດ781".pn. and (codec with ກ່າວໄ)	IF OPUB;	OR	ON	2004/07/10 12:25

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S20	1		PUB;	OR	ON	2004/07/10 12:31
6		1)	JPO; ENT			
S20 7	18	വര് with (signal\$3 adj1 ു	U: GPUB;	OR	ON	2004/07/10 12:32
			JPO;			
S20 8	1	"661.6781".pn. and ss7	PUB;	OR	ON	2004/07/10 12:40
			JPO; VENT			
S20 9	1	"C014781".pn. and (h323 "h:323")	∵ GPUB; UC⊃AT;	OR	ON	2004/07/10 12:46
			ET ` JPO; ENT			
S21 0	1	"6 14 781".pn. and (sip)	PUB;	OR	ON	2004/07/10 12:46
			1PO; ENT			
S21 1	1	"3 781":pn. and (session with	GPUB; Γ,	OR	ON	2004/07/10 12:47
	,		JPO, ENT			1
S21	287113	a turn with initiation protocol	PUB;	OR	ON	2004/07/10 12:47
			JPO; ENT	, 		
S21	1575	"sestion initiation protocol".	₽UB;	OR	ON	2004/07/10 13:03
			JPO;			
S21 4	3639	(sc) switch\$3 softswitch\$3 (soft	PUB;	OR	ON	2004/07/10 12:48
		swift (3)(software-switch\$3))	JPO; ENT			
S21 5	134	licercion initiation protocollinand ((scf::::witch\$3 softswitch\$3 (soft::::	PUB;	OR	ON	2004/07/10 12:48
		adji witch\$3)(software adj1 svitch\$3)(software-switch\$3)))	JPO; VENT			
S21 6	57		L'ESPUB;	OR	ON	2004/07/10 12:49
		Switch\$3 Software adj1 Software adj1 Software-switch\$3))	IPO; ENT		:	

Search History 1/28 0 1 : :23 AM Page 17 C:\APPS\EAST\Workspaces\0.538040.wsp

S21 7	77	("session initiation protocol" and ((soft-switch\$3 softswitch\$3 (soft adjictor) and ((soft-switch\$3) (software adjictor) and ((software-switch\$3))) and ("cassion initiation protocol" came ((soft-switch\$3 softswitch\$3 . of adjictor) switch\$3 (software adjictor) and (software-switch\$3)))	FT ₽GPUB; USAAT; JPO; F JPENT	OR	ON	2004/07/10 12:59
S21 8	5	's wich initiation protocol" and (softwitch\$3 softswitch\$3 (software adj1 adj. witch\$3)(software-switch\$3)))) to to acssion initiation protocol" came ((soft-switch\$3 softswitch\$3 (soft adj1 switch\$3)(software adj1 adjacks)(software adj1 adjacks)(software-switch\$3))))) consections:	PUB; T; JPO; ENT	OR	ON	2004/07/10 13:00
S21 9	9	(("sriccion initiation protocol" and (soft-switch\$3 softswitch\$3 (soft adjl. switch\$3)(software adjl switch\$3)(software-switch\$3))) not ("cossion initiation protocol" some ((soft-switch\$3 softswitch\$3 (soft-sij1 switch\$3)(software adjl switch\$3)(software-switch\$3)))))	SPUB; STORY, JPO; STORYENT	OR	ON	2004/07/10 13:03
S22 0	520	2. initiation protocol" with	∍PUB; , JPO; √ENT	OR	ON	2004/07/10 13:04
S22 1	1	"35" "31".pn. and pstn	PUB; ; iPO; /ENT	OR	ON	2004/07/10 13:42
S22 2	1	"15 7/21".pn. and (wireless call har mobile satellite)	PUB; ; JPO; VENT	OR	ON	2004/07/10 13:50
S22 3	1	"66 781".pn. and (billing)	GPUB; ; JPO; ENT	OR	ON	2004/07/10 13:50
S22 4	1	"56 1781".pn. and (billing same	PUB; ; JPO; /ENT	OR	ON	2004/07/10 14:20
S22 5	1	.6 :0781".pn. and (mgcp)	GPUB; F; PO; ENT	OR	ON	2004/07/10 14:31

Search History 1/28/0. 1 :: :::23 AM Page 18 C:\APPS\EAST\Workspaces\09538040.wsp

S22 6	1	"06:47/31".pn. and (valid\$5)	PUB;	OR	ON	2004/07/10 14:32
			IPO; /ENT			
S22 7	1	"66.4781".pn. and (soft same (orror))	SPUB;	OR	ON	2004/07/10 14:57
			JPO;			
S22 8	1	15656761".pn. and (70a)	PUB;	OR	ON	2004/07/10 14:57
			JPO;			
S22 9	3639	্ s ্ত witch\$3 softswitch\$3 (soft anj: ভগটো\$3)(software adj1	₃PUB;	OR	OFF	2004/07/12 08:25
		टर्मा - ६३)(software-switch\$3)))	JPO;			
S23 0	25	(\(\(\alpha\) inswitch\$3 softswitch\$3 (soft adj1 switch\$3)(software adj1	HSEAT;	OR	OFF	2004/07/12 08:52
		switch\$3)(software-switch\$3))))	∃ JPO; √ENT			
S23 1	746	s પોલ્ડા with (circuit with (valid\$6))	PUB;	OR	OFF	2004/07/12 08:29
			: JPO; المراجعة VENT			
S23 2	157	switch with (circuit near2 (valid@6))	US PGPUB;	OR	OFF	2004/07/12 08:32
	.;;;	r nee e - entennae - annin	TP JPO;	,		·
S23 3	0	s:7 ਅਲੀ (circuit near2 (valid\$6))	PUB,	OR	OFF	2004/07/12 08:32
			JPO;			
S23 4	2	s:7 with (circuit with (valid\$6))	US OT;	OR	OFF	2004/07/12 08:32
			PO;			
S23 5	158	(((soft-switch\$3 softswitch\$3 (soft soft) switch\$3)(software adj1	PUB;	OR	OFF	2004/07/12 08:53
		swith (software-switch\$3))))) with (siter\$3)	JPO; VENT			

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 Page 19

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Day: Friday
Date: 1/28/2005
Time: 10:18:46

Inventor Nama Search Result

Your Search wes:

Last Name = RAVIKUMAR First Name = SIVAKUMAR

Application#	atent#	Status	Date Filed	Title	Inventor Name 7
60628183	Not !ssued	020	11/15/2004	METHC FOR ROUTING TO PSTNALD WIRELESS NETWO AS USING DOWN ADABLE ROUTING TABLES FOR INTELLIGENT EDGE ACCESS DEVICES	RAVIKUMAR, SIVAKUMAR
<u>60583794</u>	Not ssued	020	06/30/2004	PROFILE MANAGEMENT & DATA ROUVERY ON A MOBILE BRMINAL DEVICE OVER BROWNICATIONS NETW COMMONICATIONS	RAVIKUMAR, SIVAKUMAR
<u>60583536</u>	Not .ssued	020	06/29/2004	PEER-CORRESER HYBRID MODE. OR SWITCHING AND ROUTHOUT OF RESOURCES OVER 1000 NETWORK	RAVIKUMAR, SIVAKUMAR
09539171	6775269 /	150	03/29/2000	METHO AND SYSTEM FOR ROUTH TELEPHONE CALLS BETWE A PUBLIC SWITC TO TELEPHONE NETWORK AND AN INTERNET PROTOTOL NETWORK	
09538627	Not ssued	161	03/29/2000	PROTO TOL-INDEPENDENT CALL FOR TOESSING LOGIC ENGIN	RAVIKUMAR, SIVAKUMAR
09538626	Not ssued	161	03/29/2000	INTERPORT CENTRAL OFFICE TELEPORTY NETWORK ARCHIO TURE	RAVIKUMAR, SIVAKUMAR
<u>0953</u> 8040	Not ssued	071	03/29/2000	SYSTE: / ND METHOD TO INTER: WORK TELEC: MUICATION NETW: <s different<br="" of="">PROTC: S</s>	RAVIKUMAR, SIVAKUMAR

Inventor Search Completed: No Records

Display.

••• 4.32.

	Last Name	First Name	
Search Another:	RAVIKUMAR	SIVAKUMAR	
Inventor		Search	

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Day: Friday Date: 1/28/2005 Time: 10:18:15

Inventor Name Search Result

Your Search was:

Last Name = KACZMARCZYK

First Name = CASIMIR

Application#	Patent#	Status	Date Filed	Title	Inventor Name 4
09539171	<u>6775269</u> .	150		A CONTROL OF THE CONT	KACZMARCZYK, CASIMIR M
<u>0953</u> 8627	Not Issued	161	03/29/2000	PROTOC -INDEPENDENT CALL PROCESSING LOGIC ENGINE	KACZMARCZYK, CASIMIR M
09538626 /	/ Not ssued	161		INTERNE CENTRAL OFFICE TELEPHOLY NETWORK ARCHITECTURE	KACZMARCZYK, CASIMIR M
<u>09538040</u>	Not !ssued	071		SYSTEM IND METHOD TO INTERNATION TELECCH MUICATION NETWOEKS OF DIFFERENT PROTOCIALS	KACZMARCZYK, CASIMIR M.

Inventor Search Completed: No Records Display.

	Last Name	First Name	•
Search An ther:	KACZMARCZYK	CASIMIR	
Invent: **		Search	

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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

03/07/2005

EXAMINER

Baker & Botts LLP 2001 Ross Avenue Dallas, TX 75201-2980 ABELSON, RONALD B

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 03/07/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/538 040	03/29/2000	Casimir M. Kaczmarczyk	065968 0104	6127

TITLE OF INVENTION: SYSTEM AND METHOD TO INTERNETWORK TELECOMMUICATION NETWORKS OF DIFFERENT PROTOCOLS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$0	\$700	06/07/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

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I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

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Mail Stop ISSUE FEE Commissioner for Patents P.O. Box 1450 Alexa drive virginia 22313-1450

(703) 746-4000 or <u>Fax</u>

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Baker & Botts Ll 2001 Ross Avenue Dallas, TX 75201-	:			nave its own cer	tificate of mailing or transmission Certificate of Mailing or Tra that this Fee(s) Transmittal is be rvice with sufficient postage for e Mail Stop ISSUE FEE addre the USPTO (703) 746-4000, on the	nsmission	
						(Depositor's name)	
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						(Date)	
APPLICATION NO.	FILING DATE	F	FIRST NAMED I	INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/538,040	03/29/2000		Casimir M. Ka	czmarczyk	065968.0104	6127	
TITLE OF INVENTION: S	YSTEM AND METHOD TO) INTERNETWOR	K TELECOM	MUICATION NETWO	ORKS OF DIFFERENT PROTOC	COLS	
APPLN. TYPE	SMALL ENTITY	ISSUE FE	ĒΕ	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE	
nonprovisional	YES	\$700		* \$0	\$700	06/07/2005	
EXAN	MINER	ART UNI	Т	CLASS-SUBCLASS			
ABELSON,	RONALD B	2666		370-466000			
1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.			registered attorney or agent) and the names of up to				
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	(from status indicated above MALL ENTITY status. See	•	b. Applican	at is no longer claiming	SMALL ENTITY status. See 37	CFR 1.27(g)(2).	
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PTOL-85 (Rev. 12/04) Approved for use through 04/30/2007.

OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/538,040	03/29/2000	Casimir M. Kaczmarczyk	065968.0104	6127
75	90 03/07/2005		EXAM	INER
Baker & Botts LLP 2001 Ross Avenue			ABELSON,	RONALD B
Dallas, TX 75201-2			ART UNIT	PAPER NUMBER
•			2666	
			DATE MAILED: 03/07/200	5

Determination of Patent Term Extension under 35 U.S.C. 154 (b)

(application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 0 day(s). Any patent to issue from the above-identified application will include an indication of the 0 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

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	Application No.	Applicant(s)
	09/538,040	KACZMARCZYK ET AL.4
Notice of Allowability	Examiner	Art Unit
	Ronald Abelson	2666
The MAILING DATE of this communication apperature All claims being allowable, PROSECUTION ON THE MERITS IS herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RI of the Office or upon petition by the applicant. See 37 CFR 1.313 1. This communication is responsive to 10/19/2004. 2. The allowed claim(s) is/are 3,2,4-18, and 37-51; renumbered 3. The drawings filed on 3/29/2000 are accepted by the Example 1.	(OR REMAINS) CLOSED in this ap or other appropriate communication GHTS. This application is subject t and MPEP 1308.	pplication. If not included n will be mailed in due course. THIS
4. ☐ Acknowledgment is made of a claim for foreign priority un a) ☐ All b) ☐ Some* c) ☐ None of the: 1. ☐ Certified copies of the priority documents have 2. ☐ Certified copies of the priority documents have 3. ☐ Copies of the certified copies of the priority documents have	der 35 U.S.C. § 119(a)-(d) or (f). been received. been received in Application No	
International Bureau (PCT Rule 17.2(a)). * Certified copies not received:		
Applicant has THREE MONTHS FROM THE "MAILING DATE" on noted below. Failure to timely comply will result in ABANDONM THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.		complying with the requirements
5. A SUBSTITUTE OATH OR DECLARATION must be submi INFORMAL PATENT APPLICATION (PTO-152) which give	tted. Note the attached EXAMINER is reason(s) why the oath or declara	t'S AMENDMENT or NOTICE OF ation is deficient.
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(a) ☐ including changes required by the Notice of Draftspers	on's Patent Drawing Review (PTO	-948) attached
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Adda alima and (a)		
Attachment(s) 1. ☐ Notice of References Cited (PTO-892)	5. Notice of Informal F	Patent Application (PTO-152)
2. Notice of Draftperson's Patent Drawing Review (PTO-948)	6. Interview Summary	(PTO-413),
3. ☑ Information Disclosure Statements (PTO-1449 or PTO/SB/06 Paper No./Mail Date 10/19/2004	Paper No./Mail Da 8), 7. ☐ Examiner's Amendi	te ment/Comment
4. ☐ Examiner's Comment Regarding Requirement for Deposit	8. Examiner's Stateme	ent of Reasons for Allowance
of Biological Material	9. Other	CHI PHAM
	SUPERVISOR'	1111 Deallis, 7/3 8/4

U.S. Patent and Trademark Office PTOL-37 (Rev. 1-04)

Notice of Allowability

Part of Paper No./Mail Date

OCT 1 9 2004 85



Internation Disclosure Citation in an Application Application No. 09/538,040

Applicant(s) Kaczmarczyk, Casimir M., et al.

Docket Number Group Art Unit Filing Date

Docket Number Group Art Unit 2666

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U.S. PATENT DOCUMENTS

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\neg		DOCUMENT NO.	DATE	NAME	CLASS	SAME CLASS	FILING DATI
en	A.	6,704,287	03/09/2004	Moharram	370	- 5094910gy	Censies /2900
	В.	6,134,589	10/17/2000	Hultgren	709	227	05/06/1998
П	C.	6,373,817	04/16/2002	Kung et al	370	217	12/30/1999
	D.	6,252,952	06/26/2001	Kung et al	379	114	12/30/1999
	E.	6,570,855	05/27/2003	Kung et al	370	237	12/30/1999
	F.	6,301,609	10/09/2001	Aravamudan et al.	709	207	09/08/1999
7	G.	5,022,024	06/04/1991	Paneth et al	370	50	05/08/1989
1	Н.	6,459,708	10/01/2002	Cox et al	370	537	12/21/1999
T	I.	6,522,876	02/18/2003	Weiland et al	455	414	10/04/1999
丁	J.	6,185,292	02/06/2001	Miloslavsky	379	265	02/10/1997
	K.	6,445,784 B2	09/03/2002	Uppaluru et al	379	220.01	02/27/2001
7	L.	2003/0058277	03/27/2003	Bowman-Amuah	345	765	08/31/1999

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		DOC	UMENT (Includi	ng Author, Title, Source,	and Pertinent Pag	ges)	DA	TE
a	Р.	Casimer M. Kaczn	Casimer M. Kaczmarczyk, Intelligence Engine, USSN 09/821,507; pending.					01
4	Q.		Casimer M. Kaczmarczyk, et al., System And Method To Internetwork Wireless Telecommunication Networks, USSN 09/821,508; pending.					
4	R	James J. Lu, Metho	d And System F	or Inhibiting Softswitch C	Overload, USSN	09/821,509;	03/29/20	001
il.	S	Doan, Tuan, <i>Metho</i> 09/944,775; pendir	•	or Providing Fail-Over R	Redundancy in a	Nenvork, USSN	08/30/20)01
4	T.	Henning Schulzrin	ne and Jonathan	Rosenberg, Signaling for	Internet Teleph	ony		
J	Ú.	XTML: Extensible Telephony Mark-Up Language, A Unified Framework for Delivery Next- Generation-Enhanced Telecommunication Services, Pactolus Communication Software						

EXAMINER: Initial if citation considered, whether or not citation is in/conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

DAL01:792890.1 U.S. Patent and Trademark Office

			(3)					
1	1PE	No. of District	Citatia-	Application No. 09/538,040	Appliken(s) Kaczmarczyk, (Casimir M., et al.		
net	1 9.200	nesion Disclosure ingan Application	n	Docket Number 065968.0104	Group Art Unit 2666	Filing Date March 29, 2	000	
3	PADEMAR	, se		U.S. PATENT DOCUMEN	NTS .			
	TALLE WIT	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING	DATE
Ra	A.	2002/0120691	08/29/2002	Patil et al	709	206		3/2001
	В.	2001/0054085	12/20/2001	Kurganov	709	218	02/06	5/2001
<i>-</i> -	C.	2003/0140121	07/24/2003	Adams	709	219	09/27	7/2002
H_{J}	D.	2003/0028561	02/06/2003	Gounares et al	707	513	05/19	/1999
nu	E.	6,434,143	08/13/2002	Donovan	370	356	11/08	3/1999
	F.					RECE oct ? Technolog	115	<u> </u>
	G.					DECE	INC	<u> </u>
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DAL01:792890.1 U.S. Patent and Trademark Office

Issue Classification				

Application No.	Applicant(s)	
09/538,040	KACZMARCZYK ET AL.4	
Examiner	Art Unit	
Ronald Abelson	2666	

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UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P. D. Box 1450 Alexandra, Veginia 22313-1450 www.unpto.gov

BIBDATASHEET

Bib Data Sheet

CONFIRMATION NO. 6127

SERIAL NUMBE 09/538,040	FILING DATE 03/29/2000 RULE		LASS 370	GRO	JP ART (2666	TINL	ATTORNEY DOCKET NO. 065968.0104				
APPLICANTS											
Casimir M. Kaczm	arczyk, Plano, TX;										
Sivakumar Raviku	mar, Dublin, OH;										
This appln claims	This appln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$ The sappln claims benefit of 60/127,169 03/30/1999 $R = 2/25/0.5$										
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09/538,040	KACZMARCZYK ET AL.4						
Examiner	Art Unit						
Ronald Abelson	2666						

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Part of Paper No. 9



UNITED STATES PATENT AND TRADEMARK OFFICE



APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO			
09/538,040	03/29/2000	Casimir M. Kaczmarczyk	065968.0104	6127			
7:	590 03/16/2005		EXAM	INER			
Baker & Botts			ABELSON, RONALD B				
2001 Ross Ave Dallas, TX 75			ART UNIT	PAPER NUMBER			
,			2666				

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Supplemental	09/538,040	KACZMARCZYK ET AL.4
Notice of Allowability	Examiner	Art Unit
	Ronald Abelson	2666
The MAILING DATE of this communication apperall claims being allowable, PROSECUTION ON THE MERITS IS therewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RI	(OR REMAINS) CLOSED in this ap or other appropriate communicatio IGHTS. This application is subject to	oplication. If not included n will be mailed in due course. THIS
1. \square This communication is responsive to $\underline{10/19/2004}$.		
2. X The allowed claim(s) is/are 3,2,4-18, and 37-51; renumber	ed as 1-32.	
3. \boxtimes The drawings filed on <u>29 March 2000</u> are accepted by the	Examiner.	
 4. ☐ Acknowledgment is made of a claim for foreign priority unapplementation. a) ☐ All b) ☐ Some* c) ☐ None of the: 1. ☐ Certified copies of the priority documents have 2. ☐ Certified copies of the priority documents have 3. ☐ Copies of the certified copies of the priority documents have all the priority documents have all the priority documents have all the priority documents have all the priority documents. * Certified copies not received: 	been received. been received in Application No	
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3. ☐ CORRECTED DRAWINGS (as "replacement sheets") mus	t be submitted.	
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1) ☐ hereto or 2) ☐ to Paper No./Mail Date		
(b) ☐ including changes required by the attached Examiner's Paper No./Mail Date	s Amendment / Comment or in the	Office action of
Identifying indicia such as the application number (see 37 CFR 1. each sheet. Replacement sheet(s) should be labeled as such in t	.84(c)) should be written on the drawing to 37 CFR 1 121.	ings in the front (not the back) of
7. DEPOSIT OF and/or INFORMATION about the deposit attached Examiner's comment regarding REQUIREMENT	sit of BIOLOGICAL MATERIAL	must be submitted. Note the
Attachment(s) 1. Notice of References Cited (PTO-892) 2. Notice of Draftperson's Patent Drawing Review (PTO-948)	6. Interview Summary	
3. ☑ Information Disclosure Statements (PTO-1449 or PTO/SB/0	Paper No./Mail Da 8), 7. ☐ Examiner's Amend	
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Attorney Docket No.: SNS-013

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:

Kaczmarczyk

SERIAL NO.:

09/538,040

GROUP NO.:

2666

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FILED:

March 29, 2000

EXAMINER:

Abelson, Ronald B.

TITLE:

SYSTEM AND METHOD TO INTERNETWORK

TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence, and any document(s) referred to as enclosed herein, are being faxed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 at Facsimile No. (703) 872-9306 on this 26 day of April, 2005.

Jamie Crystal-Lowry

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Submitted herewith are:

- -Revocation of Attorney with new Power of Attorney and Change of Correspondence Address (2 pages)
- -Certificate of Facsimile Transmission under 37 C.F.R. 1.8 (1 page)
- -Transmittal Form (1 page)

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			First Named	l Inventor	K	aczmarczyk			
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	22 nd Floor			Reg. No.: 42,898 Tel. No.: (617) 526-	9620	David G. Miranda Attorney for the Applicant(s)			
	Boston, M			Fax No.: (617) 526-					
		(617) 526-9 (617) 526-9		` ′		One International Place			
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PAGE 2/4 * RCVD AT 4/26/2005 3:53:40 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/1 * DNIS:8729306 * CSID: * DURATION (mm-ss):01-48

REVOCATION OF POWER OF ATTORNEY WITH NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

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I hereby revoke all previous powers of attorney given in connection with the application and patents identified in Appendix A:							
OR .		ney is submitted herewith.	ith at Customer Number		42	532	
Please cha	nge the	correspondence address for	the above-identified app	olication to:	;		
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Firm or Individual N	Vame	Proskauer Rose LLP					
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Address					·····		<u> </u>
City		Boston		State	MA	Zip	02110
Country							
Telephone		617-526-9600 Fax 617-526-9899					
I am the: Applicant/Inventor. Assignee of record of the entire interest. The assignee of record of the entire right, title, and interest of the patents identified in Appendix A, in accordance with 37 C.F.R. § 3.73(b), is Telecom Technologies, Inc., organized and existing under the laws of the state of Texas, having a usual place of business at 1701 N, Collins BLVD. Richardson, Texas 75080.							
SIGNATURE of Applicant or Assignee of Record							
Name and Title	Char	les/s. Gray, Secretary					
Signature Chulef May							
Date	e H97: 15,2005 Telephone 978-814-8505						505
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.							
*Appendix A is included as an additional sheet.							

PAGE 3/4 * RCVD AT 4/26/2005 3:53:40 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/1 * DNIS:8729306 * CSID: * DURATION (mm-ss):01-48

APPENDIX A

Attorney Docket No.	Application No./ Patent No.	Filing Date/ Issue Date	First Named Inventor	Group Art Unit	Examiner Name	Recordation Information
SNS-009	09/821,507	03/29/2001	Kaczmarczyk	2664	Shew, John	Recorded 03/29/2001 on: Reel No. 011672 Frame No. 0608
SNS-010	09/821,509	03/29/2001	Lu	2642	Tieu, Benny Quoc	Recorded 03/29/2001 on: Reel No. 011672 Frame No. 0593
SNS-011	09/821,508	03/29/2001	Kaczmarczyk	2662	Not yet assigned	Recorded 03/29/2001 on: Reel No. 011672 Frame No. 0614
SNS-012	6,775,269	08/10/2004	Kaczmarczyk	2661	Sam, Phirin	Recorded 07/06/2000 on: Reel No. 010891 Frame No. 0184
SNS-013	09/538,040	03/29/2000	Kaczmarczyk	. 2666	Abelson, Ronald B.	Recorded 07/06/2000 on: Reel No. 010891 Frame No. 0138

PAGE 4/4 * RCVD AT 4/26/2005 3:53:40 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/1 * DNIS:8729306 * CSID: * DURATION (mm-ss):01-48

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Baker & Botts LL 2001 Ross Avenue Dallas, TX 75201-2	Pros 980 One	kauer Rose Internatio		I hereby certify that States Postal Service addressed to the Ms	ertificate of Mailing or Tran this Fee(s) Transmittal is beir with sufficient postage for fi ail Stop ISSUE FEE address PTO (703) 746-4000, on the	smission Ig deposited with the Unite rst class mail in an envelop s above, or being facsimil date indicated below
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A) NAME OF ASSIGNE	E	(B)) RESIDENCE:	(CITY and STATE OR CO	DUNTRY)	
Sonus Networks, Inc. Chelmsford, MA Please check the appropriate assignee category or categories (will not be printed on the parent): Individual **Corporation or other private group entity **Quantum or ot						
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Typed or printed name	David G M	iiranda		Registratio	n No. 42,818	
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PTOL-85 (Rev. 12/04) Approved for use through 04/30/2007.

OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Express Mail Mailing Label No. EV573027541US Application Serial Number 09/538,040 JUN 0 3 2005 Filing Date March 29, 2000 First Named Inventor Kaczmarczyk Group Art Unit 2666 **Examiner Name** Ronald Abelson **FORM** SNS-013 Attorney Docket No. Patent No. Not applicable Issue Date Not applicable ENCLOSURES (check all that apply) Fee Transmittal Form Copy of Notice to File Missing Notice of Appeal to Board Parts of Application (PTO-1553) of Patent Appeals and Interferences Check Attached Copy of Fee Transmittal of Formal Drawings Appeal Brief (in triplicate) Transmittal Form Formal Drawing(s) Amendment/Response Request For Continued Status Inquiry Examination (RCE) ☐ Preliminary **Transmittal** After Final \boxtimes Return Receipt Postcard ☐ Affidavits/declaration(s) Power of Attorney Letter to Official (Revocation of Prior Powers) Certificate of First Class Mailing Draftsperson under 37 C.F.R. 1.8 including Drawings [Total Sheets ___ Terminal Disclaimer Certificate of Facsimile Transmission under 37 C.F.R. 1.8 **Executed Declaration and Power** Petition for Extension of \boxtimes Additional Enclosure(s) of Attorney for Utility or Design Time (please identify below) Patent Application Form PTOL-85 Information Disclosure Small Entity Statement Copy of Form PTOL-85 Statement Form PTO-1449 Copy of Assignment, Recordation Cover Sheet, and Certificate of Facsimile all submitted on May 17, 2005 (6 pgs.) Copies of IDS CD(s) for large table or computer Revocation of Power of Citations Attorney with New Power of Attorney and program Change of Correspondence Address (2 pgs.) Correspondence Accompanying Issue Fee (1 pg.) Certified Copy of Priority Amendment After Allowance Document(s) Request for Certificate of Sequence Listing submission Correction Paper Copy/CD ☐ Certificate of Correction (in Computer Readable Copy duplicate) ☐ Statement verifying identity of above **CORRESPONDENCE ADDRESS** SIGNATURE BLOCK Respectfully submitted, Direct all correspondence to: Patent Administrator Proskauer Rose LLP Date: June 3, 2005 One International Place Reg. No.: 42,898 David G. Miranda 22nd Floor Tel. No.: (617) 526-9620 Attorney for the Applicants Boston, MA 02110-2600 Fax No.: (617) 526-9899 Proskauer Rose LLP Tel. No.: (617) 526-9600 One International Place Fax No.: (617) 526-9899





PATENT Attorney Docket Nos. SNS-009

SNS-010 SNS-011 SNS-012 SNS-013

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ASSIGNORS:

Telecom Technologies, Inc.

ASSIGNEE:

Sonus Networks, Inc.

SERIAL NO.:

09/821,507

FILING DATE:

March 29, 2001

SERIAL NO.:

09/821,509

FILING DATE:

March 29, 2001

SERIAL NO.:

09/821,508

FILING DATE:

March 29, 2001

PATENT NO.:

6,775,269

ISSUE DATE:

August 10, 2004

SERIAL NO.:

09/538,040

FILING DATE:

March 29, 2000

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence, and any document(s) referred to as enclosed herein, are being faxed to Mail Stop Assignment Recordation Services, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 at Facsimile No. (703) 306-5995 on this 17th day of May, 2005.

Jean Gomez

Mail Stop Assignment Recordation Services Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Submitted herewith are:

- 1. Certificate of Facsimile Transmission under 37 C.F.R. 1.8 (1 pg.);
- 2. Recordation Form Cover Sheet (2 pgs); and a
- 3. Copy of Executed Assignment (3 pgs).

6913/65672-002 BNLIB1/121863v1

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JUN 0 3 2005			Application	Serial Number	09/5	09/538,040		
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	TRANSMITTA	T	Group Art U	Group Art Unit		2666		
		X.L.	Examiner Name		Abelson, Ronald B.			
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	Petition for Extension of Time		Executed Declaration and Power of Attorney for Utility or Design Patent Application			Additional Enclosure(s) (please identify below)		
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ŀ	Statement Form PTO-1449				•			
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	Certified Copy of Priority Document(s)		Amendment After Allowance					
	Sequence Listing submission Paper Copy/CD Computer Readable Copy Statement verifying identity of above							
COR	RESPONDENCE ADDRESS			SIGNATURE BL	оск			
Direct all correspondence to: Patent Administrator Proskauer Rose LLP One International Place 22 nd Floor Boston, MA 02110-2600 Tel. No.: (617) 526-9600 Fax No.: (617) 526-9899				Date: April 26, 200; Reg. No.: 42,898 Tel. No.: (617) 526- Fax No.: (617) 526-	-9620	Respectfully submitted, David G. Miranda Attorney for the Applicant(s) Proskauer Rose LLP One International Place 22 nd Floor Boston, MA 02110-2600		

*





Attorney Docket No.: SNS-013

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:

Kaczmarczyk

SERIAL NO.:

09/538,040

GROUP NO.:

2666

FILED:

March 29, 2000

EXAMINER:

Abelson, Ronald B.

TITLE:

SYSTEM AND METHOD TO INTERNETWORK

TELECOMMUNICATION NETWORKS OF DIFFERENT PROTOCOLS

Pame Cuptal-formy

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence, and any document(s) referred to as enclosed herein, are being faxed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 at Facsimile No. (703) 872-9306 on this 26 day of April, 2005.

Jamie Crystal-Lowry

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Submitted herewith are:

- -Revocation of Attorney with new Power of Attorney and Change of Correspondence Address (2 pages)
- -Certificate of Facsimile Transmission under 37 C.F.R. 1.8 (1 page)
- -Transmittal Form (1 page)

1 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	PATENT FORM COVER SHEET NTS ONLY record the attached original document(s) or copy(ies).				
Submission Type	Conveyance Type				
☑ New					
Resubmission (Non-Recordation) Document ID#: Correction of PTO Error Reel #: Frame #: Corrective Document	License Change of Name Merger Other U.S. Government (For use ONLY by U.S. Government Agencies)				
Reel #: Frame #:	☐ Departmental File ☐ Secret File				
Name Telecom Technologies, Inc. Name Name Name Name Name Name Name Address (line 1)	Mark if additional names of conveying parties attached Execution Date Month Day Year 5/16/05				
Address (line 3) Chelmsford MA City State/Country	01824 Assignment) Zip Code				
Domestic Representative Name and Address	Enter for the first Receiving Party only.				
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Mail Stop Assignment Recordation Services, Director of the US Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450

Page 2 PATENT	
Correspondent Name and Address Area Code and Telephone Number (617) 526-9600	
Name Patent Administrator	\neg
Address (line 1) Proskauer Rose LLP	
Address (line 2) One International Place	
Address (line 3) 14 th Floor	
Address (line 4) Boston, MA 02110-2600	
Pages Enter the total number of pages of the attached conveyance document	
including any attachments.	
Application Number(s) or Patent Number(s)	hed
09/821,507 6,775,269 09/821,509 ————————————————————————————————————	
Patent Cooperation Treaty (PCT) Enter PCT application number PCT PCT PCT only if a U.S. Application Number has not been assigned. PCT PCT PCT	
Number of Properties Enter the total number of properties involved. # 1	
Fee Amount Fee Amount for Properties Listed (37 CFR 3.41): \$ 200.00 Method of Payment: Enclosed Deposit Account Deposit Account (Enter for payment by deposit account or if additional fees can be charged to the account) Deposit Account Number # 50-3081	
Authorization to charge additional fees: Yes 🛛 No 🗌	
Statement and Signature To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. Charges to deposit account are authorized as indicated herein. David Miranda, Reg. No.: 42,898 Name of Person Signing Signature David Miranda, Reg. No.: 42,898	∌d,

Mail documents to be recorded with required cover sheet(s) information to:
Mail Stop Assignment Recordation Services, Director of the US Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450
6913/65672-002 BNLIB1/121868v1

Assignment - TTI, Inc. to Sonus Networks, Inc. Page 1 of 3

ASSIGNMENT

WHEREAS, <u>Telecom Technologies</u>, <u>Inc.</u> (hereinafter "ASSIGNOR"), a corporation organized and existing under the laws of the state of Texas and having a usual place of business at 1701 N. Collins Blvd., Richardson, Texas 75080, owns and has legal title to one or more inventions described in an application (or provisional application) for Letters Patent of the United States identified in attached Schedule A; and

WHEREAS, Sonus Networks, Inc. (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the state of Delaware and having a usual place of business at 250 Apollo Drive, Chelmsford, MA 01824, desires to acquire an interest therein, in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR HAS sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, ASSIGNOR'S entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the invention(s) described in said application, together with ASSIGNOR'S entire right, title and interest in and to said application and such Letters Patent as may issue thereon or claim priority under United States law or international convention, including but not limited to nonprovisionals, continuations, divisionals, reissues, reexaminations, extensions, and substitutions of said application or such Letters Patent, and any right, title and interest ASSIGNOR may have in provisional applications to which said application claims priority; said invention(s), applications and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made; ASSIGNOR hereby conveys all of ASSIGNOR'S rights arising under or pursuant to any and all United States laws and international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent, including but not limited to any cause(s) of action and damages accruing prior to this assignment. ASSIGNOR hereby acknowledges that this assignment, being of ASSIGNOR'S entire right, title and interest in and to said invention(s), carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all Letters Patent to ASSIGNEE in its own name as assignee of ASSIGNOR'S entire right, title and interest therein:

AND, ASSIGNOR hereby further agrees for ASSIGNOR and ASSIGNOR'S executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention(s) to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including the execution of non-provisional, substitution, continuation, divisional, reissue, reexamination, or corresponding foreign or international patent applications;

Assignment - TTI, Inc. to Sonus Networks, Inc. Page 2 of 3

AND, ASSIGNOR hereby further agrees to provide statements or testimony in any interference or other proceeding in which said invention(s) or any application or patent directed thereto may be involved;

AND, ASSIGNOR hereby authorizes ASSIGNEE or its attorneys or agents to insert the correct serial number and filing date into this assignment, if none is indicated on the date of ASSIGNOR'S execution of this assignment;

AND, ASSIGNOR hereby authorizes and requests the Director of the United States Patent and Trademark Office to issue such Letters Patent as shall be granted upon said application, or applications based thereon, to said ASSIGNEE, its successors, assigns, or legal representatives.

IN TESTIMONY WHEREOF, ASSIGNOR has set ASSIGNOR'S seal on the date set forth below.

Assignor's Authorized Agent:

Charles J. Gray

Secretary, Telecom Technologies, Inc.

State/Commonwealth of Mass.)
County of Mildlesex) ss

On this 16 day of _______, 2005, before me, the undersigned notary public, personally appeared Charles J. Gray proved to me through satisfactory evidence of identification, which were ______, to be the person whose name is signed on the preceding or attached document in my presence.

Notary Public

My Commission Expires: Jan 19, 201

LEILA M. AIELLO NOTARY PUBLIC My conrulssion expires Jan. 19, 2012 Assignment - TTI, Inc. to Sonus Networks, Inc. Page 3 of 3

Schedule A

<u>Title</u>	Application No./ Patent No.	Filing Date/ Issue Date	First Named Inventor	Recordation Information of ASSIGNOR'S ownership interest
Intelligence Engine	09/821,507	03/29/2001	Kaczmarczyk	Recorded 03/29/2001 on: Reel No. 011672 Frame No. 0608
Method and System for Inhibiting Softswitch Overload	09/821,509	03/29/2001	Lu	Recorded 03/29/2001 on: Reel No. 011672 Frame No. 0593
Method and System to Internetwork Wireless Telecommunication Networks	09/821,508	03/29/2001	Kaczmarczyk	Recorded 03/29/2001 on: Reel No. 011672 Frame No. 0614
Method and System to Internetwork Telecommunication Networks of Different Protocols	09/538,040	03/29/2000	Kaczmarczyk	Recorded 07/06/2000 on: Reel No. 010891 Frame No. 0138
Method and System For Routing Telephone Calls Between a PSTN and an IP Network	6,775,269	08/10/2004	Kaczmarczyk	Recorded 07/06/2000 on: Reel No. 010891 Frame No. 0184

WH 0 3 700

REVOCATION OF POWER OF ATTORNEY WITH NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

I hereby revoke all previous powers of attorney given in connection with the application and patents identified in Appendix A:									
A Power of									
I hereby ap	ppoint t	the practitioners associated wi	ith at Customer Number	r:	42	532]
Please char	nge the	correspondence address for	the above-identified ap	plication to:					
The address associated with Customer Number: OR 42532									
Firm or Individual N	lame	Proskauer Rose LLP							
Address		One International Place							
Address									
City		Boston		State	MA		Zip	02110	
Country							-		
Telephone		617-526-9600		Fax	617-52	26-9899	9		
I am the: Applicant/Inventor. Assignee of record of the entire interest. The assignee of record of the entire right, title, and interest of the patents identified in Appendix A, in accordance with 37 C.F.R. § 3.73(b), is Telecom Technologies, Inc., organized and existing under the laws of the state of Texas, having a usual place of business at 1701 N. Collins BLVD. Richardson, Texas 75080.									
		SIGNATURE of	Applicant or Assignee	of Record	l				
Name and Title	Char	les A. Gray, Secretary							
	Signature Chalif Kry								
Date	/-	1011 15,2005		Telepho			314-850		
NOTE: Signatures of a forms if more than one	all the in e signat	ventors or assignees of record of ure is required, see below*.	the entire interest or their	representativ	re(s) are r	equired.	Submit	multiple	
*Appendix A is included as an additional sheet.									

APPENDIX A

Attorney Docket No.	Application No./ Patent No.	Filing Date/ Issue Date	First Named Inventor	Group Art Unit	Examiner Name	Recordation Information
SNS-009	09/821,507	03/29/2001	Kaczmarczyk	2664	Shew, John	Recorded 03/29/2001 on: Reel No. 011672 Frame No. 0608
SNS-010	09/821,509	03/29/2001	Lu	2642	Tieu, Benny Quoc	Recorded 03/29/2001 on: Reel No. 011672 Frame No. 0593
SNS-011	09/821,508	03/29/2001	Kaczmarczyk	2662	Not yet assigned	Recorded 03/29/2001 on: Reel No. 011672 Frame No. 0614
SNS-012	6,775,269	08/10/2004	Kaczmarczyk	2661	Sam, Phirin	Recorded 07/06/2000 on: Reel No. 010891 Frame No. 0184
SNS-013	09/538,040	03/29/2000	Kaczmarczyk	2666	Abelson, Ronald B.	Recorded 07/06/2000 on: Reel No. 010891 Frame No. 0138



PATENT

Attorney Docket No.: SNS-013

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS:

Kaczmarczyk et al.

GROUP NO.:

2666

SERIAL NO.:

09/538,040

EXAMINER:

Ronald Abelson

FILING DATE:

March 29, 2000

TITLE:

System And Method To Internetwork Telecommunication Networks Of Different

Protocols

Mail Stop Issue Fee Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

CORRESPONDENCE ACCOMPANYING ISSUE FEE

Sir:

Please note a Revocation of Power of Attorney with New Power of Attorney and Change of Correspondence Address was submitted on April 26, 2005 to the U.S. patent office. A copy of the submission is attached herewith.

In addition, a Recordation Form Cover sheet with the executed assignment was submitted via facsimile on May 17, 2005 to the U.S. Patent Office, Assignment Recordation Services. The assignment conveys the rights to Sonus Networks, Inc. A copy of the submission is attached herewith. Please ensure that the name of the new owner appear on the front cover of the issued patent. This correspondence also serves as notification of loss of entitlement to small entity status with this ownership change. As indicated on form PROL-85, please deduct the Issue fee using the large entity fee of \$1400.00.

Date: June 3, 2005 Reg. No.: 42,898

Tel. No.: (617) 526-9620 Fax No.: (617) 526-9899

6913/65672-027 BNLIB1/131891v1

Respectfully submitted,

David G. Miranda

Attorney for the Applicants

Proskauer Rose LLP

One International Place 22nd Floor

Boston, MA 02110

• PRINTER RUSH • (PTO ASSISTANCE)

Application :	09/53804	Examiner :	Abelson	GAU:	2664	
From:	LH	Location:	© FMF FDC	Date:	6-10-05	
		Tracking #:	1080403	Week Date:	3-14-05	
	DOC CODE 1449 IDS CLM IIFW SRFW DRW OATH 312 SPEC	3(29/00)	MISCELL Continuing Foreign Price Document I Fees Other	Data ority		
[RUSH] MESSAGE: Attention: Chief Draftsperson Drawings: A) Figures 1-6, 14 and 15 all have improper shading B) Figures 7-13 all have small illegible clata C) Figures 6 and 15 both run into the date Stamp Please resolve Thankyou Ut /CA						
[XRUSH] RESPONSE:						

296

REV 10/04

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Form PTO-948 (Rev. 76498) 538 6 40 Application No.

U.S. DEPARTMENT OF COMMERCE U.S. Patent and Trademark Office

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink or Color (3 sets required). Color drawings are not acceptable until petition is granted. Fig(s) Pencil and non black ink not permitted. Fig(s) 2. PHOTOGRAPHS. 37 CFR 1.84(b) One (1) full-tone set is required. Fig(s) Photographs may not be mounted. 37 CFR 1.84(e) Photographs must meet paper size requirements of 37 CFR 1.84(f). Fig(s) Poor quality (half-tone). Fig(s) 3. TYPE OF PAPER. 37 CFR 1.84(e) Paper not flexible, strong, white, and durable. Fig(s) Erasures, alterations, overwritings. interlineations, folds, copy machine marks not accepted. Fig(s) 4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes: 21.0 cm by 29.7 cm (DIN size A4) or 21.6 cm by 27.9 cm (8 1/2x 11 inches) All drawing sheets not the same size. Sheet(s) Drawings sheets not an acceptable size. Fig(s) 5. MARGINS. 37 CFR 1.84(g): Acceptable margins: Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm Margins not acceptable. Fig(s) Top (T) Left (L) Right (R) Bottom (B) 6. VIEWS. 37 CFR 1.84(h) REMINDER: Specification may require revision to correspond to drawing changes, e.g., if Fig. 1 is changed to Fig. 1A, Fig 1B and Fig. 1C, etc., the specification, at the Brief Description of the Drawings, must likewise be changed. Views not labeled separately or properly. Fig(s) 7. SECTIONAL VIEWS. 37 CFR 1.84(h)(3) Sectional designation should be noted with Arabic or Roman numbers. Fig(s)	8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i) Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) 9. SCALE. 37 CFR 1.84(k) Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s) 10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l) Lines, numbers & letters not uniformly thick and well defined, clear, durable, and black (poor line quality). Fig(s) 11. SHADING. 37 CFR 1.84(m) Solid black shading not permitted. Fig(s) CHARACTERS. 37 CFR 1.84(p) Numbers and reference characters not plain and legible. Fig(s) Figure legends are poor. Fig(s) Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(1) Fig(s) English alphabet not used. 37 CFR 1.84(p)(2) Fig(s) Numbers. letters and reference characters must be at least 32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3). Fig(s) 13. LEAD LINES. 37 CFR 1.84(q) Lead lines missing. Fig(s) 14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(l) Sheets not numbered consecutively, and in Arabic numbers beginning with number 1. Sheet(s) 15. NUMBERING OF VIEWS. 37 CFR 1.84(u) Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) 16. DESIGN DRAWINGS. 37 CFR 1.152 Surface shading shown not appropriate. Fig(s) Solid black surface shading is not permitted except
	when used to represent the color plack as well as color contrast. Fig(s)



UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NUMBER 09/538040

FILING/RECEIPT DATE 03/29/2000

FIRST NAMES APPLICANT
KACZMARCZYK,
CASIMIR M:

ATTORNEY DOCKET NUMBER 065968.0104

Baker & Botts LLP 2001 Ross Avenue Dallas TX 75201-2980

Examiner

ABELSON RONALD B

Art Unit **2666**

Date Mailed: 06/21/05

Notice Regarding Drawings

Corrected drawings for the above-identified application, received in the USPTO on <u>03/29/2000</u> are still not acceptable for the reason(s) identified on the attached PTO-948. Applicant is given one opportunity to correct the informalities within a two-month time period from the mailing date of this Notice. THIS TIME PERIOD IS NOT EXTENDABLE UNDER EITHER 37 CFR 1.136(a) OR 1.136(b). Failure to take corrective action within the set period will result in abandonment of the application.

ATTACHMENT: PTO-948 Notice of Draftsperson's Patent Review RETURN CORRECTED DRAWINGS TO:
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
John Fitzhugh
Office Of Patents Publication
Publishing Division
703-305-0333 ext-137

IFW/2666

	PE vo					
79	7000		Application	Serial Number	09/53	38,040
\ ,	ME 1 DE ST		Filing Date		March 29, 2000	
\ _A			First Named	Inventor Kaczmarczyk		marczyk
	TRANSMITTA	T	Group Art U	Jnit	2666	
		X.L.	Examiner N	ame	Rona	ld Abelson
	FORM		Attorney Do	ocket No.	SNS-	013US
			Patent No.		Not y	vet assigned
			Issue Date		Not y	et assigned
		EN	CLOSURES (c.	heck all that apply)	_	
_ ı	Fee Transmittal Form		Copy of Notice	e to File Missing cation (PTO-1553)		Notice of Appeal to Board of Patent Appeals and Interferences
•	☐ Check Attached☐ Copy of Fee Transmittal Form		Formal Drawin	, ,		Appeal Brief (in triplicate)
	Amendment/Response		Request For Contraction (In Transmittal			Status Inquiry
	After Final				\boxtimes	Return Receipt Postcard
	☐ Affidavits/declaration(s) ☐ Letter to Official ☐ Draftsperson	Power of Attor		ney Prior Powers)		Certificate of Facsimile Transmission under 37 C.F.R. 1.8
	including Drawings [Total Sheets]		Terminal Discl	aimer		
				aration and Power Utility or Design tion		Additional Enclosure(s) (please identify below)
	Information Disclosure Statement		Small Entity S	tatement		Drawings (2 pages) ☑ Transmittal of Formal Figures (1 page)
	Form PTO-1449 Copies of IDS Citation Labeled C13		CD(s) for large program	e table or computer		
	Certified Copy of Priority Document(s)		Amendment A	fter Allowance		
			Request for Ce	ertificate of		
	Sequence Listing submission Paper Copy/CD		Correction Certificate	of Correction (in		
	☐ Computer Readable Copy ☐ Statement verifying	CEPTH	duplicate)	RST CLASS MAIL	NC UNI	NED 27 C E D 1 9
	identity of above	I hereby	certify that this	correspondence, and	any docui	ment(s) referred to as enclosed
						stal Service as first class mail, oner for Patents, P.O. Box 1450,
				450 on this 9th day o		
						Jamie Crystal-Lowry
COR	RESPONDENCE ADDRESS			SIGNATURE BLO	OCK	
Direc	Proskauer One Intern Boston, M	(617) 526-	lace -2600 -9600	Date: August 9, 2005 Reg. No.: 42,898 Tel. No.: (617) 526- Fax No.: (617) 526-	9620	Respectfully submitted, David G. Miranda Attorney for the Applicant(s) Proskauer Rose LLP One International Place Boston, MA 02110-2600



PATENT Attorney Docket No. SNS-013

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS:

Kaczmarczyk et al.

GROUP NO.:

2666

SERIAL NO.:

09/538,040

EXAMINER:

Ronald Abelson

FILING DATE:

March 29, 2000

TITLE:

System and Method to Internetwork Telecommunication Networks of Different

Protocols

Commissioner for Patents P.O. Box 1450 c/o John Fitzhugh, Office of Patents Publication Alexandria, VA 22313-1450

TRANSMITTAL OF FORMAL DRAWINGS

Sir:

Attached please find **twelve** (12) sheets of formal drawings for the above-identified patent application.

Date: August 9, 2005 Reg. No.: 42,898

Tel. No.: (617) 526-9620

Fax No.: (617) 526-9899

Respectfully submitted,

David G. Miranda Attorney for the Applicants

Proskauer Rose LLP
One International Place

22nd Floor

Boston, MA 02110





UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NUMBER 09/538040

FILING/RECEIPT DATE 03/29/2000

FIRST NAMES APPLICANT
KACZMARCZYK,
CASIMIR M.

ATTORNEY DOCKET NUMBER 065968.0104

Baker & Botts LLP 2001 Ross Avenue Dallas TX 75201-2980

Examiner

ABELSON RONALD B

Art Unit **2666**

Date Mailed: 06/21/05

Notice Regarding Drawings

Corrected drawings for the above-identified application, received in the USPTO on <u>03/29/2000</u> are still not acceptable for the reason(s) identified on the attached PTO-948. Applicant is given one opportunity to correct the informalities within a two-month time period from the mailing date of this Notice. THIS TIME PERIOD IS NOT EXTENDABLE UNDER EITHER 37 CFR 1.136(a) OR 1.136(b). Failure to take corrective action within the set period will result in abandonment of the application.

ATTACHMENT: PTO-948 Notice of Draftsperson's Patent Review

RETURN CORRECTED DRAWINGS TO:

Commissioner for Patents

P.O. Box 1450

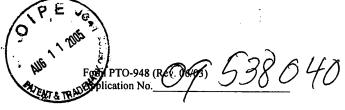
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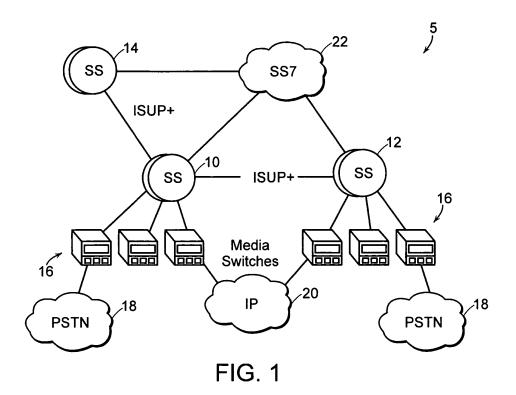
NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

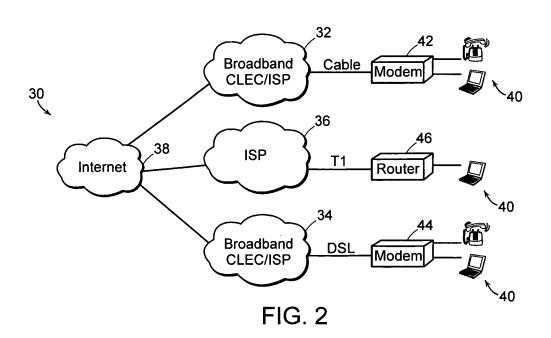
1. DRAWINGS. 37 CFR 1.84(a): Acceptable	8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i
categories of drawings: Black ink or	Words do not appear on a horizontal, left-to-rig
Color (3 sets required).	fashion when page is either upright or turned so
Color drawings are not acceptable until petition is	that the top becomes the right side, except for
granted. Fig(s)	graphs. Fig(s)
Pencil and non black ink not permitted. Fig(s)	9. SCALE. 37 CFR 1.84(k)
2. PHOTOGRAPHS. 37 CFR 1.84(b)	Scale not large enough to show mechanism
One (1) full-tone set is required. Fig(s)	without crowding when drawing is reduced in
Photographs may not be mounted. 37 CFR 1.84(e)	size to two-thirds in reproduction.
Photographs must meet paper size requirements of	Fig(s).
37 CFR 1.84(f). Fig(s)	10. CHARACTER OF LINES, NUMBERS, &
Poor quality (half-tone). Fig(s)	LETTERS. 37 CFR 1.84(1)
3. TYPE OF PAPER. 37 CFR 1.84(e)	Lines, numbers & letters not uniformly thick an
Paper not flexible, strong, white, and durable.	well defined, clean, durable, and black (poor lin
Fig(s)	quality). Fig(s)
Erasures, alterations, overwritings, interlineations,	11. SHADING. 37 CFR 1.84(m)
folds, copy machine marks not accepted.	Solid black areas pale Fig(s)
Fig(s) 27 CER 1 84(5) Acceptable	Solid black shading not permitted. Fig(s)
4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes:	12. NUMBERS, LETTERS, & REFERENCE
21.0 cm by 29.7 cm (DIN size A4) or	CHARACTERS. 37 CFR 1.84(p) Numbers and reference characters not plain and
21.6 cm by 27.9 cm (8 1/2x 11 inches)	legible. Fig(s)
All drawing sheets not the same size.	Figure legends are poor. Fig(s)
Sheet(s)	Numbers and reference characters not oriented i
Drawings sheets not an acceptable size. Fig(s)	the same direction as the view. 37 CFR 1.84(p)
5. MARGINS. 37 CFR 1.84(g): Acceptable margins:	Fig(s)
Top \$2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm	English alphabet not used. 37 CFR 1.84(p)(2)
Margins not acceptable. Fig(s) 5	Fig(s)
Top (T) Left (L)	Numbers, letters and reference characters must be
Right (R) Bottom (B)	at least 32 cm (1/8 inch) in height. 37 CFR
6. VIEWS. 37 CFR 1.84(h)	1.84(p)(3). Fig(s)
REMINDER: Specification may require revision to	13. LEAD LINES. 37 CFR 1.84(q)
correspond to drawing changes, e.g., if Fig. 1 is	Lead lines missing. Fig(s)
changed to Fig. 1A, Fig 1B and Fig. 1C, etc., the	14. NUMBERING OF SHEETS OF DRAWINGS
specification, at the Brief Description of the Drawings,	37 CFR 1.84(t)
nust likewise be changed.	Sheets not numbered consecutively, and in Arab
Views not labeled separately or properly.	numbers beginning with number 1. Sheet(s)
Fig(s)	15. NUMBERING OF VIEWS. 37 CFR 1.84(u)
SECTIONAL VIEWS. 37 CFR 1.84(h)(3)	Views not numbered consecutively, and in Arab
Sectional designation should be noted with	numerals, beginning with number 1. Fig(s) 16. DESIGN DRAWINGS. 37 CFR 1.152
Arabic or Roman numbers. Fig(s)	
	Surface shading shown not appropriate. Fig(s)
•	Solid black surface shading is not permitted exce
	when used to represent the color black as well as
	color contrast. Fig(s)
OMMENTS:	2010 00111120 1 18(3)



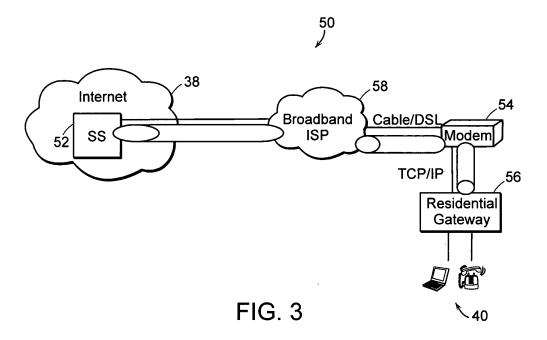
Title: System and Method to Internetwork
Telecommunication Networks of Different Protocols
Applicant: Kaczmarczyk et al.
Serial No.: 09/538,040
David M. Miranda

Title: Networks
Docket No.: SNS-013
Filed: March 29, 2000
Reg. No.: 42,898





Title: System and Method to Internetwork
Telecommunication Networks of Different Protocols
Applicant: Kaczmarczyk et al.
Docket No.: SNS-013
Serial No.: 09/538,040
David M. Miranda
Reg. No.: 42,898



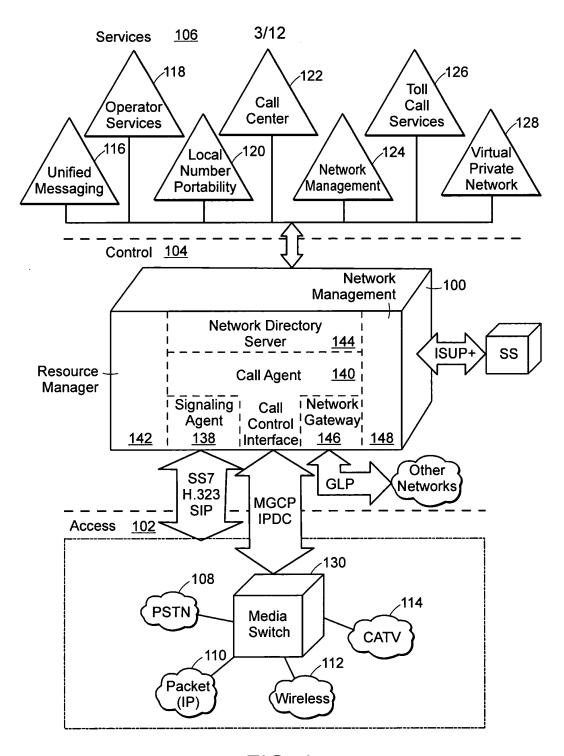
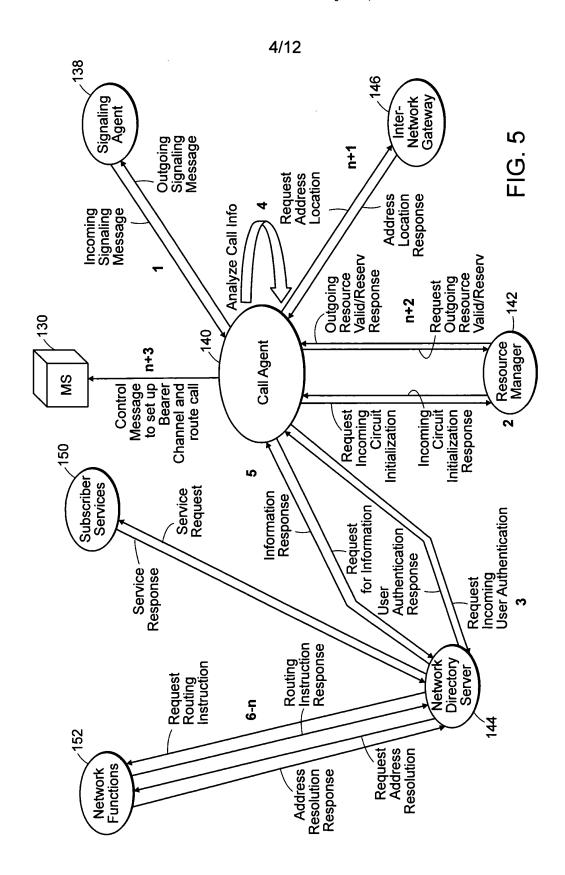
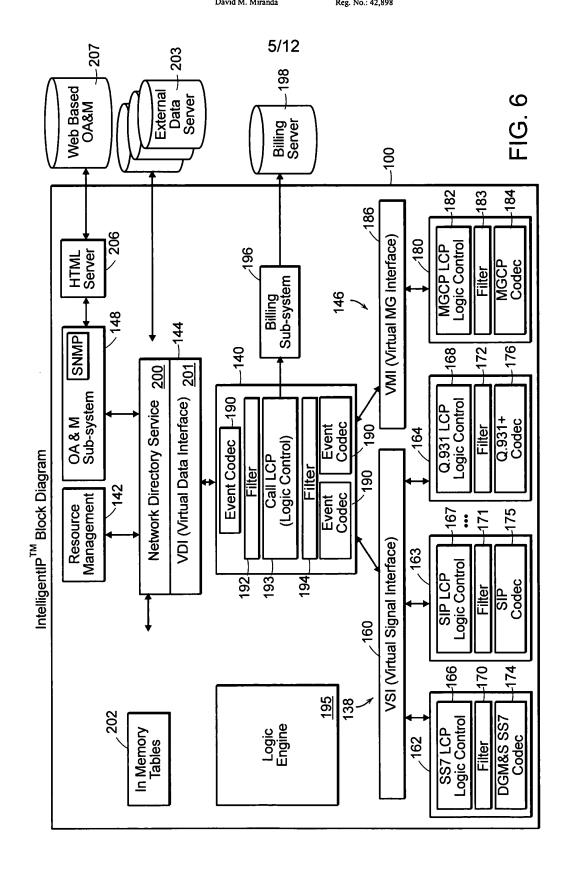


FIG. 4





Title: System and Method to Internetwork
Telecommunication Networks of Different Protocols
Applicant: Kaczmarczyk et al.
Serial No.: 09/538,040
David M. Miranda
Reg. No.: 42,898

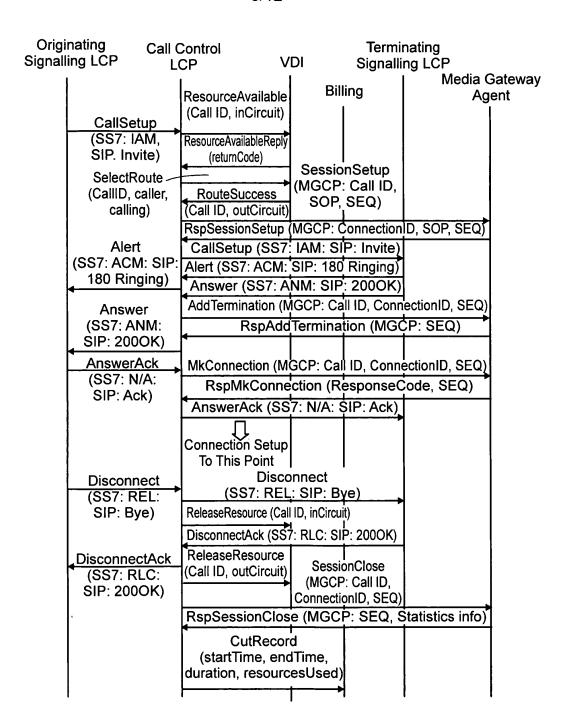
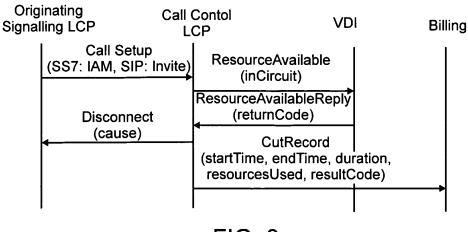


FIG. 7

Title: System and Method to Internetwork
Telecommunication Networks of Different Protocols
Applicant: Kaczmarczyk et al.
Serial No.: 09/538,040
David M. Miranda
Dovid M. Miranda





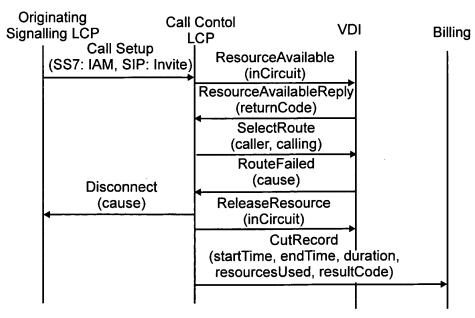
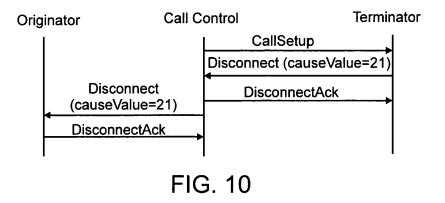


FIG. 9

Title: System and Method to Internetwork
Telecommunication Networks of Different Protocols
Applicant: Kaczmarczyk et al.
Serial No.: 09/538,040
David M. Miranda
David M. Miranda
Reg. No.: 42,898



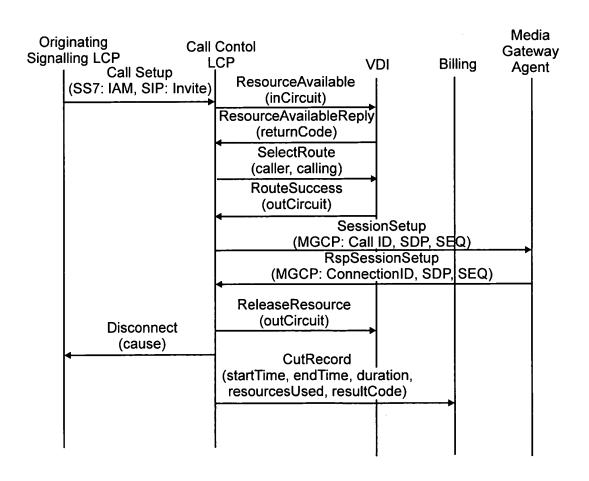


FIG. 11

Title: System and Method to Internetwork
Telecommunication Networks of Different Protocols
Applicant: Kaczmarczyk et al.
Serial No.: 09/538,040
David M. Miranda
David M. Miranda
Reg. No.: 42,898

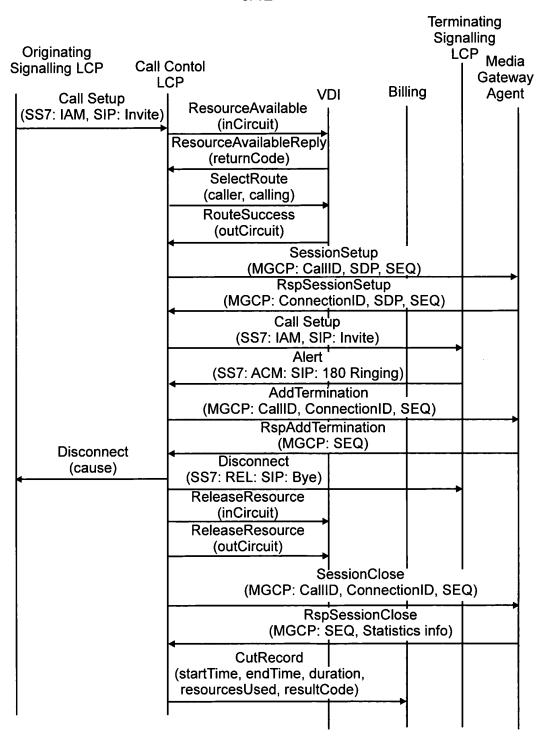
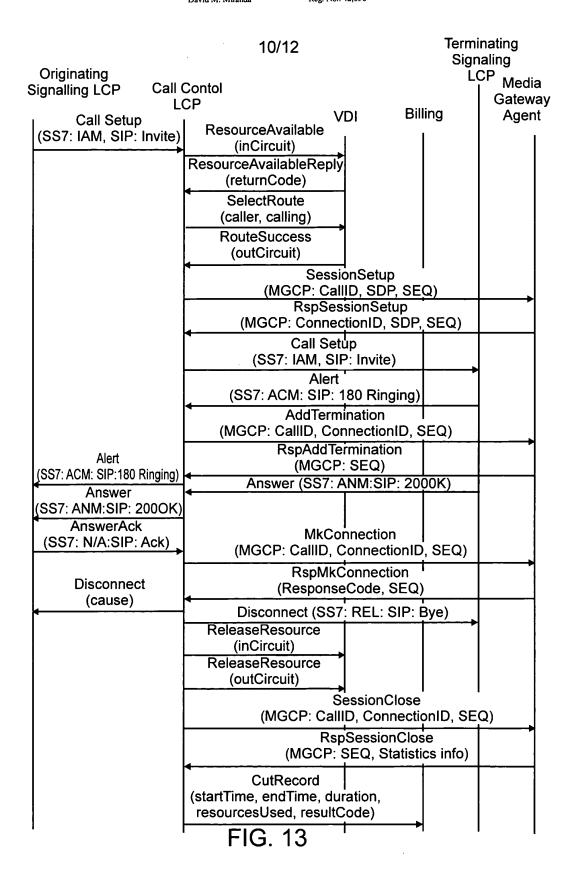
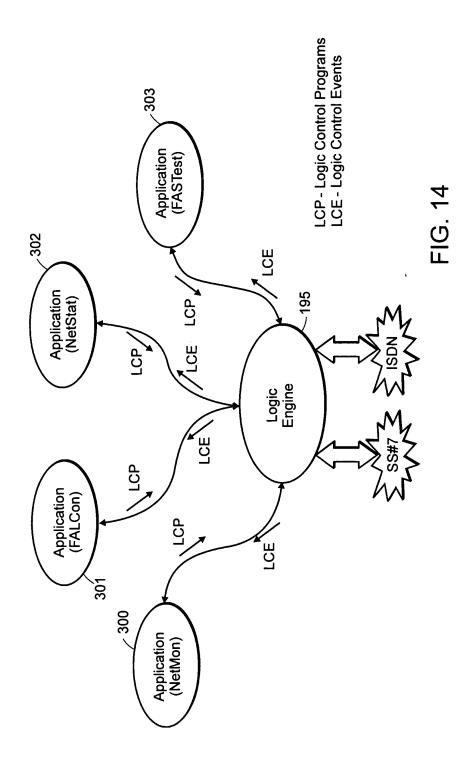
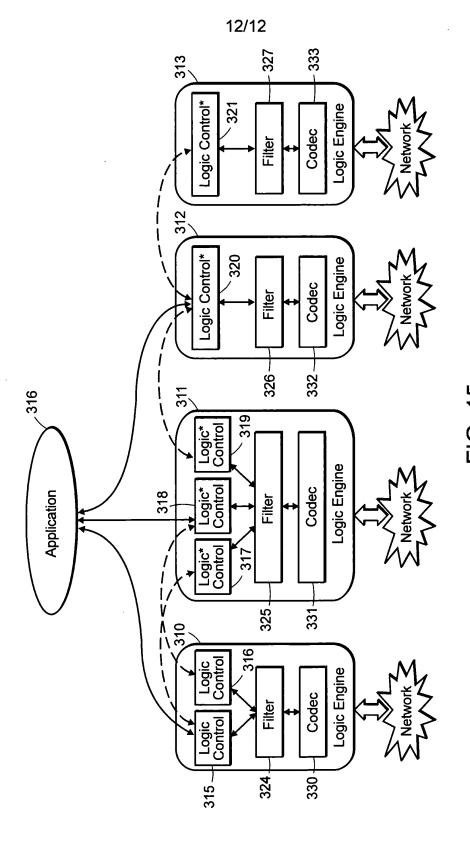


FIG. 12



Title: System and Method to Internetwork
Telecommunication Networks of Different Protocols
Applicant: Kaczmarczyk et al.
Serial No.: 09/538,040
David M. Miranda
David M. Miranda
Title: System and Method to Internetwork
Docket No.: SNS-013
Filed: March 29, 2000
Reg. No.: 42,898





314



United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Putent and Trademark Office Address COMMISSIONER FOR PATENTS PO. Box 1450 Alexandra, Virginia 22313-1450 www.usplu.gov

APPLICATION NUMBER FILING OR 371 (c) DATE FIRST NAMED APPLICANT ATTY. DOCKET NO./TITLE

09/538,040

03/29/2000

Casimir M. Kaczmarczyk

065968.0104

Baker & Botts LLP 2001 Ross Avenue Dallas, TX 75201-2980 CONFIRMATION NO. 6127

**OC000000016899151*

Date Mailed: 08/30/2005

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/26/2005.

• The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

DAMETRIUS L PERKINS

PUBS ()-

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United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandra, Vignius 22313-1450 www.uspib.gov

APPLICATION NUMBER

FILING OR 371 (c) DATE

FIRST NAMED APPLICANT

ATTY. DOCKET NO./TITLE

09/538,040

03/29/2000

Casimir M. Kaczmarczyk

065968.0104

42532 PROSKAUER ROSE LLP ONE INTERNATIONAL PLACE 14TH FL BOSTON, MA 02110

CONFIRMATION NO. 6127 *OC000000016899160*

Date Mailed: 08/30/2005

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/26/2005.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

DAMETRIUS L PERKINS

PUBS ()-

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United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address COMMISSIONER FOR PATENTS P.O. Dox 1430 Alexandra, Viginia 22313-1450 www.uniple.gov

Bib Data Sheet

CONFIRMATION NO. 6127

SERIAL NUMBER 09/538,040	FILING OR 371(c) DATE 03/29/2000 RULE	C	CLASS 370	GRO	UP AR1 2666	T UNIT	D	ATTORNEY OCKET NO. 65968.0104
Casimir M. Kaczmarczyk, Plano, TX; Sivakumar Ravikumar, Dublin, OH; ** CONTINUING DATA ********************* This appln claims benefit of 60/127,169 03/30/1999 ** FOREIGN APPLICATIONS ************************************								
Foreign Priority claimed								
TITLE	HOD TO INTERNETWO	RK TELE	COMMUICAT	ION NE	TWOR	KS OF I	DIFFE	RENT
FILING FEE RECEIVED 820 FEES: Authority has been given in Paper No to charge/credit DEPOSIT ACCOUNT No for following: All Fees 1.16 Fees (Filing) 1.17 Fees (Processing Ext. of time) 1.18 Fees (Issue) Other Credit						essing Ext. of		

PTO/SB/81A (12-08)

Approved for use through 11/30/2011. OMB 0651-0035

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Patent Number	6,950,441
Issue Date	09/27/2005
First Named Inventor	Casimir M. Kaczmarczyk
Title	SYSTEM AND METHOD TO INTERNETWORK
Attorney Docket Number	SNS-013

I here	hereby revoke all previous powers of attorney given in the above-identified patent.						
	A Power of Attorney is submitted herewith.						
OR X OR	I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:						
		int Practitioner(s) named below as my/our a transact all business in the United States F		` '	` '	•	•
		Practitioner(s) Name Registration Number					r
O Sity Count Teleph I am th	country relephone Email am the: Inventor, having ownership of the patent. OR						
0:		SIGNATURE of Inventor	or Pate	nt Owner	Τ	I	7.0044
Signa Name		/Jeffrey M. Snider/ Jeffrey M. Snider			Date Telephone	1-978-614	· ·
	and Company	Senior V.P. and General Counsel of Sonus Net	works, Ir	nc.l	Leiehnone	1-370-014	-0100
NOTE:	NOTE: Signatures of all the inventors or patent owners of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.						
	*Total offorms are submitted.						

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

- The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
- 2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
- A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record
- 4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
- 5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
- 6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
- 7. A record from this systèm of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
- 8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
- A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt					
EFS ID:	11661304				
Application Number:	09538040				
International Application Number:					
Confirmation Number:	6127				
Title of Invention:	SYSTEM AND METHOD TO INTERNETWORK TELECOMMUICATION NETWORKS OF DIFFERENT PROTOCOLS				
First Named Inventor/Applicant Name:	Casimir M. Kaczmarczyk				
Customer Number:	42532				
Filer:	Michael P. Straub				
Filer Authorized By:					
Attorney Docket Number:	065968.0104				
Receipt Date:	25-DEC-2011				
Filing Date:	29-MAR-2000				
Time Stamp:	22:12:40				
Application Type:	Utility under 35 USC 111(a)				

Payment information:

Submitted with Payment		no						
File Listing:								
Document Number	Document Description		File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)		
1	Assignee showing of ownership per 37 CFR 3.73(b).	sb0096_SNS_013.pdf	428628	no	2			
			882074dfd38a5d84616fa194a040650d576 67304					
Warnings:								
Information:								

2	Power of Attorney	sb0081a_SNS_013.pdf	700440	no	2			
			87690f0b80289c4e601b15a52be55f45395 0391e					
Warnings:								
Information:								
Total Files Size (in bytes): 1129068								

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

STATEMENT UNDER 37 CFR 3.73(b)						
Applicant/Patent Owner: SONUS NETWORKS, INC.						
Application No./Patent No.: 6,950,441	Filed/Issue Date: 09/27/2005					
Titled: SYSTEM AND METHOD TO INTERNETWORK TELEPPROTOCOLS						
SONUS NETWORKS, INC. , a Corpora	ition					
	Assignee, e.g., corporation, partnership, university, government agency, etc.					
states that it is:						
1. X the assignee of the entire right, title, and interest in;						
2. an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is						
3. the assignee of an undivided interest in the entirety of (a co	omplete assignment from one of the joint inventors was made)					
the patent application/patent identified above, by virtue of either:						
An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel, Frame, or for which a						
copy therefore is attached. OR						
B. X A chain of title from the inventor(s), of the patent application	n/patent identified above, to the current assignee as follows:					
1. From: Casimir M. Kaczmarczyk, Sivakumar Ravi	kuma To: Telecom Technologies, Inc.					
The document was recorded in the United States						
Reel 010091 , Frame 0130	, or for which a copy thereof is attached.					
2. From: Telecom Technologies, Inc.	To: Sonus Networks, Inc.					
The document was recorded in the United States						
Reel <u>016245</u> , Frame <u>0172</u>	, or for which a copy thereof is attached.					
3. From:	To:					
The document was recorded in the United States	Patent and Trademark Office at					
Reel, Frame	, or for which a copy thereof is attached.					
Additional documents in the chain of title are listed on a su	upplemental sheet(s).					
As required by 37 CFR 3.73(b)(1)(i), the documentary evidence or concurrently is being, submitted for recordation pursuant to 3	e of the chain of title from the original owner to the assignee was, 7 CFR 3.11.					
[NOTE: A separate copy (i.e., a true copy of the original assign accordance with 37 CFR Part 3, to record the assignment in the	nment document(s)) must be submitted to Assignment Division in ercords of the USPTO. <u>See MPEP 302.08</u>]					
The undersigned (whose title is supplied below) is authorized to act on	behalf of the assignee.					
/Jeffrey M. Snider/	December 7, 2011					
Signature	Date					
Jeffrey M. Snider	Senior Vice President and Ge					
Printed or Typed Name	Title					

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

- The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
- 2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
- A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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 A record from this system of records may be disclosed, as a routine use, to the Administrator,
- 7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
- 8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
- A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



101957

United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS PALEXANDRA Virginia 22313-1450 www.usplo.gov

APPLICATION NUMBER

Straub & Pokotylo

788 Shrewsbury Avenue Tinton Falls, NJ 07724

FILING OR 371(C) DATE

FIRST NAMED APPLICANT

SNS-013

03/29/2000 09/538,040

Casimir M. Kaczmarczyk

CONFIRMATION NO. 6127

ATTY. DOCKET NO./TITLE

POA ACCEPTANCE LETTER



Date Mailed: 01/09/2012

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/25/2011.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/mnguyen/ Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

page 1 of 1



42532

United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS PALEXANDRA Virginia 22313-1450 www.usplo.gov

APPLICATION NUMBER 09/538,040

PROSKAUER ROSE LLP

BOSTON, MA 02110

ONE INTERNATIONAL PLACE

FILING OR 371(C) DATE 03/29/2000

FIRST NAMED APPLICANT

Casimir M. Kaczmarczyk

ATTY. DOCKET NO./TITLE 065968.0104

CONFIRMATION NO. 6127 POWER OF ATTORNEY NOTICE



Date Mailed: 01/09/2012

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/25/2011.

• The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/mnguyen/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101