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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
61/384,456	09/20/2010		220	RALEP034+		

CONFIRMATION NO. 9507

21912
VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

FILING RECEIPT



OC000000043740742

Date Mailed: 10/04/2010

Receipt is acknowledged of this provisional patent application. It will not be examined for patentability and will become abandoned not later than twelve months after its filing date. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Gregory G. Raleigh, Woodside, CA;

Power of Attorney:

Michael Schallop--44319

If Required, Foreign Filing License Granted: 09/28/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 61/384,456**

Projected Publication Date: None, application is not eligible for pre-grant publication

Non-Publication Request: No

Early Publication Request: No
Title

Securing Service Processor with Sponsored SIMs

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international

page 1 of 3

patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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Provisional Application for Patent Cover Sheet

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

Inventor(s)

Inventor 1

Remove

Given Name	Middle Name	Family Name	City	State	Country i
Gregory	G.	Raleigh	Woodside	CA	US

All Inventors Must Be Listed – Additional Inventor Information blocks may be generated within this form by selecting the **Add** button.**Add**

Title of Invention	Securing Service Processor with Sponsored SIMs
Attorney Docket Number (if applicable)	RALEP034+

Correspondence Address

Direct all correspondence to (select one):

☒ The address corresponding to Customer Number ☐ Firm or Individual Name

Customer Number	21912
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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:

Entity Status

Applicant claims small entity status under 37 CFR 1.27

- ☐ Yes, applicant qualifies for small entity status under 37 CFR 1.27
- ☒ No

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Signature

Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Michael J. Schallop/			Date (YYYY-MM-DD)	2010-09-20
First Name	Michael J.	Last Name	Schallop	Registration Number (If appropriate)	44319

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 1.11 and 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. **This form can only be used when in conjunction with EFS-Web. If this form is mailed to the USPTO, it may cause delays in handling the provisional application.**

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3. 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).
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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.
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9. 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.

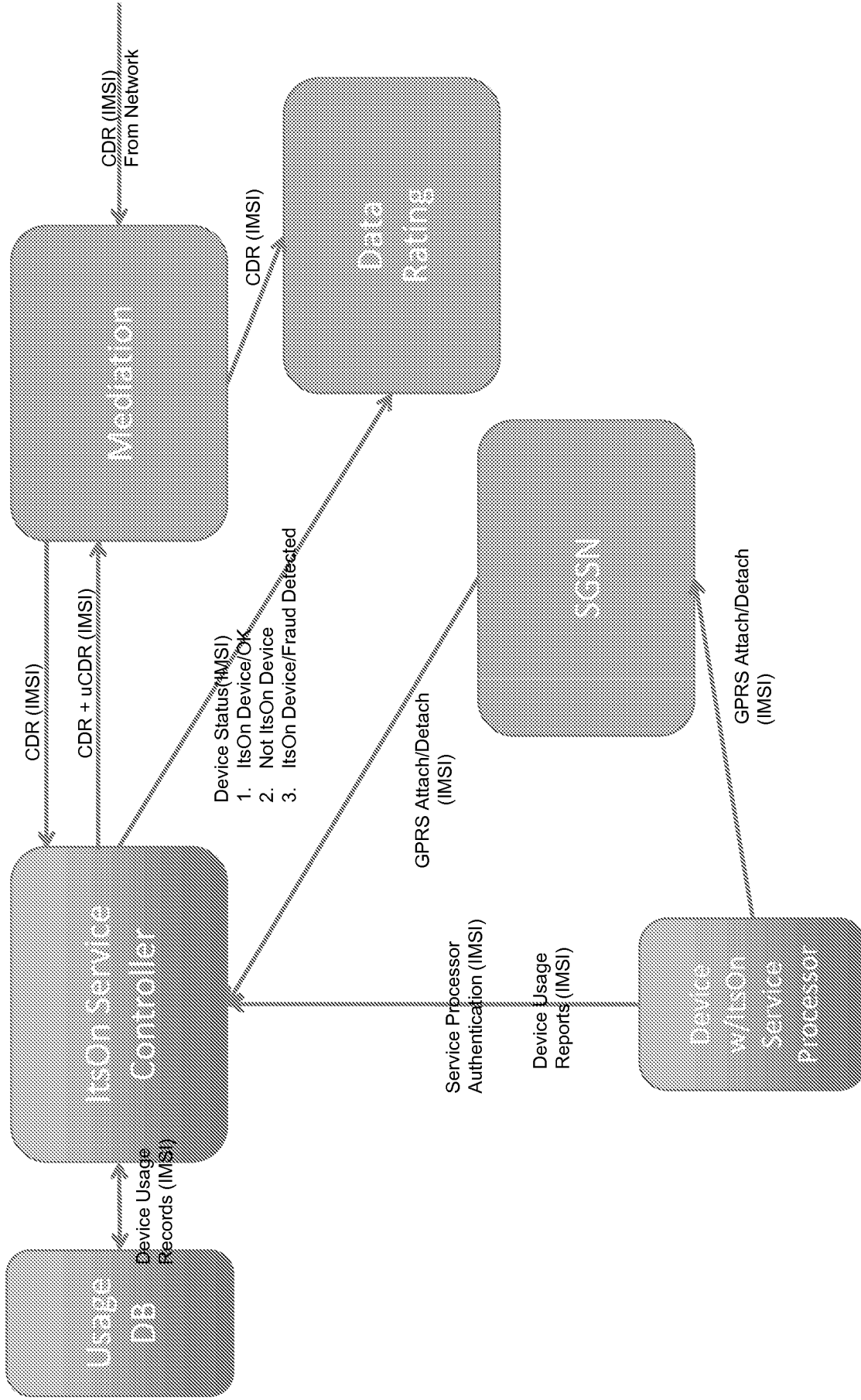
Ways to Secure Sponsored SIM DAS Enabled Offers in Phase I (non-hardware security)

1. Don't zero-rate SIM. Require pre-paid or credit card or method for billing to receive a SIM and the service agreement says that if you tamper with device you are billed at a relatively high (less favorable) rate. Reconciliation function in Service Controller only provides "micro-CDR credit" for sponsored or specialized (non-bulk) services that receive valid device Service Processor micro-CDR usage reports. Service Controller reconciliation of valid Service Processor micro-CDRs against network CDRs occurs in Service Controller. Set maximum limits on amount of service usage that can be "unaccounted for" so that if the majority of usage meets policy rules and usage for each specialized service is under caps, then give user credit for limited amount of unaccounted usage. Service usage above the limits that can not be reconciled (accounted for) is charged to user at agreed upon contract rate that is at least as high as bulk services (e.g. higher than sponsored and specialized services). With this scheme, services can be offered to non-Service Processor enabled devices as well as Service Processor enabled devices. Can still have an experience with non-SP device, but experience is better with SP device.
2. Give out SIM with small usage cap. Increase cap my the amount of usage reported in micro-CDRs that prove "micro-CDR credit". Cap increase is determined by reconciliation of valid micro-CDRs against network CDRs in the service controller and set maximum limits on amount of service usage as described above. For this to work well, real time carrier network usage cap system needs to be capable of responding in a time period that is relatively small with respect to minimum time required to burn through initial SIM usage cap at max modem data rate. Provide "micro-CDR credit" in reconciliation by either increasing cap or reducing charges against CDR code corresponding to usage cap and charging other CDR transaction codes. Can offer service this way for non-Service Processor enabled and Service Processor enabled devices. Can still have an experience with non-Service Processor device, but experience is better with Service Processor device.
 - Detail: can increase cap (or remove charge from cap CDR transaction code) as soon as reconciliation confirms an authenticated micro-CDR flow from SP instead of waiting for micro-CDR usage to fully offset CDRs. This allows system to accommodate usage report delays for small usage caps for unallocated services once a Service Processor device authenticates so the system does not shut the device down before the first network CDRs come in to reconcile usage.
 - Detail: can send in the reconciled usage after getting network CDRs, or send credit to increase cap or decrement usage before receiving network CDRs. With this scheme, services can be offered to non-Service Processor enabled devices as well as Service Processor enabled devices. Can still have an experience with non-SP device, but experience is better with SP device.
3. Here is how you solve the "box of free sponsored SIMs" problem, and how you make sure a user is not exploiting a given device to repeatedly hack service controls: Agreement that goes with sponsored SIM says that you can only use a certain number (e.g. one) free or sponsored SIM in a given device. Service Controller authentication and reconciliation functions monitor device IMEI or other device credential and SIM credential for network off-hook signal tied to SIM credential to confirm that Service Processor has authenticated with Service Controller and a valid micro-CDR sequence has been initiated. (As alternative to off-hook signal can use first network CDR service usage report the delay is small). If reconciliation determines that a given IMEI or other device credential is burning through more than one free service usage cap with multiple SIMs, then send network a suspend or deny signal based on IMEI or other device credential. (Can also associate with user if user is providing user credentials somehow as part of device authentication sequence.)

Option 1: SGSN Notification of Start/Stop Data Session – Process

1. Device attempts data session and sends GPRS Attach to SGSN
2. SGSN notifies ItsOn Service Controller that the device has started a data session
3. ItsOn Service Controller waits for a pre-determined time (e.g., one minute) to receive a login/authentication request from the ItsOn Service Processor on the device
 1. If the ItsOn Service Controller sees the request, it sends a notification to Data Rating to indicate that the device has an ItsOn Service Processor and expect uCDR reports via Data Mediation.
 2. If the ItsOn Service Controller does not see the request, it sends a notification to Data Rating to indicate that the device does not have an ItsOn Service Processor and to process usage based on carrier CDR reports.
4. ItsOn Service Controller receives usage reports from the ItsOn Service Processor
 1. If ItsOn Service Controller does not receive usage reports from the device based on time/usage intervals, it sends a notification to Data Rating to indicate that the device is in a Fraud state and usage should be billed based on carrier CDR reports.
5. Data Mediation sends CDRs to ItsOn Service Controller.
6. ItsOn Service Controller queries its device usage database for uCDRs for the device.
7. ItsOn Service Controller compares carrier CDR data usage byte counts vs. uCDRs.
 1. If ItsOn Service Controller determines that the carrier usage counts don't match the uCDR usage counts (e.g. Fraud), it sends a notification to Data Rating to indicate that the device is in a Fraud state and usage should be billed based on carrier CDR reports.
8. ItsOn Service Controller sends carrier CDR and ItsOn uCDRs to Data Mediation.
9. When GPRS Detach is received by the SGSN, SGSN sends a notification to the ItsOn Service Controller that the device data session is closed.

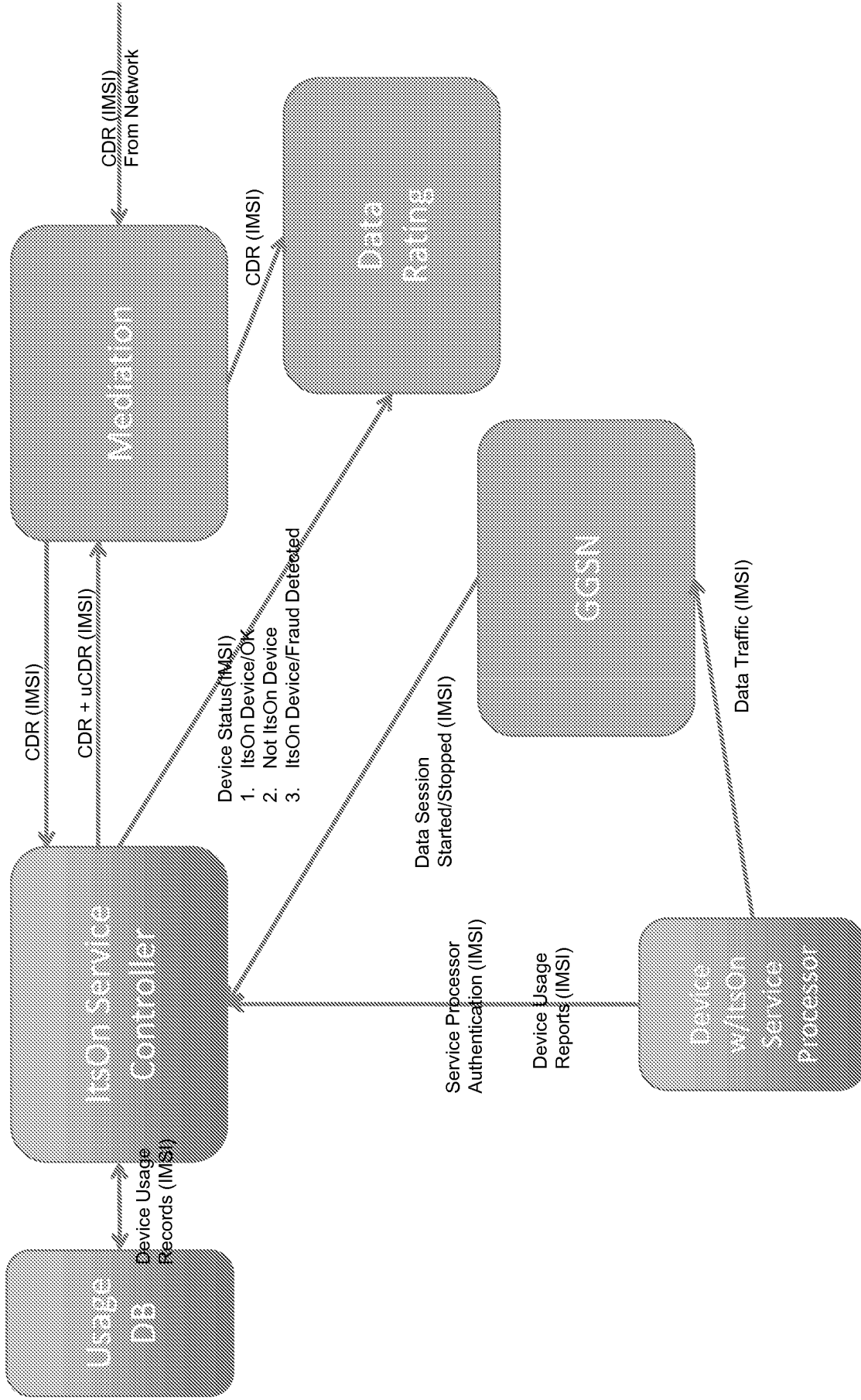
SGSN Notification of Start/Stop Data Session



Option 2: GGSN Notification of Start/Stop Data Session – Process

1. Device starts data session.
2. GGSN recognizes start of a new data session.
3. GGSN notifies ItsOn Service Controller that the device has started a data session
4. ItsOn Service Controller waits for a pre-determined time (e.g., one minute) to receive a login/authentication request from the ItsOn Service Processor on the device
 1. If the ItsOn Service Controller sees the request, it sends a notification to Data Rating to indicate that the device has an ItsOn Service Processor and expect uCDR reports via Data Mediation.
 2. If the ItsOn Service Controller does not see the request, it sends a notification to Data Rating to indicate that the device does not have an ItsOn Service Processor and to process usage based on carrier CDR reports.
5. ItsOn Service Controller receives usage reports from the ItsOn Service Processor
 1. If ItsOn Service Controller does not receive usage reports from the device based on time/usage intervals , it sends a notification to Data Rating to indicate that the device is in a Fraud state and usage should be billed based on carrier CDR reports.
6. Data Mediation sends CDRs to ItsOn Service Controller.
7. ItsOn Service Controller queries it's device usage database for uCDRs for the device.
8. ItsOn Service Controller compares carrier CDR data usage byte counts vs. uCDRs.
 1. If ItsOn Service Controller determines that the carrier usage counts don't match the uCDR usage counts (e.g. Fraud), it sends a notification to Data Rating to indicate that the device is in a Fraud state and usage should be billed based on carrier CDR reports.
9. ItsOn Service Controller sends carrier CDR and ItsOn uCDRs to Data Mediation.
10. When GGSN determines that the data session has closed, it sends a notification to the ItsOn Service Controller that the device data session is closed.

GGSN Notification of Start/Stop Data Session



Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		Securing Service Processor with Sponsored SIMs		
First Named Inventor/Applicant Name:		Gregory G. Raleigh		
Filer:		Michael J. Schallop/Veronica Pula		
Attorney Docket Number:		RALEP034+		
Filed as Large Entity				
Provisional Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Provisional application filing	1005	1	220	220
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				220

Electronic Acknowledgement Receipt	
EFS ID:	8452446
Application Number:	61384456
International Application Number:	
Confirmation Number:	9507
Title of Invention:	Securing Service Processor with Sponsored SIMs
First Named Inventor/Applicant Name:	Gregory G. Raleigh
Customer Number:	21912
Filer:	Michael J. Schallop/Veronica Pula
Filer Authorized By:	Michael J. Schallop
Attorney Docket Number:	RALEP034+
Receipt Date:	20-SEP-2010
Filing Date:	
Time Stamp:	14:46:29
Application Type:	Provisional

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$220
RAM confirmation Number	1002
Deposit Account	500685
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Provisional Cover Sheet (SB16)	RALEP034plus_Provisional_Coversheet_Efile.pdf	1000039	no	3
			0898343378ecd11fe7d1712d2a7b00f68970b7c5		
Warnings:					
Information:					
2	Specification	RALEP034plus_App.pdf	134248	no	5
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Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	29054	no	2
			350f48f669e0c169d2dd5dacfb10f922dd302769		
Warnings:					
Information:					
Total Files Size (in bytes):			1163341		
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