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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
60/608,126	09/09/2004	Ojas Thakor Choksi	100773.55349PV

23911
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 WASHINGTON, DC 20044-4300

CONFIRMATION NO. 9710


 OC000000019492791

Date Mailed: 07/05/2006

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/16/2006.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71.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).



SHARON KUANG
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60/608,126	09/09/2004	Ojas Thakor Choksi	100773.55349PV

57541
SPRINT NEXTEL CORPORATION
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CONFIRMATION NO. 9710



OC000000019492809

Date Mailed: 07/05/2006

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/16/2006.

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.

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JFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. Nos:

60/608,126

**REVOCATION OF POWER OF ATTORNEY WITH NEW POWER OF ATTORNEY AND STATEMENT
UNDER 37 CFR 3.73(b)**

Filed herewith is a Revocation of Power of Attorney that is signed by one authorized to act on behalf of the assignee of the entire interest of the applicant (per 37 C.F.R. § 1.32(b)(4)).

Revocation of Power of Attorney with New Power of Attorney.

All previous powers of attorney given in the above-identified applications (a printed chart is attached and computer disk is enclosed) are hereby revoked, and hereby appointed are the practitioners associated with Customer Number **57541** to prosecute these Applications and transact business in the Patent and Trademark Office connected therewith. Please send all correspondence to the address associated with the same customer number.

Statement under 37 CFR 3.73(b)

Sprint Nextel Corporation. is the assignee of the entire right, title and interest of the Applications, captioned above. The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Respectfully Submitted,



Harley Ball, Vice President
Sprint Nextel Corporation

6/12/06
Date

13281 U.S. PTO
090904

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.

PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No.

16800 U.S. PTO
60/608126

090904

INVENTOR(S)					
Given Name (first and middle [if any])		Family Name or Surname		Residence (City and either State or Foreign Country)	
Ojas Thakor		CHOKSI		Herndon, VA	
☐ Additional inventors are being named on the <u>separately numbered sheets attached hereto</u>					
TITLE OF THE INVENTION (500 characters max)					
Architecture to Faciliate Interoperability and Inter-Working of Dispatch-To-X Technologies					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
☒ Customer Number <u>23911</u>					
OR					
☐ Firm or Individual Name		Crowell & Moring LLP			
Address		Intellectual Property Group			
Address		PO Box 14300			
City		Washington		State	DC
Country		USA		Zip	20044-4300
		Telephone	202-624-2500	Fax	202-628-8844
ENCLOSED APPLICATION PARTS (check all that apply)					
☒ Specification		Number of Pages <u>8</u>		☐ CD(s), Number <u> </u>	
☒ Drawing(s)		Number of Sheets <u>1</u>		☐ Other (specify) <u> </u>	
☒ Application Data Sheet. See 37 CFR 1.76					
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT					
☐ Applicant claims small entity status. See 37 CFR 1.27.					
☒ A check or money order is enclosed to cover the filing fees					
☒ The Commissioner is hereby authorized to charge any deficiencies or credit any overpayment to Deposit Account Number: <u>05-1323</u> (Docket # 100773.55349PV).					
☐ Payment by credit card. Form PTO-2038 is attached.					
FILING FEE Amount\$ <u>160.00</u>					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
☒ No					
☐ Yes, the name of the U.S. Government agency and the Government contract number are: <u> </u>					

Respectfully submitted,

[Page 1 of 1]

Date September 9, 2004

SIGNATURE

REGISTRATION NO. 43,420
(if appropriate)

Docket Number: 100773.55349PV

TYPED or PRINTED NAME Stephen W. Palan

TELEPHONE 202-624-2710

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. 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 1.14. This collection is estimated to take 8 hours 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: Mail Stop Provisional Application, 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.

**ARCHITECTURE TO FACILITATE INTEROPERABILITY AND
INTER-WORKING OF DISPATCH-TO-X TECHNOLOGIES**

BACKGROUND OF THE INVENTION

[0001] Cellular communications systems typically provide interconnect and/or dispatch voice communication services. Interconnect voice communication services are those typically provided by most cellular carriers as circuit-switched communications. Dispatch communication services are commonly known as a walkie-talkie type of call such as Nextel's service identified by the trade names Push-To-Talk (PTT) or Direct Connect. Interconnect voice communication services provided by most cellular carriers can be provided between sources and destinations of different cellular carriers. However, dispatch communication services are typically implemented in a proprietary manner which prevents dispatch calls from originating in one cellular carrier's network and terminating in another cellular carrier's network.

SUMMARY OF THE INVENTION

[0002] A system and method for facilitating interoperability and inter-working of dispatch technologies. The system and method involve logical and functional entities. The logical entities including inter-working, clearinghouse and application accessibility entities. The functional entities including QuickConnect Controller, signaling bridge, address translation, QuickConnect Gateway,

transcoder, border gateway, proxy, location, policy, group management and authorization functions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] The sole Figure illustrates an exemplary architecture for facilitating interoperability and inter-working of dispatch technologies.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0004] The sole Figure illustrates an exemplary architecture for facilitating interoperability and inter-working of dispatch technologies. The logical entities include the inter-working, clearinghouse and application accessibility entities. The inter-working entities assist in translating and managing sessions. The clearinghouse entities assist in transforming raw CDRs into settlement invoices. The application accessibility entities assist in providing access to individual subscribers to value added dispatch-to-X applications, where X represents any arbitrary application such as talk. The functional entities illustrated in the Figure include the QuickConnect Controller, signaling bridge, address translation, QuickConnect Gateway, transcoder, border gateway, proxy, location, policy, group management and authorization functions.

[0005] The QuickConnect Controller function manages the QuickConnect sessions across carriers and technologies. It locates users from the domain portion of the address of record and the roaming database. It determines if transcoding is

required. The QuickConnect Controller function may also host and manage sessions for roaming subscribers.

[0006] The signaling bridge function converts session and other dispatch-related signaling messages across dispatch technologies into a format that is common across the QuickConnect network.

[0007] The address translation function provides translation services to the proxy function and the QuickConnect controllers to map domains into IP addresses. If different naming conventions are used across dispatch carriers, it shall also provide translation of user addresses. The actual translation can occur at the QuickConnect control function or at the signaling bridge.

[0008] The QuickConnect gateway function converts to and from proprietary RTP implementations. It shall also perform jitter buffering to minimize the variable delays encountered inside and outside of the QuickConnect administrative domain. It may perform latency smoothing to avoid floor starvation during a group call spanning two or more carriers. The QuickConnect gateway function will also enforce policies to ensure appropriate treatment is accorded to the media in accordance with the service level agreement (SLA) with the associated carriers. It shall schedule session streams as per the contract with the carriers.

[0009] The transcoder function, when the end points of sessions do not support a common vocoder, provides the necessary translation from one voice format to another to facilitate transparent voice sessions across carriers and

technologies. The transcoder function may be part of the QuickConnect gateway function.

[0010] The border gateway function performs aggregation of traffic for carriers. It also enforces the aggregate level carrier SLA by metering, marking, classifying and policing the traffic traversing the domains in both directions. The aggregate SLA may include multiple levels of QoS. It also hosts the necessary trust relationships and related security associations between the QuickConnect network and the carriers.

[0011] The proxy function analyzes incoming sessions to determine if it needs to be routed to same technology dispatch servers or to signaling bridge for translation. It makes routing decisions based on the address translation data received from the address translation function. The proxy function optimizes the latency performance of sessions originating from and terminating to subscribers with the same dispatch technology (but belonging to different carriers).

[0012] The location function assists in dispatch registration of roaming subscribers. The location function interfaces with its peers in a secure way to transfer credentials and available credit for the roaming subscriber. The location function shall also notify the call processing entities upon successful registration of roaming subscribers. The available credit is forwarded so that appropriate admission control may be provided either within the foreign carrier or inside the QuickConnect network (if it is hosting the session control for roaming subscribers).

It shall also notify the authorization function of the credentials that may be required to authorize subscriber access to dispatch-To-X applications.

[0013] The policy function distributes the administrative policies to be enforced at the edge as well as within the QuickConnect network (e.g. QuickConnect gateway). It may also provide an input to the contract function of the clearinghouse architecture to enable robust creation of business logic to process raw CDRs and reconcile billing across carriers.

[0014] The group management function brokers and assists in definition of groups spanning across multiple carriers. It maintains a trust relationship with carriers' group management servers. The group management function performs naming translation as necessary. Moreover, it shall provide group definitions to controllers within the QuickConnect network that may be managing group sessions on behalf of the dispatch carriers. It shall also provide group definitions to the service delivery layer to be delivered to the hosted applications.

[0015] The authorization function enforces call restrictions on sessions initiated by, or terminated to, roaming subscribers. This function may reside internal or external to the location function. Moreover, it may also assist in authorization of subscribers requesting access to dispatch-To-X applications.

[0016] While the invention has been described in connection with various embodiments, it will be understood that the invention is capable of further modifications. This application is intended to cover any variations, uses or

adaptation of the invention following, in general, the principles of the invention, and including such departures from the present disclosure as, within the known and customary practice within the art to which the invention pertains.

What is claimed is:

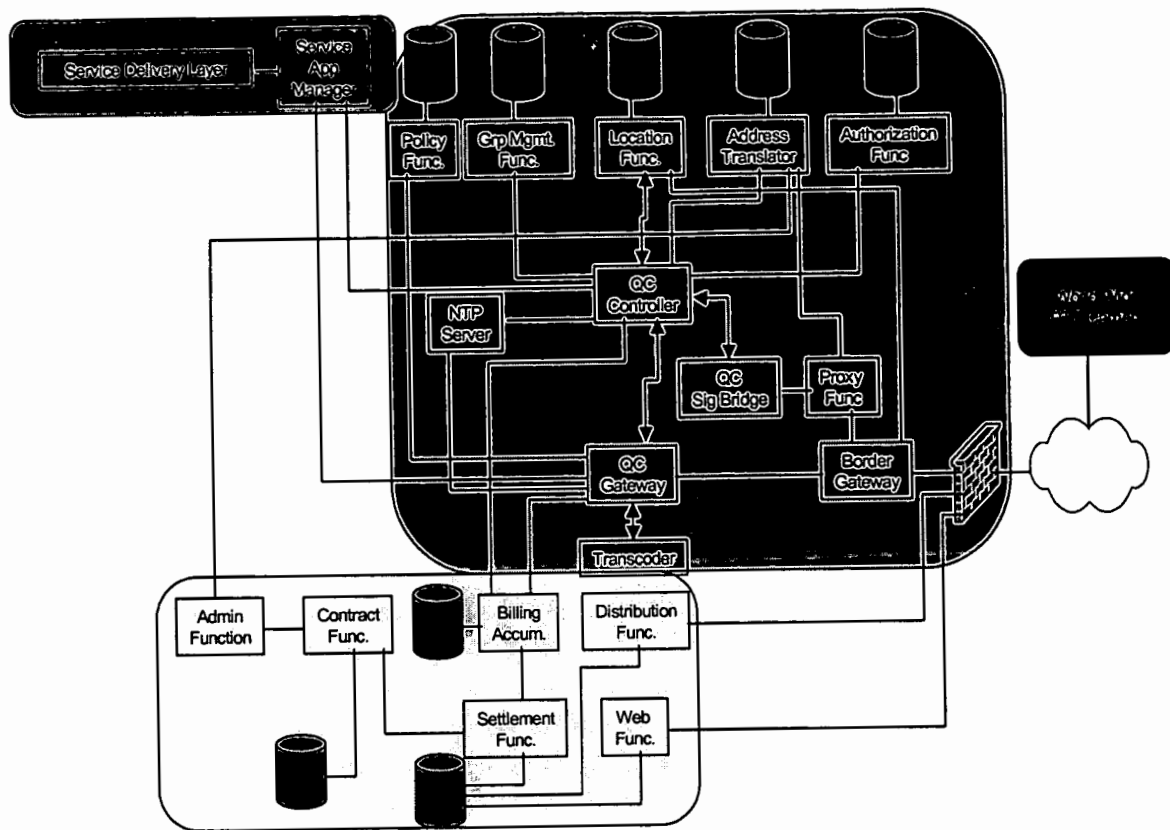
1. A system for facilitating interoperability and inter-working of dispatch technologies, the system comprising:

logical entities, the logical entities including inter-working, clearinghouse and application accessibility entities; and

functional entities, the functional entities including QuickConnect Controller, signaling bridge, address translation, QuickConnect Gateway, transcoder, border gateway, proxy, location, policy, group management and authorization functions.

ABSTRACT OF THE DISCLOSURE

A system and method for facilitating interoperability and inter-working of dispatch technologies. The system and method involve logical and functional entities. The logical entities including inter-working, clearinghouse and application accessibility entities. The functional entities including QuickConnect Controller, signaling bridge, address translation, QuickConnect Gateway, transcoder, border gateway, proxy, location, policy, group management and authorization functions.



Figure

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
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FEE RECORD SHEET

09/10/2004 RFEKADU1 00000070 60608126

01 FC:1005 160.00 0P

PTO-1556
(5/87)

APPLICATION DATA SHEET

APPLICATION INFORMATION

Application type::	Provisional
Subject Matter::	Utility
Title::	Architecture to Facilitate Interoperability and Inter-Working of Dispatch-To-X Technologies
Attorney Docket No.::	100773.55349PV
Total Drawing Sheets::	One (1)

APPLICANT INFORMATION

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Initial 09/09/2004