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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	079198.0107
		Application Number	
Title of Invention	Mobile Activity Intelligence		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.</p> <p>This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

## Secrecy Order 37 CFR 5.2

- ☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

## Applicant Information:

<b>Applicant 1</b>					
<b>Applicant Authority</b>		<input checked="" type="radio"/> Inventor		<input type="radio"/> Legal Representative under 35 U.S.C. 117	
				<input type="radio"/> Party of Interest under 35 U.S.C. 118	
<b>Prefix</b>	<b>Given Name</b>	<b>Middle Name</b>	<b>Family Name</b>	<b>Suffix</b>	
	Ojas	Udayan	Rege		
<b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
<b>City</b>	Palo Alto	<b>State/Province</b>	CA	<b>Country of Residence</b>	US
<b>Citizenship under 37 CFR 1.41(b)</b>		US			
<b>Mailing Address of Applicant:</b>					
<b>Address 1</b>		4290 Briarwood Way			
<b>Address 2</b>					
<b>City</b>	Palo Alto	<b>State/Province</b>	CA		
<b>Postal Code</b>	94306	<b>Country</b>	US		
<b>Applicant 2</b>					
<b>Applicant Authority</b>		<input checked="" type="radio"/> Inventor		<input type="radio"/> Legal Representative under 35 U.S.C. 117	
				<input type="radio"/> Party of Interest under 35 U.S.C. 118	
<b>Prefix</b>	<b>Given Name</b>	<b>Middle Name</b>	<b>Family Name</b>	<b>Suffix</b>	
	Robert	Bates	Tinker		
<b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
<b>City</b>	San Francisco	<b>State/Province</b>	CA	<b>Country of Residence</b>	US
<b>Citizenship under 37 CFR 1.41(b)</b>		US			
<b>Mailing Address of Applicant:</b>					
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<b>City</b>	San Francisco	<b>State/Province</b>	CA		
<b>Postal Code</b>	94115	<b>Country</b>	US		
<b>Applicant 3</b>					
<b>Applicant Authority</b>		<input checked="" type="radio"/> Inventor		<input type="radio"/> Legal Representative under 35 U.S.C. 117	
				<input type="radio"/> Party of Interest under 35 U.S.C. 118	
<b>Prefix</b>	<b>Given Name</b>	<b>Middle Name</b>	<b>Family Name</b>	<b>Suffix</b>	
	Sanjeev	Kumar	Mishra		
<b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
<b>City</b>	Sunnyvale	<b>State/Province</b>	CA	<b>Country of Residence</b>	US

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	079198.0107
		Application Number	
Title of Invention	Mobile Activity Intelligence		

<b>Citizenship under 37 CFR 1.41(b)</b>		IN	
<b>Mailing Address of Applicant:</b>			
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Address 2			
City	Sunnyvale	State/Province	CA
Postal Code	94087	Country	US
<b>Applicant 4</b>			
<b>Applicant Authority</b> <input checked="" type="radio"/> Inventor		<input type="radio"/> Legal Representative under 35 U.S.C. 117	
		<input type="radio"/> Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name
	Sandilya		Garimella
<b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service			
City	San Jose	State/Province	CA
		Country of Residence	US
<b>Citizenship under 37 CFR 1.41(b)</b>		US	
<b>Mailing Address of Applicant:</b>			
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Address 2			
City	San Jose	State/Province	CA
Postal Code	95120	Country	US
<b>Applicant 5</b>			
<b>Applicant Authority</b> <input checked="" type="radio"/> Inventor		<input type="radio"/> Legal Representative under 35 U.S.C. 117	
		<input type="radio"/> Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name
	Stuart	Carleton	Eichert
<b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service			
City	Mountain View	State/Province	CA
		Country of Residence	US
<b>Citizenship under 37 CFR 1.41(b)</b>		US	
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Address 1		269 Bush Street, Apt. H	
Address 2			
City	Mountain View	State/Province	CA
Postal Code	94041	Country	US
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the <b>Add</b> button. <span style="float: right;">Add</span>			

## Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
<input type="checkbox"/> An Address is being provided for the correspondence Information of this application.	
Customer Number	05073

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	079198.0107
		Application Number	
Title of Invention	Mobile Activity Intelligence		
Email Address		<input type="button" value="Add Email"/>	<input type="button" value="Remove Email"/>

**Application Information:**

Title of the Invention	Mobile Activity Intelligence		
Attorney Docket Number	079198.0107	Small Entity Status Claimed	<input type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	32	Suggested Figure for Publication (if any)	

**Publication Information:**

<input type="checkbox"/>	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
<input checked="" type="checkbox"/>	<b>Request Not to Publish.</b> I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application <b>has not and will not</b> be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

**Representative Information:**

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.			
Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	05073		

**Domestic Benefit/National Stage Information:**

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.			
Prior Application Status		<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the <b>Add</b> button.			

**Foreign Priority Information:**

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	079198.0107
		Application Number	
Title of Invention	Mobile Activity Intelligence		

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

			<a href="#">Remove</a>
Application Number	Country <sup>1</sup>	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			<input type="radio"/> Yes <input checked="" type="radio"/> No
Additional Foreign Priority Data may be generated within this form by selecting the <b>Add</b> button.			

## Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

### Assignee 1

If the Assignee is an Organization check here. ☒

Organization Name	Mobile Iron, Inc.
-------------------	-------------------

### Mailing Address Information:

Address 1	1320 Chesapeake Terrace		
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Address 2	
-----------	--

City	Sunnyvale	State/Province	CA
------	-----------	----------------	----

Country <sup>1</sup>	US	Postal Code	94089
----------------------	----	-------------	-------

Phone Number		Fax Number	
--------------	--	------------	--

Email Address	
---------------	--

Additional Assignee Data may be generated within this form by selecting the **Add** button.

## Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

<b>Signature</b>	/Kevin M. Donnelly/		Date (YYYY-MM-DD)	2009-04-09	
First Name	Kevin	Last Name	Donnelly	Registration Number	61643

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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:

1. 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 the Freedom of Information Act requires disclosure of these records.
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.
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).
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 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 inspections or an issued patent.
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.

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**NONPUBLICATION REQUEST  
UNDER  
35 U.S.C. 122(b)(2)(B)(i)**

First Named Inventor

Rege et al.

Title

Mobile Activity Intelligence

Attorney Docket Number

079198.0107

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

/Kevin M. Donnelly/

April 9, 2009

Signature

Date

Kevin M. Donnelly

61643

Typed or printed name

Registration Number, if applicable

650-739-7513

Telephone Number

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

This collection of information is required by 37 CFR 1.213(a). 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 6 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 (1-800-786-9199) 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:

1. 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.
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).
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 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.
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.

ATTORNEY DOCKET  
079198.0107

DECLARATION AND  
POWER OF ATTORNEY

1

### DECLARATION AND POWER OF ATTORNEY

As a below-named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name; I believe the named inventor or inventors are the original and first inventor or inventors of the subject matter which is claimed in and for which a patent is sought on the application entitled MOBILE ACTIVITY INTELLIGENCE, which is attached hereto; and

I have reviewed and I understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above; I do not know and I do not believe that the above-identified subject matter was ever known or used in the United States of America before my invention or discovery thereof, patented or described in any printed publication in any country before my invention or discovery thereof or more than one year prior to the above-identified application, or in public use or on sale in the United States of America more than one year prior to the above-identified application; the above-identified subject matter has not been patented or made the subject of an inventor's certificate issued prior to the date of the above-identified application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns; and 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 by 37 C.F.R. § 1.56, which for a continuation-in-part application includes information known to me to be material to patentability as defined by 37 C.F.R. § 1.56 that became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or (f) or 35 U.S.C. § 365 of any foreign application for patent or inventor's certificate or PCT international application listed below and I have identified below, by indicating priority not claimed, any foreign application for patent or inventor's certificate or any PCT international application having a filing date before that of the application on which priority is claimed:

PAL01:101756.1

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079198.0107

DECLARATION AND  
POWER OF ATTORNEY

2

Application Number	Country	Date Filed	Priority Claimed (Yes or No)
-----NONE-----			

I hereby claim the benefit under 35 U.S.C. § 120 of any United States patent application listed below:

Application Number	Date Filed	Status
-----NONE-----		

I hereby appoint the following as my attorneys or agents, with full power of substitution and revocation, to prosecute the above-identified application, to transact all business in the United States Patent and Trademark Office connected therewith, and to file and prosecute any international patent application filed thereon before any international authority.

The practitioners at Customer Number **05073**

Send correspondence to

Mark J. Spolyar  
at Customer Number 05073

Direct telephone calls to

Mark J. Spolyar at 650.739.7511

I hereby declare that all statements made herein of my own knowledge are true; that all statements made on information and belief are believed to be true; and that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and any such willful false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

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079198.0107

DECLARATION AND  
POWER OF ATTORNEY

3

Title of Application: MOBILE ACTIVITY INTELLIGENCE

Full name of inventor: Ojas Udayan Rege

Signature of inventor:

*Ojas Udayan Rege*

Date:

*Apr 9, 2009*

Residence: Palo Alto, California, United States of America

Country of citizenship: United States of America

Mailing address: 4290 Briarwood Way  
Palo Alto, CA 94306

PAL01:101756.1

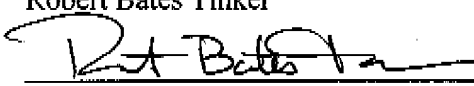
ATTORNEY DOCKET  
079198.0107

DECLARATION AND  
POWER OF ATTORNEY

4

Title of Application: MOBILE ACTIVITY INTELLIGENCE

Full name of inventor: Robert Bates Tinker

Signature of inventor: 

Date: Apr 9 2009

Residence: San Francisco, California, United States of America

Country of citizenship: United States of America

Mailing address: 2285 Broadway, #1  
San Francisco, CA 94115

PAL01:101756.1


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079198.0107

DECLARATION AND  
POWER OF ATTORNEY

5

Title of Application: MOBILE ACTIVITY INTELLIGENCE

Full name of inventor: Sanjeev Kumar Mishra

Signature of inventor: 

Date: 4/9/2009

Residence: Sunnyvale, California, United States of America

Country of citizenship: Indian

Mailing address: 791 W. Homestead Road  
Sunnyvale, CA 94087

PAL01:101756.1



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079198.0107

DECLARATION AND  
POWER OF ATTORNEY

6

Title of Application: MOBILE ACTIVITY INTELLIGENCE

Full name of inventor: Sandilya Garimella

Signature of inventor: *Sandilya Garimella*

Date: 4.09.09

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Country of citizenship: United States of America

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San Jose, CA 95120

PAL01:101756.1

ATTORNEY DOCKET  
079198.0107

DECLARATION AND  
POWER OF ATTORNEY

7

Title of Application: MOBILE ACTIVITY INTELLIGENCE

Full name of inventor: Stuart Carleton Eichert

Signature of inventor: Stuart Carleton Eichert

Date: April 9, 2009

Residence: Mountain View, California, United States of America

Country of citizenship: United States of America

Mailing address: 269 Bush Street, Apt. H  
Mountain View, California 94041

PAL01:101756.1

# Mobile Activity Intelligence

## **TECHNICAL FIELD**

[0001] This disclosure relates generally to mobile devices and management systems and, more particularly, to gathering data directly from mobile devices for use in mobile device management.

## **BACKGROUND**

[0002] In a manner similar to personal computers and laptops, business enterprises increasingly rely on mobile and handheld devices. Indeed, the capabilities and uses of mobile devices have moved beyond voice communications and personal information management applications to a variety of communications- and business-related functions including email, browsing, instant messaging, enterprise applications, and video applications. For example, the functionality of many mobile devices have been extended to include cellular and wireless local area network (WLAN) communications interfaces, as well as virtual private network (VPN) and other client applications. Furthermore, mobile devices used in enterprises may also include enterprise applications used by employees in the field or otherwise.

[0003] Deployment, management and configuration of mobile and handheld devices in enterprise environments, however, present certain challenges. For example, the vast and constantly changing variety of mobile device types, functions and capabilities presents challenges to configuration, provisioning and troubleshooting. Moreover, enterprise mobile expenses are one of the fastest growing enterprise expenditures, and as such, enterprises are paying more attention to their bills from network service providers.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

[0004] Figures 1A to 1D are schematic diagrams illustrating an example mobile device management architecture according to an embodiment of the present disclosure.

[0005] Figure 2 provides an example schematic, functional representation of how a control client may be integrated into a mobile device according to an embodiment of the present disclosure.

[0006] Figure 3 is a schematic diagram illustrating an example server system architecture.

[0007] Figure 4 is a schematic diagram illustrating an example mobile device system architecture.

[0008] Figure 5 is a schematic diagram illustrating example application proxy functions.

[0009] Figure 6 is a diagram illustrating example device virtualization layers.

[0010] Figure 7 is a diagram illustrating mobile device virtualization functionality.

[0011] Figure 8 shows a flowchart illustrating an example process for collecting and receiving call data from a mobile phone.

[0012] Figures 9A-9D illustrate example usage, security, and quality of service reports.

[0013] Figures 10A-10C illustrate example voice, data, and SMS usage reports, respectively.

[0014] Figures 11A-11D illustrate example international usage reports.

[0015] Figures 12A-12H illustrate various other example reports.

[0016] Figure 13 illustrates an example control center interface.

[0017] Figures 14A and 14B illustrate example QOS maps.

[0018] Figure 14C illustrates an example call log.

[0019] Figure 15 illustrates an example embodiment of a central mobile activity intelligence service provider system.

## **DESCRIPTION OF EXAMPLE EMBODIMENTS**

**[0020]** Embodiments of the present disclosure provide methods, apparatuses and systems directed to the collection of a wide variety of data from a variety of mobile devices, which, in turn, may be used in facilitating deployment, configuration, and/or management of the mobile devices. In particular embodiments, a central mobile activity intelligence provider may receive any and all data directly, and potentially in real-time, from the mobile devices (e.g., phones) associated with a given enterprise, filter, analyze, and otherwise process the data, and provide customized reports to the enterprise thereby allowing the enterprise to have a better information balance between what the enterprise knows and what its network service provider(s) know. By way of example, in particular embodiments, key reports may include voice summary reports, carrier summary reports, international roaming reports, dropped call reports, and home zone reports, among others, as will be described in further detail below. Such knowledge may enable the enterprise to significantly reduce its costs by utilizing this knowledge to monitor cost drivers, negotiate with network service providers for better rates and to optimize its service plans as well as to verify quality of service (QoS) or compliance and enforce a service level agreement (SLA). Furthermore, this raw and/or processed data may be stored in a central database and compared with other related data over time to gauge the effectiveness of the enterprise's current mobile deployment. Moreover, such aggregated data may be stripped of most or all individual and/or enterprise identifying data and further aggregated with that of other enterprises in a central data repository. In this way, a central mobile activity intelligence service provider may provide multi-enterprise multi-carrier reports that include aggregated data from a plurality of enterprises and network service providers and provide valuable insight to each of the enterprises.

**[0021]** In a particular embodiment, for each of one or more mobile devices, a mobile device management application, maintains a virtual instance of the mobile device, and interacts with a control client application hosted on the physical instance of the mobile device to synchronize the state of the physical instance of the mobile device with the virtual instance of that mobile device. In one particular embodiment, the control client logs man-machine interface (MMI) data, file system commands, and other data characterizing usage of, and/or the actions performed on, the mobile device. Some or all of the log data is provided to a device management application hosted on a device management server, which can synchronize the state of the virtual instance of the mobile device. In this manner, the device management application provides an administrator

a snapshot of the state of the mobile device, and facilitates device management operations, as described below.

#### Virtual Instance Architecture for Mobile Device Management Systems

**[0022]** In particular embodiments, a virtual instance of a mobile (wireless capable) device is a running instantiation of the associated actual physical mobile device (hereinafter also referred to as “physical instance”) that can execute or operate in a virtualized execution environment. For example, a server may host a virtual machine that emulates the hardware (such as the microprocessor or controller) of the mobile device, allowing a copy of the mobile device operating system (hereinafter also referred to as “virtual operating system”) to be run. Additionally, one or more applications (themselves or copies) installed on the actual mobile device can also run on the virtual operating system. The virtual instance of the mobile device may also include all or a subset of the file system image of the mobile device, as well as device configuration and settings. In one embodiment, the logged usage data transmitted from a control client application on the actual mobile device can be used to replay, using the virtual instance of the mobile device, the actions taken by a user on the actual mobile device for a desired period of time. Still further, a device management server, in some implementations, may support an interface that presents a rendered image of the mobile device and activatable man-machine interface that allows a user to input commands to, and otherwise interact with, the actual mobile device or the virtual instance of the mobile device.

**[0023]** In one embodiment, there is a one-to-one correspondence between a virtual instance and a physical instance of a mobile device. The virtual instance of the mobile device includes a hardware emulation layer and a software emulation layer. The hardware and software emulation layers emulate the hardware and software components of the physical instance of the mobile device, respectively. Both the hardware and software emulation layers are executable in a computer runtime environment and, generally, the software emulation layer is executable within the context of the hardware emulation layer to replicate the behavior, operations, and/or characteristics of identical software being executed on the actual physical mobile device. In a particular embodiment, a mobile device management application on a device management server executes the hardware and/or software emulation layers of a virtual instance of a mobile device in connection with remote management of the physical instance of the mobile device.

**[0024]** Figures 1A and 1B are schematic diagrams illustrating the interaction between a physical instance of a mobile device 102a and a device management server 104 operative to maintain a virtual instance of the mobile device 102b. As Figure 1A illustrates, a physical instance of a mobile device 102a may communicate with device management server 104 over a variety of communication channels and networks, such as WLAN/WiFi, BlueTooth, Wide Area Networks (WANs), and/or indirectly via a personal computer 105 during, by way of example, synchronization. As Figure 1B illustrates, device management server 104 may be operably connected to an enterprise network 115. Enterprise network 115 may further include one or more of email or exchange servers 122, enterprise application servers 124, authentication (AAA) servers 126, directory servers 128, Virtual Private Network (VPN) gateways, firewalls, among other servers and components. A number of mobile devices 102a may access or utilize one or more of the enterprise systems or functionality described above.

**[0025]** Figures 1C and 1D illustrate other example deployment architectures. In various embodiments, device management server 104 can be installed in a variety of locations such as, by way of example, within a data center, a de-militarized zone (DMZ, i.e., a computer or small subnetwork that lies between a trusted internal network, such as a corporate private LAN, and an untrusted external network, such as the public Internet), topologically in-front of enterprise application servers, as well as in the cloud (i.e., a public or semi-public space that exists between the end points of a transmission depending on the requirements of the network administrator). Figure 1C illustrates an example deployment of device management server 104 in a DMZ. As shown in Figure 1C, device management server 104 may reside in the enterprise DMZ and may act as a proxy device for some or all data traffic coming from the physical instances 102a of the mobile devices connecting through external networks including cellular networks such as, by way of example., GSM (e.g., 2G), GPRS (e.g., 2.5G or 3G), UMTS (e.g., 3G), or EDGE networks, as well as other wireless networks (e.g., WiFi).

**[0026]** In particular embodiments, all the data traffic that comes from the physical instances 102a of the mobile phones will first be received by device management server 104 before being sent to the respective final destinations. In one particular embodiment, to direct all traffic from the physical instances 102a of the mobile devices to device management server 104, an IPSEC tunnel may be used that terminates at device management server 104. In various embodiments, there may be at least two modes of operation here--split-tunneling and full tunneling. In split

tunneling mode, all traffic that is destined to the enterprise network will come through the IPSEC tunnel and any other traffic that is destined to, for example, the internet will go directly to the internet through the operator's network. In full tunneling mode, all traffic irrespective of its destination (e.g., internet traffic or enterprise network traffic) will first come to device management server 104 before being transmitted out. In some embodiments, when in full tunneling mode, device management server 104 may offer more comprehensive security and controls to the administrators as all traffic passes through the device management server 104, giving administrators full control of the traffic going in and out of the physical instance 102a of any mobile device.

**[0027]** Figure 1D illustrates an example Software as a Service (SaaS) deployment architecture. In particular embodiments, a device management server 104b resides in a remote network relative to the enterprise, and can be remotely managed by enterprise administrators. This sort of model may be well-suited for enterprises that have more SaaS-based applications where the data traffic usually does not come to the enterprise network. Rather, clients are directly served from the servers within the internet. In such a case, a deployment architecture where network traffic is first received within the enterprise network over IPsec Tunnels, and is then sent to the internet to host applications may be inefficient as it adds another hop to the network. However, an SaaS deployment architecture is well-suited for enterprises that include a relatively fewer number of devices and perhaps, furthermore, cannot afford to manage them exclusively in the enterprise network.

**[0028]** In an example SaaS model embodiment, the solution can be implemented as a single box operable such that an administrator may log into a portal available to him to manage mobile devices, or, in an alternate embodiment, deployed in conjunction with another device management server 104a within the enterprise network. In such an example two-box solution, enterprise device management server 104a may protect the traffic entering the enterprise, while device management server 104b in the internet protects the traffic going directly to the Internet from the mobile client. In this scenario, two IPsec tunnels may be deployed for a given mobile device 102a to protect the traffic between the mobile client in the mobile device 102a and the internet and enterprise networks. Any traffic that is destined to the enterprise will use the enterprise IPSEC tunnel and all other traffic will use the other IPSEC tunnel. In such a case, both device management servers 104a and 104b may communicate with one another to



accomplish various functions or tasks. If, for some reason, the device management server 104b in the hosted cloud sees some abnormal behavior (e.g., a virus or something similar) on a particular mobile client, it may immediately inform the device management server 104a in the enterprise to implement a policy to block the traffic coming from that particular mobile client.

**[0029]** Each device management server 104 may include, or operate in connection with, one or more of a data manager 140, a synchronization proxy 142, an application/image certification module 144, a profile control module 146, a log module 148, a rules engine 150, a policy module 152 and an identity manager 154. Device management servers 104 may also operate in connection with one or more virtual instances 102b of respective mobile devices. In one implementation, device management servers 104 comprise one or more virtual machines 106, as may be required to emulate the hardware of different mobile device types. Each virtual instance 102b of a mobile device is a virtualized instance that is configured based on the configuration details and other attributes of the physical instance 102a of that particular mobile device. For example, the virtual operating system that runs on the virtual machine 106 is selected to be the same version as that installed on the physical instance 102a of the mobile device. In addition, device management servers 104 may maintain a virtual image of a data storage device(s) installed on the physical instance 102b of the mobile device.

**[0030]** A virtual instance 102b of a mobile device may comprise information relating to 1) one or more applications installed on the mobile device, 2) an operating system, 3) a microprocessor, controller, and/or other hardware or firmware functionality of the mobile device, and 4) an image of one or more storage devices installed in the mobile device (such as a disk or flash/ROM image) including executable as well as non-executable files and data stored on a storage device of the mobile device. A storage device or file system image may comprise a computer file containing the complete contents and structure of a data storage medium or device, such as a hard drive, flash drive, etc. An image generally contains all the information necessary to replicate the structure and contents layout, as well as the actual contents, of a storage device. Device management servers 104 may maintain this image information in a data store and load a particular virtual instance 102b into the virtual execution environment as needed or, for example, in response to a command from an administrator.

**[0031]** As described above, the virtual instance 102b of a particular mobile device is a running instance of the mobile device that may execute in a virtual machine runtime

environment. For example, the virtual machine runtime environment may emulate the hardware processor installed in the mobile device relative to the operating system. In a particular embodiment, the virtual machine fully simulates the complete hardware of the mobile device, allowing an unmodified operating system to run in connection with the virtual machine. In other embodiments, the virtual machine may require some modification to the operating system. In particular embodiments, the virtual machine 106 may be implemented using a Type 1 or Type 2 hypervisor. A Type 1 hypervisor runs directly on the hardware while a Type 2 hypervisor runs on another operating system, such as Linux. Each virtual machine may run any operating system supported by the underlying hardware. Device management server 104 may thus run two or more different "guest" virtual instances 102b of respective mobile devices simultaneously, in separate "private" virtual computers. In some embodiments, device management server 104 may operate in connection with multiple virtual machine types, as required for management of different mobile device platforms.

**[0032]** Device management server 104 may also include one or more network interfaces 110 for communication with remote hosts, such as the physical instances 102a of mobile devices, as well as enterprise applications and others. In some embodiments, the virtual instances 102b of the mobile devices may communicate with remote hosts through the one or more network interfaces 110. Device management server 104 may further support a holding or quarantine section 108, which is a conceptual area into which virtual instances 102b of mobile devices may be placed. By way of example, in some embodiments, physical instances 102a of mobile devices that have become infected with a virus may have their corresponding virtual instances 102b placed in quarantine section 108. In addition, new virtual instances 102b that have not been fully defined relative to the corresponding physical mobile device instances 102a may also be placed in the quarantine section 108 until the full virtual instances have been defined. Placement of a virtual instance 102b of a mobile device in quarantine section 108 may affect policy or configuration changes on the enterprise's network. For example, access to the enterprise network allowed to a physical instance 102a of a mobile device, while the virtual instance 102b is in quarantine section 108 may be restricted to data connections to device management server 104 in order to receive required configuration updates or patches, or to allow the device management server to discover one or more attributes of the physical instance 102a in order to fully define the virtual instance.

**[0033]** A control client application 302 hosted on a particular physical mobile device may monitor operation of the mobile device and interact with remote device management application server 104 to allow the mobile device management application server to synchronize the state of the physical and virtual instances 102a and 102b, respectively, of the mobile device. For example, in particular embodiments, the control client application 302 may include layers or hooks inserted into one or more communications or device protocol stacks to monitor and/or log data entered into or transmitted from the mobile device. More specifically, the control client application 302 may log the key strokes entered using a dial pad, keyboard, and/or pointing device. The control client application 302 may also monitor and log file system operations. In addition, the control client application 302 may monitor and log data transmitted to or from a communications interface, such as a cellular network interface, a wireless local area network interface, among others.

**[0034]** Figure 2 illustrates how control client functionality may be integrated with a physical instance 102a of a mobile device. In particular embodiments, the control client functionality may include a control client application 302 and one or more control points inserted to monitor data traversing the interfaces of the physical instance 102a of the mobile device. For example, a man-machine interface (MMI) control point 306 may be inserted into the driver stack of the man-machine interface 308 to log keystroke data. An application/file system control point 310 may be inserted to monitor and log application level and file system commands. Additionally, stack control point 314 may be inserted in one or more network protocol stacks of the physical instance 102a of the mobile device, while port control points 318 may be inserted at a different layer of the network protocol stack. In various embodiments, one or more of the control points may be implemented as drivers that are installed in the appropriate driver stacks of the mobile device. In some implementations, the control points may emulate the operation of higher layer and/or lower layer drivers and pass data on to the lower or higher layer native drivers. In some embodiments, a rule set may define what data is captured.

**[0035]** Control client application 302 may store the data collected by the control points in one or more log files stored on a storage device of the mobile device. For example, control client application 302 may store file system commands (such as open, save, delete, copy, rename, etc.) in file system log 344. Furthermore, control client application 302 may store keystroke data in

behavior log 352. Still further, control client application 302 may store data relating to its own operation in control log 340.

**[0036]** The control client application 302 can provide some of all of the data to device management server 104, which may synchronize the state of the virtual instance 102b of the mobile device with the physical instance 102a based on the data provided to it. In this manner, a central device management server 104 can, for example, maintain an accurate image of the data storage device(s) of the mobile device, including the applications installed and the files stored on the mobile device. In various embodiments, control client application 302 may operate to provide this data in real-time, intermittently during periods of non-activity (e.g., such as when the mobile device is inserted into a charging cradle), in addition to, or at, periodic intervals. Still further, the data may be provided to the device management server 104 during a synchronization operation between the mobile device and the user's personal computer. In a particular embodiment, a synchronization utility hosted by the user's personal computer may be configured to transmit the data to the device management server 104. In addition, the control client application 302 may operate in one to a plurality of modes based on a set of rules or policies. Furthermore, the control client application 302 may also apply a rule set that determines what data is provided to the device management server 104, and/or when such data is transmitted.

**[0037]** In particular embodiments, the control client application 302 and the remote management server 104 may establish encrypted connections. For example, Virtual Private Network (VPN) tunneling and encryption may be used to secure the connection. In a particular implementation, the physical instance 102a of a mobile device may include port-based VPN functionality to encrypt the connection between the control client application 302 and the remote management server.

**[0038]** In various embodiments, the physical instances 102a of the mobile devices may include device management and/or data synchronization functionality. For example, the physical instances 102a of the mobile devices may support the Open Mobile Alliance (OMA) Device Management (DM) protocol, and/or the OMA Data Synchronization (DS) protocol. OMA DM is a protocol specified by OMA for DM purposes, by the Device Management Working Group and the Data Synchronization Working Group. One such specification is OMA DM version 1.2, which is incorporated by reference herein. The OMA DM specification is designed for management of small mobile devices such as, by way of example, mobile phones, mobile smart

phones, PDAs and palm top computers. The device management may support 1) provisioning (configuration of the device (including first time use), enabling and disabling features); 2) configuration (allowing changes to settings and parameters of the device); 3) software upgrades (providing for new software and/or bug fixes to be loaded on the device, including applications and system software); and 4) fault management (such as reporting errors from the device, querying about status of device). The device management generally takes place by communication between a server (which is managing the device) and the client (the device being managed). OMA DM is designed to support and utilize any number of data transports such as a) physically over both wireline (e.g., USB, RS-232) and wireless media (e.g., GSM, CDMA, Infrared, BlueTooth), and b) transport layers implemented over any of WSP (WAP), HTTP or OBEX or similar transports. The communication protocol is generally a request-response protocol. Authentication and challenge of authentication may be incorporated to ensure the server and client are communicating after proper validation. The communication may be initiated by the OMA DM server, asynchronously, using any of a variety of methods available such as, by way of example, a WAP Push or SMS. Once the communication is established between the server and client, a sequence of messages may be exchanged to complete a given device management task. OMA DM provides for alerts, which are messages that may occur out of sequence, and may be initiated by either server or client. Such alerts may be used to handle errors, abnormal terminations, etc.

**[0039]** Several parameters relating to the communication such as, for example, the maximum message size, may be negotiated between the server and client during the initiation of a session. In order to transfer large objects, the protocol allows for sending larger objects in smaller portions or chunks. Error recovery based on timeouts is not specified completely, hence, different implementations may possibly differ as the protocol is not fully specified in these areas. The protocol specifies exchange of packages during a session, each package consisting of several messages and each message, in turn, consisting of one or more commands. The server generally initiates the commands and the client is expected to execute the commands and return the result(s) via a reply message. Particular embodiments may also use the OMA Data Synchronization (DS) protocols and functionality for synchronization of files and data between the physical and virtual instances 102a and 102b of a particular mobile device.

**[0040]** Using OMA DM or another suitable protocol, the control client functionality discussed above can be installed on a physical instance 102a of a mobile device. For example, a mobile device without the control client functionality can be provisioned and configured as follows. In a preliminary step, an administrator may create a virtual instance 102b of a mobile device with a minimal configuration. The virtual instance 102b, prior to full configuration, may be quarantined in quarantine 108—a state in which the corresponding physical instance 102a of the mobile device is not allowed access (or at least full access) to the enterprise's internal network, except for device registration and provisioning with the device management server 104. Suitable identifying information may include a device identifier, a user name, and the like. A user of the mobile device may then be directed to connect to the device management server 104 using, for example, a dial up connection, or a data connection with a WAP browser. The device management server 104, acting as an OMA DM server, may then interrogate the mobile device to learn one or more attributes (such as model number, serial number, operating system type and version, etc.), and provision and configure the mobile device. When the physical instance 102a of the mobile device has been configured, the device management server 104 may further use the configuration and other information related to the mobile device to complete the virtual instance 102b of the mobile device and remove it from quarantine.

**[0041]** The device management server 104 may also include other functionality, such as image and/or application software installation, upgrade and/or repair for one or more mobile devices, as well as other functionality. In one embodiment, an administrator may select one or more virtual instances 102b of respective mobile devices, and cause device management server 104 to transmit updated software applications, patches, and the like to the corresponding physical instances 102a of the mobile devices. During installation of software to a particular mobile device, the control client application 302 may communicate the log data reflecting the changes to device management server 104, which results in changes to the virtual instance 102b of the mobile device. In another embodiment, the administrator may change one or more attributes of the virtual instance 102b of the mobile device, which causes the device management server 104 to transmit commands to the corresponding physical instance 102a of the mobile device to cause it to implement the changes made to the virtual instance of the mobile device.

**[0042]** The physical and virtual instances 102a and 102b of the mobile device, through the control client 302, device management server 104, and the protocols described herein, may effect

state changes, policy and other device management rules, and affect one or more behaviors in one or both directions. In particular embodiments, state changes or behaviors on a particular physical instance 102a may cause corresponding state changes or behaviors to the corresponding virtual instance 102b of the mobile device. Alternatively or in addition, state changes resulting from execution, modification, re-configuration, etc. of the virtual instance 102b may result in state changes to, or behaviors of, the physical instance 102a of the mobile device. For example, an administrator may run the virtual instance 102b of the mobile device (for example, to fix a problem the user is experiencing during a help-desk call) and trigger the device management server 104 to synchronize the resulting state and behavior of the virtual instance with the physical instance 102a of the mobile device. More particularly, a mobile device user may even watch the display screen of the physical instance 102a of the mobile device, as a help desk operator controls the virtual instance 102b of the mobile device to accomplish an action, such as retrieving a desired document, configuring an email client, among a wide assortment of actions. The state and behavior information may be transmitted to the control client 302 which may implement the resulting changes. Furthermore, in some particular embodiments, synchronization of state and behavior may operate in real-time. In other embodiments, an administrator may change one or more policies by modifying the virtual instance 102b of the mobile device and cause device management server 104 to synchronize the policy change with the physical instance 102a of the mobile device at a later (scheduled or otherwise available) time.

**[0043]** In some embodiments, device management server 104 may be operative to proxy transactions, sessions and/or connections between a physical instance 102a of a mobile device and other logical or physical nodes, such as enterprise application services, and the like. For example, in one embodiment, the virtual instance 102b of the mobile device may be used as a proxy, which accesses enterprise application 124. The resulting changes to device state, file system state and data that can be used to simulate user-observed behaviors on the display screen of the physical device instance 102a may be communicated back to the physical instance of the mobile device and rendered on the display and otherwise effected by the control client 302. In alternate embodiments, device management server 104 may simply proxy the connection and selectively transmit data messages from the enterprise application server (for example) to both the physical and virtual instances 102a and 102b of the mobile device.

**[0044]** Maintaining a virtual instance of a mobile device at a remote device management server facilitates a variety of configuration, management, troubleshooting and/or security functions. For example, the virtual instance provides an administrator a detailed snapshot of the state of the mobile device. The virtual instance also allows an administrator to perform management operations, such as virus/malware scans, application/image certification, etc., on the virtual instance of the mobile device, without consuming computing resources of the physical instance of the mobile device.

**[0045]** Figure 3 illustrates an example computing system architecture, which may be used to implement a physical server. In one embodiment, computing system 200 comprises a processor 202, a cache memory 204, and one or more software applications and drivers directed to the functions described herein. Additionally, computing system 200 may include a high performance input/output (I/O) bus 206 and a standard I/O bus 208. A host bridge 210 may couple processor 202 to high performance I/O bus 206, whereas I/O bus bridge 212 may couple the two buses 206 and 208 to one another. A system memory 214 and a network/communication interface 216 may be coupled to bus 206. Computing system 200 may further include video memory (not shown) and a display device coupled to the video memory. Mass storage 218 and I/O ports 220 may be coupled to bus 208. Computing system 200 may also optionally include a keyboard and pointing device (or other input device), and a display device (not shown) coupled to bus 208. Collectively, these elements are intended to represent a broad category of computer hardware systems, including but not limited to general purpose computer systems based on the x86-compatible processors manufactured by Intel Corporation of Santa Clara, California, and the x86-compatible processors manufactured by Advanced Micro Devices (AMD), Inc., of Sunnyvale, California, as well as any other suitable processor.

**[0046]** The elements of computing system 200 are described in greater detail below. In particular, network interface 216 provides communication between computing system 200 and any of a wide range of networks, such as an Ethernet (e.g., IEEE 802.3) network, etc. Mass storage 218 provides permanent storage for the data and programming instructions to perform the above described functions implemented in the location server 22, whereas system memory 214 (e.g., DRAM) provides temporary storage for the data and programming instructions when executed by processor 202. I/O ports 220 are one or more serial and/or parallel communication



ports that provide communication between additional peripheral devices, which may be coupled to hardware system 200.

**[0047]** Computing system 200 may include a variety of system architectures; and various components of computing system 200 may be rearranged. For example, cache 204 may be on-chip with processor 202. Alternatively, cache 204 and processor 202 may be packed together as a “processor module,” with processor 202 being referred to as the “processor core.” Furthermore, certain embodiments may not require nor include all of the above components. For example, the peripheral devices shown coupled to standard I/O bus 208 may couple to high performance I/O bus 206. In addition, in some embodiments only a single bus may exist, with the components of hardware system 200 being coupled to the single bus. Furthermore, hardware system 200 may include additional components, such as additional processors, storage devices, or memories.

**[0048]** As discussed below, in one embodiment, the operations of one or more of the physical servers (e.g., device management server 104 (which may itself be comprised of one or more servers) and those servers within the enterprise network 115) described herein are implemented as a series of software routines run by a computing system 200. These software routines comprise a plurality or series of instructions to be executed by one or more processors in the hardware system, such as processor 202. Initially, the series of instructions may be stored on a storage device, such as mass storage 218. However, the series of instructions can be stored on any suitable storage medium, such as a diskette, CD-ROM, ROM, EEPROM, etc. Furthermore, the series of instructions need not be stored locally, rather, they could be retrieved/received from a remote storage device, such as a server on a network, via network/communication interface 216. The instructions may be copied from the storage device, such as mass storage 218, into memory 214 and then accessed and executed by processor 202.

**[0049]** An operating system manages and controls the operation of computing system 200, including the input and output of data to and from software applications (not shown). The operating system provides an interface between the software applications being executed on the system and the hardware components of the system. According to one embodiment, the operating system is the Windows® 95/98/NT/XP operating system, available from Microsoft Corporation of Redmond, Wash. However, various embodiments may utilize other suitable operating systems, such as the Apple Macintosh Operating System, available from Apple

Computer Inc. of Cupertino, Calif., UNIX operating systems, LINUX operating systems, and the like. Of course, other suitable implementations may be possible. For example, the server functionalities described herein may be implemented by a plurality of server blades communicating over a backplane.

**[0050]** Figure 4 shows a schematic representation of the main components of an example mobile device 102a, according to various particular embodiments, which is adapted for use in connection with a GSM network or any other mobile telephone network and may also be configured to meet the wireless application protocol specification (WAP). In various embodiments, any type of wireless or other communications link may be utilized. For example, the wireless communication network over which mobile devices 102 communicate may utilize a cellular-based communication infrastructure that includes cellular-based communication protocols such as AMPS, CDMA, TDMA, GSM, iDEN, GPRS, EDGE, UMTS, WCDMA and their variants, among others.

**[0051]** Signal processing may be carried out under the control of a digital micro-controller 16 which has an associated RAM/ROM and flash memory 17. Electric analog signals may be produced by microphone 7 and fed to earpiece 6. The controller 16 may receive instruction signals from the keypad 8 including soft keys and control the operation of the display 5. Radio signals are transmitted and received by means of an antenna 23 that may be connected through a radio interface 24 to a codec 25 configured to process signals under control of the controller 16. Thus, in use, for speech, the codec 25 receives analog signals from the microphone 7, digitizes them into a form suitable for transmission and feeds them to the radio interface 24 for transmission through antenna element 23 to the public land mobile network (PLMN). Similarly, received signals are fed to codec 25 so as to produce analog signals which are fed to ear piece 6. The mobile device 102a may also include a subscriber identification module (SIM) card 26, a SIM card reader 27, light emitting diodes (LEDs) 28 and a ringer 29. In some embodiments, mobile device 102a is also a dual mode phone having a wireless local area network (WLAN) interface, as well as other wireless or physical interfaces (such as Bluetooth® and USB). Additionally, the mobile device 102a may be powered by a removable battery pack 15.

**[0052]** Figure 5 shows an example deployment of device management server 104 in a proxy mode, in which device management server 104 proxies sessions between mobile devices 102a and one or more enterprise applications. Device management server 104, when acting as a proxy

device, can proxy the applications so any specific environments (like BlackBerry®) can be generalized so that any device can be used for that specific environment. For example, device management server 104 can act as a BlackBerry® device to the BlackBerry® network service environment for non-BlackBerry® mobile devices. Additionally, the proxy service benefits users when they want to migrate to another environment different from their current one. In the example illustrated in Figure 5, device management server 104 is acting as a proxy for a BlackBerry® (or other mobile email) service.

**[0053]** BlackBerry® service requires all mobile traffic to be received at their Network Operations Center (NOC) first before entering the enterprise network. A typical BlackBerry® solution includes Blackberry enterprise servers, and a BlackBerry® gateway in the NOC. All the traffic going in and out of mobile clients will first hit the mobile gateway in the BlackBerry® NOC before going anywhere else (including internet destinations). In this way, BlackBerry® provides the end to end security from mobile client all the way through the enterprise email servers, thus providing the confidentiality to the enterprise user traffic. Any traffic destined to the internet will first go to the BlackBerry® NOC prior to the final destination. In Figure 5, the red line indicates traffic flow in a BlackBerry® environment, while the blue line indicates normal traffic flow. To provide BlackBerry® services to the normal users, one can deploy device management server 104 as an Application Proxy server. In this case, all the BlackBerry user traffic may go directly between the BlackBerry enterprise server and the BlackBerry gateway in the NOC. All the traffic from non-blackberry devices will go through the device management server 104 for Blackberry services.

**[0054]** Conventionally, mobile device management is often difficult and challenging as the mobile devices generally cannot be reached easily because of the different networks they operate on. Embodiments of the present disclosure facilitate or provide an architecture that eases device management, security and collaboration issues through an innovate architecture using virtualization. In a particular embodiment, a virtual instance 102b of a mobile device running in a network performs resource intensive process, and passes the results of that processing (e.g., through synchronization and other data transfers) to the physical instance 102a of the mobile device. In this manner, the user experience may be improved on the mobile device.

**[0055]** Figure 6 illustrates an example mobile device virtualization architecture according to a particular embodiment. The virtualization architecture comprises four functional layers.

Depending on the functionality or the task to be performed, one or more of the function layers may be used to perform a given operation or task. The four layers are data session layer 610, control layer 620, virtual data layer 630 and the virtual machine/instance (VM) layer 640.

**[0056]** Data session layer 610 is responsible for handling data session related functions. This layer acts as a proxy for all the session traffic going between the mobile devices and the application servers. Services like IPSEC VPN, SSL-VPN, Firewall or Network based Anti-virus functions are hosted in this layer. Data session layer 610 may maintain a session table for all the traffic to steer the traffic appropriately.

**[0057]** Control layer 620 is the main layer where most control functions are hosted. Policy settings, device management, data synchronization, and anti-virus engine may run in the control layer. For example, control of the data is implemented in this layer.

**[0058]** Virtual data layer 630 is where copies of the mobile device data are maintained. Data synchronization service in the control layer will synchronize the data between the mobile device and the virtual data layer copy of the mobile device data. OMA DS standard can be used for the synchronization services. Anti-virus software running in the control layer can work on this virtual data to provide the anti-virus functionality to the end device. If the anti-virus service finds any abnormality then the mobile device may be placed into quarantine until the virus has been cleaned and removed from the actual device.

**[0059]** VM layer 640 is the layer where the virtual instances 102b of the client devices reside. The virtual instances 102b are executing replicas of the actual physical instances 102a of the mobile devices exhibiting substantially the same behavior and functionality. These virtual instances need not run all the time and can be brought up and down depending on need. This VM layer 640 may execute on top of virtual containers or virtual machine monitors, provided by companies such as, for example, XenSource™, VMware or KVM (Kernel Virtual Machine). As discussed below, the VM layer 640 can be configured in at least two ways: full hardware and software emulation of the mobile device, or software-only emulation.

**[0060]** VM layer 640, in a particular embodiment, includes functionality that virtualizes substantially the entire physical instance 102a of a mobile device including the hardware and software. In this implementation, the mobile device image can be extracted from the mobile device and run in the VM layer 640. In such an embodiment, the VM layer 640 includes hardware emulation functionality. For example, the mobile device processor instruction set

could be x86, ARM or some other instruction set that supports or emulates the processor that the mobile phone is running.

**[0061]** Figure 7 illustrates an example virtualization architecture according to one embodiment. In a particular implementation, the virtualization layer includes, for a given mobile device, a hardware emulation layer 710 (including network and storage device emulation) and a software emulation layer 720 (including operating system 731, 732, 733, virtual device drivers 741, 742, and one or more applications 751, 752, 753). The bottom layer 760 may be the hardware layer of the host (in one implementation, device management server 104). In a particular implementation, a native operating system, such as Linux, runs on top of the hardware layer. In the native operating system, virtual containers may be created for the virtual instances 102b of the mobile devices to run. In the virtualization system, the hardware emulation layer 710 includes communication layers for network and storage (e.g., Flash memory) systems. Flash driver mux and network driver mux may act as the gateway for all the network and memory related activities associated with the virtual instances.

**[0062]** Hardware emulation, in one embodiment, features bit to bit emulation of the real hardware for the mobile device image to run. In such a model, the software image may not be modified or changed to run in the virtual instance 102b, hence, whatever hardware the mobile phone has for which the image has been built is to be emulated exactly in the device management server 104. Hardware emulation functionality will typically vary with the many different hardware models. Depending on the mobile device, the corresponding hardware or processor chip is emulated in the appliance. To reduce the work on the virtual instance 102b, a subset of the hardware can be virtualized, such as the processor, memory model and other important peripherals like flash, bootrom, etc. In one embodiment, the choices as to which aspects are virtualized are application-driven. In other words, since management of applications may be important, any hardware that is required to support the applications may be virtually emulated. For example, two aspects that a majority of applications require are network access and flash space to store data. Virtualizing other hardware components such as, for example, WiFi, GPS, GSM, Camera, Speakerphone etc., in the virtual instance 102b may be optional and may depend on the applications supported by device management server 104. In addition, a virtual instance 102b of a mobile device may include all or a subset of the applications installed on the corresponding physical instance 102a of the mobile device.

**[0063]** The hardware emulation layer 710 generally includes various hardware emulation components or modules, each of which may correspond to one or more pieces of hardware in the physical instance 102a of the mobile device to which the virtual instance 102b corresponds. For example, the hardware emulation layer may include a processor emulator that emulates the processor of the corresponding physical instance 102a of the mobile device, a memory emulator that emulates the memory storage or subsystem of the corresponding physical instance of the mobile device, a network interface emulator that emulates the one or more network interfaces, e.g., WiFi, Bluetooth, etc., of the corresponding physical instance of the mobile device, an input/output (I/O) emulator that emulates the one or more I/O devices, e.g., keypads, wheels, sliders, buttons, etc., of the corresponding physical instance of the mobile device, a display emulator that emulates the display screen on the corresponding physical instance of the mobile device, etc. Each emulator imitates or duplicates the behavior of the piece of hardware it emulates and, furthermore, may maintain the look, feel, operations, characteristics, behavior, etc. of the original pieces of hardware.

**[0064]** There are a variety of different ways to implement the individual emulators or modules included in the hardware emulation layer. According to one embodiment, the emulators or modules are implemented as computer-executable programs, represented by computer program instructions stored in various forms of tangible computer-readable media. For example, one way to emulate the processor of a physical instance 102a of a mobile device is to use an interpreter, which follows the execution flow of the program code and, for every machine code instruction encountered, executes operations on the processor(s) of the device management server 104 that are semantically equivalent to the original instruction. Some pre-packaged CPU simulators may also be incorporated into the process emulator. A way to emulate the memory storage of a physical instance 102a of a mobile device is to use an array of elements, each corresponding to a memory location within the memory storage on the physical instance of the mobile device. The hardware emulation programs may be loaded into a computer runtime environment for execution in order to emulate the operations and/or behaviors of the hardware components of the corresponding physical instance 102a of the mobile device for which these programs emulate.

**[0065]** In a particular embodiment, hardware emulation layer 710 is a part of a virtual mobile device platform. The device management server 104 causes the hardware emulation layer of a

virtual instance 102b of a particular mobile device to be executed when there is a need to emulate one or more pieces of hardware of the corresponding physical instance 102a of the particular mobile device. For example, when the device management server 104 emulates the software operations of the physical instance 102a of a particular mobile device, it first loads the hardware emulation layer of the virtual instance 102b of that mobile device and then executes a copy of the software of the physical instance of the mobile device within the context of the hardware emulation layer.

**[0066]** To emulate the software components of a physical instance 102a of a mobile device, according to one embodiment, the corresponding virtual instance 102b of the mobile device includes a software emulation layer, which includes a copy of the operating system, one or more device drivers, and/or one or more applications on the physical instance of the mobile device. For example, application software on a mobile device may include email, messaging, calendar, task list, address book, device settings, etc.

**[0067]** The software may be executed within the context of the hardware emulation layer of the virtual instance 102b of the mobile device as described above to replicate the behavior, operations, and/or characteristics of the same software being executed on the corresponding physical instance of the mobile device. For example, to emulate a specific piece of application software, the device manage server 104 may first cause the hardware emulation layer to be loaded and executed, and then cause the copy of the piece of application software from the software emulation layer 720 to be executed on top of the hardware emulation layer 710, i.e., interacting with the hardware emulation layer 710, thus imitating the piece of software being executed on the physical instance of the mobile device and interacting with the actual hardware components.

**[0068]** In a physical instance 102a of a mobile device, communications may generally occur through the GPRS stack or WiFi stack. Device management server 104 hosts virtual hardware for storage and network hardware components. Custom drivers may be built for this virtual hardware which resides in the device management server 104. In one implementation, the drivers for these virtual hardware devices are installed on the physical instance 102a of the mobile device as well so that the virtual drivers become part of the software image on the mobile device. These two drivers may have no function in the actual physical instance 102a of the mobile device as there may be no hardware corresponding to those drivers and hence they will not be loaded.

When the software image is extracted and run in the virtual instance 102b, however, all other drivers will fail (not be loaded) except the virtual drivers because there is no real hardware emulation for devices like GPS, WiFi, GSM, Speakerphone, etc. Virtual drivers will find the virtual hardware, like network and flash, so they will attach themselves to this virtual hardware. The network driver provides the glue to the communication between the virtual instance 102b and the device management server 104 and similarly a virtual Flash driver will provide the glue for virtual instance flash layer and the data storage attached to or available to device management server 104.

**[0069]** In a particular embodiment, the communication between the virtual instance 102b and the device management server 104 happens through the two main drivers; that is, the virtual network driver and the flash driver. The virtual network driver of each virtual instance 102b communicates with the virtualization layer network driver (Network Driver Mux) of device management server 104 through the network hardware emulation functionality. The network driver of the virtualization layer of device management server 104 may act as a multiplexer in the sense that it will communicate with all the virtual instances 102b and the actual network interface(s) in the device management server 104. There can be two types of communication that can happen between a given virtual instance 102b and the outside. One is the virtual instance 102b talking to the device management server 104 and the other is the virtual instance talking to remote devices and hosts. Since the device management server 104 has full control of the virtual instances 102b and the virtual instances communicate through the device management server 104, device management server 104 may act as a gateway for the virtual instances.

**[0070]** In one embodiment, device management server 104 may have a DHCP service running where it can assign the IP addresses to the virtual instances 102b as they become live and the device management server's IP address can be configured as the gateway IP address for the virtual instances. An IPSEC client may provide secure connection functionality between the mobile device 102a and device management server 104. The IPSEC client, in a particular embodiment, is able to tolerate IP address changes as the client roams from one network to another. For all the communication that can happen between a given virtual instance 102b and outside devices, device management server 104 can act as a NAT gateway such that there is no need to assign routable IP addresses to the individual virtual instances. For any communication that originates from the outside, a user first authenticates with the device management server 104



and then indicates to which particular virtual instance 102b they want to connect. Based on the user credentials, device management server 104 can grant access to the virtual instance 102b.

**[0071]** In another embodiment, a particular virtual instance 102b replicates the application environment of the corresponding physical instance 102a of the mobile device, but does not replicate the hardware functionality of the actual device. Device management server 104, in a particular embodiment, maintains a repository of mobile device operating systems. By way of example, such operating systems may include Windows Mobile (e.g., Windows Mobile 5.0, Windows Mobile 6.0), Symbian (e.g., Symbian 7.1), Palm, Android (developed by Google and later the Open Handset Alliance), and/or Linux versions, among others. Device management server 104 may also maintain a repository of applications (e.g., salesforce.com, RSS reader, among others) that can be installed on these operating systems. When a new mobile device is registered with device management server 104, the device management server can query all the details of the mobile device including the operating system, applications installed, memory profiles etc., either through OMA DM or via an installed client (e.g., client 302) on the actual mobile device. Device management server 104 preferably maintains information in its database regarding what applications are running on the mobile device and on what operating systems. In particular embodiments, as applications are installed or removed, this information is preferably updated throughout the life of the mobile device to be able to create an accurate virtual instance of a mobile device.

**[0072]** In particular embodiments, the device management server 104 monitors the physical mobile devices 102a (either through the client 302 installed on the actual mobile device or through OMA DM queries) for application installations or removals from the actual device so that the same behavior can be replicated in the corresponding virtual instances 102b. A new application can be installed on a mobile device in a variety of ways. By way of example, a user may install the application or the application may be installed through some automated manner, such as, for example, through OMA DM functionality. Through software and patch management functionality, new software may be installed on the mobile devices without user intervention. In either case (either the user initiated installation or automated installation), the new application installation information may be pushed to the device management server 104 via a client (e.g., client 302) installed on the mobile device.

**[0073]** The newly installed application software may also be maintained in the application repository in the device management server 104 so that the device management server can use it to create the virtual instance 102b of the actual mobile device. In various embodiments, this application software can be made available to the device management server 104 through a variety of means. By way of example, a link to the location of the software may be provided. Alternatively, an administrator may download the application to the repository. Every time there is a change in the software version or new software has been added, one of the above methods may be used to acquire the software. The device management server 104, in one embodiment, acquires application software prior to installing the software on the physical instance 102a of the mobile device such that the corresponding virtual instance 102b can be created with all the applications in real time. These and other applications may have been developed to run on the operating system directly or a common platform such as, for example, J2ME, etc. If an application runs directly on the operating system, there will be a different version of the software for different operating systems; however, if the applications are written for platforms like J2ME, then the same version of the application may be run on all operating systems. In particular embodiments, both types of applications are supported in the device manager application repository.

**[0074]** In particular embodiments, device management server 104 maintains copies of all the operating systems used in the mobile devices under management so that the device manager can create virtual instances 102b of the actual mobile devices. In a particular embodiment, the operating systems are compiled to a common processor or hardware instruction set. Furthermore, the repository of the operating systems may be collected, maintained and distributed by a central service provider for a plurality of enterprises (something similar to the distribution of virus definitions). Whenever ISVs (Independent software vendors like Microsoft Corp or Symbian) release a version of an operating system, the central service provider may download the operating system and keep it in its distribution server. All the individual enterprise device management servers 104 may be equipped with software download managers configured to talk to the software distribution server. Whenever there is new software being added to the distribution servers, registered download managers of the device management servers 104 may be notified of the availability of the new software and, moreover, may be configured to download the software automatically or with user consent.

**[0075]** VM layer 640 generally includes functionality operative to create and maintain multiple virtual instances 102b for any number of corresponding mobile devices in the device management server 104. All the different operating systems that are compiled for the same instruction set as the device manager (for example x86) can be directly run on the host operating system (like Linux). For creating this type of virtualization an existing virtualization technology (e.g., XenSource™ or Virtual Iron®) may be used. If the operating systems are compiled for another instruction set like ARM (which is more popular in the mobile device world) then a JIT conversion mechanism (e.g., QEMU, a device emulator layer where ARM instructions will be converted to x86 instruction in run time) may alternately be used in between the guest operating systems (guest operating systems are those which run in the virtual instances) and the host operating system VM layer.

#### Mobile Activity Intelligence

**[0076]** The embodiments described thus far with reference to Figures 1-7 facilitate the collection of a wide variety of data from a variety of mobile devices and, furthermore, illustrate the efficiency, thoroughness, and flexibility of such data collection from the mobile devices. The present inventors have determined that this ability to collect raw data directly from a mobile (or wireless) device, such as a mobile phone or smart phone, potentially in real-time and subsequently selectively process and analyze this data affords valuable insight into the activity of the user of the mobile device. In particular, such data may include, by way of example, call information (e.g., calling party and location, receiving party and location, roaming information, call duration, signal strength, type of network (e.g., 3G or 2/2.5G), network speed (e.g., kilobytes per second (kB/s) or Megabytes per second (MB/s)), and whether the call was dropped), other Quality of Service (QoS or QOS) information, sent and received SMS text information, other sent and received data and event information, and application usage, among other forms, as will be described in greater detail below.

**[0077]** Extrapolating this “Mobile Activity Intelligence (MAI)” concept to the mobile devices of an entire enterprise (e.g., a private or public company, corporation or business establishment), a manager of the enterprise may then gain valuable insight into the mobile usage activities of all or a portion of the users of the entire enterprise, as well as the QoS experienced by the users. The manager may then exploit this aggregated data to better manage the

enterprise's mobile devices, control costs, and monitor Quality of Service. In various embodiments, this may include negotiating with wireless network providers for better rates, policing QoS commitments or claims, optimizing wireless service plans down to individual mobile device granularity, and providing feedback or instruction to mobile users within the enterprise, among other managing goals. To facilitate these and other goals, the raw data received directly from the mobile devices may be selectively and/or automatically filtered, analyzed, and otherwise processed into a number of key reports, as will be further described below, that concisely describe or summarize portions of the data, which may include comparisons over time. These reports may even be customized or tailored to the needs of the particular enterprise.

**[0078]** Moreover, such aggregated data can be stripped of most or all individual and/or enterprise identifying data (hereinafter this process may be referred to as “anonymizing”) and further aggregated with that of other enterprises in a central data repository. In this way, a central mobile activity intelligence service provider (hereinafter “central MAI service provider”), by way of example an entity whose customers are the enterprises but that is generally unaffiliated with any individual one of the enterprises, may provide multi-enterprise reports that include aggregated data from a plurality of enterprises and provide valuable insight to each of the enterprises (and others). Such reports may provide feedback on particular phones and carriers among other useful information. Such feedback may be used in determining which phone(s) to buy and which carriers and service plans to use. More generally, such multi-enterprise data may be presented in the form of a consolidated quality of service (QoS) map across all enterprise customers for each specific network service provider or for a combination of two or more network service providers. The consolidated multi-enterprise QoS map may include dropped call percentage, signal strength, whether the network supports 2G or 3G at particular locations, percentage 3G, among other information. It should be reiterated that the central mobile activity intelligence service provider provides an independent source of data (e.g., independent of network service provider or enterprise) and that such data and resultant reports provide concrete quantitative information concerning mobile usage.

**[0079]** Particular embodiments relate to a central MAI service provider that provides MAI services to one or more enterprises. A primary and significant difference between embodiments of the present disclosure and conventional mobile management services is that the data collected

and used in particular embodiments of the present disclosure is received directly from the mobile devices (e.g., phones, personal digital assistants (PDAs)), and in particular embodiments, in real-time, rather than from a network carrier or service provider (e.g., AT&T, Verizon, T-mobile, etc.). This is in contrast to conventional mobile device management service providers such as, for example, Telecom Expense Management (TEM) providers, which acquire data from the network service providers themselves. As will be appreciated, the methodologies employed by such TEMs is inherently flawed as network service providers generally have no incentive to provide detailed data concerning usage of their networks and what little data they do provide rarely if ever provides quality of service (QoS) information. Thus, there is a significant lack of transparency between a given enterprise and its network service provider(s). As a result, the reports and other feedback provided by TEMs and other mobile device management service providers are based on the limited data (e.g., bills and brief general usage data) voluntarily provided by the network service providers. As such, TEMs and other conventional mobile device management service providers generally perform what is known as “bill scraping” or bill auditing. That is, the conventional mobile device management service provider analyzes the bills provided to a particular enterprise by the associated network service provider and checks for simple billing errors (e.g., for didactic purposes a particular call to Brazil was charged at \$4.99/minute rather than the correct \$3.99/minute). While this information is useful, as it is estimated that approximately 8-12% of an enterprise’s phone bill results from erroneous charges, it leaves much to be desired.

**[0080]** Such data and reports provided by conventional mobile device management service providers are obviously limited in their usefulness. By way of example, a given enterprise may hope to negotiate with its network service provider for a better rate based on the reports. However, the enterprise’s negotiating leverage is severely limited since the limited data used to generate the reports was provided by the network service provider itself. To further complicate the challenges an enterprise faces, different employees may have different billing plans. By way of example, in general, most employees will have corporate liable mobile device (phone) plans. These plans are billed to the enterprise. However, some employees may wish to use their own personal phones for enterprise related calls, text, data transmission and other enterprise usage. Such plans are known as individual liable plans. Such plans are billed to the individual user. Generally, the user pays the bill and then submits an expense report (e.g., monthly) to the

enterprise seeking reimbursement for the user's enterprise related mobile activities. Unfortunately for the enterprise, the enterprise often has no means to analyze the expense report and verify its accuracy let alone aggregate data from multiple employees across billing plans. Moreover, the enterprise may elicit mobile service from a plurality of different network service providers. Unfortunately, conventional mobile device management service providers are unable to aggregate data across network carriers.

**[0081]** Particular embodiments of the present disclosure solve most or all of the problems associated with conventional mobile device management service providers. In particular, a central mobile activity intelligence provider may receive any and all data directly from the mobile phones associated with a given enterprise, filter, analyze, and otherwise process the data, and provide customized reports to the enterprise thereby allowing the enterprise to have a better information balance between what the enterprise knows and what its network service provider(s) know. By way of example, in particular embodiments key reports may include voice summary reports, carrier summary reports, international roaming reports, dropped call reports, and home zone reports, among others, as will be described in further detail below. Such knowledge may enable the enterprise to significantly reduce its costs by utilizing this knowledge to monitor cost drivers, negotiate with network service providers for better rates and to optimize its service plans as well as to verify quality of service (QoS) or compliance and enforce a service level agreement (SLA). SLAs are virtually unheard of in the mobile network service provider arena as, conventionally, good SLAs are impossible to enforce. Furthermore, this raw and/or processed data may be stored in a database and compared with other related data over time to gauge the effectiveness of the enterprise's current mobile deployment. Alternatively, the central MAI service provider may even provide raw or processed data to conventional mobile device management service providers who may then produce reports for the enterprises.

**[0082]** In particular embodiments, the raw data may be sent directly from the mobile devices to a central mobile activity intelligence server (hereinafter "central MAI server"). In a particular embodiment, central MAI server may include similar functionality as device management server 104 described above. In one particular embodiment, central MAI server may even be a device management server 104 of a particular enterprise. In alternate embodiments, central MAI server may be a separate server that may receive data from one or more device management servers 104 from one or more enterprises, respectively. In turn, each device management server 104 may

receive its data directly from a plurality of mobile devices themselves via a client installed or otherwise contained in each mobile device.

**[0083]** In particular embodiments, the client may have some similar functionality to the client 302 described above. In one particular embodiment, the client may even be client 302 described above. In one particular embodiment, the client may filter or otherwise process raw data before transmitting the data to device management server 104 or other central MAI server. In one embodiment, the central MAI server may receive data at predetermined or periodic intervals, or upon a request by either the central MAI server or a data management server 104. In another embodiment, the central MAI server includes some or all of the functionality of the device management server 104 described above. In such an embodiment, the central MAI server may receive data directly from the mobile devices of one or more enterprises rather than or in addition to from one or more enterprise servers such as device management servers 104. Furthermore, the central MAI server may be linked or networked to a central MAI repository or database for storing data collected by the MAI server.

**[0084]** Alternatively or additionally, the device management server 104 may obtain its data from a database containing the virtual instance 102b corresponding to the physical instance 102a of the mobile device. In some embodiments, in effect, data collection from the virtual instance 102b may be considered direct data from the associated mobile device given that the virtual instance 102b may be synchronized often (even in real time) with the corresponding physical instance 102a of the mobile device.

**[0085]** The data collected may vary widely based in part on the needs of a particular enterprise. By way of example, the collected data may comprise voice (or call) usage information, SMS usage information, other data usage information (e.g., MMS or internet/web browser data usage), location data and application use data. In particular, voice usage information may include the number of calls made by a particular user, group of users (e.g., a department) or the entire enterprise. Voice usage information may also include the durations of such calls, the identity of a user placing a particular call, information concerning the receiver of a particular call, calling patterns of particular users or groups, percentage domestic versus international, the location of the user or receiver of the call at the time of the call (which may be determined using GPS technology incorporated into the corresponding mobile phone), the type of network used to make the call (e.g., 3G or 2G, as well as carrier), among other information.

In a particular embodiment, the central mobile activity intelligence server keeps track of how many and which calls were dropped. The central mobile activity intelligence server may also track roaming (particularly international roaming) information. By way of example, the central mobile activity intelligence server may track users that have high roaming usage or users that are currently roaming. This and other roaming information may be reported to managers, particularly an MAI manager or associated enterprise managers, in real-time or on other time bases.

**[0086]** In one particular embodiment, a manager of the central MAI server or a particular enterprise may be presented with a user interface enabling the manager to send an alert to particular roaming users. In another particular embodiment, these and other alerts may be sent to mobile phone users and enterprise managers automatically by the central MAI server. Automatic alerts may be sent, by way of example, once a mobile phone initiates roaming, at periodic intervals while the user is roaming, and/or once a mobile phone has been roaming for a predetermined threshold of time or once the user has accumulated a threshold level of minutes in a particular period of time such as, for example, in a particular day or month (hereinafter these may be referred to as “threshold alerts”). As another example, a particular mobile device may receive a threshold alert when the user has used a threshold number of minutes that call, day, week, month, or configurable period of time. As other examples, a threshold alert might be received when the user has used a threshold number of MB of data, or made a certain number of calls to a toll number, or reached other thresholds of phone activity.

**[0087]** The central mobile activity intelligence server may also be configured to send out exception alerts. Exception alerts may be sent to mobile phones of users who conduct irregular activity, such as, by way of example, users who are roaming. These roaming alerts may be sent periodically or upon initiation of roaming, for example. In particular embodiments, exception alerts may be sent to users who are not permitted by the enterprise to use their phones internationally. As another example, an exception alert may be sent to a particular mobile device when the user of the device attempts to use the device in an unauthorized way, such as, for example, using the device to access a particular class of website, or a website in general. In addition to sending threshold and exception alerts to mobile phones or managers, regular event alerts may also be sent to particular mobile devices and managers in response to regular or expected activity such as, by way of example, an alert showing the number of minutes used in a



particular call, hour, day, week or month. These and other alerts may be received in a number of ways. By way of example, various alerts may be sent through SMS, email, PIN, or web notification, among other ways.

**[0088]** In particular embodiments, the alerts may be automatically sent hierarchically; that is, an alert may be first sent to a particular mobile device such as when, by way of example, the user starts roaming. In a particular embodiment, the alert may include a warning indicating what will happen if the user continues roaming for a threshold number of minutes. In one particular embodiment, after the mobile device has been roaming for a first threshold number of minutes (e.g., 100 minutes), both the mobile device and a manager may receive an alert signaling that the user has been roaming for the threshold number of minutes. The alert may also include a warning of what will happen upon further roaming usage. Upon reaching a second tier of use (e.g., 500 minutes), the mobile device, manager, and, for example, finance department may receive an automatic alert. Upon even further use, the mobile device may be disabled.

**[0089]** In particular embodiments, the MAI server may be configured to automatically shut down or otherwise disable a particular mobile phone that is being used exceedingly or improperly (e.g., contrary to enterprise policy). In another embodiment, a manager may be presented with a user interface that provides the manager the discretion to send an alert to or disable a particular user's mobile phone. By way of example, if a particular mobile device is being abused or may be potentially lost or stolen, an enterprise may want to automatically block connectivity to the enterprise by the particular mobile device, block usage of the mobile device in general, wipe the memory of the mobile phone or switch the user/mobile device to a different security policy. Such instances may be automatically detected by, for example, spikes in call volume, data volume, roaming, or excessive data being copied to removable media, among others. In various embodiments, an enterprise may want to be notified before or after the phone is disabled. By way of example, an enterprise may want to disable service associated with a particular SIM card. This may be accomplished manually by calling the associated carrier upon receiving an alert that the mobile device may be being used improperly. In other particular embodiments, the carrier may be notified automatically by the central MAI server.

**[0090]** Similar to voice usage, SMS and other data usage may also be tracked. By way of example, the central MAI server may track the number of SMS messages sent and/or received, the quantity (e.g., in kilobytes (kB) or megabytes (MB)) of data sent or received in each SMS

message, as well as the quantity of data sent or received in an MMS message, email message, or from the internet. The central MAI server may also track network information (e.g., 3G or 2G, as well as carrier), average or current network speed (e.g., kB/s or MB/s), and from whom, to whom, and when the data was sent, as well as where the transmitting and receiving parties are physically or geographically located. Regarding internet usage, the central MAI server may also track which websites a user navigates to. Additionally, the central MAI server may also be configured to track which applications a user of a mobile device uses, how frequently the user uses each application, which applications the user has downloaded, uploaded or otherwise installed, among other application data.

**[0091]** In particular embodiments, privacy controls may be implemented on an individual, group, department, or enterprise basis, among other divisions. Additionally, privacy controls may vary based on the type of usage (e.g., voice call, SMS, MMS, email, internet, etc.) By way of example, while the central MAI server may track (store) the number of SMS messages sent or received, the central MAI server may not store the content of these messages. In particular embodiments, it is the responsibility of the enterprise manager to legislate privacy controls even though it is the MAI server that may implements the privacy controls. By way of example, an enterprise manager may choose different privacy controls for mobile devices depending on whether a particular mobile device is part of a corporate or individual liable billing plan.

**[0092]** As described above, any and all of this information may be gathered and transmitted to the central mobile activity intelligence server in real-time. In such a manner, the MAI service provider provides potentially real-time visibility to enterprises concerning the voice usage of its employees and may eliminate unexpected charges and related surprises from enterprise phone bills. Moreover, any and all of the data may be used to upgrade or downgrade the billing or service plans of users of associated mobile phones on an individual or group level granularity. By way of example, the MAI server may track and report the users with the highest and lowest voice call usages, the users with the highest/lowest roaming usages, or inactive mobile phones (which may then be removed from the enterprise's service plan). In some embodiments, the MAI server may even track usage rate increases or decreases (i.e., whose usage has increased/decreased the most in a specific period of time or even the rate of change of increase/decrease).

**[0093]** Figure 8 shows a flowchart illustrating an example process for collecting and receiving call data from a mobile phone. In a particular embodiment, the data is collected by the client (e.g., client 302) in the background of the normal operations of the mobile device. In some embodiments, any and all of the data described above may be collected and transmitted by the mobile devices on an event driven, periodic or continuous (e.g., whenever available) basis. Data collection for various mobile devices may vary according to the user of the device. By way of example, mobile phones that are roaming may be tracked more frequently than those that are not. The usage data may be temporarily stored in memory within the mobile device (e.g., RAM or flash memory 18 and/or within a database and/or various data storage logs such as, for example, file system log 344, behavior log 352, control log 340, or in other call and data usage logs).

**[0094]** In one particular embodiment, upon occurrence of a call event at 802 (e.g., a call end event corresponding to the termination of a call), the central MAI server polls the mobile device at 804. The mobile device client then extracts usage data associated with the call at 806. By way of example, the call data may include any of the call information described above. This usage data may be collected from, by way of example, any of the aforementioned data storage logs. The mobile device client may then timestamp or otherwise correlate the usage data at 808 based on the time of usage (e.g., start time of the call and end time of the call) and other identifying and descriptive data. In particular embodiments, the usage data is also correlated based on the geographical location (i.e., “location”-stamp the usage data) of the mobile device at the time of the call (e.g., obtained through GPS location data). In particular embodiments, the usage data is also correlated based on the cellular tower used by the mobile device during the call. More particularly, information that is usable in identifying a cellular tower used by the mobile device during use is associated with the usage data (the central MAI server may then use this cellular tower information to identify the specific cellular tower used by the mobile device during the call). In this way, as alluded to above, comprehensive maps may be generated using the geographic and/or cellular tower data as references. In various embodiments, the usage data may also be correlated with other user data, carrier data, enterprise data, etc.

**[0095]** The client or other module may then package (or cause to be packaged) the relevant correlated data at 810 and transmit the packaged data at 812 to the central MAI server. Additionally or alternatively, various data may be collected, correlated, packaged, and transmitted on a periodic or threshold basis (e.g., once data levels reach a predetermined memory

level). In alternate embodiments, in which the MAI server receives data from an enterprise device management server (e.g., device management server 104), the MAI server may poll the device management server for the call data. Once at the central MAI server, the data may be filtered, analyzed and otherwise processed and subsequently stored in the central MAI database and utilized to generate reports.

**[0096]** In a similar fashion, SMS text, email or other data usage information may also be collected by the mobile device client and stored in various memory locations and/or SMS and data logs. By way of example, SMS text or MMS message information may be collected, correlated, packaged and transmitted to the central MAI server upon receipt or sending of an SMS or MMS message. As another example, data associated with emails may be transmitted upon receipt or sending of an email message, upon downloading an email message from an email server (e.g., from a blackberry® server), upon opening of an email, as well as on periodic or threshold bases.

**[0097]** In general, it may be desirable to transmit any of the described data as frequently as possible while keeping power consumption associated with the collecting, correlating, packaging, and (especially) transmitting below a power consumption threshold.

**[0098]** Data from individual mobile devices may then be aggregated and/or otherwise processed, for example on a periodic (e.g., daily) basis, with data from one or more other mobile devices associated with the enterprise irrespective of whether or not the one or more other mobile devices are on the same billing plan or serviced by the same network service provider. In this manner, data from all of the mobile devices of an entire enterprise may be aggregated together and stored in the central MAI database. The central MAI server may then generate a variety of reports for the enterprise. By way of example, the reports may be generated on a periodic basis (e.g., daily, weekly, monthly, yearly) or whenever requested.

**[0099]** The MAI reports may be electronically sent to and presented through a graphical user interface to a mobile device manager such as, for example, an enterprise manager at the enterprise. By way of example, Figures 9A and 9B illustrate example “Dashboard” usage reports while Figures 9C and 9D illustrate example Dashboard security and QoS reports, respectively. In particular embodiments, separate specific usage reports may be generated. In some embodiments, specific usage reports may include call (voice) summary reports, data summary reports, and SMS summary reports. By way of example, Figures 10A-10C illustrate example

“Overall Activity” minutes, data quantity (e.g., Mb), and SMS reports. For enterprises having significant numbers of international mobile users, reports specifically related to international usage may be desirable. Figures 11A-11D illustrate example international outbound minutes, roaming minutes, and roaming data reports, and current roamers, respectively. Other desirable reports include, by way of example, toll calls (e.g., pay calls such as 411 directory service or 900 numbers) reports, location and international breakdown reports, carrier usage summary reports, carrier QoS reports, carrier dropped calls reports, connection security reports, data security reports, and lost device reports, didactic examples of which are illustrated in Figures 12A-12H, respectively. Still other reports may include mobile versus fixed recipient reports (e.g., calls made to other mobile phones versus calls made to fixed wired phones), employee to employee reports, carrier to carrier reports (e.g., the number of calls made from AT&T serviced mobile phones to other AT&T serviced phones or the number of calls made from Verizon serviced phones to T-Mobile serviced phones), or home zone / cellular tower activity reports, phone type breakdown reports, as well as signal strength, SNR and network speed reports (e.g., by carrier, location and over time), among others.

**[00100]** Home zone and/or cellular tower activity reports in particular may be useful for a number of enterprises. A home zone generally refers to the geographic area from which an enterprise or enterprise office is associated. The home zone is generally served by a specific cellular tower. Mobile phone usage data includes information that may be used to uniquely identify the cellular tower used for particular calls or other usage. An example cellular tower activity report may include a list of cellular tower used in servicing the mobile devices of the enterprise. These towers may be ranked in order of most used to least used and, in particular embodiments, may include the number of minutes served by each particular tower. Still further, a cellular tower activity report may provide information regarding which users are currently being served by a given tower.

**[00101]** Based on the gathered cellular tower information, the MAI server may determine which cellular tower is associated with the enterprise and furthermore, what percentage of calls or data transmissions are being made between mobile phones associated with the home zone cellular tower or within the home zone in general (i.e., a mobile phone within the home zone calls a fixed wired phone in the home zone). If this percentage is high, it may indicate to the enterprise that the enterprise should consider finding alternative ways to route calls between

phones that are both located within the home zone. By way of example, the enterprise may determine that using a voice over internet protocol (VoIP) service to deliver voice communications between mobile devices in the home zone is more cost effective than using a cellular network.

**[00102]** Furthermore, Figure 13 illustrates an example control center interface 1300 for use in taking informed actions with respect to individual users. The interface shown in Figure 13 shows particular users and their associated mobile devices and allows a manager to take actions with respect to particular users and their associated mobile devices. By way of example, the control center may allow a manager to locate a particular mobile device, view a particular mobile device's usage, place a particular mobile device on a watchlist, block service for a particular mobile device, send an alert to a particular mobile device, wipe portions of the memory of a particular mobile device, set privacy and security policies for a particular mobile device, among other actions.

**[00103]** It should be noted that all of the above example reports and names used in the reports are for didactic purposes and the data and other information in these didactic reports should not be construed as accurate or in any way representative of specific companies or network carriers whose names appear in the reports.

**[00104]** In particular embodiments, the above data and reports may be integrated/aggregated with the bills from an enterprise's network service provider(s). In a particular embodiment, this may enable automatic bill auditing and/or plan optimization.

**[00105]** In an additional embodiment, the data aggregated from a particular enterprise may be stripped of most or all individual and/or enterprise identifying data (e.g., names, phone numbers, IP addresses, end points, etc.) such that the data is not traceable back to a specific individual or even a particular enterprise. The data may then be further aggregated with anonymized data collected from other enterprises in a central data repository. In this way, the central MAI service provider may provide multi-enterprise reports that include aggregated data from a plurality of enterprises and provide valuable insight to each of the enterprises (and others). As outlined above, such reports may provide feedback on particular phones and carriers (including carrier market share) among other useful information. Such feedback may be useful in determining which phone(s) to buy and which carriers and service plans to use. More generally, such multi-enterprise data may be presented in the form of a consolidated quality of service (QoS) map

across all enterprise customers for each specific network service provider or for a combination of two or more network service providers. The consolidated multi-enterprise QoS map may include dropped call percentage, signal strength, whether the network supports 2G or 3G at particular locations, percentage 3G, network speed, among other information (such as that provided in the individual enterprise reports).

**[00106]** Figures 14A and 14B illustrate example interactive QOS maps with cellular tower locations. A user may choose a specific cellular tower 1402 (e.g., by clicking with a mouse or rolling the a cursor over the tower) and, subsequently, the user is presented with a pop-up window 1404. Window 1404 may provide the cell ID of the tower, signal strength of the tower, individual, enterprise or total minutes serviced by the particular tower during a particular period of time, the type of network the tower supports, among other information. Alternately or additionally, a user may be presented with “heat” maps that show, for example, signal strength or network speed as a function of color with respect to a desired geographic location or one or more cellular tower locations. Figure 14C shows an example pop-up window 1406 showing call logs for a particular cellular tower.

**[00107]** Figure 15 illustrates an example embodiment of a central MAI service provider system 1500. As illustrated in Figure 15, central system 1500 includes a central MAI server 1502. By way of example, central MAI server 1502 may include HTTP and related functionality. Central MAI server may receive input from a variety mobile devices 1504 directly or, in alternate embodiments, from a plurality of enterprises 1506 that, in turn, receive data directly from mobile devices associated with the enterprises. Central MAI server 1502 may store this and other data in memory within a central MAI database 1508. As described above, central MAI server 1502 is configured to aggregate the mobile device data across enterprises and carriers and make it accessible to users of the various enterprises. By way of example, MAI server may include functionality that provides carrier comparison and other reports to decision makers at enterprises to evaluate carriers among other concerns. To facilitate this, central MAI server 1502 may be coupled to a plurality of enterprise management appliances 1510, each enterprise management appliance being located or associated with a particular enterprise. In a particular embodiment, an enterprise management appliance 1520 may be configured to present a graphical user interface (GUI) to a manager or decision maker at the enterprise. By way of example, the GUI may display reports generated by central MAI server 1502. The GUI may also

give a manager the ability to request reports or to modify or customize existing or create new reports. As another example, the GUI may allow a manager to control aspects of various mobile devices associated with the enterprise (e.g., enable/disable the mobile devices, send alerts, etc.)

**[00108]** The present disclosure encompasses all changes, substitutions, variations, alterations, and modifications to the example embodiments described herein that a person having ordinary skill in the art would comprehend. Similarly, where appropriate, the appended claims encompass all changes, substitutions, variations, alterations, and modifications to the example embodiments described herein that a person having ordinary skill in the art would comprehend.



## CLAIMS

What is claimed is:

1. A method, comprising:  
receiving, at a first server, mobile device usage data directly from each of a plurality of mobile devices associated with a particular enterprise;  
aggregating the usage data from each of the plurality of mobile devices; and  
generating one or more mobile device usage reports based on the aggregated usage data.
2. The method of Claim 1, wherein the first server is a central server not affiliated with the particular enterprise and wherein the usage data is sent from the mobile devices directly to the central server.
3. The method of Claim 2, further comprising aggregating the aggregated usage data from the plurality of mobile devices associated with the particular enterprise with aggregated usage data from mobile devices associated with other enterprises and generating one or more multi-enterprise usage reports each comprising data from at least two different enterprises.
4. The method of Claim 1, wherein the first server is an enterprise server of the particular enterprise, and wherein the method further comprises sending the usage data from the first server directly to a central server that is not affiliated with the particular enterprise.
5. The method of Claim 1, wherein the first server is a data management server that maintains a virtual instance of each of the plurality of mobile devices, wherein particular virtual instances corresponding to particular mobile devices are updated based on the data sent to the data management server from the particular mobile devices, and wherein the data management server sends the usage data corresponding to the particular mobile devices to a central server that is not affiliated with the particular enterprise.
6. The method of Claim 1, further comprising:

at each mobile device, selectively filtering raw data to generate the usage data prior to transmitting the usage data and the receiving of the usage data.

7. The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on a corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

8. The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on the corresponding geographic location of mobile device at the corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

9. The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on the corresponding cellular tower at the corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

10. The method of Claim 1, wherein the usage data comprises one or more of call usage information, SMS text usage information, web browser usage information, and application usage information.

11. The method of Claim 1, further comprising automatically sending an alert to a particular mobile device based on usage data received from the particular mobile device.

12. The method of Claim 1, further comprising disabling all or a portion of the usage capabilities of a particular mobile device based on usage data received from the particular mobile device.

13. The method of Claim 1, further comprising wiping all or a portion of the memory of a particular mobile device based on usage data received from the particular mobile device.

14. The method of Claim 1, further comprising changing a security policy corresponding to a particular mobile device based on usage data received from the particular mobile device.

15. The method of Claim 1, further comprising changing a service plan of a particular mobile device based on usage data received from the particular mobile device.

16. The method of Claim 1, wherein one or more of the reports comprise a call summary report of a particular mobile device, group of mobile devices, or entire enterprise.

17. The method of Claim 1, wherein one or more of the reports comprise a data summary report of a particular mobile device, group of mobile devices, or entire enterprise.

18. The method of Claim 1, wherein one or more of the reports comprise an SMS summary report of a particular mobile device, group of mobile devices, or entire enterprise.

19. The method of Claim 1, wherein the usage data comprises data from mobile devices associated with two or more network service providers and wherein at least one of the usage reports comprises usage data from at least two different network service providers.

20. The method of Claim 1, wherein the usage data is received in real-time.

21. The method of Claim 1, wherein the usage data is received on an event driven basis.

22. The method of Claim 1, wherein the usage data is received on a periodic basis.

23. The method of Claim 1, wherein the usage data is received on a continuous basis.

24. A mobile device management system, comprising:

a central database;  
a server configured to  
    receive mobile device usage data directly from each of a plurality of mobile devices associated with a particular enterprise;  
    aggregate the usage data from each of the plurality of mobile devices at the central database; and  
    generate one or more mobile device usage reports based on the aggregated usage data.

25. A method comprising:  
in response to a usage event at a mobile device,  
    extracting, at the mobile device, usage data associated with the usage event;  
    correlating, at the mobile device, the extracted usage data;  
    packaging, at the mobile device, the correlated usage data; and  
    transmitting, at the mobile device, the packaged usage data directly to a central server that is not affiliated with a network service provider that provides network service to the mobile device.

26. The method of Claim 25, wherein the usage event corresponds to the end of a call and wherein the usage data comprises call usage data associated with a call.

27. The method of Claim 25, wherein the usage event corresponds to the transmission or reception of an SMS, and wherein the usage data comprise SMS usage data associated with the SMS.

28. The method of Claim 25, wherein the correlating comprises correlating the usage data based on a corresponding time of usage prior to transmitting the usage data.

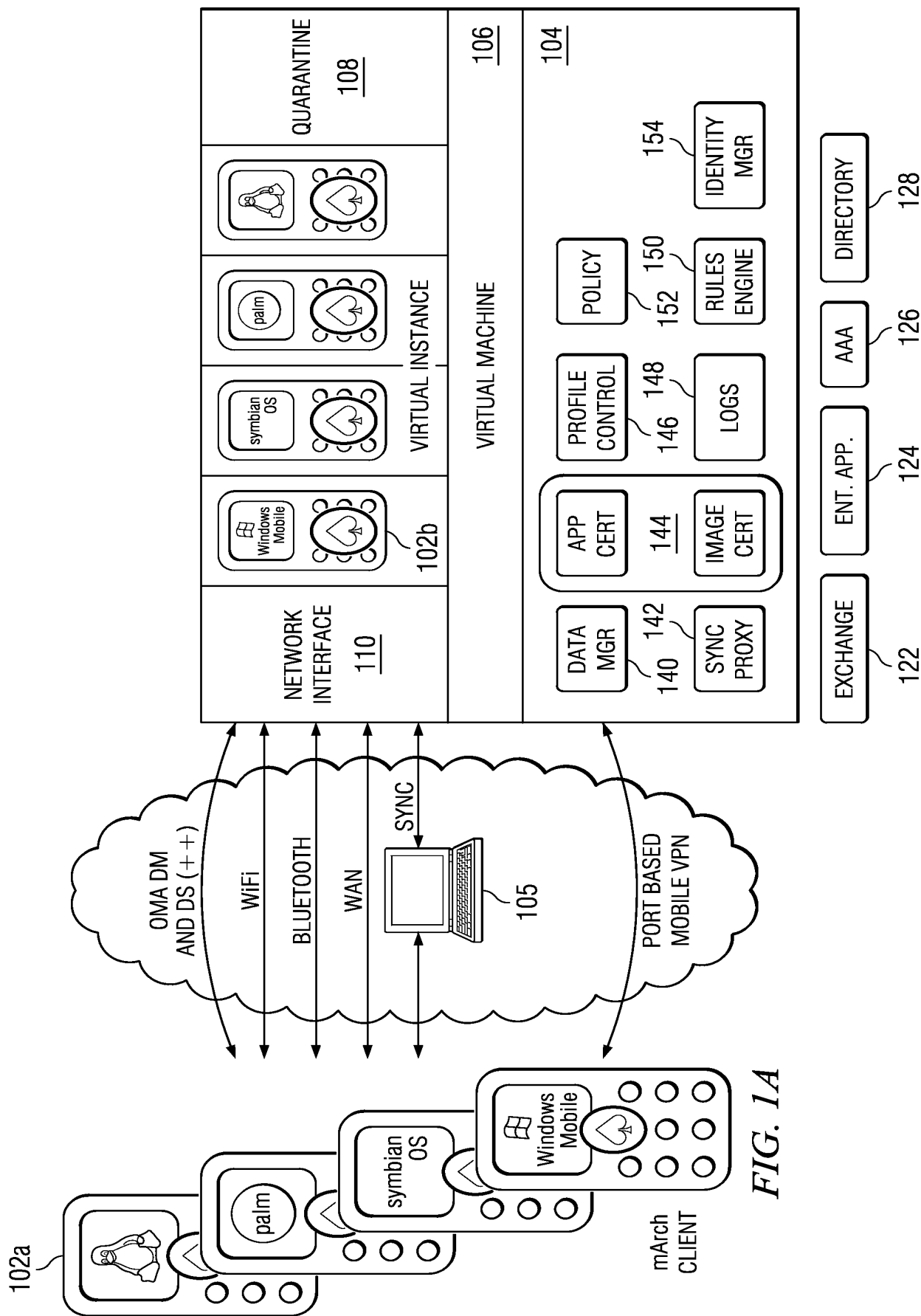
29. The method of Claim 25, wherein the correlating comprises correlating the usage data based on the corresponding geographic location of the mobile device at the corresponding time of usage prior to transmitting the usage data.

30. The method of Claim 25, wherein the correlating comprises correlating the usage data based on the corresponding cellular tower at the corresponding time of usage prior to transmitting the usage data.

# Mobile Activity Intelligence

## ABSTRACT

In various embodiments, a method is described that includes receiving mobile device usage data directly from each of a plurality of mobile devices associated with a particular enterprise, aggregating the usage data from each of the plurality of mobile devices at a central database, and generating one or more mobile device usage reports based on the aggregated usage data.



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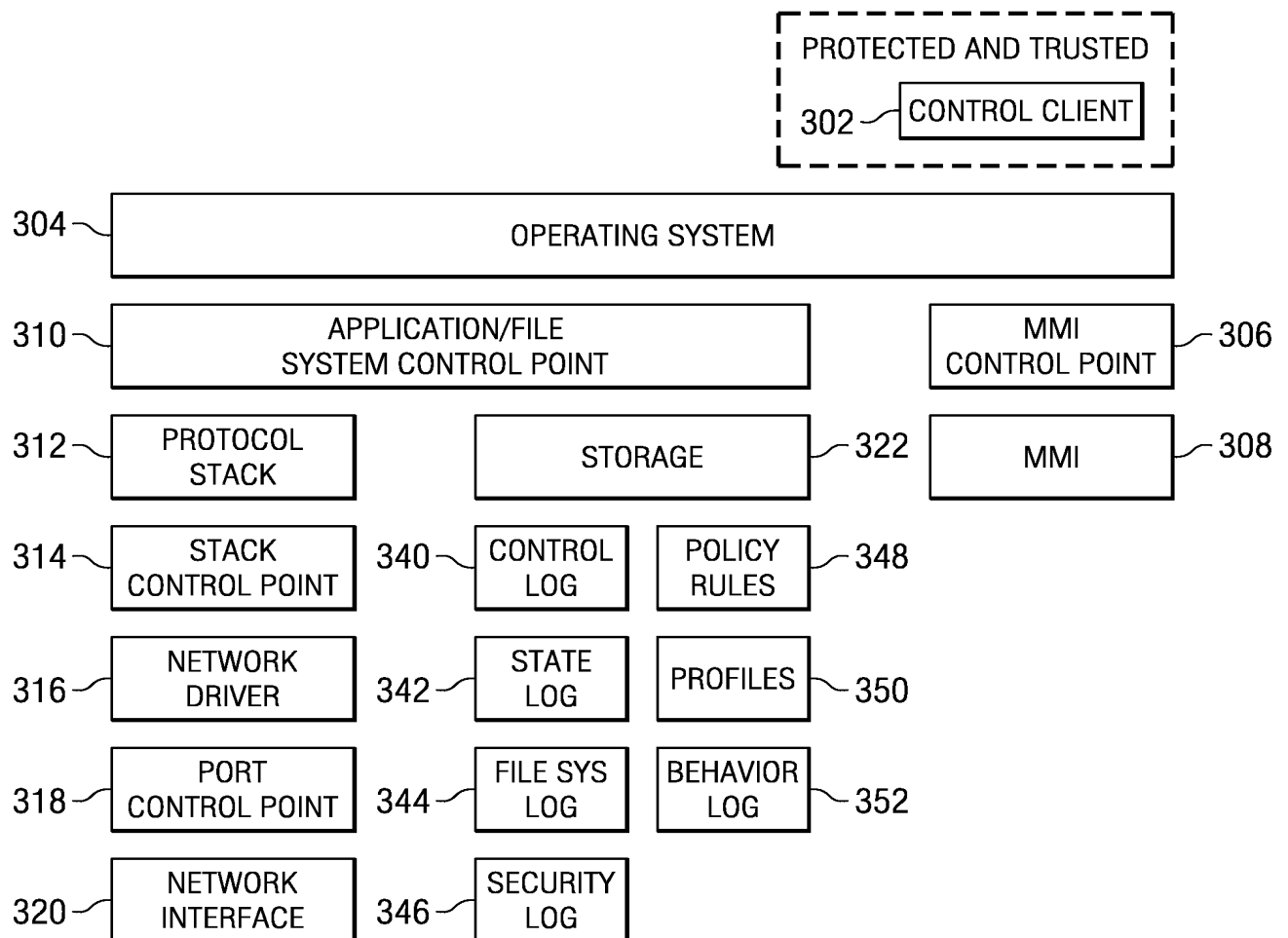
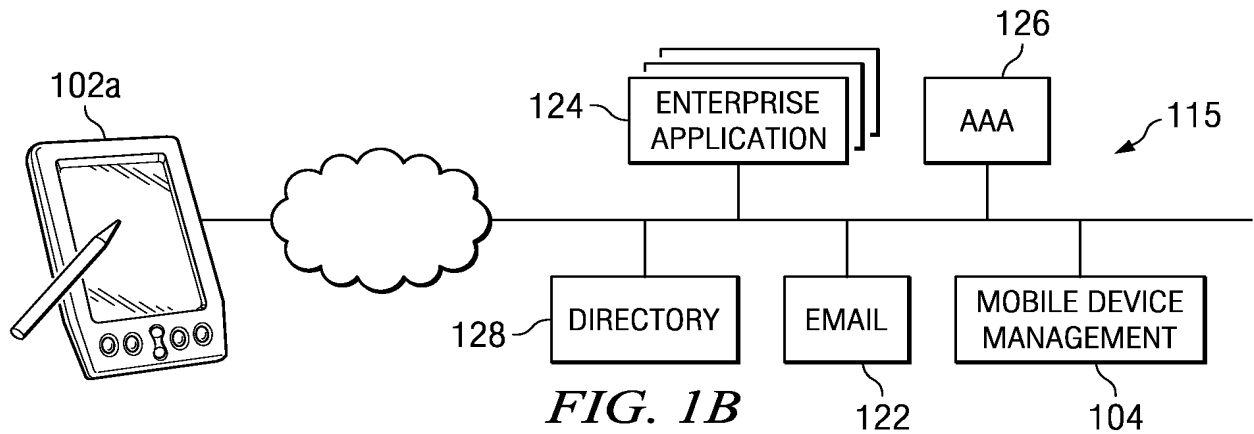


FIG. 2



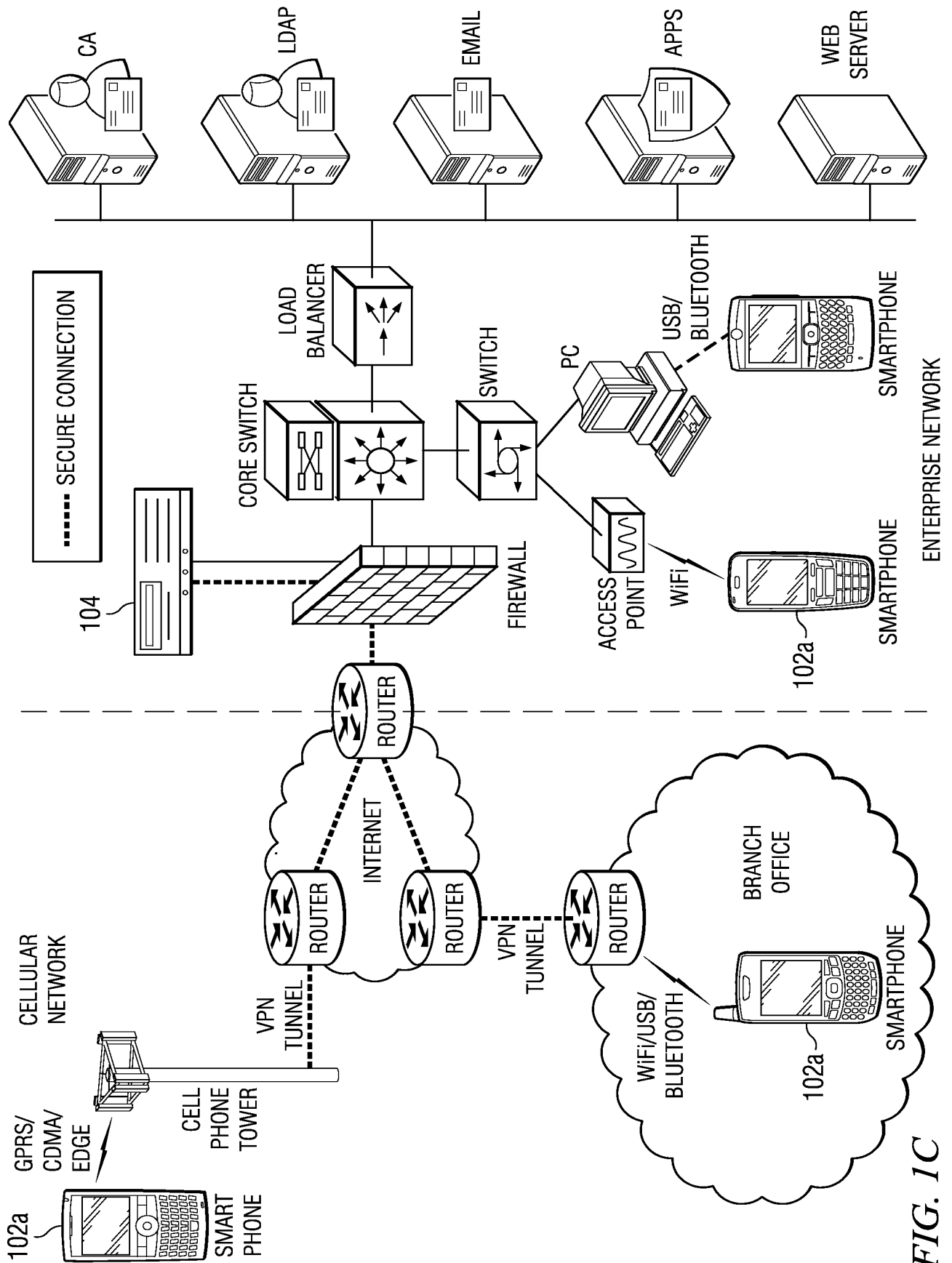
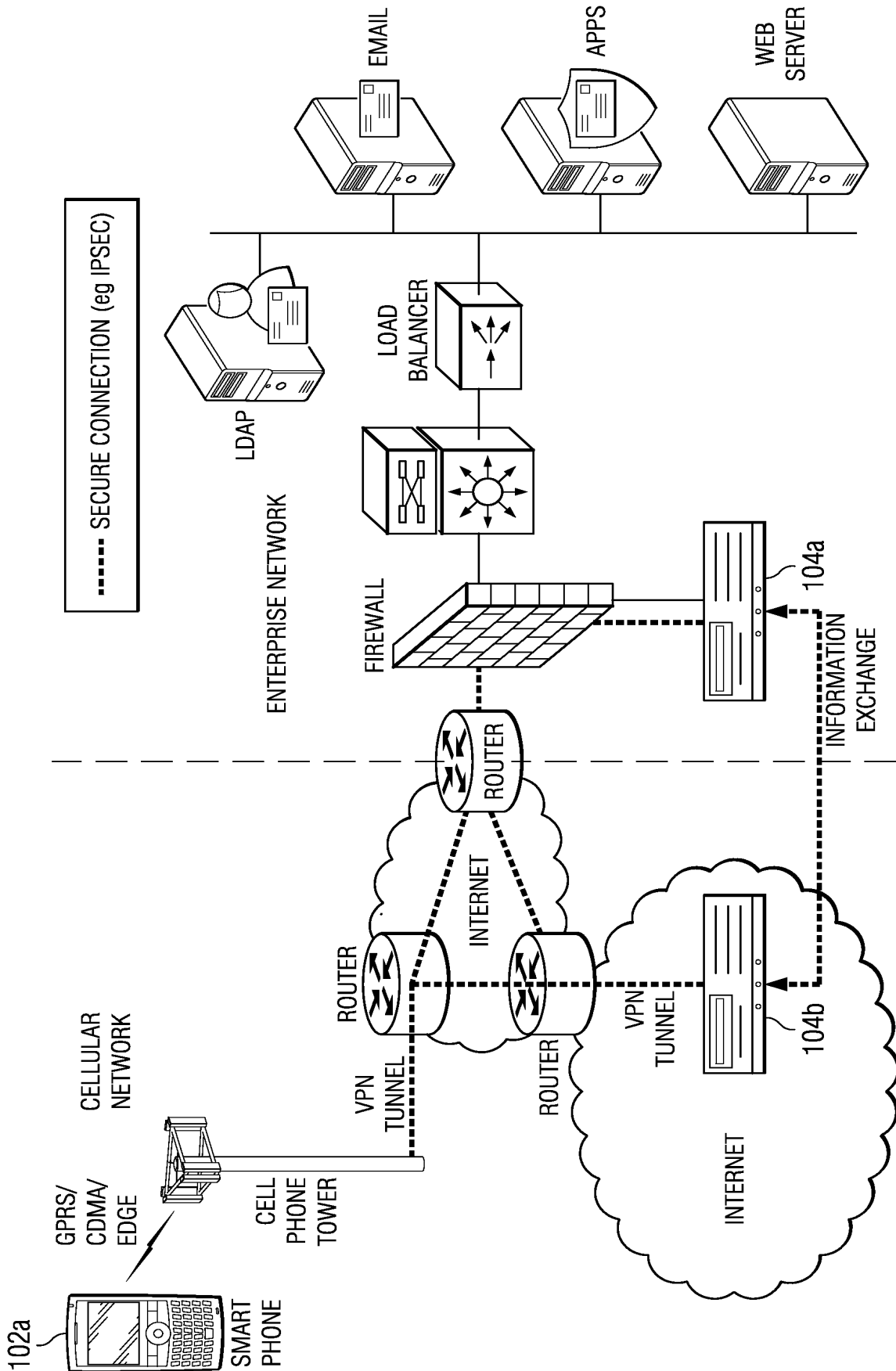
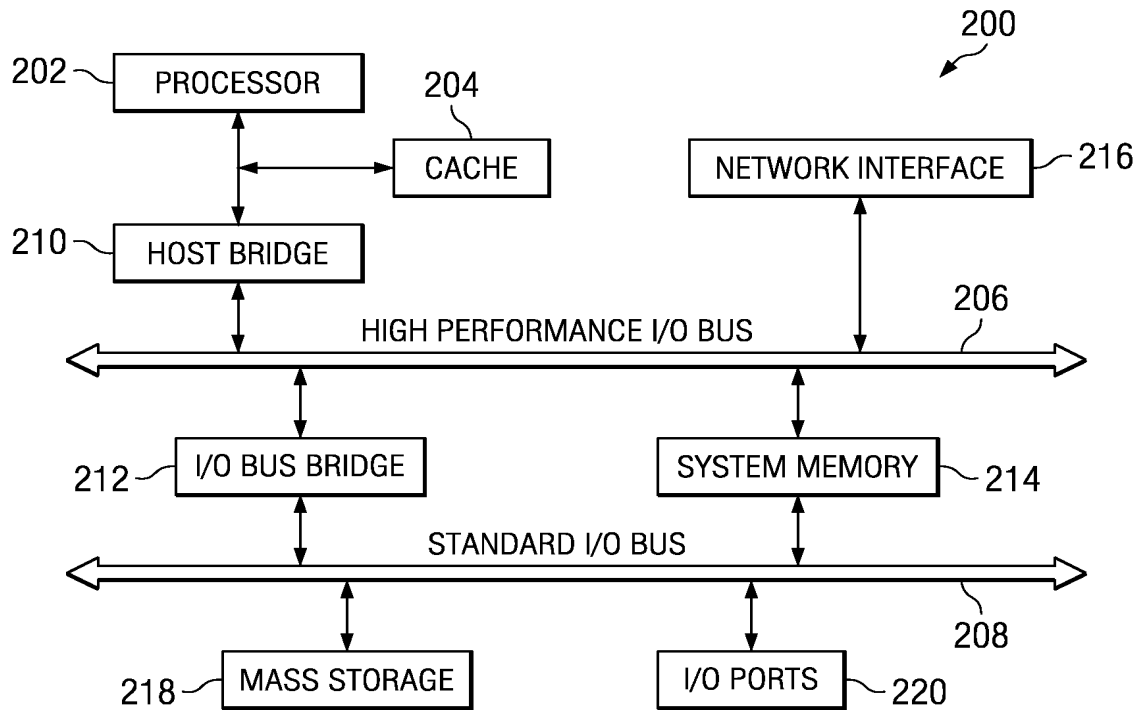
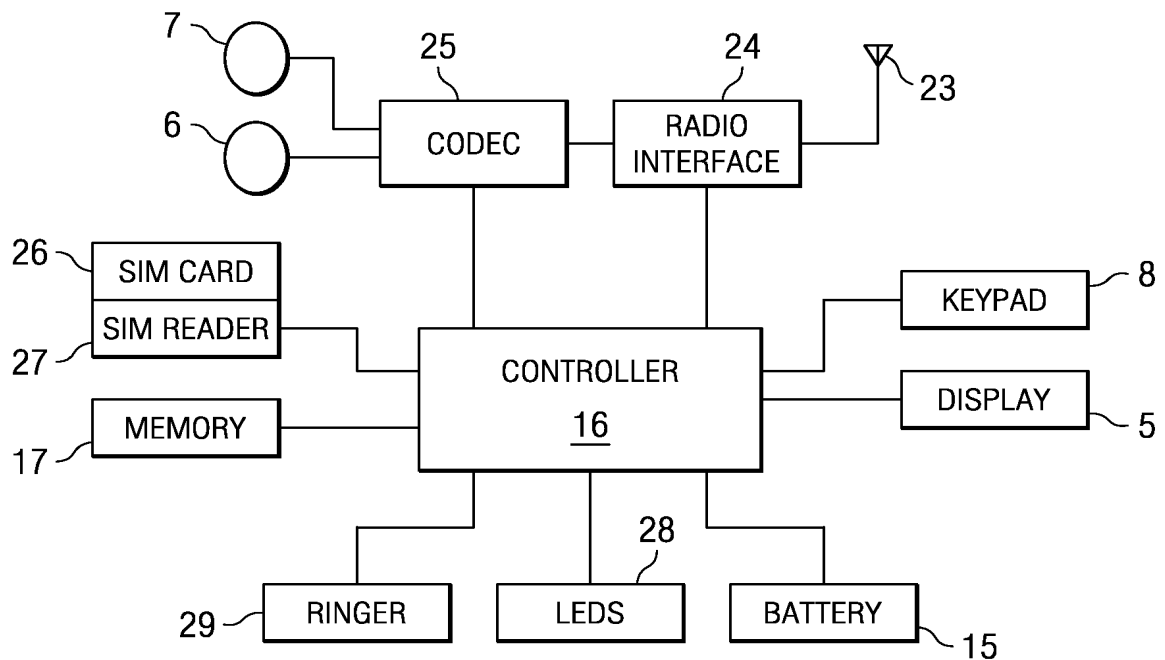


FIG. 1C



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**FIG. 3****FIG. 4**

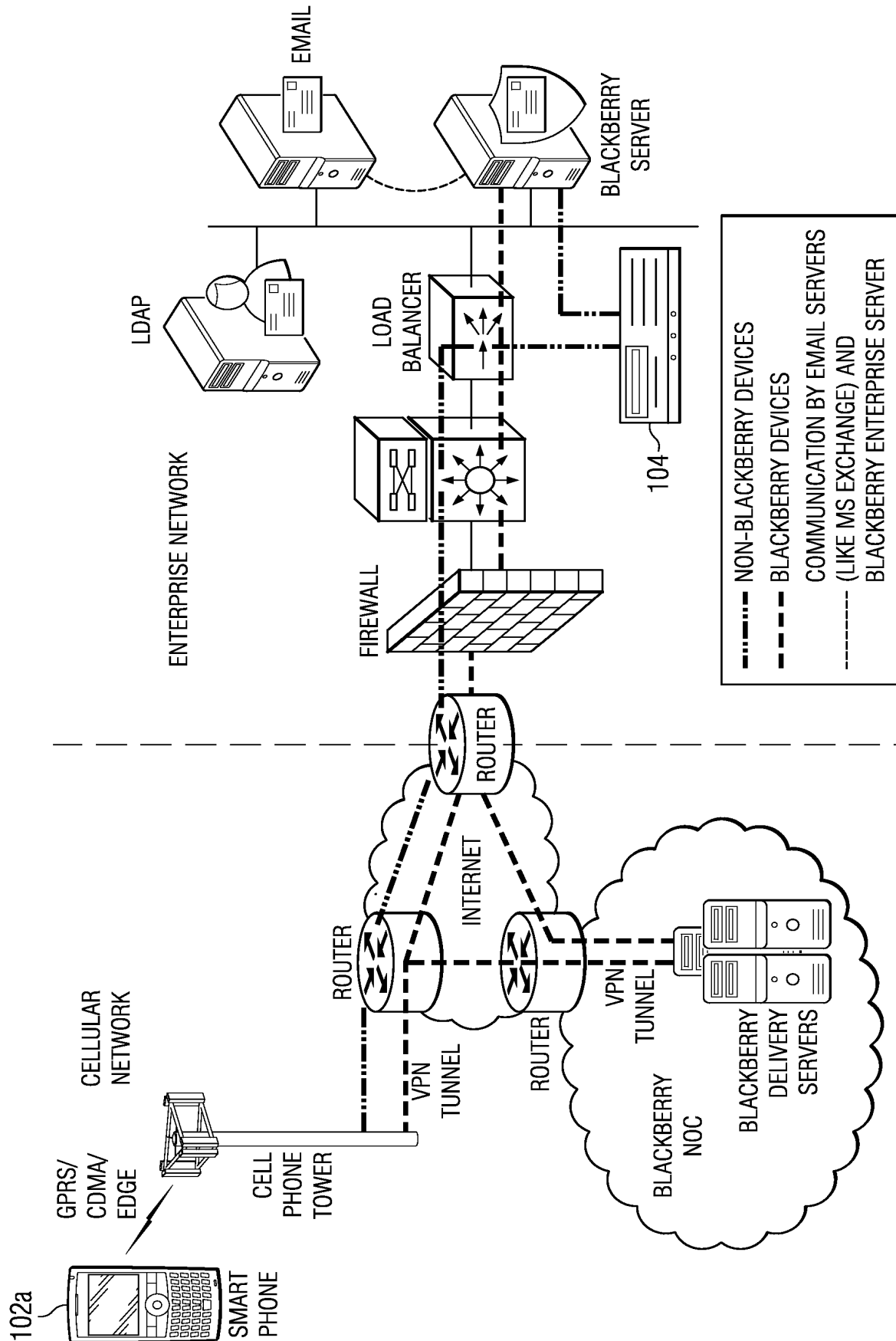


FIG. 5

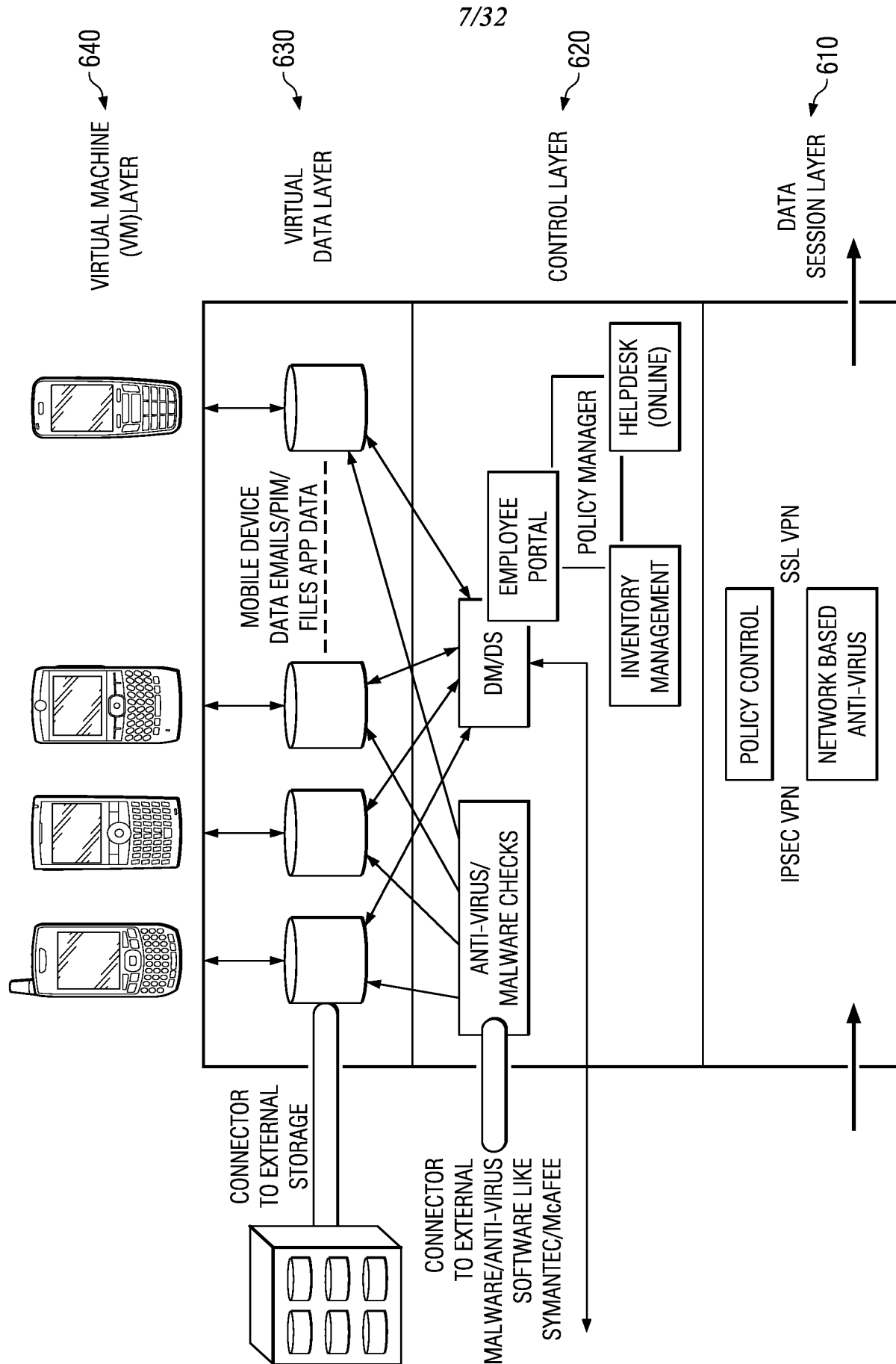


FIG. 6

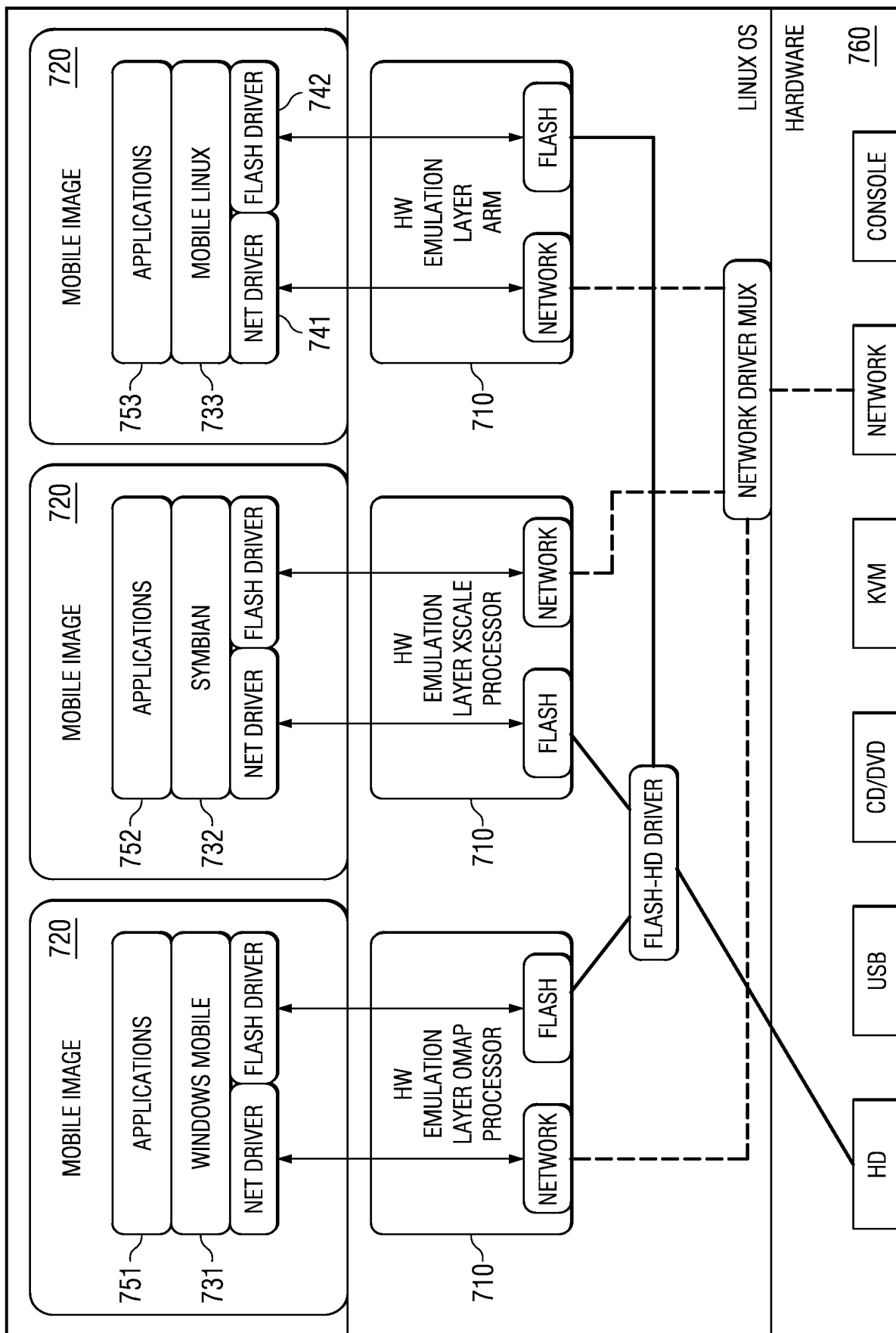
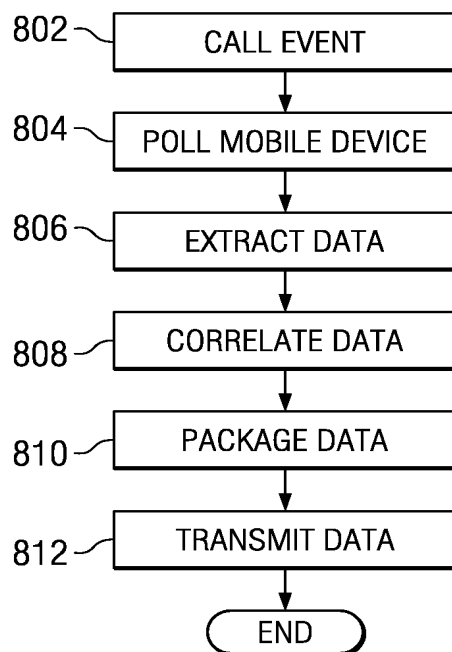
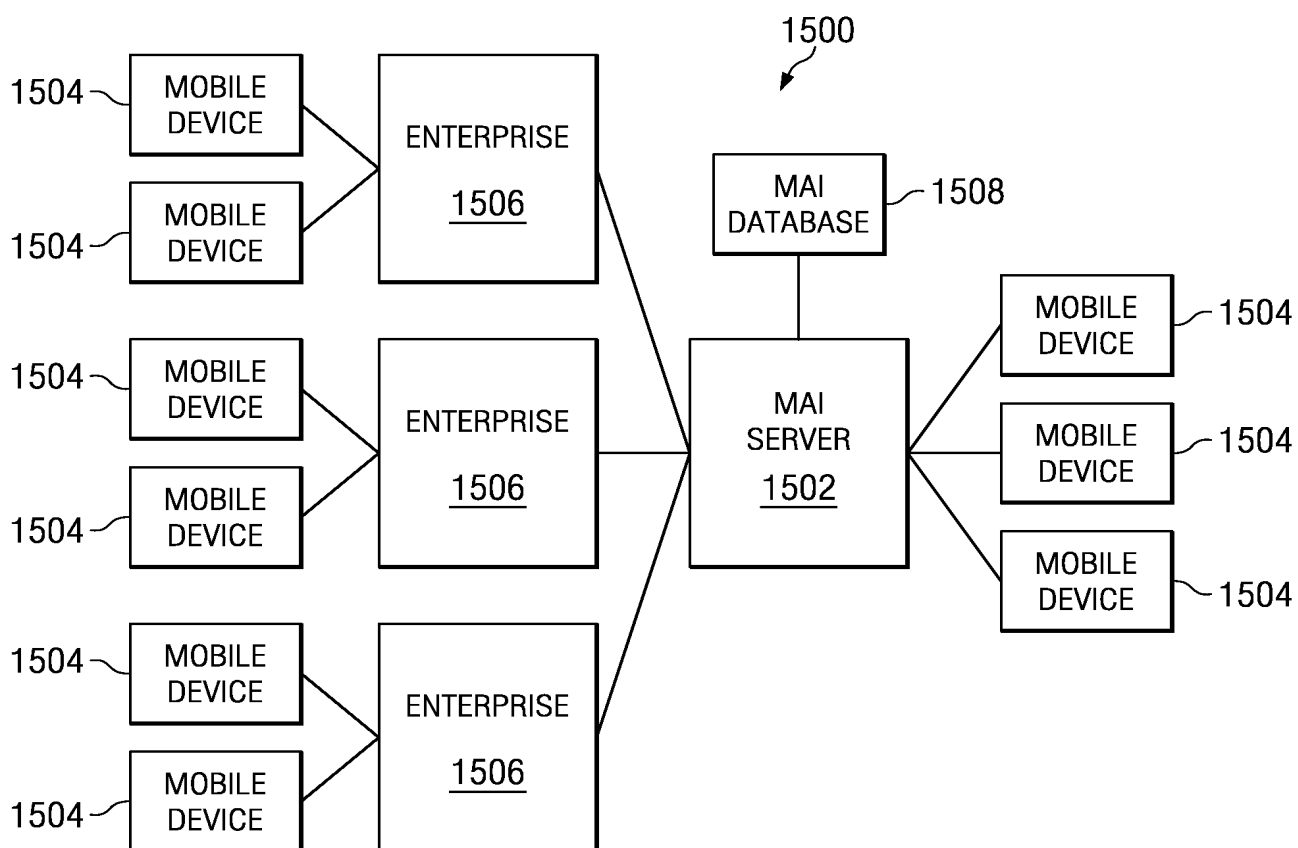


FIG. 7

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*FIG. 8**FIG. 15*

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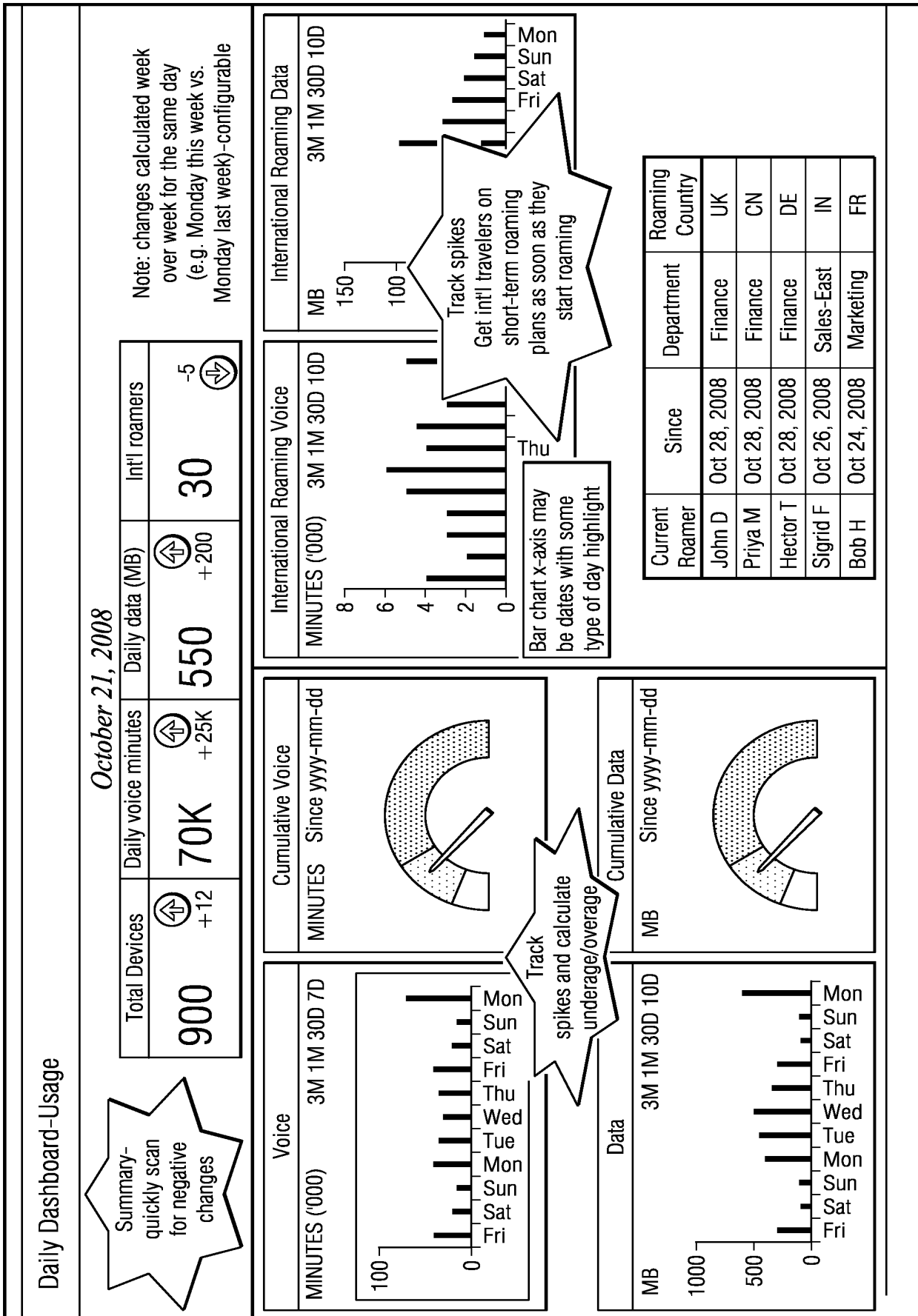


FIG. 9A



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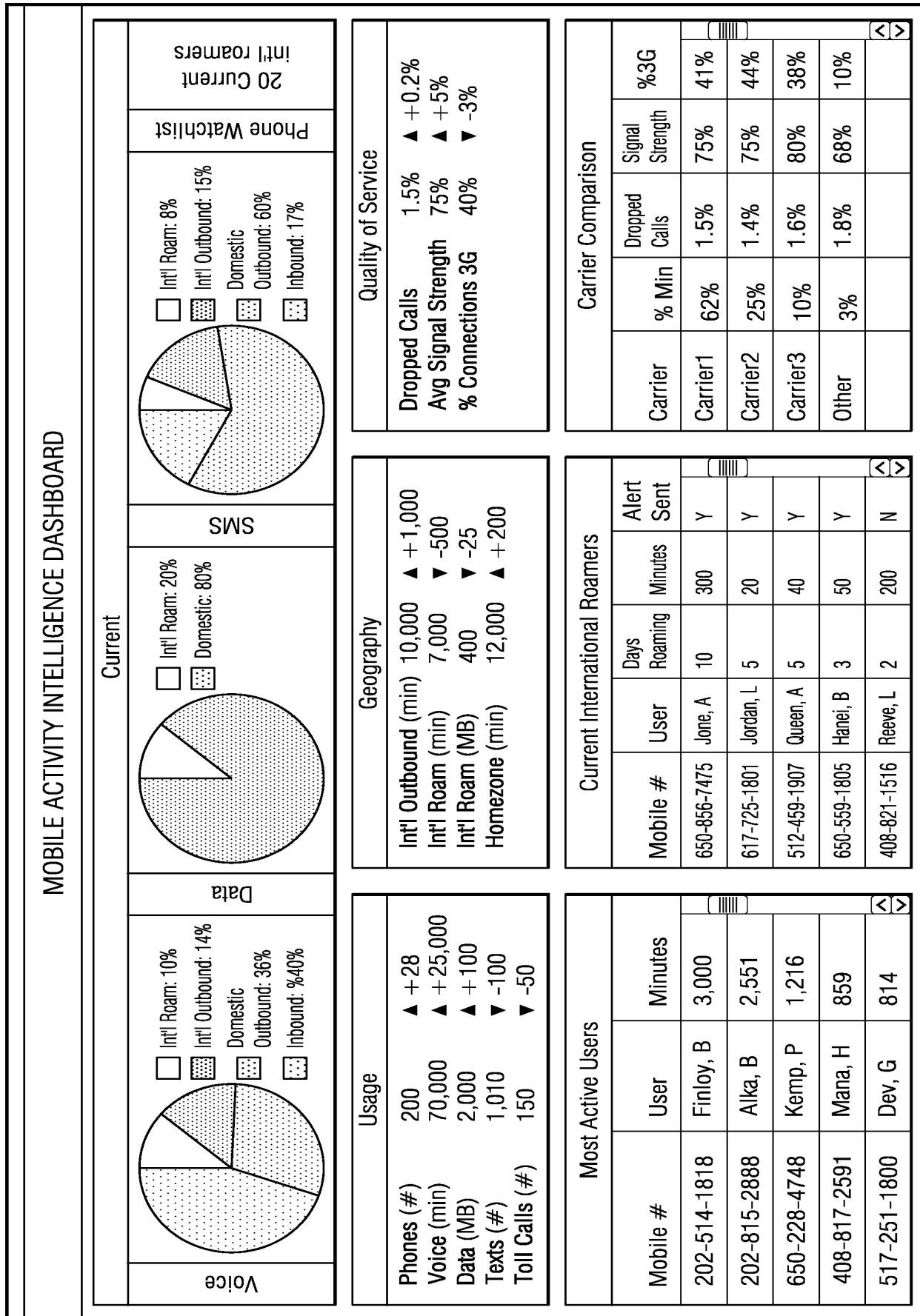


FIG. 9B

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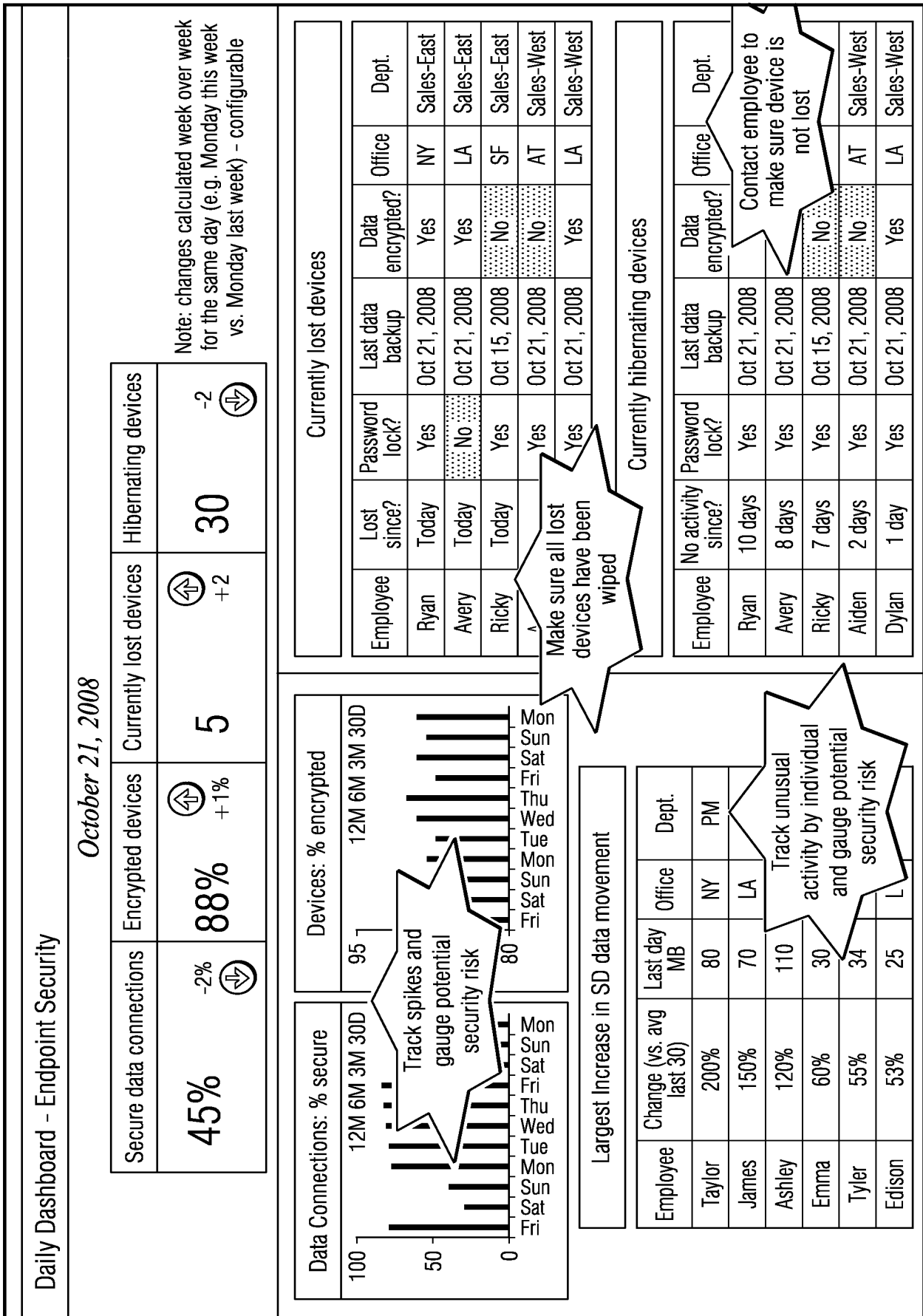


FIG. 9C

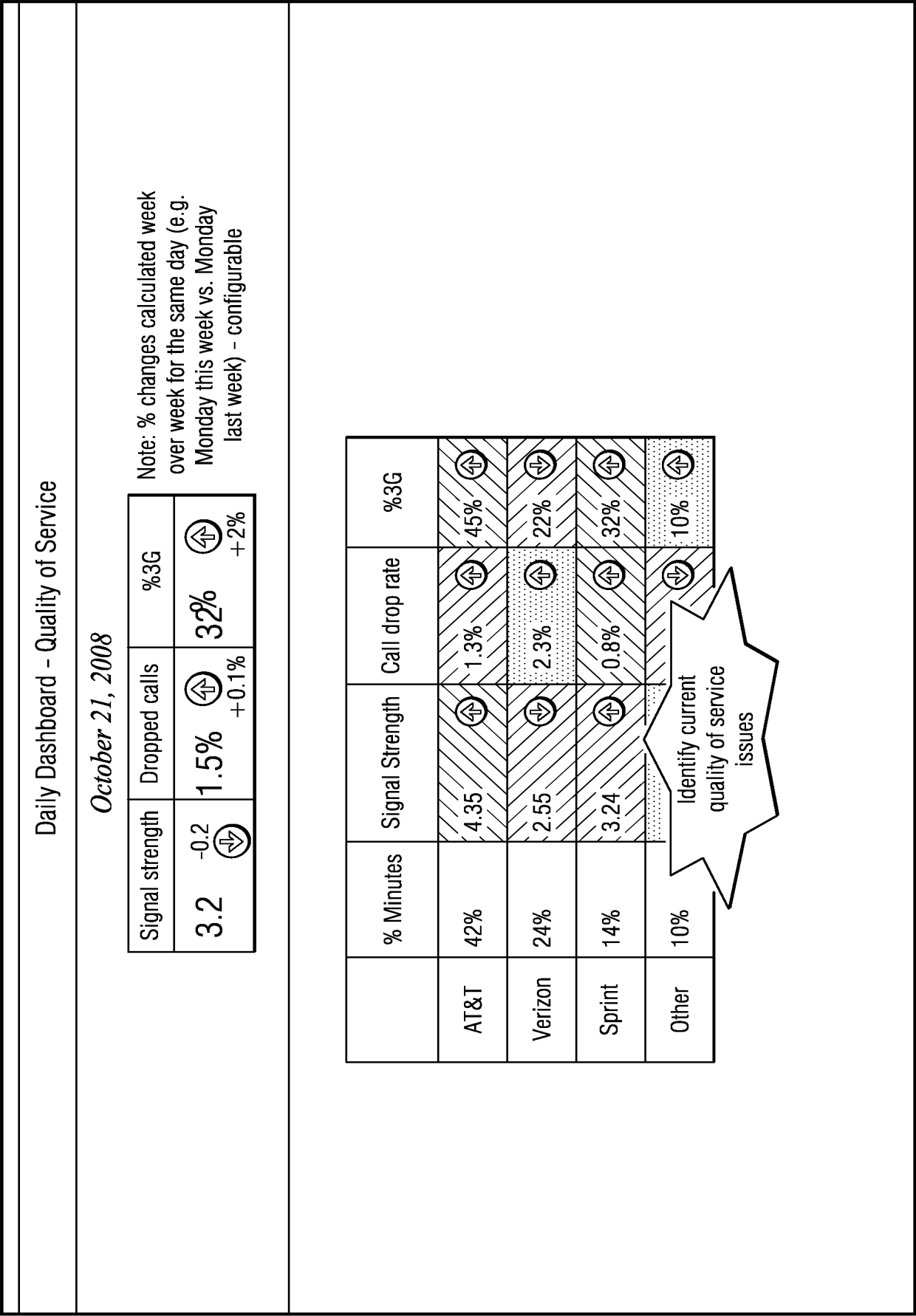


FIG. 9D

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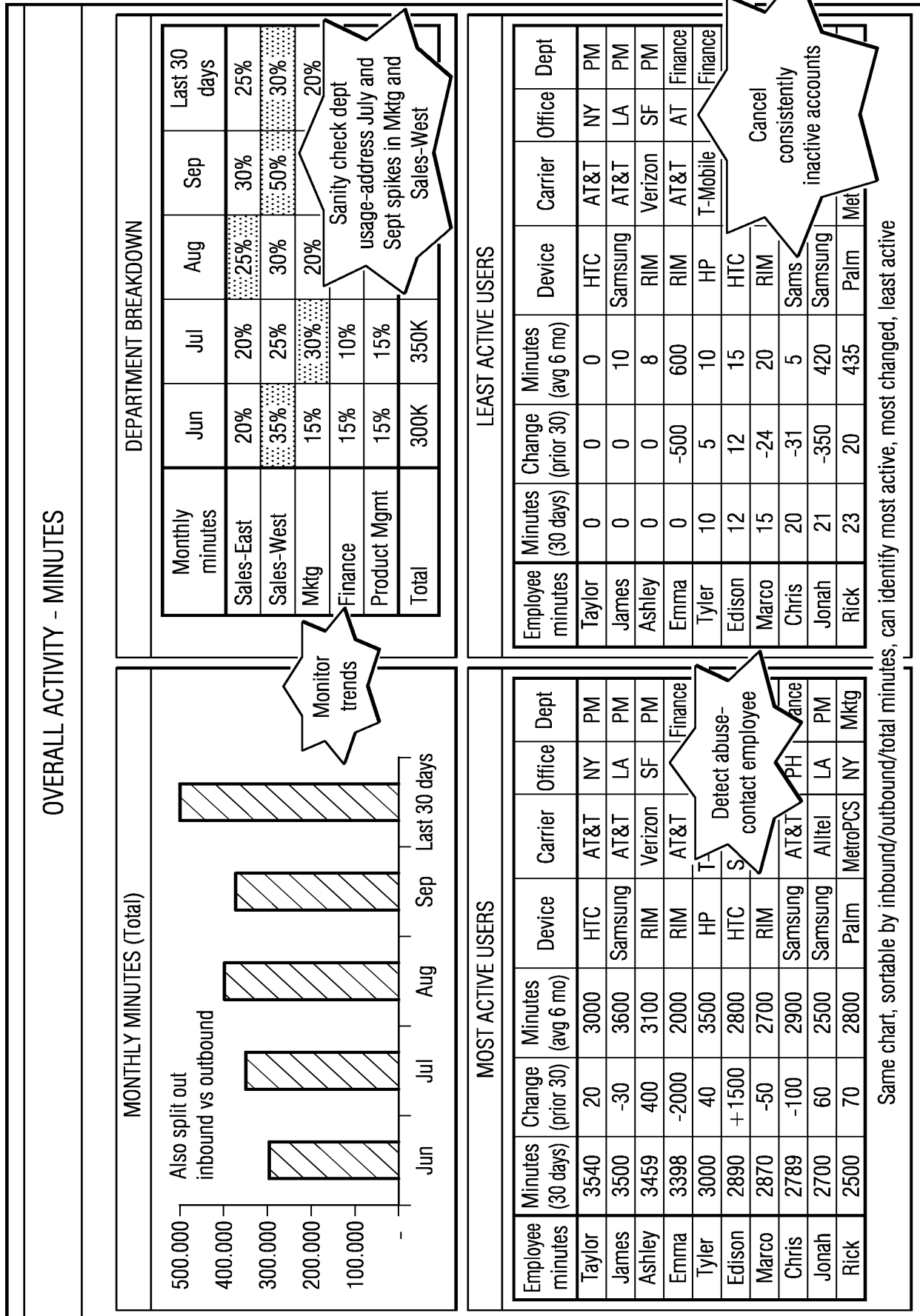


FIG. 10A

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## OVERALL ACTIVITY - MB

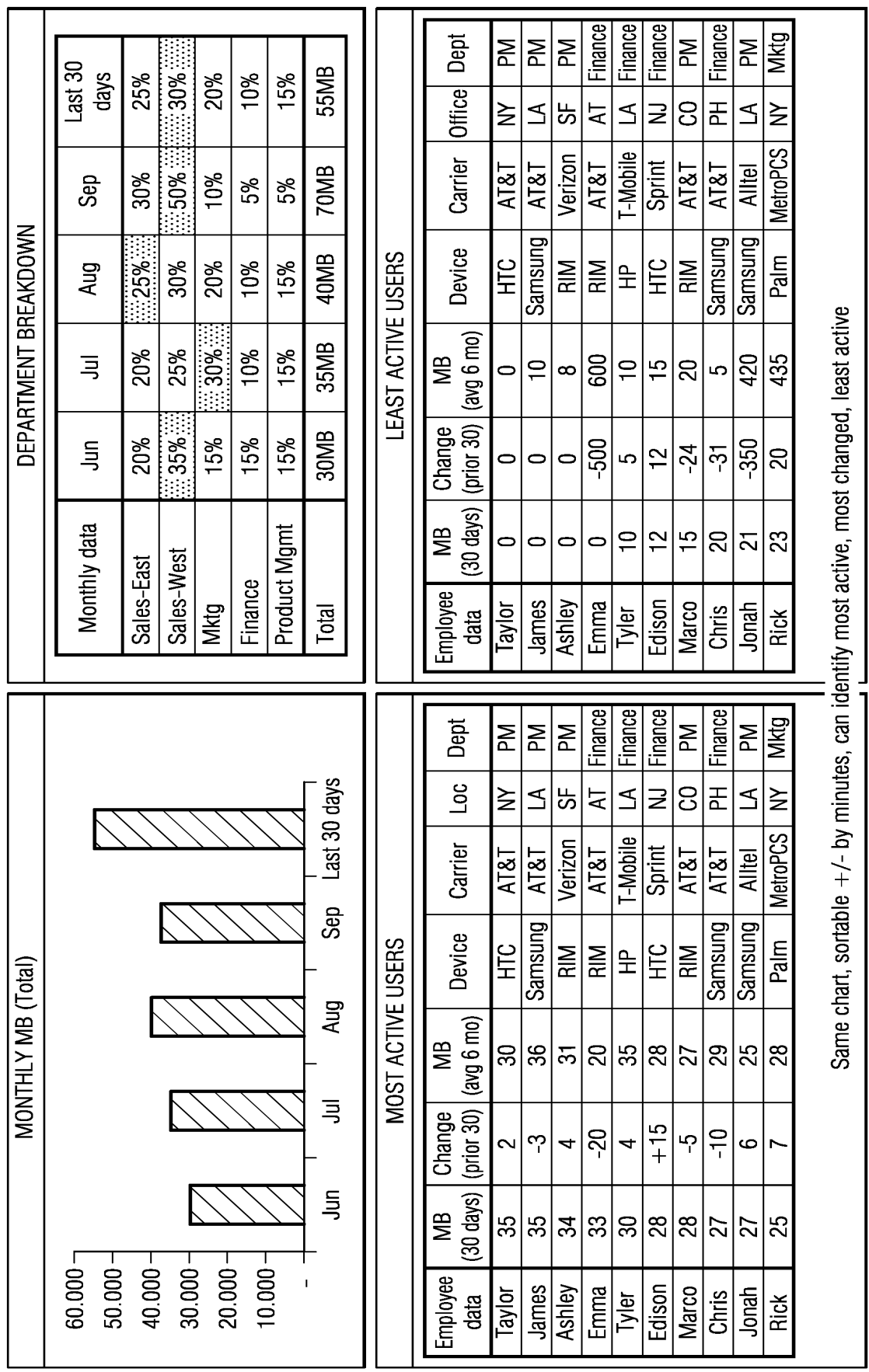


FIG. 10B

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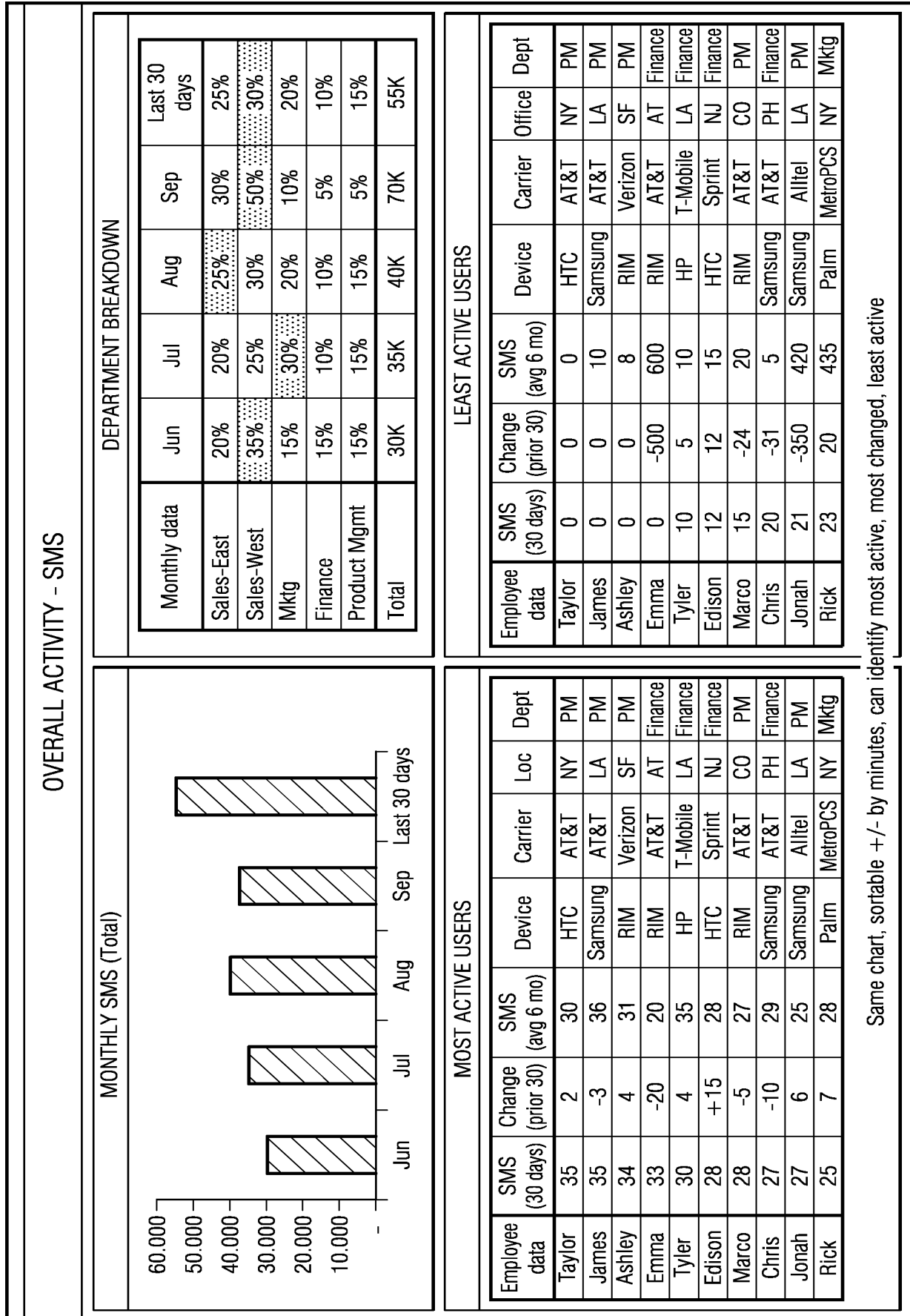


FIG. 10C

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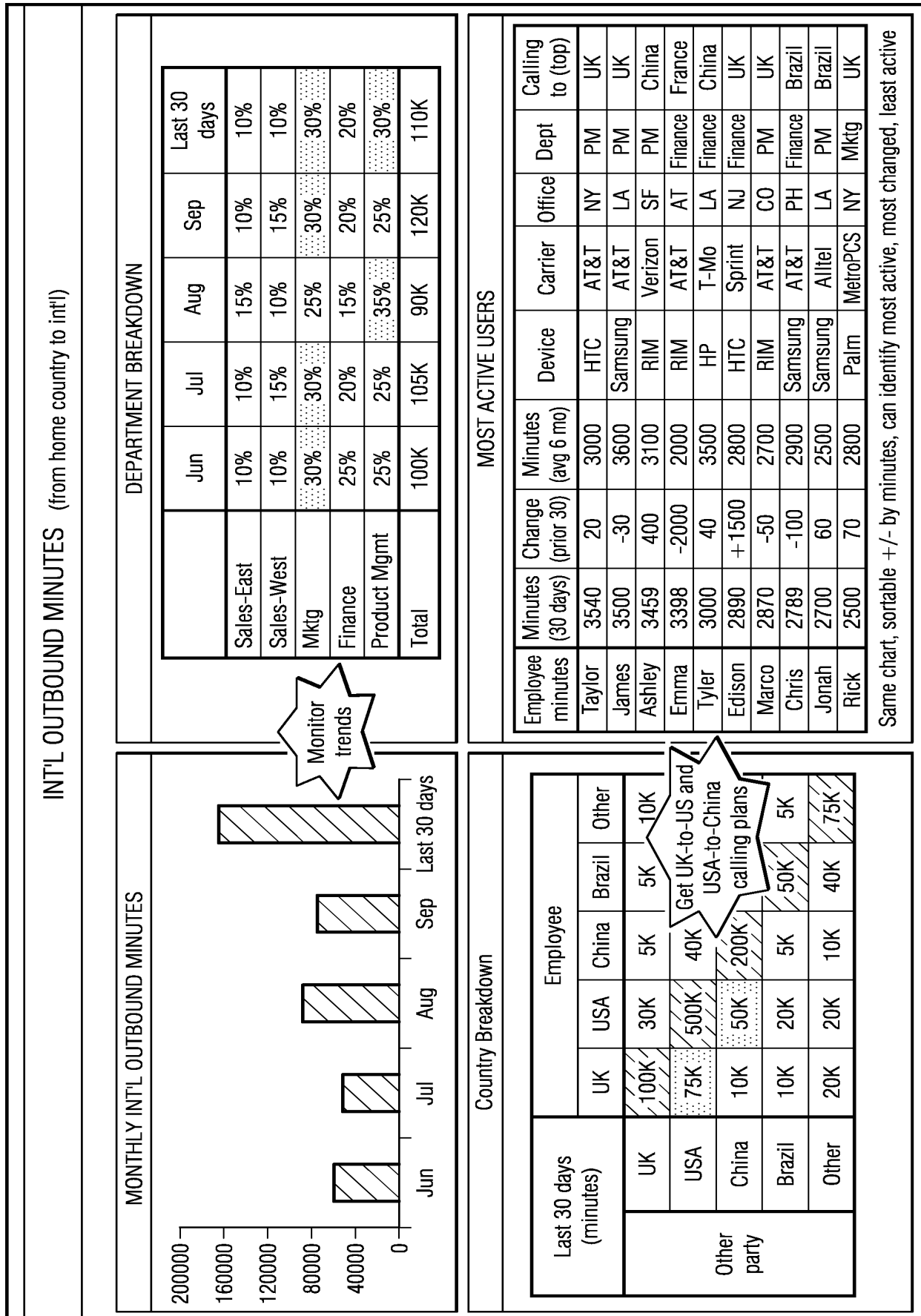


FIG. 11A

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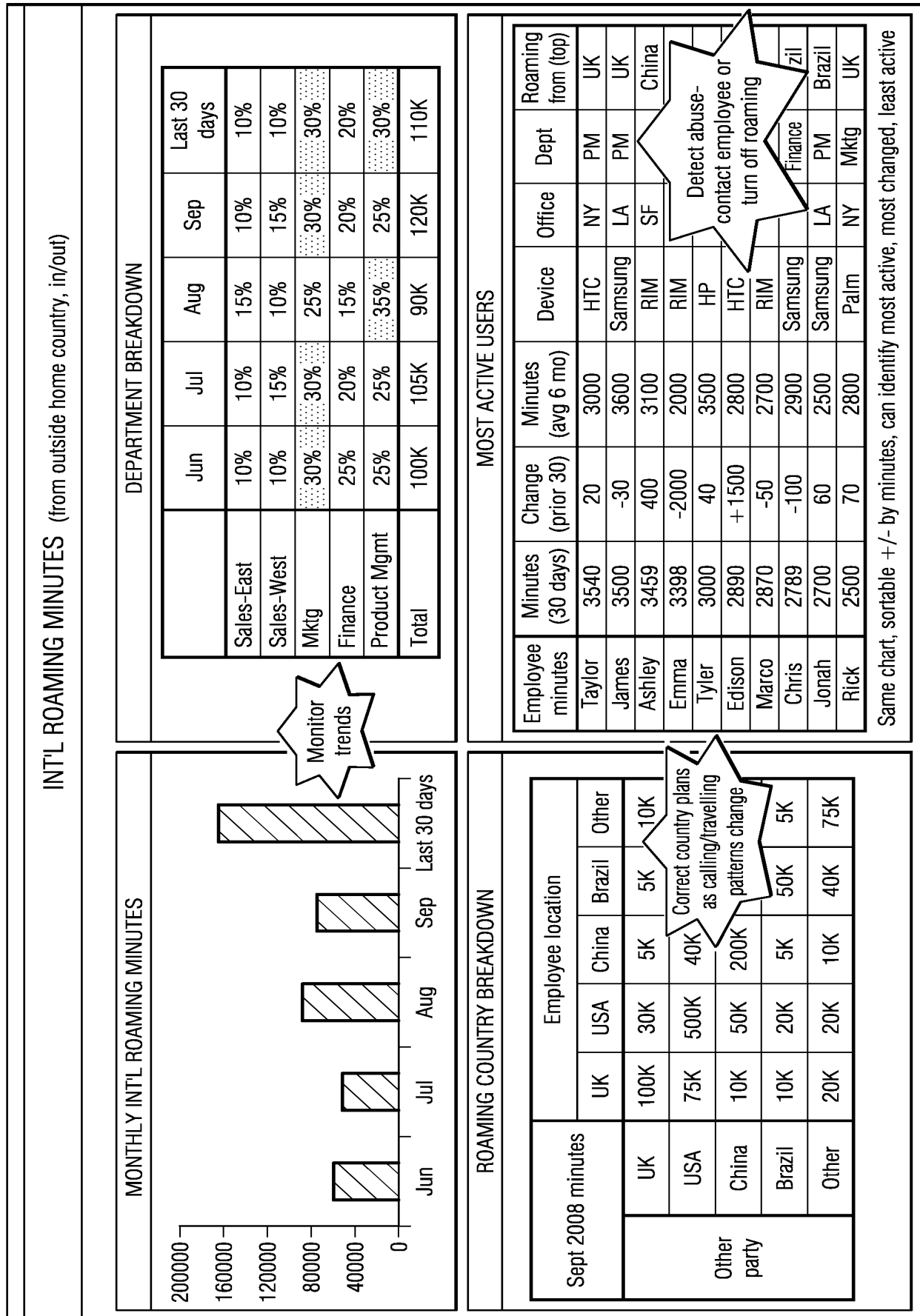


FIG. 11B



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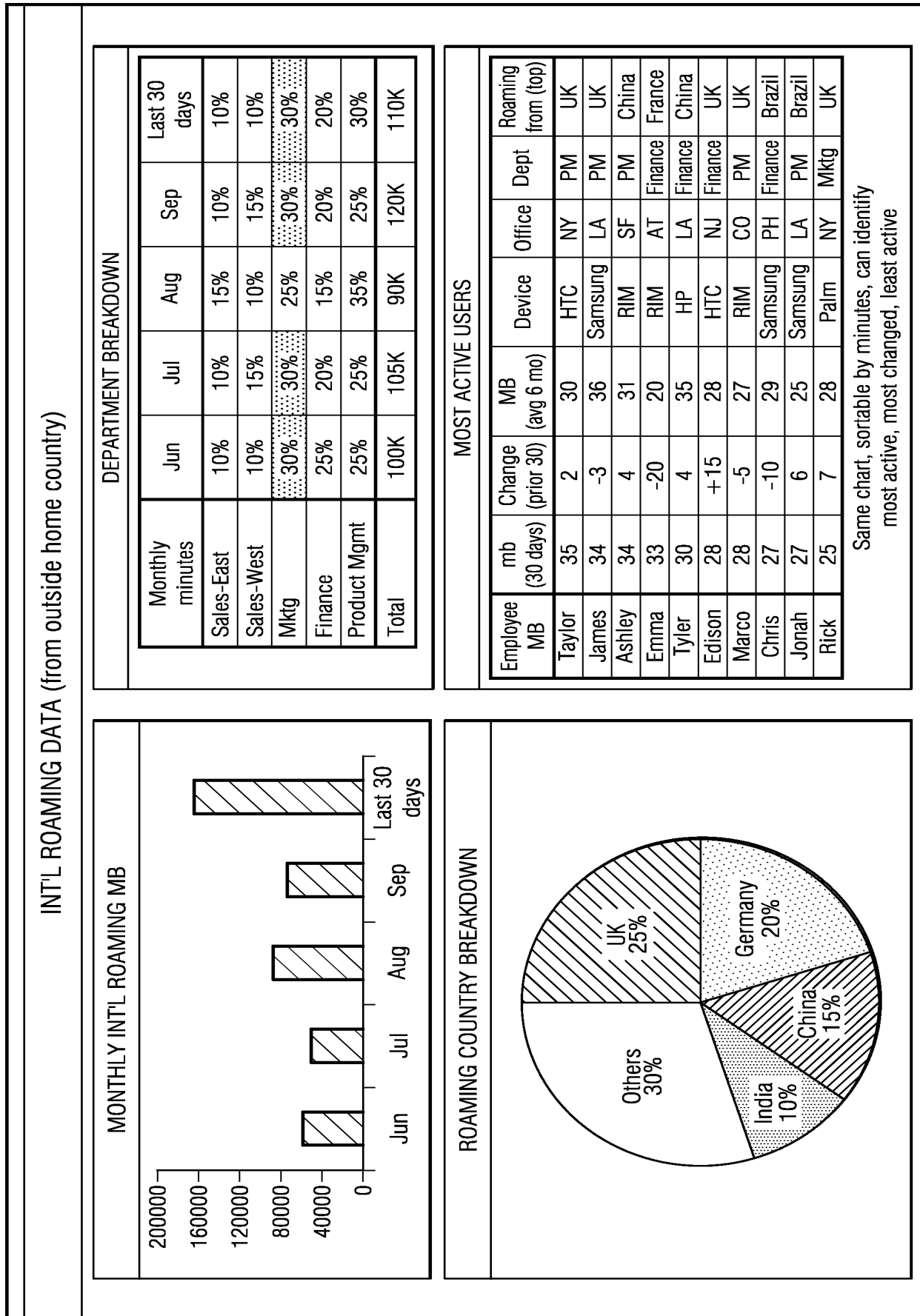


FIG. 11C

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CURRENT ROAMERS							
Current Roamer	Since	Roaming Country	Min Used	MB Used	Home Carrier	Alert sent	
Maya	Oct 28, 2008	UK	20	0	AT&T	No	
Priya	Oct 28, 2008	France	200	4	Orange	No	
Aditi	Oct 28, 2008	India	10	10	Globe	Yes	
Shanti	Oct 28, 2008	Brazil	50	15	T-Mobile	No	
Indira	Oct 28, 2008	China	100	20	AT&T	Yes	
Nisha	Oct 27, 2008	Mexico	120	8	AT&T	No	
Amit	Oct 25, 2008	Egypt	300	20	Vodafone	Yes	
Bhanu	Oct 25, 2008		400	10	AT&T	Yes	
Ravi	Oct 21, 2008		500	30	AT&T	Yes	

Get int'l travelers on short-term roaming plans as soon as they start roaming

FIG. 11D

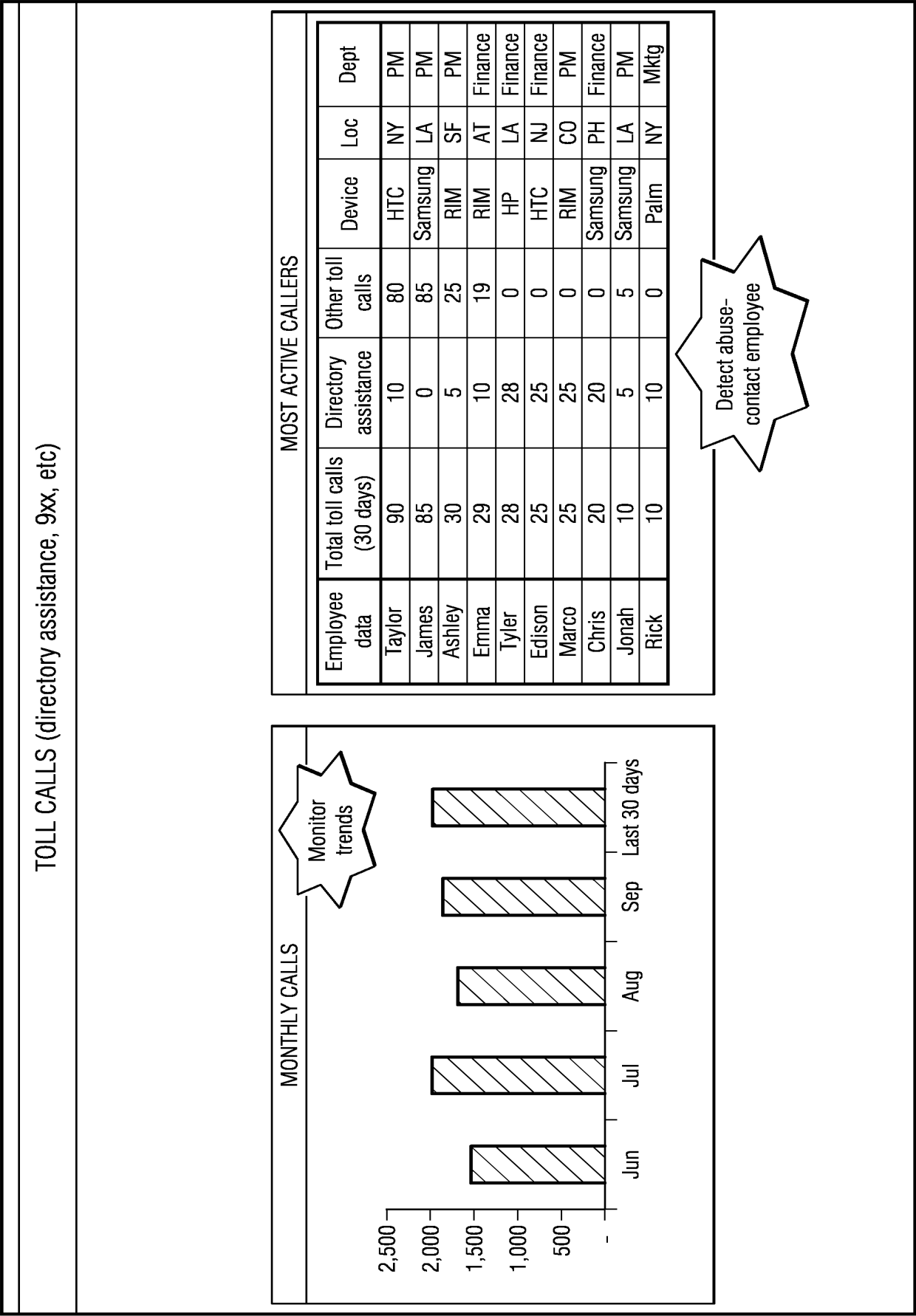


FIG. 12A

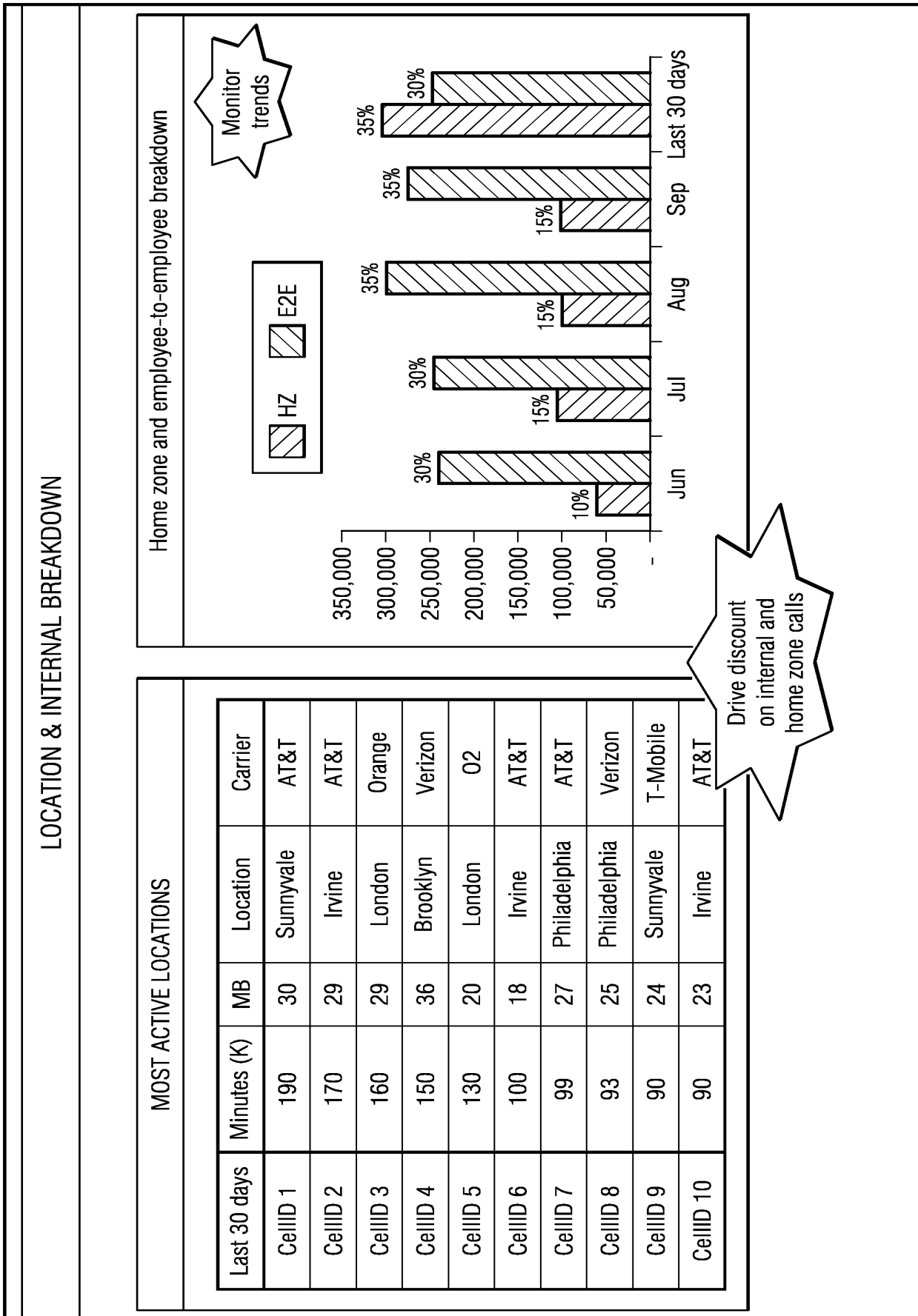


FIG. 12B

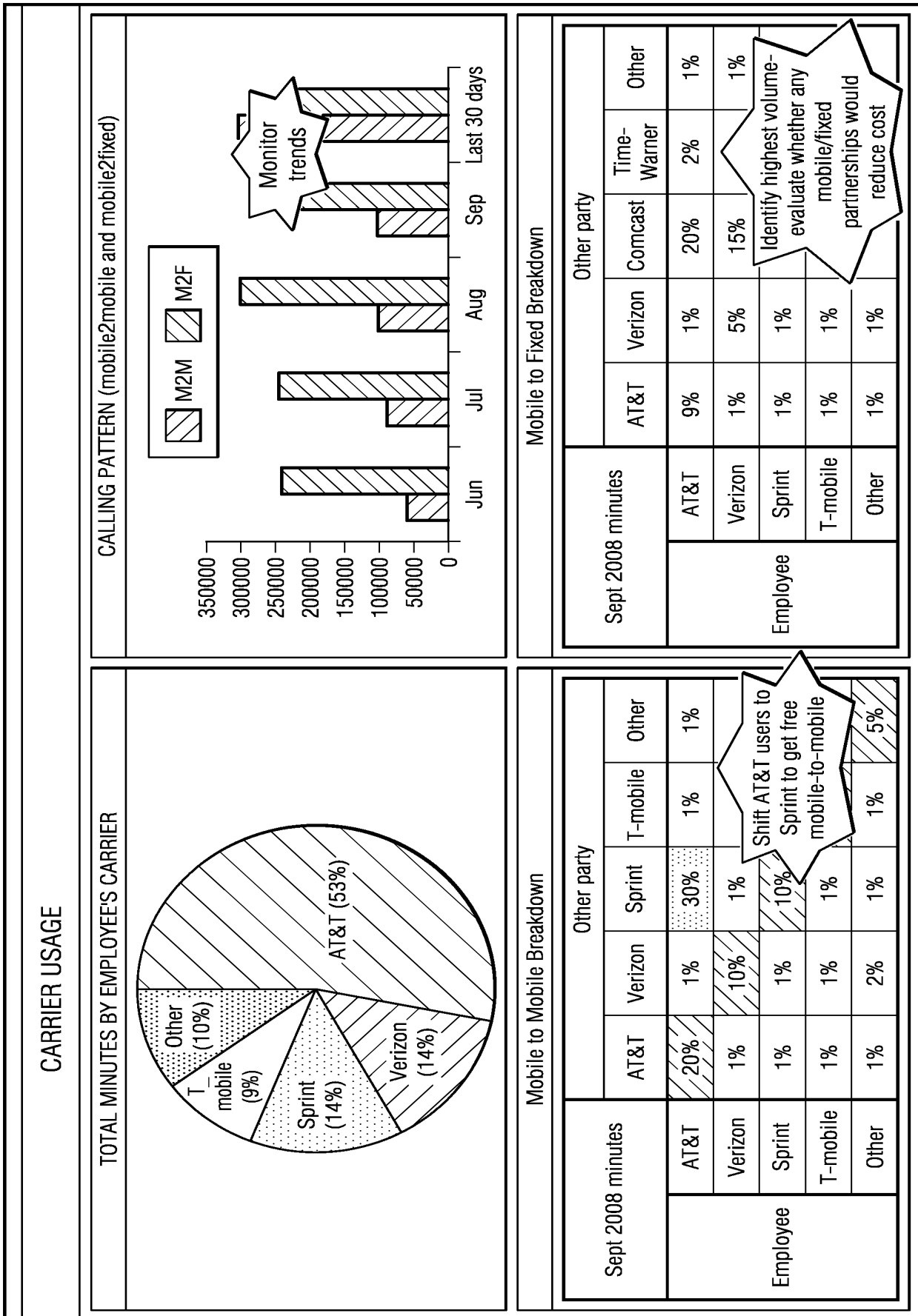


FIG. 12C

## CARRIER QUALITY OF SERVICE

Last 30 days	% Minutes	Signal Strength	Call drop rate	%3G
AT&T	42%	4.35 ⬆️	1.3% ⬆️	45% ⬆️
Verizon	24%	2.55 ⬆️	2.3% ⬆️	22% ⬆️
Sprint	14%	3.24 ⬆️	0.8% ⬆️	32% ⬆️
Other	10%	1.92 ⬆️	1.2% ⬆️	10% ⬆️

Pick carrier with best  
quality of service based on  
actual employee data  
Leverage data to negotiate  
service plans  
Enforce SLAs

FIG. 12D

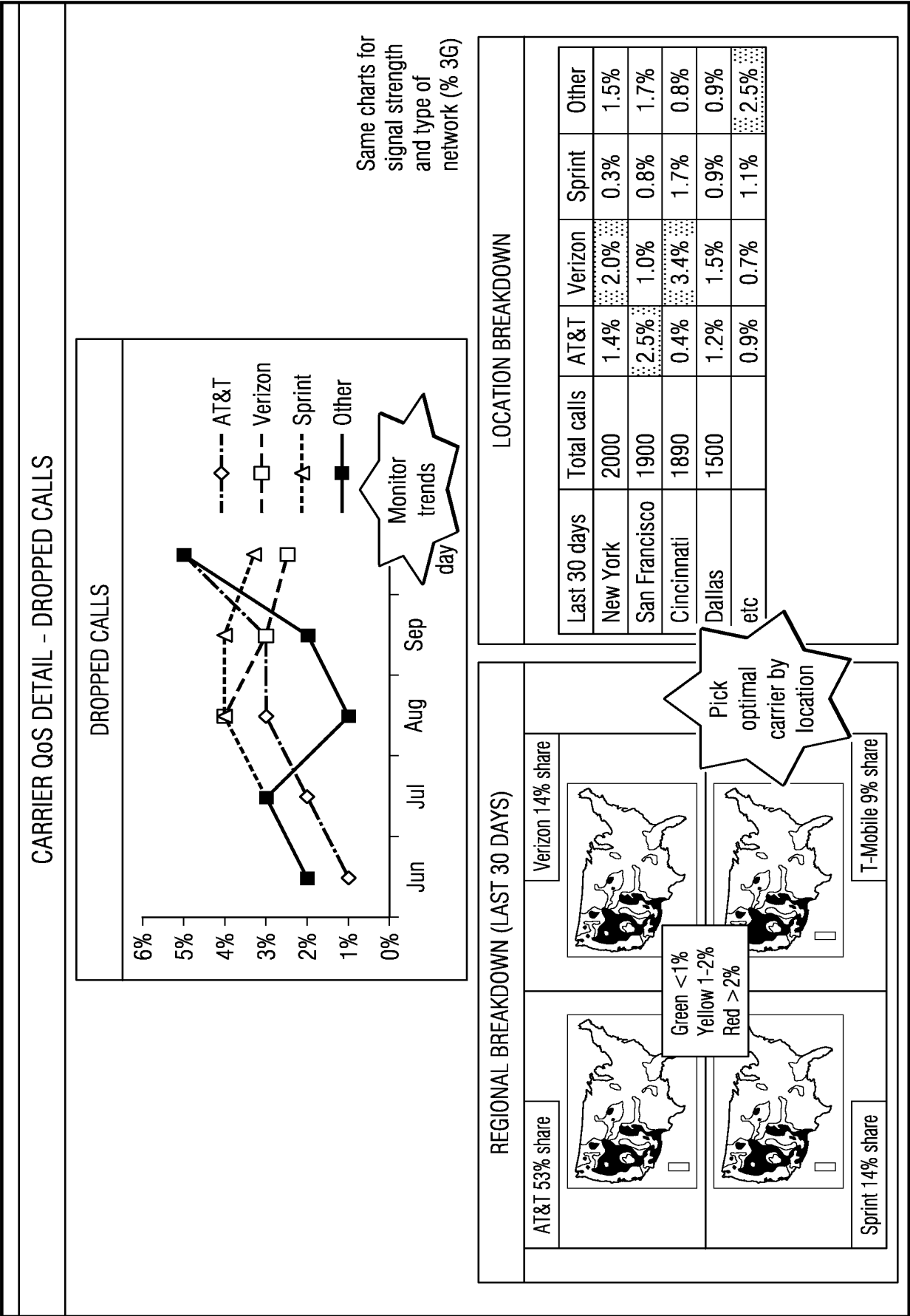
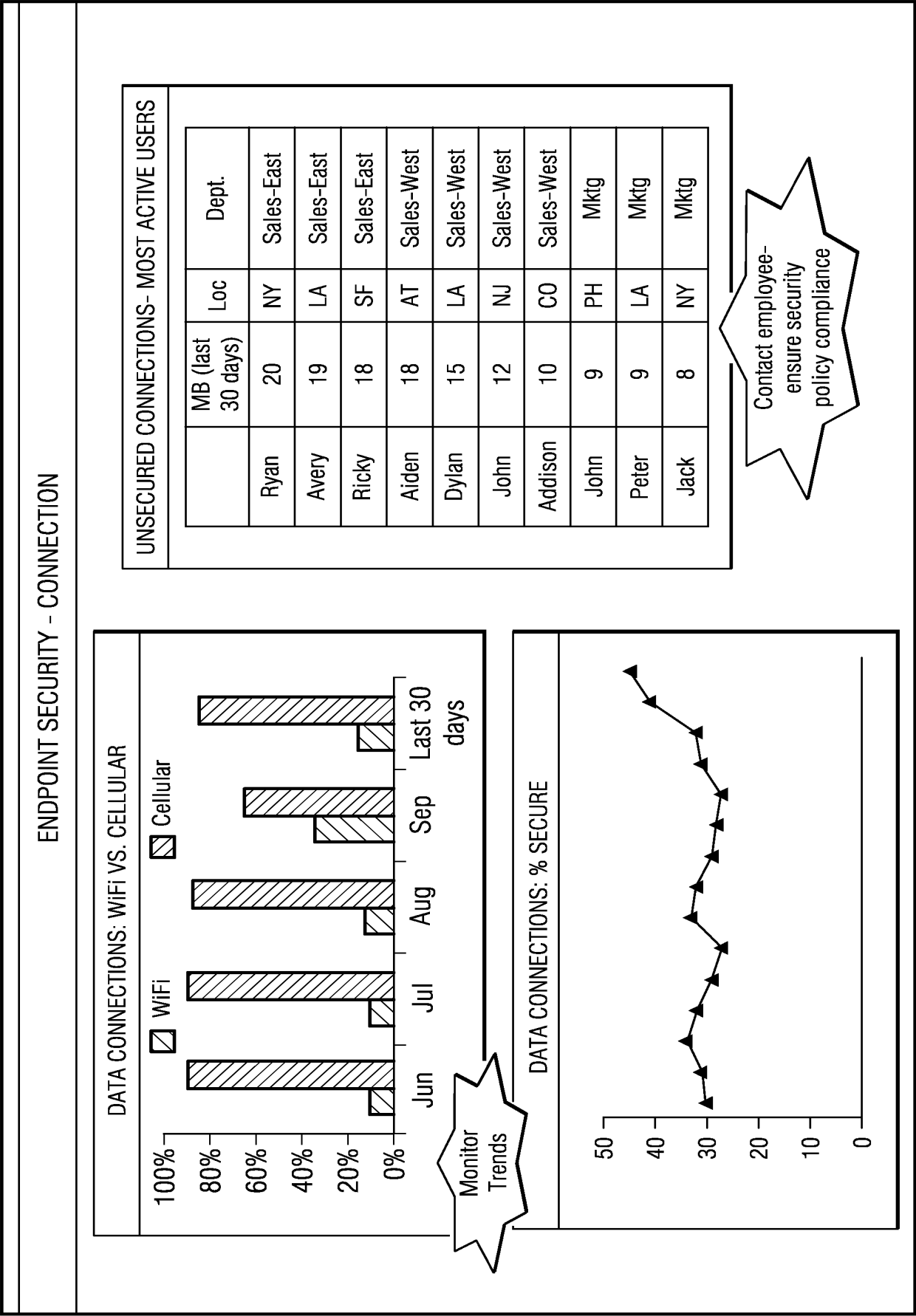


FIG. 12E





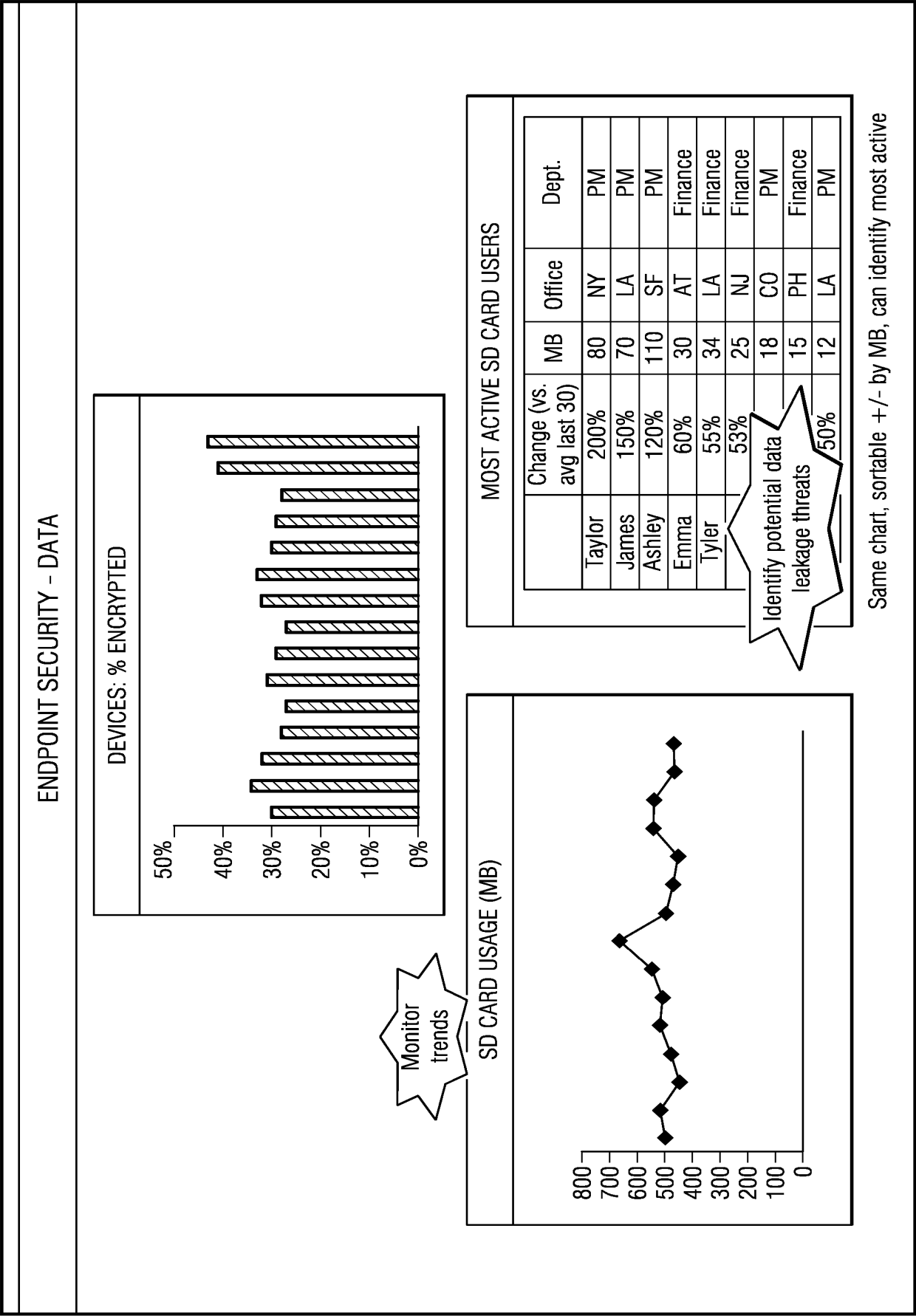


FIG. 12G

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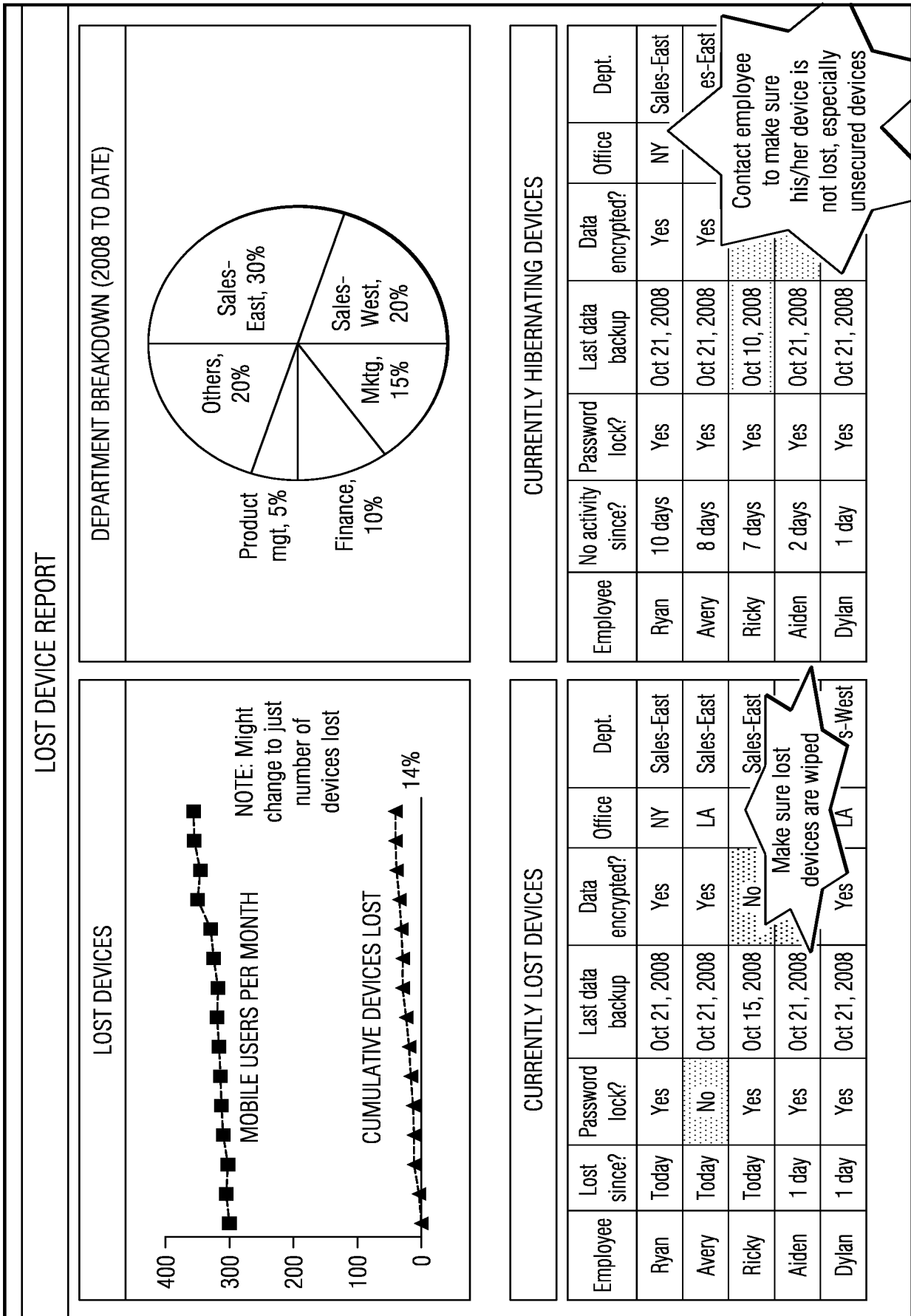


FIG. 12H

## Control Center: Take informed actions

[illegible]

1300

**FIG. 13**



Enter ZIP or address below:

and choose a distance:  
☒ 25 miles

Analyze data for a   
Rate towers by:

	total minutes	<input checked="" type="checkbox"/>
<input type="button" value="Locate"/>	<input type="button" value="Reset"/>	

Tower ID	Mins	Strm
① 23106	103	74%
② 23103	49	70%
③ 29622	34	87%
④ 5303	20	54%
⑤ 4305	19	100%
⑥ 60535	15	84%
⑦ 35434	11	63%
⑧ 20515	9	58%
⑨ 29293	9	56%

The screenshot displays the main interface of the "Cellular Signal Strength" application. At the top, there are navigation icons for home, back, forward, zoom in, zoom out, and a settings menu. Below these, a search bar contains the ZIP code "94089". A section titled "and choose a distance:" shows "25 miles" selected. Under "Analyze data for a", "day" is selected. The "Rate towers by:" section includes a table with columns for Tower ID, Mins, and Strm, listing nine towers with their respective signal metrics. Below this table are "Locate" and "Reset" buttons. The bottom half of the screen features a map of California with several cellular towers marked by numbered circles (1-9) corresponding to the table above. A detailed information panel for the selected tower (Tower 1) is open, showing its location at "600-698 W Evelyn Ave., Mountain View, CA 94041, USA" and various technical details like cellid (23106), signal (74%), minutes (103), carrier (AT&T Mobileless), lac (56998), mcc (310), mnc (410), and network (GSM). Buttons for "Add to homepage", "Show calls", and "Map" are also visible.

**FIG. 14B**

Time	User	Phone number	Carrier	Minutes	Avg. signal strength (%)	Start cell Id	End cell Id
2009-03-13 03-48	Ojas Rege	16505556677	AT&T	0	88	4305	4305
2009-03-13 03-32	Ojas Rege	16505556677	AT&T	0	88	4305	4305
2009-03-13 03-30	Ojas Rege	16505556677	AT&T	19	88	4305	257

1406

FIG. 14C

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		Mobile Activity Intelligence		
First Named Inventor/Applicant Name:		Ojas Udayan Rege		
Filer:		Kevin M. Donnelly/Susan Bacchi		
Attorney Docket Number:		079198.0107		
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility application filing	1011	1	330	330
Utility Search Fee	1111	1	540	540
Utility Examination Fee	1311	1	220	220
Pages:				
Claims:				
Claims in excess of 20	1202	10	52	520
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>1610</b>



## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	5131455
<b>Application Number:</b>	12421517
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4643
<b>Title of Invention:</b>	Mobile Activity Intelligence
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege
<b>Customer Number:</b>	05073
<b>Filer:</b>	Kevin M. Donnelly/Susan Bacchi
<b>Filer Authorized By:</b>	Kevin M. Donnelly
<b>Attorney Docket Number:</b>	079198.0107
<b>Receipt Date:</b>	09-APR-2009
<b>Filing Date:</b>	
<b>Time Stamp:</b>	19:15:47
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 1610
RAM confirmation Number	4584
Deposit Account	020384
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 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

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	Application Data Sheet	2009_04_09_ADS_079198_0107.pdf	52186 8dba29a3822eb5074c34da931db178aef96a13c8	no	5

### Warnings:

### Information:

This is not an USPTO supplied ADS fillable form

2	Nonpublication request from applicant.	2009_04_09_NonPub_079198_0107.pdf	68399 5831f213fce1e8f6c10450a34423218cd80c4691	no	2
---	--	-----------------------------------	---	----	---

### Warnings:

### Information:

3	Oath or Declaration filed	2009_04_09_Declaration_079198_0107.pdf	79693 a0acb4e3da6dea48bc483a8f37b40a69981468dc	no	7
---	---------------------------	--	---	----	---

### Warnings:

### Information:

4		2009_04_09_SpecClaimsAbst_079198_0107.pdf	210226 b6552047c5448f44856934257680a1230f872cc0	yes	44
---	--	---	--	-----	----

### Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	38
Claims	39	43
Abstract	44	44

### Warnings:

### Information:

5	Drawings-only black and white line drawings	2009_04_09_FormalDrawings_079198_0107.pdf	4490822 e9265e5d940b0d0dd160895f0202cb64ab8b8cbd	no	32
---	---	---	---	----	----

### Warnings:

### Information:

6	Fee Worksheet (PTO-06)	fee-info.pdf	36436 56c7c378e6e63fc56eb8b37bdc4b8ffd19ad3aa4	no	2
---	------------------------	--------------	---	----	---

<b>Warnings:</b>	
<b>Information:</b>	
<b>Total Files Size (in bytes):</b>	4937762
<p><b>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.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>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.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>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.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>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.</b></p>	

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	5131455
<b>Application Number:</b>	12421517
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4643
<b>Title of Invention:</b>	Mobile Activity Intelligence
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege
<b>Customer Number:</b>	05073
<b>Filer:</b>	Kevin M. Donnelly/Susan Bacchi
<b>Filer Authorized By:</b>	Kevin M. Donnelly
<b>Attorney Docket Number:</b>	079198.0107
<b>Receipt Date:</b>	09-APR-2009
<b>Filing Date:</b>	
<b>Time Stamp:</b>	19:15:47
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
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Payment was successfully received in RAM	\$ 1610
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Authorized User	

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Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

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	Application Data Sheet	2009_04_09_ADS_079198_0107.pdf	52186 8dba29a3822eb5074c34da931db178aef96a13c8	no	5

### Warnings:

### Information:

This is not an USPTO supplied ADS fillable form

2	Nonpublication request from applicant.	2009_04_09_NonPub_079198_0107.pdf	68399 5831f213fce1e8f6c10450a34423218cd80c4691	no	2
---	--	-----------------------------------	---	----	---

### Warnings:

### Information:

3	Oath or Declaration filed	2009_04_09_Declaration_079198_0107.pdf	79693 a0acb4e3da6dea48bc483a8f37b40a69981468dc	no	7
---	---------------------------	--	---	----	---

### Warnings:

### Information:

4		2009_04_09_SpecClaimsAbst_079198_0107.pdf	210226 b6552047c5448f44856934257680a1230f872cc0	yes	44
---	--	---	--	-----	----

### Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	38
Claims	39	43
Abstract	44	44

### Warnings:

### Information:

5	Drawings-only black and white line drawings	2009_04_09_FormalDrawings_079198_0107.pdf	4490822 e9265e5d940b0d0dd160895f0202cb64ab8b8cbd	no	32
---	---	---	---	----	----

### Warnings:

### Information:

6	Fee Worksheet (PTO-06)	fee-info.pdf	36436 56c7c378e6e63fc56eb8b37bdc4b8ffd19ad3aa4	no	2
---	------------------------	--------------	---	----	---

<b>Warnings:</b>	
<b>Information:</b>	
<b>Total Files Size (in bytes):</b>	4937762
<p><b>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.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>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.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>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.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>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.</b></p>	

Filing Date: 04/09/09

Approved for use through 7/31/2006. OMB 0651-0032

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 APPLICATION FEE DETERMINATION RECORD**

Substitute for Form PTO-875

Application or Docket Number

**12/421,517****APPLICATION AS FILED – PART I**

(Column 1) (Column 2)

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(i))	30 minus 20 =	10
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))		

**SMALL ENTITY**

OR

**OTHER THAN SMALL ENTITY**

RATE (\$)	FEE (\$)
N/A	
N/A	
N/A	
x\$26	
x\$110	
195	
TOTAL	

OR

RATE (\$)	FEE (\$)
N/A	330
N/A	540
N/A	220
x\$52	520
x\$220	
390	
TOTAL	1610

\* If the difference in column 1 is less than zero, enter "0" in column 2.

**APPLICATION AS AMENDED – PART II**

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(i))	*	Minus	**	=	
Independent (37 CFR 1.16(h))	*	Minus	***	=	
Application Size Fee (37 CFR 1.16(s))					
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

**SMALL ENTITY**

OR

**OTHER THAN SMALL ENTITY**

RATE (\$)	ADDITIONAL FEE (\$)
X =	
X =	
N/A	
TOTAL ADD'T FEE	

OR

OR

OR

OR

OR

OR

RATE (\$)	ADDITIONAL FEE (\$)
X =	
X =	
N/A	
TOTAL ADD'T FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(i))	*	Minus	**	=	
Independent (37 CFR 1.16(h))	*	Minus	***	=	
Application Size Fee (37 CFR 1.16(s))					
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

RATE (\$)	ADDITIONAL FEE (\$)
X =	
X =	
N/A	
TOTAL ADD'T FEE	

OR

OR

OR

OR

OR

OR

RATE (\$)	ADDITIONAL FEE (\$)
X =	
X =	
N/A	
TOTAL ADD'T FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. 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 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.

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

<b>PTO-SBO08A</b>  <b>Information Disclosure Citation In an Application</b>	Application No. 12/421,517	Applicant(s) Rege et al.	
	Docket Number 079198.0107	Group Art Unit 2617	Filing Date 9 Apr 2009

**U.S. PATENT DOCUMENTS**

		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	6,745,011	Jun 1, 2004	HENDRICKSON			
	B	6,754,470	Jun 22, 2004	HENDRICKSON			
	C	6,807,515 B2	Oct 19, 2004	VOGEL			
	D	6,862,564	Mar 1, 2005	SHUE			
	E	7,047,495	May 16, 2006	PANG			
	F	20050220080A1	Oct 6, 2005	RONKAINEN			
	G	20050256697A1	Nov 17, 2005	NARAYANASWAMI			
	H	20060031768A1	Feb 9, 2006	SHAH			
	I	20060259292A1	Nov 16, 2006	SOLOMON			
	J	20070276897A1	Nov 29, 2007	TAMESHIGE			

		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	K	PCT/US2008/071459, International Search Report	19 Feb 2009
	L	<a href="http://www.telephia.com/">http://www.telephia.com/</a>	10 April 2009
	M	<a href="http://www.telephia.com/html/about_telephia.html">http://www.telephia.com/html/about_telephia.html</a>	10 April 2009
	N	<a href="http://www.telephia.com/html/solutions.html">http://www.telephia.com/html/solutions.html</a>	10 April 2009
	O	<a href="http://www.telephia.com/html/measurement.html">http://www.telephia.com/html/measurement.html</a>	10 April 2009
	P	<a href="http://www.nielson.com/">http://www.nielson.com/</a>	10 April 2009
	Q	<a href="http://www.nielson.com/Industry_Reports">http://www.nielson.com/Industry_Reports</a>	10 April 2009
	R	<a href="http://www.fiercewireless.com/wireless_industry.asp?CMP=KNC-FW&amp;HBX_OU=51">http://www.fiercewireless.com/wireless_industry.asp?CMP=KNC-FW&amp;HBX_OU=51</a>	10 April 2009
	S	<a href="http://www.carrieriq.com/overview/index.htm">http://www.carrieriq.com/overview/index.htm</a>	10 April 2009
	T	<a href="http://www.carrieriq.com/overview/mobileservice/index.htm">http://www.carrieriq.com/overview/mobileservice/index.htm</a>	10 April 2009
	U	<a href="http://www.carrieriq.com/overview/IQInsightDeviceAnalyzer/index.htm">http://www.carrieriq.com/overview/IQInsightDeviceAnalyzer/index.htm</a>	10 April 2009
	V	<a href="http://www.carrieriq.com/overview/IQInsightDatacardAnalyzer/index.htm">http://www.carrieriq.com/overview/IQInsightDatacardAnalyzer/index.htm</a>	10 April 2009
	W	<a href="http://www.carrieriq.com/overview/IQInsightExperienceManager/index.htm">http://www.carrieriq.com/overview/IQInsightExperienceManager/index.htm</a>	10 April 2009
	X	<a href="http://www.carrieriq.com/overview/IQInsightServiceAnalyzer/index.htm">http://www.carrieriq.com/overview/IQInsightServiceAnalyzer/index.htm</a>	10 April 2009
	Y	<a href="http://www.rivermine.com/about_corporate.php">http://www.rivermine.com/about_corporate.php</a>	10 April 2009
	Z	<a href="http://www.rivermine.com/solutions_software.php">http://www.rivermine.com/solutions_software.php</a>	10 April 2009
	AA	<a href="http://www.rivermine.com/solutions_managed.php">http://www.rivermine.com/solutions_managed.php</a>	

EXAMINER

DATE CONSIDERED


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.

U.S. PATENT AND TRADEMARK OFFICE



## PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:  Mark James Spolyar, Esq.  Baker Botts, L.L.P. 2001 Ross Avenue, Suite 600 Dallas Texas 75201 USA  
---

PCT

**NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT AND  
THE WRITTEN OPINION OF THE INTERNATIONAL  
SEARCHING AUTHORITY, OR THE DECLARATION**

(PCT Rule 44.1)

Applicant's or agent's file reference 079198.0106	Date of mailing (day/month/year) 19 FEBRUARY 2009 (19.02.2009)
International application No. <b>PCT/US2008/071459</b>	International filing date (day/month/year) <b>29 JULY 2008 (29.07.2008)</b>
Applicant  <b>MOBILE IRON, INC. et al</b>	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

**Filing of amendments and statement under Article 19:**

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

**When?** The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

**Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes  
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

**For more detailed instructions,** see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

**4. Reminders**


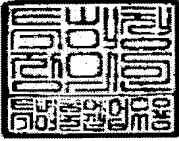
Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/KR  Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea  Facsimile No. 82-42-472-7140	Authorized officer  COMMISSIONER  Telephone No. 82-42-481-5131	
---	--	---

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article", "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

#### **What parts of the international application may be amended ?**

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

**When ?** Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

#### **Where not to file the amendments ?**

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

**How ?** Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Section 205(b)).

**The amendments must be made in the language in which the international application is to be published.**

#### **What documents must/may accompany the amendments ?**

##### **Letter (Section 205(b)):**

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

**The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.**

## NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

**The following examples illustrate the manner in which amendments must be explained in the accompanying letter:**

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:  
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:  
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:  
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or  
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:  
"Claims 1 - 10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

### **"Statement under Article 19(1)" (Rule 46.4)**

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

**It must be in the language in which the international application is to be published.**

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

### **Consequence if a demand for international preliminary examination has already been filed**

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the proceduer before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1 *bis*(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43 *bis*.1(c)).

### **Consequence with regard to translation of the international application for entry into the national phase**

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.

\* Attention

Copies of the documents cited in the international search report can be searched in the following Korean Intellectual Property Office English website for three months from the date of mailing of the international search report.

<http://www.kipo.go.kr/kpo/eng/> => Patent Search => PCT-Service

ID : PCT international application number

PW : **BGHU0EH1**

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Mark James Spolyar, Esq.

Baker Botts, L.L.P. 2001 Ross Avenue, Suite 600 Dallas  
Texas 75201 USA

Date of mailing  
(day/month/year) **19 FEBRUARY 2009 (19.02.2009)**

Applicant's or agent's file reference  
079198.0106

## FOR FURTHER ACTION

See paragraph 2 below

International application No.

**PCT/US2008/071459**

International filing date (day/month/year)

**29 JULY 2008 (29.07.2008)**

Priority date(day/month/year)

30 JULY 2007 (30.07.2007)

International Patent Classification (IPC) or both national classification and IPC

**G06F 15/16(2006.01)i**

Applicant

**MOBILE IRON, INC. et al**

## 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.  
For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR  
Korean Intellectual Property Office  
Government Complex-Daejeon, 139  
Seonsa-ro, Seo-gu, Daejeon 302  
-701, Republic of Korea  
Facsimile No. 82-42-472-7140

Date of completion of this opinion

18 FEBRUARY 2009 (18.02.2009)

Authorized officer

YEO, Won Hyeon

Telephone No.82-42-481-5696



**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/US2008/071459**

**Box No. I Basis of this opinion**

1. With regard to the **language**, this opinion has been established on the basis of :

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/US2008/071459**

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-20	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	None	NO

**2. Citations and explanations :**

Reference is made to the following documents:

D1: US 2005 0256697 A1

D2: US 2006 0259292 A1

**(1) Novelty and Inventive Step**

**1.1 Claims 1 and 9**

D1 discloses a method and system for emulating a mobile device on a computer. The method comprises:

storing an emulator program on the computer, wherein the emulator program imitates the functions and display of the mobile device;

establishing a connection between the mobile device and the computer; executing the emulator program on the computer, wherein an interface of the computer serves to interface with the emulator program; and

synchronizing the emulator program and the mobile device such that the emulator program imitates in real time the functions and display of the mobile device.

The system of D1 also comprises :

a memory for storing an emulator program, wherein the emulator program imitates the functions and display of the mobile device;

an interface for establishing a connection with the mobile device;

a processor configured for executing the emulator program such that an interface of the information processing system serves to interface with the mobile device and for synchronizing the emulator program and the mobile device such that the emulator program imitates in real time the functions and display of the mobile device.(see column [0048]-[0049] and claim 8, in D1)

Although D1 does not mention that data received in the mobile device is stored, but this feature is obvious to the person skilled in the art.

Thus, claims 1 and 9 are considered to be novel but lack an inventive step under PCT Article 33(2)-(3).

(Continued on Supplemental Box)

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/US2008/071459**

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.  
Continuation of :

**Box V**

**1.2 Claims 8 and 15**

D1 shows that a user manipulates the emulated mobile device in console and controlling the mobile device. Thus, claims 8 and 15 are considered to be novel but lack an inventive step under PCT Article 33(2)-(3).

**1.3 Claims 2-7, 10-14 and 16-20**

D1 does not show the emulator consisting of the hardware emulation component and software emulation components, but D2 shows the emulation device consisting of the hardware emulation layer and the software emulation layer.(see column [0003]-[0004], [0068]-[0069] and Figs. 1A-1C)  
Additionally, the other features added by claims 2-7, 10-14 and 16-20 are considered to be a minor difference over the disclosure of D1(or D2), that are consistent with the general knowledge of a person skilled in the art. Thus, claims 2-7, 10-14 and 16-20 are considered to be novel but lack an inventive step under PCT Article 33(2)-(3).

**(2) Industrial Applicability**

The present invention relating to remotely managing physical mobile devices can be made or used in a computer industry. Therefore, claims 1-20 are considered to be industrially applicable under PCT Article 33(4).



## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 079198.0106	<b>FOR FURTHER ACTION</b> <span style="float: right;">see Form PCT/ISA/220 as well as, where applicable, item 5 below.</span>	
International application No. <b>PCT/US2008/071459</b>	International filing date ( <i>day/month/year</i> ) <b>29 JULY 2008 (29.07.2008)</b>	(Earliest) Priority Date ( <i>day/month/year</i> ) 30 JULY 2007 (30.07.2007)
Applicant  <b>MOBILE IRON, INC. et al</b>		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of :

☒ the international application in the language in which it was filed

☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1A

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

b. ☐ none of the figure is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2008/071459****A. CLASSIFICATION OF SUBJECT MATTER****G06F 15/16(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC : G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS(KIPO internal)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005 0256697 A1 (NARAYANASWAMI et al.) 17 November 2005	1,8,9,15
--	See abstract, Column [0048]-[0049] & Claims 1, 8	-----
Y		2-7,10-14,16-20
Y	US 2006 0259292 A1 (SOLOMON et al.) 16 November 2006	1-20
	See abstract, Column [0003]-[0004], [0068]-[0069] & Figs. 1A-1C	
A	US 6 862 564 B1 (SHUE et al.) 1 March 2005	1-20
	See abstract	

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

18 FEBRUARY 2009 (18.02.2009)

Date of mailing of the international search report

**19 FEBRUARY 2009 (19.02.2009)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
Government Complex-Daejeon, 139 Seonsa-ro, Seo-  
gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

YEO, Won Hyeon

Telephone No. 82-42-481-5696



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2008/071459**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005-0256697 A1	17.11.2005	None	
US 2006-0259292 A1	16.11.2006	None	
US 6862564 B1	01.03.2005	None	

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	5137665
<b>Application Number:</b>	12421517
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4643
<b>Title of Invention:</b>	Mobile Activity Intelligence
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege
<b>Customer Number:</b>	05073
<b>Filer:</b>	Mark James Spolyar/Susan Bacchi
<b>Filer Authorized By:</b>	Mark James Spolyar
<b>Attorney Docket Number:</b>	079198.0107
<b>Receipt Date:</b>	10-APR-2009
<b>Filing Date:</b>	
<b>Time Stamp:</b>	18:53:08
<b>Application Type:</b>	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	Transmittal Letter	2009_04_09_IDSLetter_079198_0107.pdf	92032 37508b40104adec2460959a7e9ae8be553dc95ae	no	2

### Warnings:

### Information:

2	Information Disclosure Statement (IDS) Filed (SB/08)	2009_04_09_sbo08a_079198_0107.pdf	89923	no	1
			b011585e538e35837d16d08c74242f800956ba2d		
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	NPL Documents	ISR_PCTUS2008_071459_079198_0106.pdf	550323	no	11
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Warnings:					
Information:					
4	NPL Documents	www_carrieriq_com_overview_index_htm.pdf	88009	no	2
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Warnings:					
Information:					
5	NPL Documents	www_carrieriq_com_overview_IQInsightDatacardAnalyzer_index.pdf	86328	no	2
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Warnings:					
Information:					
6	NPL Documents	www_carrieriq_com_overview_IQInsightDeviceAnalyzer_index.pdf	96334	no	2
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Warnings:					
Information:					
7	NPL Documents	www_carrieriq_com_overview_IQInsightExperienceManager_index.pdf	249471	no	2
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8	NPL Documents	www_carrieriq_com_overview_IQInsightServiceAnalyzer_index.pdf	100384	no	2
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Warnings:					
Information:					
9	NPL Documents	www_carrieriq_com_overview_mobileservice_index_htm.pdf	74453	no	2
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Warnings:					
Information:					
10	NPL Documents	www_fiercewireless_com_wireless_industry.pdf	42111	no	2
			b1527a783779c75eb46ea4b49ec2dc00b322f05e		

Warnings:					
Information:					
11	NPL Documents	www_nielson_com.pdf	29444	no	1
			6ec20bb4486d7faf890a62cfe17ac53f1e234af		
Warnings:					
Information:					
12	NPL Documents	www_nielson_com_Industry.pdf	24433	no	2
			0aa936f010daf84c7dfc78ad1ab85603bf48a744		
Warnings:					
Information:					
13	NPL Documents	www_rivermine_com_about_corporate_php.pdf	35387	no	2
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Warnings:					
Information:					
14	NPL Documents	www_rivermine_com_solutions_managed_php.pdf	65370	no	2
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Information:					
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Warnings:					
Information:					
16	NPL Documents	www_telephia_com.pdf	39986	no	1
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Warnings:					
Information:					
17	NPL Documents	www_telephia_com_html_about_telephia.pdf	30290	no	2
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Warnings:					
Information:					
18	NPL Documents	www_telephia_com_html_measurement.pdf	66597	no	2
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Warnings:					
Information:					
19	NPL Documents	www_telephia_com_html_solutions.pdf	50743	no	1
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<b>Warnings:</b>	
<b>Information:</b>	
<b>Total Files Size (in bytes):</b>	1878761
<p><b>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.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>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.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>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.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>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.</b></p>	

ATTORNEY DOCKET NO.  
079198.0107

PATENT APPLICATION  
12/421,517

1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:     Rege et al.  
Serial No.                 12/421517  
Filing Date:             09 Apr 2009  
Art Unit:                 2617  
Confirmation:            4643  
Examiner:                Unassigned  
Title:                     *Mobile Activity Intelligence*

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

Dear Sir:

**Information Disclosure Statement**

Applicants submit this Information Disclosure Statement (IDS) under 37 C.F.R. § 1.97(b)(3). Applicants respectfully request the Examiner to consider and cite in the examination of this Application the documents listed in the attached Form PTO-1449. Under 37 C.F.R. § 1.98(a)(2)(ii), Applicants have not provided copies of U.S. patents or U.S. patent application publications.

Under 37 C.F.R. § 1.97(g), the filing of this IDS shall not be construed as a representation that a search has been made. Moreover, under 37 C.F.R. § 1.97(h), the filing of this IDS shall not be construed to be an admission that the information cited in this IDS is or is considered to be material to patentability as defined by 37 C.F.R. §1.56(b). Furthermore, the filing of this IDS shall not be construed to be an admission that any information cited in this IDS is or is considered to be prior art under 35 U.S.C. §§ 102-103.



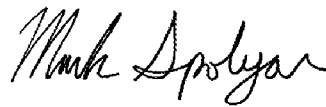
ATTORNEY DOCKET NO.  
079198.0107

PATENT APPLICATION  
12/421,517

2

The Commissioner may charge any fee due and 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

A handwritten signature in black ink, appearing to read "Mark Spolyar". The signature is fluid and cursive, with the first name "Mark" and last name "Spolyar" clearly distinguishable.

Mark J. Spolyar  
Reg. No. 42164  
Tel. 650.739.7511

Date: 10 April 2009

**Customer Number: 05073**



# 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  
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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
12/421,517	04/09/2009	2617	1610	079198.0107	30	3

**CONFIRMATION NO. 4643**

5073  
BAKER BOTTS L.L.P.  
2001 ROSS AVENUE  
SUITE 600  
DALLAS, TX 75201-2980

## FILING RECEIPT



Date Mailed: 06/04/2009

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. 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)

Ojas Udayan Rege, Palo Alto, CA;  
Robert Bates Tinker, San Francisco, CA;  
Sanjeev Kumar Mishra, Sunnyvale, CA;  
Sandilya Garimella, San Jose, CA;  
Stuart Carleton Eichert, Mountain View, CA;

### Assignment For Published Patent Application

Mobile Iron, Inc., Sunnyvale, CA

**Power of Attorney:** The patent practitioners associated with Customer Number 05073

### Domestic Priority data as claimed by applicant

### Foreign Applications

**If Required, Foreign Filing License Granted:** 05/27/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/421,517**

**Projected Publication Date:** Request for Non-Publication Acknowledged

**Non-Publication Request:** Yes

**Early Publication Request:** No

**Title**

Mobile Activity Intelligence

**Preliminary Class**

455

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

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 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.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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# UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/421,517	04/09/2009	Ojas Udayan Rege	079198.0107	4643
5073	7590	09/16/2011	EXAMINER	
BAKER BOTTS L.L.P.			TRAN, CONGVAN	
2001 ROSS AVENUE				
SUITE 600			ART UNIT	
DALLAS, TX 75201-2980			PAPER NUMBER	
			2617	
			NOTIFICATION DATE	
			DELIVERY MODE	
			09/16/2011	
			ELECTRONIC	

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

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptomail1@bakerbotts.com  
glenda.orrantia@bakerbotts.com

<b>Office Action Summary</b>	<b>Application No.</b> 12/421,517	<b>Applicant(s)</b> REGE ET AL.	
	<b>Examiner</b> CONGVAN TRAN	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 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 09 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ 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

- 5) ☒ Claim(s) 1-30 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-30 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 09 April 2009 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).
- 12) ☐ 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

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ 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) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/09</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### ***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.

2. Claims 1-5, 10, and 16-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Allen (2010/0016011).

Regarding claims 1, and 21-23, Allen discloses a method for collecting usage information on wireless devices for rating purposes, comprising: receiving, at a first server, mobile device usage data directly from each of a plurality of mobile devices associated with a particular enterprise (see abstract, figs.1-2, elements 130, 110, 101/102/103, paragraph [0043], fig.6, steps 600-615, paragraph [0088] and its description); aggregating the usage data from each of the plurality of mobile devices (see abstract, figs.1-2, elements 130, 110, paragraph [0044], fig.6, steps 610-615 paragraph [0088] and its description); and generating one or more mobile device usage reports based on the aggregated usage data (see abstract, figs.1-2, paragraph [0043-0044], fig.6, step 625 its description).

Regarding claim 2, Allen further discloses the first server is a central server not affiliated with the particular enterprise and wherein the usage data is sent from the mobile devices directly to the central server (see fig.1, element 110, 101/102/103 paragraph [0042] and its description).

Regarding claim 3, Allen further discloses aggregating the aggregated usage data from the plurality of mobile devices associated with the particular enterprise with aggregated usage data from mobile devices associated with other enterprises and generating one or more multi-enterprise usage reports each comprising data from at least two different enterprises (see abstract, fig.1, elements 110, 130, paragraph [0042-0043], and its description).

Regarding claims 4-5, Allen further discloses the first server is an enterprise server of the particular enterprise, and wherein the method further comprises sending the usage data from the first server directly to a central server that is not affiliated with the particular enterprise (see abstract, fig.1, element 130, 110, paragraph [0044], and its description).

Regarding claims 10, 16-18, 26-27, Allen further discloses the usage data comprises one or more of call usage information, SMS text usage information, web browser usage information, and application usage information (see paragraph [0001], [0058], [0081]).

Regarding claim 19, Allen further discloses the usage data comprises data from mobile devices associated with two or more network service providers and wherein at least one of the usage reports comprises usage data from at least two



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different network service providers (see fig.2 elements 130, 120-1, 120-2 and its description).

Regarding claim 20, Allen further discloses the usage data is received in real-time (see fig.5, paragraphs [0015], [0065], [0072])

Regarding claim 24, Allen discloses a method for collecting usage information on wireless devices for rating purposes, comprising: a central database (it is inherent in any server such as memory devices for storing usage information paragraph [0044]); a server configured to receive mobile device usage data directly from each of a plurality of mobile devices associated with a particular enterprise (see abstract, figs.1-2, elements 130, 110, 101/102/103, paragraph [0043], fig.6, steps 600-615, paragraph [0088] and its description); aggregate the usage data from each of the plurality of mobile devices at the central database (see abstract, figs.1-2, elements 130, 110, paragraph [0044], fig.6, steps 610-615 paragraph [0088] and its description); and generate one or more mobile device usage reports based on the aggregated usage data (see abstract, figs.1-2, paragraph [0043-0044], fig.6, step 625 its description).

Regarding claim 25, Allen discloses a method for collecting usage information on wireless devices for rating purposes, comprising: in response to a usage event at a mobile device, extracting, at the mobile device, usage data associated with the usage event (see figs.1-2, element 150 paragraphs [0051], [0053-0054] and its description); correlating, at the mobile device, the extracted usage data (see figs.1-2, element 150 paragraph [0052], [0053-0054] and its description); packaging, at the mobile device, the correlated usage data (see

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figs.1-2, element 150, [0053-0054] and its description); and transmitting, at the mobile device, the packaged usage data directly to a central server that is not affiliated with a network service provider that provides network service to the mobile device (see figs.1-2, elements 130, 150, 110, 120, paragraph [0051], [0053-0054] and its description).

### ***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 negated by the manner in which the invention was made.

4. Claims 6-9, 11-15, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (2010/0016011).

Regarding claims 6-9, 11-15, and 28-30, the Examiner takes Official notice that these features is structurally integrated with communication device is notoriously well known in the art in purpose of improve the use of telecommunication devices.

### ***Conclusion***

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other

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passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. SEE MPEP 2141.02 [R-5] VI. PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH AWAY FROM THE CLAIMS: A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). >See also MPEP §2123.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CongVan Tran whose telephone number is 571-272-7871. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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://pair->

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direct.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). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



UNITED STATES PATENT AND TRADEMARK OFFICE

/CongVan Tran/

Primary Examiner, Art Unit 2617

<b>Notice of References Cited</b>	Application/Control No. 12/421,517		Applicant(s)/Patent Under Reexamination REGE ET AL.	
	Examiner CONGVAN TRAN		Art Unit 2617	Page 1 of 1

#### U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2010/0016011 A1	01-2010	Alen, Anand Bernard	455/550.1
*	B	US-2010/0190469 A1	07-2010	Vanderveen et al.	455/406
*	C	US-2010/0131642 A1	05-2010	Chalikouras et al.	709/224
*	D	US-2009/0170469	07-2009	Tuli et al.	455/406
*	E	US-7,885,636	02-2011	Taglienti et al.	455/406
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

#### FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

#### NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*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.

<b>PTO-SBO08A</b>  <b>Information Disclosure Citation In an Application</b>	Application No. 12/421,517	Applicant(s) Rege et al.	
	Docket Number 079198.0107	Group Art Unit 2617	Filing Date 9 Apr 2009

**U.S. PATENT DOCUMENTS**

		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	6,745,011	Jun 1, 2004	HENDRICKSON			
	B	6,754,470	Jun 22, 2004	HENDRICKSON			
	C	6,807,515 B2	Oct 19, 2004	VOGEL			
	D	6,862,564	Mar 1, 2005	SHUE			
	E	7,047,495	May 16, 2006	PANG			
	F	20050220080A1	Oct 6, 2005	RONKAINEN			
	G	20050256697A1	Nov 17, 2005	NARAYANASWAMI			
	H	20060031768A1	Feb 9, 2006	SHAH			
	I	20060259292A1	Nov 16, 2006	SOLOMON			
	J	20070276897A1	Nov 29, 2007	TAMESHIGE			

		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	K	PCT/US2008/071459, International Search Report	19 Feb 2009
	L	<a href="http://www.telephia.com/">http://www.telephia.com/</a>	10 April 2009
	M	<a href="http://www.telephia.com/html/about_telephia.html">http://www.telephia.com/html/about_telephia.html</a>	10 April 2009
	N	<a href="http://www.telephia.com/html/solutions.html">http://www.telephia.com/html/solutions.html</a>	10 April 2009
	O	<a href="http://www.telephia.com/html/measurement.html">http://www.telephia.com/html/measurement.html</a>	10 April 2009
	P	<a href="http://www.nielson.com/">http://www.nielson.com/</a>	10 April 2009
	Q	<a href="http://www.nielson.com/Industry_Reports">http://www.nielson.com/Industry_Reports</a>	10 April 2009
	R	<a href="http://www.fiercewireless.com/wireless_industry.asp?CMP=KNC-FW&amp;HBX_OU=51">http://www.fiercewireless.com/wireless_industry.asp?CMP=KNC-FW&amp;HBX_OU=51</a>	10 April 2009
	S	<a href="http://www.carrieriq.com/overview/index.htm">http://www.carrieriq.com/overview/index.htm</a>	10 April 2009
	T	<a href="http://www.carrieriq.com/overview/mobileservice/index.htm">http://www.carrieriq.com/overview/mobileservice/index.htm</a>	10 April 2009
	U	<a href="http://www.carrieriq.com/overview/IQInsightDeviceAnalyzer/index.htm">http://www.carrieriq.com/overview/IQInsightDeviceAnalyzer/index.htm</a>	10 April 2009
	V	<a href="http://www.carrieriq.com/overview/IQInsightDatacardAnalyzer/index.htm">http://www.carrieriq.com/overview/IQInsightDatacardAnalyzer/index.htm</a>	10 April 2009
	W	<a href="http://www.carrieriq.com/overview/IQInsightExperienceManager/index.htm">http://www.carrieriq.com/overview/IQInsightExperienceManager/index.htm</a>	10 April 2009
	X	<a href="http://www.carrieriq.com/overview/IQInsightServiceAnalyzer/index.htm">http://www.carrieriq.com/overview/IQInsightServiceAnalyzer/index.htm</a>	10 April 2009
	Y	<a href="http://www.rivermine.com/about_corporate.php">http://www.rivermine.com/about_corporate.php</a>	10 April 2009
	Z	<a href="http://www.rivermine.com/solutions_software.php">http://www.rivermine.com/solutions_software.php</a>	10 April 2009
	AA	<a href="http://www.rivermine.com/solutions_managed.php">http://www.rivermine.com/solutions_managed.php</a>	

EXAMINER

/CongVan Tran/ (09/09/2011)

DATE CONSIDERED


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.

U.S. PATENT AND TRADEMARK OFFICE

PAL01:101804.1


ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.T./

Good Technology Software, Inc., Ex. 1002 - 130

<b><i>Index of Claims</i></b>  	<b>Application/Control No.</b>  12421517	<b>Applicant(s)/Patent Under Reexamination</b>  REGE ET AL.
	<b>Examiner</b>  CONG TRAN	<b>Art Unit</b>  2617

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47			
CLAIM		DATE							
Final	Original	09/09/2011							
	1	✓							
	2	✓							
	3	✓							
	4	✓							
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	30	✓							

<b>Search Notes</b>  	<b>Application/Control No.</b>  12421517	<b>Applicant(s)/Patent Under Reexamination</b>  REGE ET AL.
	<b>Examiner</b>  CONG TRAN	<b>Art Unit</b>  2617

SEARCHED			
Class	Subclass	Date	Examiner
455	403, 405, 406, 407, 408, 414.1, 550.1	9/08/11	CT

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

	/CONG TRAN/ Primary Examiner.Art Unit 2617
--	---



## POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:



Practitioners associated with the Customer Number:

21912

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:



The address associated with Customer Number:

21912

OR

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Country			
Telephone	Email		

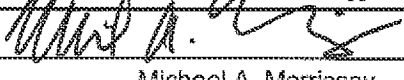
Assignee Name and Address:

MOBILE IRON, INC.  
415 East Middlefield Rd  
Mountain View, CA 94043

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

### SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	Oct. 25, 2011
Name	Michael A. Morrissey	Telephone	650-919-8100
Title	Vice President, Legal and General Counsel		

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.

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**STATEMENT UNDER 37 CFR 3.73(b)**Applicant/Patent Owner: REGE et al.Application No./Patent No.: 12/421,517Filed/Issue Date: April 9, 2009Titled: MOBILE ACTIVITY INTELLIGENCE

MOBILE IRON, INC., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ 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 \_\_\_\_\_ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

- A. ☒ 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 022530, Frame 0190, or for which a copy therefore is attached.

OR

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: \_\_\_\_\_ To: \_\_\_\_\_

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☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

- ☒ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature

Date

William J. James

Reg. No. 40,661

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.

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<b>EFS ID:</b>	11273013
<b>Application Number:</b>	12421517
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4643
<b>Title of Invention:</b>	Mobile Activity Intelligence
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege
<b>Customer Number:</b>	5073
<b>Filer:</b>	William James/Elaine Nguyen
<b>Filer Authorized By:</b>	William James
<b>Attorney Docket Number:</b>	079198.0107
<b>Receipt Date:</b>	26-OCT-2011
<b>Filing Date:</b>	09-APR-2009
<b>Time Stamp:</b>	19:37:38
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	MOIRG000_power_of_atty_to_prosecute_applications_signed.pdf	91967 fc0aba5792c4d2d56284dc456e90f9d4eca6cdeb7	no	1

### Warnings:

### Information:

2	Assignee showing of ownership per 37 CFR 3.73(b).	MOIRP003_statement_under_37_3_73_b.pdf	1236910 00630c3e9596a3b96e901fbd2bd4b36de902cb2e	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>				1328877	
<p><b>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.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>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.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>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.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>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.</b></p>					



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/421,517	04/09/2009	Ojas Udayan Rege	079198.0107

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

**CONFIRMATION NO. 4643**  
**POA ACCEPTANCE LETTER**



Date Mailed: 11/02/2011

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 10/26/2011.

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.

/mnnguyen/

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



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/421,517	04/09/2009	Ojas Udayan Rege	079198.0107

5073  
BAKER BOTTS L.L.P.  
2001 ROSS AVENUE  
SUITE 600  
DALLAS, TX 75201-2980

**CONFIRMATION NO. 4643**  
**POWER OF ATTORNEY NOTICE**



Date Mailed: 11/02/2011

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 10/26/2011.

- 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

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	REGE et al.	Examiner:	Congvan Tran
Application No.:	12/421,517	Art Unit:	2617
Filed:	April 9, 2009	Docket No.:	MOIRP003
Title:	MOBILE ACTIVITY INTELLIGENCE		

## **AMENDMENT A**

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

Dear Sir:

This is in response to the Office Action mailed September 16, 2011. The following amendments and remarks are respectfully submitted.

Applicant(s) believe that no (additional) fees are required beyond any fees submitted herewith. If required fees are missing or any additional fees are required during the pendency of the subject application, please charge such fees or credit any overpayment to Deposit Account No. 50-0685 (MOIRP003).

## IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1. (Currently Amended) A method, comprising:  
receiving, at a first server, mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise;  
aggregating the usage data from each of the plurality of mobile devices; and  
generating one or more mobile device usage reports based on the aggregated usage data.
2. (Original) The method of Claim 1, wherein the first server is a central server not affiliated with the particular enterprise and wherein the usage data is sent from the mobile devices directly to the central server.
3. (Original) The method of Claim 2, further comprising aggregating the aggregated usage data from the plurality of mobile devices associated with the particular enterprise with aggregated usage data from mobile devices associated with other enterprises and generating one or more multi-enterprise usage reports each comprising data from at least two different enterprises.
4. (Original) The method of Claim 1, wherein the first server is an enterprise server of the particular enterprise, and wherein the method further comprises sending the usage data from the first server directly to a central server that is not affiliated with the particular enterprise.
5. (Original) The method of Claim 1, wherein the first server is a data management server that maintains a virtual instance of each of the plurality of mobile devices, wherein particular virtual instances corresponding to particular mobile devices are updated based on the data sent to the data management server from the particular mobile devices, and wherein



the data management server sends the usage data corresponding to the particular mobile devices to a central server that is not affiliated with the particular enterprise.

6. (Original) The method of Claim 1, further comprising:  
at each mobile device, selectively filtering raw data to generate the usage data prior to transmitting the usage data and the receiving of the usage data.

7. (Original) The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on a corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

8. (Original) The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on the corresponding geographic location of mobile device at the corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

9. (Original) The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on the corresponding cellular tower at the corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

10. (Original) The method of Claim 1, wherein the usage data comprises one or more of call usage information, SMS text usage information, web browser usage information, and application usage information.

11. (Original) The method of Claim 1, further comprising automatically sending an alert to a particular mobile device based on usage data received from the particular mobile device.

12. (Original) The method of Claim 1, further comprising disabling all or a portion of the usage capabilities of a particular mobile device based on usage data received from the particular mobile device.

13. (Original) The method of Claim 1, further comprising wiping all or a portion of the memory of a particular mobile device based on usage data received from the particular mobile device.

14. (Original) The method of Claim 1, further comprising changing a security policy corresponding to a particular mobile device based on usage data received from the particular mobile device.

15. (Original) The method of Claim 1, further comprising changing a service plan of a particular mobile device based on usage data received from the particular mobile device.

16. (Original) The method of Claim 1, wherein one or more of the reports comprise a call summary report of a particular mobile device, group of mobile devices, or entire enterprise.

17. (Original) The method of Claim 1, wherein one or more of the reports comprise a data summary report of a particular mobile device, group of mobile devices, or entire enterprise.

18. (Original) The method of Claim 1, wherein one or more of the reports comprise an SMS summary report of a particular mobile device, group of mobile devices, or entire enterprise.

19. (Original) The method of Claim 1, wherein the usage data comprises data from mobile devices associated with two or more network service providers and wherein at least one of the usage reports comprises usage data from at least two different network service providers.

20. (Original) The method of Claim 1, wherein the usage data is received in real-time.

21. (Original) The method of Claim 1, wherein the usage data is received on an event driven basis.

22. (Original) The method of Claim 1, wherein the usage data is received on a periodic basis.

23. (Original) The method of Claim 1, wherein the usage data is received on a continuous basis.

24. (Currently Amended) A mobile device management system, comprising:  
a central database;  
a server configured to  
receive mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise;  
aggregate the usage data from each of the plurality of mobile devices at the central database; and  
generate one or more mobile device usage reports based on the aggregated usage data.

25. (Currently Amended) A method comprising:  
in response to a usage event at a mobile device,  
extracting, at the mobile device, network traffic usage data associated with the usage event;  
correlating, at the mobile device, the extracted usage data;  
packaging, at the mobile device, the correlated usage data; and  
transmitting, at the mobile device, the packaged usage data directly to a central server that is not affiliated with a network service provider that provides network service to the mobile device.

26. (Original) The method of Claim 25, wherein the usage event corresponds to the end of a call and wherein the usage data comprises call usage data associated with a call.

27. (Original) The method of Claim 25, wherein the usage event corresponds to the transmission or reception of an SMS, and wherein the usage data comprise SMS usage data associated with the SMS.

28. (Original) The method of Claim 25, wherein the correlating comprises correlating the usage data based on a corresponding time of usage prior to transmitting the usage data.

29. (Original) The method of Claim 25, wherein the correlating comprises correlating the usage data based on the corresponding geographic location of the mobile device at the corresponding time of usage prior to transmitting the usage data.

30. (Original) The method of Claim 25, wherein the correlating comprises correlating the usage data based on the corresponding cellular tower at the corresponding time of usage prior to transmitting the usage data.

## **REMARKS**

Claims 1, 24 and 25 have been amended to clarify the subject matter regarded as the invention. Claims 1-30 are pending.

### ***Claim Rejections – 35 U.S.C. §102 and/or §103***

Claims 1-5, 10 and 16-27 stand rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent Application Publication No. 2010/0016011 to Alen (“*Alen*”). The remaining claims stand rejected under 35 U.S.C. §103 based on *Alen*.

Claim 1 recites, among other features, receiving mobile device network traffic\_usage data directly from each of a plurality of mobile devices associated with a particular enterprise. Such features are discussed by way of example in paragraphs [0020]-[0021] and [0096]-[0101] of the disclosure of this application. Here, key reports may include voice summary reports, carrier summary reports, international roaming reports, dropped call reports, and home zone reports, among others, as will be described in further detail below. Such knowledge may enable the enterprise to significantly reduce its costs by utilizing this knowledge to monitor cost drivers, negotiate with network service providers for better rates and to optimize its service plans as well as to verify quality of service (QoS) or compliance and enforce a service level agreement (SLA).

In contrast, *Alen* discloses a ratings system for tracking user favorability towards content delivered to mobile devices, as discussed in paragraphs [0018]-[0020] of that application. *Alen* discloses, in paragraphs [0058]-[0060], noting a user’s access to mobile device-related features such as voicemail and text messaging in order to build a consumer profile, but discloses nothing regarding network traffic usage of any data. *Alen* therefore fails to teach or to suggest all of the features recited in amended claim 1, including the patentably distinct features discussed above.

In view of the above, the applied reference cannot reasonably be considered to teach or to suggest the combination of features recited in claim 1. Claims 24 and 25 recite features similar to those recited in claim 1, and are patentably distinct over the applied references for the reasons given above with respect to the patentability of claim 1. Claims 2-23 and 26-30 are also allowable at least for their dependence on the allowable independent claims enumerated above,

for the separately patentable subject matter that each of these claims recites, and for the additional reasons given below.

Claim 3 recites aggregating the aggregated usage data from the plurality of mobile devices associated with the particular enterprise with aggregated usage data from mobile devices associated with other enterprises and generating one or more multi-enterprise usage reports each comprising data from at least two different enterprises. The Office Action asserts that such features are disclosed in Fig. 1 and paragraphs [0042]-[0043] of *Alen*. However, *Alen* discloses only that mobile devices communicate with a ratings server through one or more service provider networks, and fails to disclose any enterprises. It is known that an 'enterprise' and 'service provider network' are not analogous, and such a distinction is disclosed in paragraph [0020] of this application; where the enterprise may have a better information balance between what the enterprise knows and what its network service provider(s) know. Thus, *Alen* fails to disclose the features recited in claim 3.

The foregoing amendments are not to be taken as an admission of unpatentability of any of the claims prior to the amendments.

Reconsideration of the application and allowance of all claims are respectfully requested based on the preceding remarks. If at any time the Examiner believes that an interview would be helpful, please contact the undersigned.

Respectfully submitted,

Dated: December 16, 2011

/william j. james/  
William J. James  
Registration No. 40,661  
V 408-973-2592  
F 408-973-2595

VAN PELT, YI & JAMES LLP  
10050 N. Foothill Blvd., Suite 200  
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## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	11643023
<b>Application Number:</b>	12421517
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4643
<b>Title of Invention:</b>	Mobile Activity Intelligence
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege
<b>Customer Number:</b>	21912
<b>Filer:</b>	William James/Veronica Pula
<b>Filer Authorized By:</b>	William James
<b>Attorney Docket Number:</b>	MOIRP003
<b>Receipt Date:</b>	16-DEC-2011
<b>Filing Date:</b>	09-APR-2009
<b>Time Stamp:</b>	17:18:40
<b>Application Type:</b>	Utility under 35 USC 111(a)

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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		MOIRP003_AMD_A.pdf	117814 f027484f834aa7e8fd2b384628ae5d1eb5066e21	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	8
Warnings:			
Information:			
Total Files Size (in bytes):		117814	
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<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>12/421,517</b>		Filing Date <b>04/09/2009</b>		<input type="checkbox"/> To be Mailed	
<b>APPLICATION AS FILED – PART I</b>										
(Column 1)			(Column 2)			SMALL ENTITY <input type="checkbox"/> OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*	X \$	=		X \$	=			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$	=		X \$	=			
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.					TOTAL		TOTAL			
<b>APPLICATION AS AMENDED – PART II</b>										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	12/16/2011	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 30 Minus	** 30	= 0	X \$	=		X \$60=	0	
	Independent (37 CFR 1.16(h))	* 3 Minus	***3	= 0	X \$	=		X \$250=	0	
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE							OR	TOTAL ADD'L FEE	0	
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)		
Total (37 CFR 1.16(i))	* Minus	**	=	X \$	=		X \$	=		
Independent (37 CFR 1.16(h))	* Minus	***	=	X \$	=		X \$	=		
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE							OR	TOTAL ADD'L FEE		
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>										

Legal Instrument Examiner:  
/DEBRA SAVOY/

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/421,517	04/09/2009	Ojas Udayan Rege	MOIRP003	4643
21912 7590 01/26/2012 VAN PELT, YI & JAMES LLP 10050 N. FOOTHILL BLVD #200 CUPERTINO, CA 95014			EXAMINER TRAN, CONGVAN	
			ART UNIT	PAPER NUMBER
			2617	
			NOTIFICATION DATE	DELIVERY MODE
			01/26/2012	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptocorrespondence@ip-patent.com

<b>Office Action Summary</b>	<b>Application No.</b> 12/421,517	<b>Applicant(s)</b> REGE ET AL.	
	<b>Examiner</b> CONGVAN TRAN	<b>Art Unit</b> 2617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 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 16 December 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ 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

- 5) ☒ Claim(s) 1-30 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-30 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ 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).
- 12) ☐ 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

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ 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) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### ***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.

2. Claims 1-5, 10, and 16-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Danford et al. (2009/0035111).

Regarding claims 1, and 21-23, Danford discloses a virtual instance architecture for mobile device management systems, comprising: receiving, at a first server, mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise (see abstract, fig.1A-B, elements 102a, 104, 124, paragraph [0026], and its description); aggregating the usage data from each of the plurality of mobile devices (see fig.2, element 302, paragraphs [0023-0024], [0035] and its description); and generating one or more mobile device usage reports based on the aggregated usage data (see fig.2, element 302, paragraph [0070] and its description).

Regarding claim 2, Danford further discloses the first server is a central server not affiliated with the particular enterprise and wherein the usage data is sent from the mobile devices directly to the central server (see abstract, fig.1A-B, elements 102a, 104, paragraph [0064], and its description).

Regarding claim 3, Danford further discloses aggregating the aggregated usage data from the plurality of mobile devices associated with the particular enterprise with aggregated usage data from mobile devices associated with other enterprises and generating one or more multi-enterprise usage reports each comprising data from at least two different enterprises (see abstract, fig.2, element 302, paragraphs [0023-0024], [0035] and its description).

Regarding claims 4-5, Danford further discloses the first server is an enterprise server of the particular enterprise, and wherein the method further comprises sending the usage data from the first server directly to a central server that is not affiliated with the particular enterprise (see abstract, fig.1, element 124, and its description).

Regarding claims 10, 16-18, 26-27, Danford further discloses the usage data comprises one or more of call usage information, SMS text usage information, web browser usage information, and application usage information (see paragraphs [0038-0040],

Regarding claim 19, Danford further discloses the usage data comprises data from mobile devices associated with two or more network service providers and wherein at least one of the usage reports comprises usage data from at least two different network service providers (see fig.1A elements OMA DM, WAN, WiFi, paragraph [0026], and its description).

Regarding claim 20, Danford further discloses the usage data is received in real-time (see figs.1-2, paragraph [0036])

Regarding claim 24, Danford discloses a virtual instance architecture for mobile device management systems, comprising: a central database (see abstract, fig.1, element 104 and its description); a server configured to receive mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise (see abstract, figs.1, elements 120a, 124, paragraph [0026], and its description); aggregate the usage data from each of the plurality of mobile devices at the central database (see fig.2, element 302, paragraphs [0023-0024], [0035] and its description); and generate one or more mobile device usage reports based on the aggregated usage data (see fig.2, element 302, paragraph [0070] and its description).

Regarding claim 25, Danford discloses a virtual instance architecture for mobile device management systems, comprising:

in response to a usage event at a mobile device, extracting, at the mobile device, network traffic usage data associated with the usage event (see abstract, figs.1, element 120a paragraphs [0026-0029] and its description);

correlating, at the mobile device, the extracted usage data (see figs.1 element 120a paragraph [0050] and its description);

packaging, at the mobile device, the correlated usage data (see figs.1, element 120a, [0050-0057] and its description); and

transmitting, at the mobile device, the packaged usage data directly to a central server that is not affiliated with a network service provider that provides network service to the mobile device (see figs.1, elements 120a, 104, 124, paragraph [0026], and its description).

***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 negated by the manner in which the invention was made.

4. Claims 6-9, 11-15, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Danford et al. (2009/0035111).

Regarding claims 6-9, 11-15, and 28-30, the Examiner takes Official notice that these features is structurally integrated with communication device is notoriously well known in the art in purpose of improve the use of telecommunication devices.

***Conclusion***

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. SEE MPEP 2141.02 [R-5] VI. PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH AWAY FROM THE CLAIMS: A prior art reference must be considered in its entirety, i.e., as a whole,

Art Unit: 2617

including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). >See also MPEP §2123.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CongVan Tran whose telephone number is 571-272-7871. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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://pair-direct.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). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.





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UNITED STATES PATENT AND TRADEMARK OFFICE

/CongVan Tran/

Primary Examiner, Art Unit 2617

<b>Notice of References Cited</b>	Application/Control No. 12/421,517	Applicant(s)/Patent Under Reexamination REGE ET AL.	
	Examiner CONGVAN TRAN	Art Unit 2617	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2009/0036111 A1	02-2009	Danford et al.	455/419
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			


**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*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.


<b>Search Notes</b>  	<b>Application/Control No.</b>  12421517	<b>Applicant(s)/Patent Under Reexamination</b>  REGE ET AL.
	<b>Examiner</b>  CONG TRAN	<b>Art Unit</b>  2617

SEARCHED			
Class	Subclass	Date	Examiner
455	403, 405, 406, 407, 408, 414.1, 550.1	9/08/11	CT

SEARCH NOTES		
Search Notes	Date	Examiner
search updated	1/12/12	CT

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

	/CONG TRAN/ Primary Examiner.Art Unit 2617
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<b><i>Index of Claims</i></b>  	<b>Application/Control No.</b>  12421517	<b>Applicant(s)/Patent Under Reexamination</b>  REGE ET AL.
	<b>Examiner</b>  CONG TRAN	<b>Art Unit</b>  2617

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant				<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
CLAIM		DATE							
Final	Original	09/09/2011	01/18/2012						
	1	✓	✓						
	2	✓	✓						
	3	✓	✓						
	4	✓	✓						
	5	✓	✓						
	6	✓	✓						
	7	✓	✓						
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	26	✓	✓						
	27	✓	✓						
	28	✓	✓						
	29	✓	✓						
	30	✓	✓						

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	REGE et al.	Examiner:	Congvan Tran
Application No.:	12/421,517	Art Unit:	2617
Filed:	April 9, 2009	Docket No.:	MOIRP003
Title:	MOBILE ACTIVITY INTELLIGENCE		

## **AMENDMENT B**

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

Dear Sir:

This is in response to the Office Action mailed January 26, 2012. The following amendments and remarks are respectfully submitted.

Applicant(s) believe that no (additional) fees are required beyond any fees submitted herewith. If required fees are missing or any additional fees are required during the pendency of the subject application, please charge such fees or credit any overpayment to Deposit Account No. 50-0685 (MOIRP003).

## IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1. (Currently Amended) A method, comprising:  
receiving, at a first server, mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise;  
aggregating the usage data from each of the plurality of mobile devices according to characterized actions performed on each of the mobile devices; and  
generating one or more mobile device usage reports based on the aggregated usage data.
2. (Original) The method of Claim 1, wherein the first server is a central server not affiliated with the particular enterprise and wherein the usage data is sent from the mobile devices directly to the central server.
3. (Original) The method of Claim 2, further comprising aggregating the aggregated usage data from the plurality of mobile devices associated with the particular enterprise with aggregated usage data from mobile devices associated with other enterprises and generating one or more multi-enterprise usage reports each comprising data from at least two different enterprises.
4. (Original) The method of Claim 1, wherein the first server is an enterprise server of the particular enterprise, and wherein the method further comprises sending the usage data from the first server directly to a central server that is not affiliated with the particular enterprise.
5. (Original) The method of Claim 1, wherein the first server is a data management server that maintains a virtual instance of each of the plurality of mobile devices, wherein particular virtual instances corresponding to particular mobile devices are updated based

on the data sent to the data management server from the particular mobile devices, and wherein the data management server sends the usage data corresponding to the particular mobile devices to a central server that is not affiliated with the particular enterprise.

6. (Original) The method of Claim 1, further comprising:  
at each mobile device, selectively filtering raw data to generate the usage data prior to transmitting the usage data and the receiving of the usage data.

7. (Original) The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on a corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

8. (Original) The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on the corresponding geographic location of mobile device at the corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

9. (Original) The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on the corresponding cellular tower at the corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

10. (Original) The method of Claim 1, wherein the usage data comprises one or more of call usage information, SMS text usage information, web browser usage information, and application usage information.

11. (Original) The method of Claim 1, further comprising automatically sending an alert to a particular mobile device based on usage data received from the particular mobile device.

12. (Original) The method of Claim 1, further comprising disabling all or a portion of the usage capabilities of a particular mobile device based on usage data received from the particular mobile device.

13. (Original) The method of Claim 1, further comprising wiping all or a portion of the memory of a particular mobile device based on usage data received from the particular mobile device.

14. (Original) The method of Claim 1, further comprising changing a security policy corresponding to a particular mobile device based on usage data received from the particular mobile device.

15. (Original) The method of Claim 1, further comprising changing a service plan of a particular mobile device based on usage data received from the particular mobile device.

16. (Original) The method of Claim 1, wherein one or more of the reports comprise a call summary report of a particular mobile device, group of mobile devices, or entire enterprise.

17. (Original) The method of Claim 1, wherein one or more of the reports comprise a data summary report of a particular mobile device, group of mobile devices, or entire enterprise.

18. (Original) The method of Claim 1, wherein one or more of the reports comprise an SMS summary report of a particular mobile device, group of mobile devices, or entire enterprise.

19. (Original) The method of Claim 1, wherein the usage data comprises data from mobile devices associated with two or more network service providers and wherein at least one of the usage reports comprises usage data from at least two different network service providers.



20. (Original) The method of Claim 1, wherein the usage data is received in real-time.

21. (Original) The method of Claim 1, wherein the usage data is received on an event driven basis.

22. (Original) The method of Claim 1, wherein the usage data is received on a periodic basis.

23. (Original) The method of Claim 1, wherein the usage data is received on a continuous basis.

24. (Currently Amended) A mobile device management system, comprising:  
a central database;  
a server configured to  
receive mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise;  
aggregate the usage data from each of the plurality of mobile devices at the central ~~database~~; database according to characterized actions performed on each of the mobile devices; and  
generate one or more mobile device usage reports based on the aggregated usage data.

25. (Currently Amended) A method comprising:  
in response to a usage event at a mobile device,  
extracting, at the mobile device, network traffic usage data associated with the usage event;

correlating, at the mobile device, the extracted usage ~~data;~~ data according to characterized actions performed at the mobile device;

packaging, at the mobile device, the correlated usage data; and

transmitting, at the mobile device, the packaged usage data directly to a central server that is not affiliated with a network service provider that provides network service to the mobile device.

26. (Original) The method of Claim 25, wherein the usage event corresponds to the end of a call and wherein the usage data comprises call usage data associated with a call.

27. (Original) The method of Claim 25, wherein the usage event corresponds to the transmission or reception of an SMS, and wherein the usage data comprise SMS usage data associated with the SMS.

28. (Original) The method of Claim 25, wherein the correlating comprises correlating the usage data based on a corresponding time of usage prior to transmitting the usage data.

29. (Original) The method of Claim 25, wherein the correlating comprises correlating the usage data based on the corresponding geographic location of the mobile device at the corresponding time of usage prior to transmitting the usage data.

30. (Original) The method of Claim 25, wherein the correlating comprises correlating the usage data based on the corresponding cellular tower at the corresponding time of usage prior to transmitting the usage data.

31. (New) The method of claim 1, wherein the characterized actions comprise email usage information.

32. (New) The method of claim 1, wherein the characterized actions comprise SMS usage information.

33. (New) The method of claim 1, wherein the characterized actions comprise dropped call information.

34. (New) The method of claim 1, wherein the characterized actions comprise roaming information.

## **REMARKS**

Claims 1, 24 and 25 have been amended, and claims 31-34 have been added to clarify the subject matter regarded as the invention. Support for these added claims may be found in paragraphs [0020], [0021] and [0096] of this application's disclosure. Claims 1-34 are pending.

### ***Claim Rejections – 35 U.S.C. §102 and/or §103***

Claims 1-5, 10 and 16-27 stand rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent Application Publication No. 2009/0036111 to Danford et al. ("*Danford*"). The remaining claims stand rejected under 35 U.S.C. §103 based on *Danford*.

The rejection is respectfully traversed. With respect to claim 1, the claim recites, among other features, aggregating usage data from each of a plurality of mobile devices according to characterized actions performed on each of the mobile devices. Such features are discussed by way of example in paragraphs [0020]-[0021] and [0095]-[0096] of the disclosure of this application. In exemplary embodiments, a control client may log man-machine interface (MMI) data, file system commands, and other data characterizing usage of, and/or the actions performed on, a mobile device. *Danford* thus fails to teach or to suggest all of the features recited in amended claim 1, including the patentably distinct features discussed above.

In view of the above, none of the applied references, either alone or in combination, can reasonably be considered to teach or to suggest the combination of features recited in claim 1. Claims 24 and 25 recite features similar to those recited in claim 1, and are patentably distinct over the applied references for the reasons given above with respect to the patentability of claim 1. Claims 2-23 and 26-34 are also allowable at least for their dependence on the allowable independent claims enumerated above, as well as for the separately patentable subject matter that each of these claims recites.

The foregoing amendments are not to be taken as an admission of unpatentability of any of the claims prior to the amendments.

Reconsideration of the application and allowance of all claims are respectfully requested based on the preceding remarks. If at any time the Examiner believes that an interview would be helpful, please contact the undersigned.

Respectfully submitted,

Dated: April 26, 2012

/william j. james/  
William J. James  
Registration No. 40,661  
V 408-973-2592  
F 408-973-2595

VAN PELT, YI & JAMES LLP  
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Cupertino, CA 95014

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	12421517			
<b>Filing Date:</b>	09-Apr-2009			
<b>Title of Invention:</b>	Mobile Activity Intelligence			
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege			
<b>Filer:</b>	William James/Veronica Pula			
<b>Attorney Docket Number:</b>	MOIRP003			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
Claims in excess of 20	1202	4	60	240
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				240

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	12642541
<b>Application Number:</b>	12421517
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4643
<b>Title of Invention:</b>	Mobile Activity Intelligence
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege
<b>Customer Number:</b>	21912
<b>Filer:</b>	William James/Veronica Pula
<b>Filer Authorized By:</b>	William James
<b>Attorney Docket Number:</b>	MOIRP003
<b>Receipt Date:</b>	26-APR-2012
<b>Filing Date:</b>	09-APR-2009
<b>Time Stamp:</b>	19:09:17
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 240
RAM confirmation Number	9177
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 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)



Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

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		MOIRP003_AMD_B.pdf	113521 b838fde352b76f303b495fed3fd2b4345ee362e8	yes	9

### Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Claims	2	7
Applicant Arguments/Remarks Made in an Amendment	8	9

### Warnings:

### Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30120 f9da64370d9829afea1848e610c9f7340f32efad	no	2
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### Warnings:

### Information:

<b>Total Files Size (in bytes):</b>	143641
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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.

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.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>12/421,517</b>		Filing Date <b>04/09/2009</b>		<input type="checkbox"/> To be Mailed	
<b>APPLICATION AS FILED – PART I</b>										
(Column 1)			(Column 2)			SMALL ENTITY <input type="checkbox"/> OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)		RATE (\$)	FEE (\$)			
<input checked="" type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	<b>330</b>			
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*	X \$	=	OR	X \$	=			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$	=		X \$	=			
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.										
			TOTAL			TOTAL	<b>330</b>			
<b>APPLICATION AS AMENDED – PART II</b>										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
<b>AMENDMENT</b>	<b>04/26/2012</b>	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 34	Minus	** 30	= 4	X \$	=	OR	X \$60=	240
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X \$	=	OR	X \$250=	0
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	<b>240</b>
<b>AMENDMENT</b>		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$	=	OR	X \$	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$	=	OR	X \$	=
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:  
/GLORIA TRAMMELL/

This collection of information is required by 37 CFR 1.16. 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 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.**

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



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/421,517	04/09/2009	Ojas Udayan Rege	MOIRP003	4643
21912 7590 06/27/2012 VAN PELT, YI & JAMES LLP 10050 N. FOOTHILL BLVD #200 CUPERTINO, CA 95014			EXAMINER TRAN, CONGVAN	
			ART UNIT	PAPER NUMBER
			2617	
			NOTIFICATION DATE	DELIVERY MODE
			06/27/2012	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptocorrespondence@ip-patent.com

<b>Office Action Summary</b>	<b>Application No.</b> 12/421,517	<b>Applicant(s)</b> REGE ET AL.	
	<b>Examiner</b> CONGVAN TRAN	<b>Art Unit</b> 2617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 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 26 April 2012.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ 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**

- 5) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-34 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ 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).
- 12) ☐ 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**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ 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) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

**DETAILED ACTION**

***Response to Amendment***

1. This office is in response to Amendment filed on Apr. 26, 2012).
2. Claims 1, 24 and 25 have been amended.
3. Claims 31-34 have been amended.

***Claim Rejections - 35 USC § 102***

4. 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.

5. Claims 1-5, 10, and 16-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Farley et al. (7,796,570).

Regarding claims 1, and 20-23, Farley discloses a method for sparse table accounting and dissemination from a mobile subscriber device in a wireless mobile AD-HOC network, comprising: receiving, at a first server, mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise (see abstract, fig.1, elements 102s, 106s/104, col.3, line 33, and its description); aggregating the usage data from each of the plurality of mobile devices according to characterized actions performed on each of mobile devices (see fig.3, element 120, col.5, line 6 and its description); and generating one or more mobile

device usage reports based on the aggregated usage data (see fig.3, element 120, col.5, line 16 and its description).

Regarding claim 2, Farley further discloses the first server is a central server not affiliated with the particular enterprise and wherein the usage data is sent from the mobile devices directly to the central server (see abstract, fig.1, elements 102s, 106s/104, col.3, line 33, and its description).

Regarding claim 3, Farley further discloses aggregating the aggregated usage data from the plurality of mobile devices associated with the particular enterprise with aggregated usage data from mobile devices associated with other enterprises and generating one or more multi-enterprise usage reports each comprising data from at least two different enterprises (see abstract, fig.1, elements 102s, 106s/104, col.3, line 33, fig.3, element 120, col.5, line 6 and its description).

Regarding claims 4-5, Farley further discloses the first server is an enterprise server of the particular enterprise, and wherein the method further comprises sending the usage data from the first server directly to a central server that is not affiliated with the particular enterprise (see abstract, fig.1, elements 102s, 106s/104, col.3, line 33, fig.3, element 124, col.5, line 6 and its description and its description).

Regarding claims 10, 16-18, 26-27, Farley further discloses the usage data comprises one or more of call usage information, SMS text usage information, web browser usage information, and application usage information (see abstract, col.2, line 4),

Regarding claim 19, Farley further discloses the usage data comprises data from mobile devices associated with two or more network service providers and wherein at least one of the usage reports comprises usage data from at least two different network service providers (see abstract, col.1, line 29).

Regarding claim 20, Farley further discloses the usage data is received in real-time (see figs.1-2, paragraph [0036])

Regarding claim 24, Farley discloses a method for sparse table accounting and dissemination from a mobile subscriber device in a wireless mobile AD-HOC network, comprising: a central database (see abstract, fig.3, element 104/124, col.5, line 6 and its description and its description); a server configured to receive mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise (see abstract, fig.1, elements 102s, 106s/104, col.3, line 33, and its description); aggregate the usage data from each of the plurality of mobile devices at the central database according to characterized actions performed on each of mobile devices (see fig.3, element 120, col.5, line 6 and its description); and generate one or more mobile device usage reports based on the aggregated usage data (see fig.3, element 120, col.5, line 16 and its description).

Regarding claim 25, Farley discloses a method for sparse table accounting and dissemination from a mobile subscriber device in a wireless mobile AD-HOC network, comprising: in response to a usage event at a mobile device, extracting, at the mobile device, network traffic usage data associated with the usage event (see abstract, figs1-3, element 102, col.2, line 1 and its description); correlating, at the mobile device, the

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extracted usage data according to characterized actions performed on each of mobile device (see abstract, figs1-3, element 102, col.2, line 18 and its description); packaging, at the mobile device, the correlated usage data (see abstract, figs1-3, element 102, col.2, line 1 and its description); and transmitting, at the mobile device, the packaged usage data directly to a central server that is not affiliated with a network service provider that provides network service to the mobile device (see abstract, figs1-3, element 102, 104, col.5, line 26 and its description).

### ***Claim Rejections - 35 USC § 103***

6. 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 negated by the manner in which the invention was made.

7. Claims 6-9, 11-15, and 28-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farley et al. (7,796,570).

Regarding claims 6-9, 11-15, and 28-34, the Examiner takes Official notice that these features is structurally integrated with communication device is notoriously well known in the art in purpose of improve the use of telecommunication devices (please, see Fordon's reference 2009/0203352, fig.3).

### ***Conclusion***

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP



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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. SEE MPEP 2141.02 [R-5] VI. **PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH AWAY FROM THE CLAIMS:** A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert.

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denied, 469 U.S. 851 (1984) In re Fulton, 391 F.3d 1195, 1201,73 USPQ2d 1141, 1146 (Fed. Cir. 2004). >See also MPEP §2123.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CongVan Tran whose telephone number is 571-272-7871. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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://pair-direct.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). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



UNITED STATES PATENT AND TRADEMARK OFFICE

/CongVan Tran/

Application/Control Number: 12/421,517

Page 8

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Primary Examiner, Art Unit 2617

<b>Notice of References Cited</b>	Application/Control No. 12/421,517		Applicant(s)/Patent Under Reexamination REGE ET AL.	
	Examiner CONGVAN TRAN		Art Unit 2617	Page 1 of 1

#### U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,796,570 B1	09-2010	Farley et al.	370/338
*	B	US-2009/0203352	08-2009	Fordon et al.	455/406
*	C	US-2008/0200168	08-2008	Jiang, John Yue Jun	455/432.1
*	D	US-2007/0136267	06-2007	Hess et al.	707/004
*	E	US-7,487,121	02-2009	Swarna et al.	705/30
*	F	US-8,190,618	05-2012	Berstis et al.	707/751
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			


#### FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

#### NON-PATENT DOCUMENTS


*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*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.

<b><i>Index of Claims</i></b>  	<b>Application/Control No.</b>  12421517	<b>Applicant(s)/Patent Under Reexamination</b>  REGE ET AL.
	<b>Examiner</b>  CONG TRAN	<b>Art Unit</b>  2617

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47			
CLAIM		DATE							
Final	Original	09/09/2011	01/18/2012	06/20/2012					
	1	✓	✓	✓					
	2	✓	✓	✓					
	3	✓	✓	✓					
	4	✓	✓	✓					
	5	✓	✓	✓					
	6	✓	✓	✓					
	7	✓	✓	✓					
	8	✓	✓	✓					
	9	✓	✓	✓					
	10	✓	✓	✓					
	11	✓	✓	✓					
	12	✓	✓	✓					
	13	✓	✓	✓					
	14	✓	✓	✓					
	15	✓	✓	✓					
	16	✓	✓	✓					
	17	✓	✓	✓					
	18	✓	✓	✓					
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	25	✓	✓	✓					
	26	✓	✓	✓					
	27	✓	✓	✓					
	28	✓	✓	✓					
	29	✓	✓	✓					
	30	✓	✓	✓					
	31			✓					
	32			✓					
	33			✓					
	34			✓					

<b>Search Notes</b>  	<b>Application/Control No.</b>  12421517	<b>Applicant(s)/Patent Under Reexamination</b>  REGE ET AL.
	<b>Examiner</b>  CONG TRAN	<b>Art Unit</b>  2617

SEARCHED			
Class	Subclass	Date	Examiner
455	403, 405, 406, 407, 408, 414.1, 550.1	9/08/11	CT

SEARCH NOTES		
Search Notes	Date	Examiner
search updated	1/12/12	CT
search updated	6/19/12	CT

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

	/CONG TRAN/ Primary Examiner.Art Unit 2617
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## REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL (Submitted Only via EFS-Web)

Application Number	12/421,517	Filing Date	2009-04-09	Docket Number (if applicable)	MOIRP003	Art Unit	4643
First Named Inventor	Ojas Udayan Rege			Examiner Name	Congvan Tran		

**This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.**

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

### SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_

☐ Other \_\_\_\_\_

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other \_\_\_\_\_

### MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months \_\_\_\_\_  
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other \_\_\_\_\_

### FEES

**The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to  
Deposit Account No 500685

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

Signature of Registered U.S. Patent Practitioner			
Signature	/william j. james/	Date (YYYY-MM-DD)	2012-09-27
Name	William J. James	Registration Number	40661

This collection of information is required by 37 CFR 1.114. 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.

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



## Privacy Act Statement

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

1. 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 the Freedom of Information Act requires disclosure of these records.
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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 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 inspections or an issued patent.
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# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	REGE et al.	Examiner:	Congvan Tran
Application No.:	12/421,517	Art Unit:	2617
Filed:	April 9, 2009	Docket No.:	MOIRP003
Title:	MOBILE ACTIVITY INTELLIGENCE		

## **AMENDMENT C**

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

Dear Sir:

This is in response to the Office Action mailed June 27, 2012. The following amendments and remarks are respectfully submitted.

Applicant(s) believe that no (additional) fees are required beyond any fees submitted herewith. If required fees are missing or any additional fees are required during the pendency of the subject application, please charge such fees or credit any overpayment to Deposit Account No. 50-0685 (MOIRP003).

## IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1. (Currently Amended) A method, comprising:  
receiving, at a first server, mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise, a first subset of the plurality of mobile devices being associated with a first network service provider and a second subset of the plurality of mobile devices being associated with a second network service provider;  
aggregating the usage data from each of the plurality of mobile devices according to characterized actions performed on each of the mobile devices; and  
generating ~~one or more mobile device usage reports~~ based on the aggregated usage data one or more mobile device usage reports at least a subset of which compare a first aggregated usage data associated with the first network service provider with a corresponding second aggregated usage data associated with the second network service provider.
2. (Original) The method of Claim 1, wherein the first server is a central server not affiliated with the particular enterprise and wherein the usage data is sent from the mobile devices directly to the central server.
3. (Original) The method of Claim 2, further comprising aggregating the aggregated usage data from the plurality of mobile devices associated with the particular enterprise with aggregated usage data from mobile devices associated with other enterprises and generating one or more multi-enterprise usage reports each comprising data from at least two different enterprises.
4. (Original) The method of Claim 1, wherein the first server is an enterprise server of the particular enterprise, and wherein the method further comprises sending the usage

data from the first server directly to a central server that is not affiliated with the particular enterprise.

5. (Original) The method of Claim 1, wherein the first server is a data management server that maintains a virtual instance of each of the plurality of mobile devices, wherein particular virtual instances corresponding to particular mobile devices are updated based on the data sent to the data management server from the particular mobile devices, and wherein the data management server sends the usage data corresponding to the particular mobile devices to a central server that is not affiliated with the particular enterprise.

6. (Original) The method of Claim 1, further comprising:  
at each mobile device, selectively filtering raw data to generate the usage data prior to transmitting the usage data and the receiving of the usage data.

7. (Original) The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on a corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

8. (Original) The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on the corresponding geographic location of mobile device at the corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

9. (Original) The method of Claim 1, further comprising: at each mobile device, correlating the usage data based on the corresponding cellular tower at the corresponding time of usage prior to transmitting the usage data and the receiving of the usage data.

10. (Original) The method of Claim 1, wherein the usage data comprises one or more of call usage information, SMS text usage information, web browser usage information, and application usage information.

11. (Original) The method of Claim 1, further comprising automatically sending an alert to a particular mobile device based on usage data received from the particular mobile device.

12. (Original) The method of Claim 1, further comprising disabling all or a portion of the usage capabilities of a particular mobile device based on usage data received from the particular mobile device.

13. (Original) The method of Claim 1, further comprising wiping all or a portion of the memory of a particular mobile device based on usage data received from the particular mobile device.

14. (Original) The method of Claim 1, further comprising changing a security policy corresponding to a particular mobile device based on usage data received from the particular mobile device.

15. (Original) The method of Claim 1, further comprising changing a service plan of a particular mobile device based on usage data received from the particular mobile device.

16. (Original) The method of Claim 1, wherein one or more of the reports comprise a call summary report of a particular mobile device, group of mobile devices, or entire enterprise.

17. (Original) The method of Claim 1, wherein one or more of the reports comprise a data summary report of a particular mobile device, group of mobile devices, or entire enterprise.

18. (Original) The method of Claim 1, wherein one or more of the reports comprise an SMS summary report of a particular mobile device, group of mobile devices, or entire enterprise.

19. (Original) The method of Claim 1, wherein the usage data comprises data from mobile devices associated with two or more network service providers and wherein at least one of the usage reports comprises usage data from at least two different network service providers.

20. (Original) The method of Claim 1, wherein the usage data is received in real-time.

21. (Original) The method of Claim 1, wherein the usage data is received on an event driven basis.

22. (Original) The method of Claim 1, wherein the usage data is received on a periodic basis.

23. (Original) The method of Claim 1, wherein the usage data is received on a continuous basis.

24. (Currently Amended) A mobile device management system, comprising:

a central database;

a server configured to

receive mobile device network traffic usage data directly from each of a plurality of mobile devices associated with a particular enterprise, a first subset of the plurality of mobile devices being associated with a first network service provider and a second subset of the plurality of mobile devices being associated with a second network service provider;

aggregate the usage data from each of the plurality of mobile devices at the central database according to characterized actions performed on each of the mobile devices; and

generate ~~one or more mobile device usage reports~~ based on the aggregated usage data one or more mobile device usage reports at least a subset of which compare a first

aggregated usage data associated with the first network service provider with a corresponding second aggregated usage data associated with the second network service provider.

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Previously Presented) The method of claim 1, wherein the characterized actions comprise email usage information.

32. (Previously Presented) The method of claim 1, wherein the characterized actions comprise SMS usage information.

33. (Previously Presented) The method of claim 1, wherein the characterized actions comprise dropped call information.

34. (Previously Presented) The method of claim 1, wherein the characterized actions comprise roaming information.

## **REMARKS**

Claims 25-30 have been canceled. Claims 1 and 24 have been amended to clarify the subject matter regarded as the invention. Claims 1-24 and 31-34 are pending.

### ***Claim Rejections – 35 U.S.C. §102 and/or §103***

Claims 1-5, 10, and 16-24 stand rejected under 35 U.S.C. §102 as being anticipated by Farley. The remaining claims stand rejected under 35 U.S.C. §103 based on Farley as combined with one or more other references.

The rejection is respectfully traversed. With respect to claims 1 and 24, each has been amended to recite the aggregation of usage data across a set of mobile devices that include devices associated with a “first network service provider” and devices associated with a “second network service provider”. Farley, by contrast, describes a way that a single network service provider can gather, aggregate, and report usage data observed at each of a plurality of wireless nodes in a wireless mobile ad hoc network. Farley at col. 5, lines 6-25. Each node gathers data until it has a connection to the single network provider’s core network 104, and then reports usage data to the core network 104. *Id.* The network provider aggregates this data and performs accounting functions based thereon. By contrast, in claims 1 and 24 as amended, usage data is tracked and aggregated for an enterprise across network service providers, enabling comparisons between them to be made. Support for the amendments to claims 1 and 24 is found, without limitation, in the Application at [0020] and [0098].

The remaining claims depend from claim 1 and are therefore believed to be allowable for the same reasons described above.

The foregoing amendments are not to be taken as an admission of unpatentability of any of the claims prior to the amendments.



Reconsideration of the application and allowance of all claims are respectfully requested based on the preceding remarks. If at any time the Examiner believes that an interview would be helpful, please contact the undersigned.

Respectfully submitted,

Dated: September 27, 2012

/william j. james/  
William J. James  
Registration No. 40,661  
V 408-973-2592  
F 408-973-2595

VAN PELT, YI & JAMES LLP  
10050 N. Foothill Blvd., Suite 200  
Cupertino, CA 95014

Electronic Patent Application Fee Transmittal				
Application Number:		12421517		
Filing Date:		09-Apr-2009		
Title of Invention:		Mobile Activity Intelligence		
First Named Inventor/Applicant Name:		Ojas Udayan Rege		
Filer:		William James/Elaine Nguyen		
Attorney Docket Number:		MOIRP003		
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
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(\$)
<b>Miscellaneous:</b>				
Request for continued examination	1801	1	930	930
<b>Total in USD (\$)</b>				<b>930</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	13860084
<b>Application Number:</b>	12421517
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4643
<b>Title of Invention:</b>	Mobile Activity Intelligence
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege
<b>Customer Number:</b>	21912
<b>Filer:</b>	William James/Elaine Nguyen
<b>Filer Authorized By:</b>	William James
<b>Attorney Docket Number:</b>	MOIRP003
<b>Receipt Date:</b>	27-SEP-2012
<b>Filing Date:</b>	09-APR-2009
<b>Time Stamp:</b>	19:53:06
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$930
RAM confirmation Number	6882
Deposit Account	500685
Authorized User	

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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	MOIRP003_AMD_C_RCE_Transmittal_signed.pdf	697680 86d7eff09f520d42fbd2fde2ecc843752390807	no	3

### Warnings:

### Information:

2		MOIRP003_AMD_C.pdf	100218 07861f929b56b0d23b0d55d80722e5cf21383596	yes	8
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### Multipart Description/PDF files in .zip description

	Document Description	Start	End
	Amendment Submitted/Entered with Filing of CPA/RCE	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	8

### Warnings:

### Information:

3	Fee Worksheet (SB06)	fee-info.pdf	30176 89f8061810adad48abf6b4dbde165257cff1c8b0	no	2
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Total Files Size (in bytes):			828074
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**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.**

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<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>12/421,517</b>		Filing Date <b>04/09/2009</b>		<input type="checkbox"/> To be Mailed	
<b>APPLICATION AS FILED – PART I</b>										
(Column 1)			(Column 2)			SMALL ENTITY <input type="checkbox"/> OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*	X \$	=		X \$	=			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$	=		X \$	=			
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.					TOTAL		TOTAL			
<b>APPLICATION AS AMENDED – PART II</b>										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	09/27/2012	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 28	Minus	** 34	= 0	X \$	=		X \$60=	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$	=		X \$250=	0
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$	=		X \$	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$	=		X \$	=
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>										

Legal Instrument Examiner:  
/KAREN VESTAL/

This collection of information is required by 37 CFR 1.16. 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 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.**

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21912 7590 10/16/2012  
VAN PELT, YI & JAMES LLP  
10050 N. FOOTHILL BLVD #200  
CUPERTINO, CA 95014

EXAMINER

TRAN, CONGVAN

ART UNIT

PAPER NUMBER

2641

DATE MAILED: 10/16/2012

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/421,517

04/09/2009

Ojas Udayan Rege

MOIRP003

4643

TITLE OF INVENTION: MOBILE ACTIVITY INTELLIGENCE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1770	\$0	\$0	\$1770	01/16/2013

**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 DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

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B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

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.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

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.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**



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**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

21912 7590 10/16/2012  
VAN PELT, YI & JAMES LLP  
10050 N. FOOTHILL BLVD #200  
CUPERTINO, CA 95014

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/421,517 04/09/2009 Ojas Udayan Rege MOIRP003 4643

TITLE OF INVENTION: MOBILE ACTIVITY INTELLIGENCE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1770 \$0 \$0 \$1770 01/16/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
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TRAN, CONGVAN 2641 455-406000

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.**

2. For printing on the patent front page, list

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3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. 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 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, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/421,517	04/09/2009	Ojas Udayan Rege	MOIRP003	4643

21912	7590	10/16/2012
VAN PELT, YI & JAMES LLP		
10050 N. FOOTHILL BLVD #200		
CUPERTINO, CA 95014		

EXAMINER	
TRAN, CONGVAN	

ART UNIT	PAPER NUMBER
2641	

  
DATE MAILED: 10/16/2012

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 464 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 464 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment 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>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## 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:

1. 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.
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).
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 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.
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.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	12/421,517	REGE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	CongVan Tran	2641	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY 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.

1. ☒ This communication is responsive to RCE & Remarks filed on Sep. 27, 2012.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-24, 31-34 have been renumbered to 1-23, 28, 24-27 respectively.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    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)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date ____     | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance             |
|  | 9. <input type="checkbox"/> Other ____.   |

/CongVan Tran/  
Primary Examiner, Art Unit 2641

<b>Notice of References Cited</b>	Application/Control No. 12/421,517	Applicant(s)/Patent Under Reexamination REGE ET AL.	
	Examiner CongVan Tran	Art Unit 2641	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2010/0192212	07-2010	Raleigh, Gregory G.	726/7
*	B	US-5,991,379	11-1999	Kusaki et al.	379/115.01
*	C	US-6,041,226	03-2000	Skoro et al.	455/405
*	D	US-6,970,692	11-2005	Tysor, Arthur James	455/405
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			


**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*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.

<b>Search Notes</b>  	<b>Application/Control No.</b>  12421517	<b>Applicant(s)/Patent Under Reexamination</b>  REGE ET AL.
	<b>Examiner</b>  CONG TRAN	<b>Art Unit</b>  2617

SEARCHED			
Class	Subclass	Date	Examiner
455	403, 405, 406, 407, 408, 414.1, 550.1	9/08/11	CT

SEARCH NOTES		
Search Notes	Date	Examiner
search updated	1/12/12	CT
search updated	6/19/12	CT

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
455	405	10/04/12	CT

	/CONG TRAN/ Primary Examiner.Art Unit 2641
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## BIB DATA SHEET

CONFIRMATION NO. 4643

<b>SERIAL NUMBER</b> 12/421,517	<b>FILING or 371(c) DATE</b> 04/09/2009 <b>RULE</b>	<b>CLASS</b> 455	<b>GROUP ART UNIT</b> 2641	<b>ATTORNEY DOCKET NO.</b> MOIRP003		
<b>APPLICANTS</b> Ojas Udayan Rege, Palo Alto, CA; Robert Bates Tinker, San Francisco, CA; Sanjeev Kumar Mishra, Sunnyvale, CA; Sandilya Garimella, San Jose, CA; Stuart Carleton Eichert, Mountain View, CA;						
<b>** CONTINUING DATA *****</b> <b>** FOREIGN APPLICATIONS *****</b> <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **</b> 05/27/2009						
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input type="checkbox"/> No Verified and /CONG TRAN/ Acknowledged Examiner's Signature		<input type="checkbox"/> Met after Allowance Initials	<b>STATE OR COUNTRY</b> CA	<b>SHEETS DRAWINGS</b> 32	<b>TOTAL CLAIMS</b> 30	<b>INDEPENDENT CLAIMS</b> 3
<b>ADDRESS</b> VAN PELT, YI & JAMES LLP 10050 N. FOOTHILL BLVD #200 CUPERTINO, CA 95014 UNITED STATES						
<b>TITLE</b> Mobile Activity Intelligence						
<b>FILING FEE RECEIVED</b> 1850	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit			





# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

21912 7590 10/16/2012  
VAN PELT, YI & JAMES LLP  
10050 N. FOOTHILL BLVD #200  
CUPERTINO, CA 95014

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

12/421,517 04/09/2009 Ojas Udayan Rege MOIRP003 4643

TITLE OF INVENTION: MOBILE ACTIVITY INTELLIGENCE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1770 \$0 \$0 \$1770 01/16/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
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TRAN, CONGVAN 2641 455-406000

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.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Van Pelt, Yi & James LLP

2 \_\_\_\_\_

3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

MOBILE IRON, INC.

Mountain View, CA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

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4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-0685 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /william j. james/

Date November 16, 2012

Typed or printed name William J. James

Registration No. 40,661

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12421517
	Filing Date		2009-04-09
	First Named Inventor	Ojas Udayan Rege	
	Art Unit	2641	
	Examiner Name	Congvan Tran	
	Attorney Docket Number	MOIRP003	

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Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6151606		2000-11-21	Daniel J. Mendez	
	2	7702322		2010-04-20	MAURYA et al.	
	3	7970386		2011-06-28	BHAT et al.	
	4	8012219		2011-09-06	MENDEZ et al.	

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Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup>	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12421517	
	Filing Date		2009-04-09	
	First Named Inventor	Ojas Udayan Rege		
	Art Unit	2641		
	Examiner Name	Congvan Tran		
	Attorney Docket Number	MOIRP003		

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	12421517
Filing Date	2009-04-09
First Named Inventor	Ojas Udayan Rege
Art Unit	2641
Examiner Name	Congvan Tran
Attorney Docket Number	MOIRP003

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/william j. james/	Date (YYYY-MM-DD)	2012-11-16
Name/Print	William J. James	Registration Number	40661

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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.**

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

1. 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 the Freedom of Information Act requires disclosure of these records.
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.
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).
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 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 inspections or an issued patent.
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.

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	12421517			
<b>Filing Date:</b>	09-Apr-2009			
<b>Title of Invention:</b>	MOBILE ACTIVITY INTELLIGENCE			
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege			
<b>Filer:</b>	William James/Elaine Nguyen			
<b>Attorney Docket Number:</b>	MOIRP003			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
Utility Appl issue fee	1501	1	1770	1770
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
Submission- Information Disclosure Stmt	1806	1	180	180
Printed copy of patent - no color	8001	4	3	12
<b>Total in USD (\$)</b>				<b>1962</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14251086
<b>Application Number:</b>	12421517
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4643
<b>Title of Invention:</b>	MOBILE ACTIVITY INTELLIGENCE
<b>First Named Inventor/Applicant Name:</b>	Ojas Udayan Rege
<b>Customer Number:</b>	21912
<b>Filer:</b>	William James/Elaine Nguyen
<b>Filer Authorized By:</b>	William James
<b>Attorney Docket Number:</b>	MOIRP003
<b>Receipt Date:</b>	16-NOV-2012
<b>Filing Date:</b>	09-APR-2009
<b>Time Stamp:</b>	19:39:57
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 1962
RAM confirmation Number	7336
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 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)



Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

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	Issue Fee Payment (PTO-85B)	MOIRP003_Issue_Fee_Transmit tal.pdf	98845 a0d11f4deae1cf9e19fde1428ba6055121c 3458	no	1

### Warnings:

### Information:

2	Information Disclosure Statement (IDS) Form (SB08)	MOIRP003_IDS_Form_SB08a_1 1162012.pdf	612196 6801a35346262ef623291c2aba75b69e5a8 1e085	no	4
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### Warnings:

### Information:

3	Fee Worksheet (SB06)	fee-info.pdf	33821 58b6b46e6746ce6ddae01b7494c761970a9 e2409	no	2
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### Warnings:

### Information:

**Total Files Size (in bytes):**

744862

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#### **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.**

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12421517
	Filing Date		2009-04-09
	First Named Inventor	Ojas Udayan Rege	
	Art Unit	2641	
	Examiner Name	Congvan Tran	
	Attorney Docket Number	MOIRP003	

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6151606		2000-11-21	Daniel J. Mendez	
	2	7702322		2010-04-20	MAURYA et al.	
	3	7970386		2011-06-28	BHAT et al.	
	4	8012219		2011-09-06	MENDEZ et al.	

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	1					

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Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup>	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12421517	12421517 - GAU: 2641
	Filing Date		2009-04-09	
	First Named Inventor	Ojas Udayan Rege		
	Art Unit	2641		
	Examiner Name	Congvan Tran		
	Attorney Docket Number	MOIRP003		

	1							<input type="checkbox"/>
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>
	1		<input type="checkbox"/>

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<b>EXAMINER SIGNATURE</b>			
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Examiner Signature	/CongVan Tran/ (11/26/2012)	Date Considered	
--------------------	-----------------------------	-----------------	--

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

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	12421517	12421517 - GAU: 2641
Filing Date	2009-04-09	
First Named Inventor	Ojas Udayan Rege	
Art Unit	2641	
Examiner Name	Congvan Tran	
Attorney Docket Number	MOIRP003	

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

- ☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

- ☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

- ☐ See attached certification statement.
- ☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- ☐ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/william j. james/	Date (YYYY-MM-DD)	2012-11-16
Name/Print	William J. James	Registration Number	40661

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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:

1. 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 the Freedom of Information Act requires disclosure of these records.
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.
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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)).
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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.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.T./



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Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/421,517	04/09/2009	Ojas Udayan Rege	MOIRP003	4643
21912 7590 11/29/2012 VAN PELT, YI & JAMES LLP 10050 N. FOOTHILL BLVD #200 CUPERTINO, CA 95014			EXAMINER TRAN, CONGVAN	
			ART UNIT	PAPER NUMBER
			2641	
			NOTIFICATION DATE	DELIVERY MODE
			11/29/2012	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptocorrespondence@ip-patent.com



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U.S. Patent and Trademark Office**

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P.O. Box 1450  
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
12/421,517	09 April, 2009	REGE ET AL.	MOIRP003

VAN PELT, YI & JAMES LLP 10050 N. FOOTHILL BLVD #200 CUPERTINO, CA 95014		<b>EXAMINER</b>	
		CongVan Tran	
		<b>ART UNIT</b>	<b>PAPER</b>
		2641	20121126

DATE MAILED:

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

**Commissioner for Patents**

The information disclosure statement (IDS) submitted on Nov. 16, 2012 was filed after the mailing date of the allowance on Oct. 16, 2012. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

/CongVan Tran/  
Primary Examiner, Art Unit 2641



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[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/421,517	12/25/2012	8340633	MOIRP003	4643

21912 7590 12/05/2012  
VAN PELT, YI & JAMES LLP  
10050 N. FOOTHILL BLVD #200  
CUPERTINO, CA 95014

## ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

### **Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)** (application filed on or after May 29, 2000)

The Patent Term Adjustment is 620 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment 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>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Ojas Udayan Rege, Palo Alto, CA;  
Robert Bates Tinker, San Francisco, CA;  
Sanjeev Kumar Mishra, Sunnyvale, CA;  
Sandilya Garimella, San Jose, CA;  
Stuart Carleton Eichert, Mountain View, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit [SelectUSA.gov](http://SelectUSA.gov).



AO 120 (Rev. 08/10)

<b>TO:</b> <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court \_\_\_\_\_ for the District of Delaware \_\_\_\_\_ on the following

☐ Trademarks or ☒ Patents. ( ☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 14-1308 (LPS)(CJB)	DATE FILED 10/14/2014	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF GOOD TECHNOLOGY CORPORATION, et al.		DEFENDANT MOBILEIRON, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED 10/29/2014	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input checked="" type="checkbox"/> Counterclaim Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,869,307 B2	10/21/2014	MobileIron, Inc.
2 8,340,633 B1	12/25/2012	MobileIron, Inc.
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy