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P. SWAIN
Certifying Officer

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ISSUE CLASSIFICATION	Class	Subclass
	455	418

PATENT NUMBER
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U.S. UTILITY PATENT APPLICATION

O.I.P.E.	PATENT DATE
SCANNED SM Q.A. KMH	AUG 07 2001

SECTOR	CLASS	SUBCLASS	ART UNIT	EXAMINER
	455	418	2745	CHOW

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PREPARED AND APPROVED FOR ISSUE

ISSUING CLASSIFICATION

ORIGINAL		CROSS REFERENCE(S)						
CLASS	SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					
455	418	455	419	575				
INTERNATIONAL CLASSIFICATION								
H04M 3/00								

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~~7/2/01~~ Formal Drawings (4 shts) set 1 6/12/98

☐ TERMINAL DISCLAIMER	DRAWINGS			CLAIMS ALLOWED	
	Sheets Drwg.	Figs. Drwg.	Print Fig.	Total Claims	Print Claim for O.G.
	4	6	2	13	1

☐ a) The term of this patent subsequent to _____ (date) has been disclaimed.

C. CHOW (Assistant Examiner) 4/23/01 (Date)

NOTICE OF ALLOWANCE MAILED
4-30-01

☐ b) The term of this patent shall not extend beyond the expiration date of U.S. Patent. No. _____

DANIEL HUNTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600
(Primary Examiner) 4/27/01 (Date)

ISSUE FEE TH

Amount Due	Date Paid
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☐ c) The terminal ____ months of this patent have been disclaimed.

(Legal Instruments Examiner) 5/2/01 (Date)

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F-62

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(LABEL AREA)
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09/096,664	06/12/1998	455	2749	PF01596NA

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CONTINUING DOMESTIC DATA********
VERIFIED

None. C.C .

371 (NAT'L STAGE) DATA********
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None C.C.

FOREIGN APPLICATIONS********
VERIFIED

None. C.C ,

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Foreign priority claimed / 35 USC 119 (a-d) conditions met	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDE CLAIMS
yes O no / yes O no O Met after Allowance Verified and acknowledged C.CHOW C.C. Examiner's Name Initials	TX	4	~~12~~ 13	3

ADDRESS
MOTOROLA INC
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TITLE
METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

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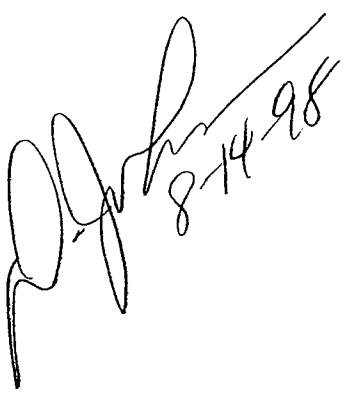

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Transmitted herewith for filing under 37 CFR 1.53(b) is a Nonprovisional:

New Application **XX**; Continuation __, Division, ____ or Continuation in Part (CIP) _____ of prior US application S/N _____, filed on _____.

Title: **METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA**

For: **DWIGHT RANDALL SMITH**

Enclosed are the following documents:

XX Transmittal Letter to PTO;
XX **4** sheet(s) of drawings and **15** page(s) of specification and claims;
XX Oath or Declaration Combined with Power of Attorney (2 pages).
XX Newly Executed (original or copy).
_____ Copy from a prior application (if this is a Continuation/Division).
_____ signed statement deleting named inventor(s) in prior application if this is a Continuation/Division (see 37 CFR 1.63(d) and 1.33(b).
_____ Please abandon the prior application identified above as of the filing date granted to the present Continuation/Division application.
_____ Enclosed is a certified copy of a ____ (non-US) application S/N _____, having a filing date of _____, and foreign priority to this non-US application for the present application is hereby claimed under 35 USC 119.
XX Assignment Transmittal and Assignment to MOTOROLA, INC.
XX An Information Disclosure Statement and PTO 1449 with references attached.
Preliminary Amendment.
XX Return postcard.

CLAIMS AS FILED

FOR	NUMBER FILED	NUMBER EXTRA	RATE	FEE
TOTAL CLAIMS	13-20	0	X $22.00	
INDEPENDENT CLAIMS	3-3	0	X $82.00	
MULTIPLE DEPENDENT CLAIM(S)			$270.00	
ASSIGNMENT DOCUMENT			$40.00	$40.00
BASIC FEE				$790.00
			TOTAL FILING FEE	**$830.00**

Please charge my deposit account no. **50-0280** in the amount of **$830.00**. The Commissioner is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required during the entire pendency of this application, or credit any overpayment, to deposit account No. **50-0280.**

6/12/98
Date

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METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

Field of the Invention

This invention relates in general to wireless communication systems, and more specifically to a method and apparatus in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit.

Background of the Invention

Prior-art messaging systems have utilized specific vector types, such as tone-only, numeric, and alphanumeric vector types, to control the type of data the fixed portion of the messaging system would send to a specific subscriber unit. Typically, control of the specific vector type has been implemented through class-of-service information.

As subscriber units become increasingly user customizable with enhanced software application upgradability, it is impractical to expect that a class-of-service distinction or a subscriber unit class can define all the types of data that the applications accessible to a specific subscriber unit can support. Further, it is unlikely that all subscriber units of a specific type will have identical applications having identical application version numbers. Nonetheless, it remains desirable not to send data to a subscriber unit that the subscriber unit cannot utilize.

Thus, what is needed is a method and apparatus for controlling the delivery of data from the fixed portion of the messaging system to the subscriber unit. Preferably, the method and apparatus will not require specific vector types and corresponding class-of-service information to define the types of data which the subscriber unit can utilize. In addition, the method and apparatus preferably will not require an over-the-air session for each delivery of data to determine whether the subscriber unit can utilize the specific data type.

Summary of the Invention

An aspect of the present invention is a method in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit. The method comprises in the subscriber unit the step of maintaining an application registry for registering applications accessible to the subscriber unit. The method further comprises, in the fixed portion of the wireless communication system, the steps of keeping a current copy of the application registry of the subscriber unit, and checking the current copy of the application registry in response to having the data to send to the subscriber unit. The method further comprises, in the fixed portion of the wireless communication system, the step of sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit.

Another aspect of the present invention is a controller in a fixed portion of a wireless communication system for controlling a delivery of data to a subscriber unit which maintains an application registry for registering applications accessible to the subscriber unit. The controller comprises a network interface for accepting the data from an originator, and a processing system coupled to the network interface for processing the data, the processing system comprising a memory. The controller further comprises a base station interface coupled to the processing system for controlling a base station to transmit the data. The processing system is programmed to keep in the memory a current copy of the application registry of the subscriber unit, and to check the current copy of the application registry in response to having the data to send to the subscriber unit. The processing system is further programmed to send the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit.

Another aspect of the present invention is a subscriber unit in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system. The subscriber unit comprises a receiver for receiving the data, and a processing system coupled to the receiver for processing the data. The subscriber unit further comprises a transmitter coupled to the processing system for communicating with the fixed portion of the wireless communication

system. The processing system is programmed to maintain an application registry for registering applications accessible to the subscriber unit; and, in response to a change in accessibility of an application, to update the application registry and control the transmitter to communicate the change to the fixed portion of the wireless communication system.

Brief Description of the Drawings

FIG. 1 is an electrical block diagram of a wireless communication system in accordance with the present invention.

FIG. 2 is an electrical block diagram of a subscriber unit in accordance with the present invention.

FIG. 3 is an electrical block diagram of a controller in accordance with the present invention.

FIG. 4 is a flow diagram depicting operation of the subscriber unit for maintaining an application registry in accordance with the present invention.

FIG. 5 is a flow diagram depicting a first operation of the controller in accordance with the present invention.

FIG. 6 is a flow diagram depicting a second operation of the controller in accordance with the present invention.

Detailed Description of the Drawings

Referring to FIG. 1, an electrical block diagram depicts an exemplary wireless communication system in accordance with the present invention comprising a fixed portion 102 including a controller 112 and a plurality of conventional base stations 116, the communication system also including a plurality of subscriber units 122. The base stations 116 preferably communicate with the subscriber units 122 utilizing conventional radio frequency (RF) techniques, and are coupled by conventional communication links 114 to the controller 112, which controls the base stations 116.

The hardware of the controller 112 is preferably a combination of the Wireless Messaging Gateway (WMG™) Administrator! paging terminal, and the RF-Conductor!™ message distributor manufactured by Motorola, Inc. The software of the controller 112 is modified in accordance with the present

invention. The hardware of the base stations 116 is preferably a combination of the RF-Orchestra! transmitter and RF-Audience!™ receivers manufactured by Motorola, Inc. The subscriber units 122 are preferably similar to PageWriter™ 2000 data messaging units, also manufactured by Motorola, Inc., and having software modified in accordance with the present invention. It will be appreciated that other similar hardware can be utilized as well for the controller 112, the base stations 116, and the subscriber units 122.

Each of the base stations 116 transmits RF signals to the subscriber units 122 via an antenna 118. The base stations 116 preferably each receive RF signals from the plurality of subscriber units 122 via the antenna 118. The RF signals transmitted by the base stations 116 to the subscriber units 122 (outbound messages) comprise selective call addresses identifying the subscriber units 122, and data messages originated by a message originator, as well as commands originated by the controller 112 for adjusting operating parameters of the radio communication system. The RF signals preferably transmitted by the subscriber units 122 to the base stations 116 (inbound messages) comprise responses that include scheduled messages, such as positive acknowledgments (ACKs) and negative acknowledgments (NAKs), and unscheduled messages, such as registration requests and application registry updates, in accordance with the present invention.

The controller 112 preferably is coupled by telephone links 101 to a public switched telephone network (PSTN) 110 for receiving selective call message originations therefrom. Selective call originations comprising data messages from the PSTN 110 can be generated, for example, from a conventional telephone 111 or a conventional computer 117 coupled to the PSTN 110.

The over-the-air protocol utilized for outbound and inbound messages is preferably selected from Motorola's well-known FLEX™ family of digital selective call signaling protocols. These protocols utilize well-known error detection and error correction techniques and are therefore tolerant to bit errors occurring during transmission, provided that the bit errors are not too numerous. It will be appreciated that other suitable protocols can be used as well.

FIG. 2 is an electrical block diagram of an exemplary subscriber unit 122 in accordance with the present invention. The subscriber unit 122 is depicted coupled to an external device 230, such as a personal computer for accessing software applications therefrom. The subscriber unit 122 comprises an antenna 204 for intercepting an outbound message and for

transmitting an inbound message. The antenna 204 is coupled to a conventional receiver 208 for receiving the outbound message and coupled to a conventional transmitter 209 for transmitting the inbound message. The receiver 208 and transmitter 209 are coupled to a processing system 206 for processing the outbound and inbound messages. A user interface 214 preferably is also coupled to the processing system 206 for interfacing with a user. The user interface 214 comprises a conventional display 216 for displaying the inbound and outbound messages, a conventional alert element 218 for alerting the user when the outbound message arrives, and a conventional keyboard 220 for generating the inbound message and for controlling the subscriber unit 122. A conventional external device interface 207 preferably is also coupled to the processing system 206 for coupling the subscriber unit 122 to the external device 230.

The processing system 206 comprises a conventional processor 210 and a conventional memory 212. The memory 212 comprises software elements and other variables for programming the processing system 206 in accordance with the present invention. The memory 212 preferably includes a selective call address 222 to which the subscriber unit 122 is responsive. In addition, the memory 212 includes a message processing element 224 for programming the processing system 206 to process messages through well-known techniques. The memory 212 further comprises an application registry 226 in accordance with the present invention. The application registry 226 comprises a list of applications that are accessible to the subscriber unit 122. The applications can reside either internal to or external to the subscriber unit 122, e.g., in a personal computer to which the subscriber unit 122 is connected. In addition, the application registry 226 preferably includes an application version number corresponding to each application. The memory 212 also includes an updater element 228 for programming the processing system 206 to control the transmitter 209 to communicate a change in the application registry 226 to the fixed portion 102 of the wireless communication system.

FIG. 3 is an electrical block diagram depicting an exemplary controller 112 in accordance with the present invention. The controller 112 comprises a network interface 318 for receiving a message from a message originator via the telephone links 101. The network interface

318 is coupled to a processing system 310 for controlling and communicating with the network interface 318. The processing system is coupled to a base station interface 304 for controlling and communicating with the base stations 116 via the communication links 114. The processing system 310 is also coupled to a conventional clock 336 for providing a timing signal to the processing system 310. The processing system 310 comprises a conventional computer 312 and a conventional memory, preferably a mass medium 314, e.g., a magnetic disk drive, programmed with information and operating software in accordance with the present invention. The mass medium 314 comprises a conventional subscriber database 320 for storing profiles defining service for subscribers using the system. The mass medium 314 further comprises a message processing element 322 for processing messages through well-known techniques.

The mass medium 314 also includes current copies 324 of application registries of the subscriber units 122 operating in the wireless communication system, in accordance with the present invention. In addition, the mass medium 314 includes a compatibility element 328 for programming the processing system 310 to check the current copy 324 of the application registry of the subscriber unit 122 in response to having data to send to the subscriber unit 122, and to send the data only when the current copy 324 of the application registry indicates that an application compatible with the data is accessible to the subscriber unit 122 for which the data is intended. The mass medium 314 also includes a conversion element 330 for programming the processing system 310 to convert data that is incompatible with the applications accessible to the subscriber unit 122 for which the data is intended, to a format that is compatible with one of the applications accessible to the subscriber unit 122. The mass medium 314 further comprises a report generating element 332 for programming the processing system 310 to examine the current copies 324 of application registries of the subscriber units 122 to generate a report of how many users use which version of which applications. The mass medium 314 also includes a trigger element 334 for programming the processing system 310 to check the application version number of an application in response to a predetermined stimulus, and to take a predetermined action to trigger a software update when the application version number is an old version. The predetermined stimulus can be,

7

for example, the receipt of an update to the application registry 226 of the subscriber unit 122 which adds an application not present in the current copy 324. This can occur when a user purchases and installs a new application, or when the user connects the subscriber unit 122 to a previously disconnected external device. Another example of the predetermined stimulus is an appearance in the wireless communication system of a new application version number, resulting, for example, from a system software update. Still another example of the predetermined stimulus is a registration of a new subscriber unit 122 in the wireless communication system.

An example of taking a predetermined action to trigger a software update when the application version number is an old version, is generating a notification message to the users corresponding to the old version. The notification message can, for example, advise that a new version is available, state where and how to obtain the new version, provide hints and tips about the new version, and recommend add-ons that will enhance the new version. Another example of a predetermined action (preferably for small applications) is to automatically download the new version over the air. Still another example is to disable the currently running application when it is no longer being supported by the wireless communication system. Another alternative (preferred for larger programs) is to provide wireline access to the latest version, and to notify the affected users to download the latest version by wireline, e.g., via the Internet. The alternative selected depends mainly upon the desires of the wireless service provider and the size of the application.

FIG. 4 is a flow diagram 400 depicting operation of the subscriber unit 122 for maintaining the application registry in accordance with the present invention. At step 404 the processing system 206 of the subscriber unit 122 registers the applications accessible to the subscriber unit 122, along with the corresponding application version numbers, into the application registry 226. The processing system 206 then monitors the status of the subscriber unit 122 to determine 406 whether a change in the accessibility of an application has occurred, e.g., through the installation of a new application, or through coupling the subscriber unit 122 to a previously uncoupled external device 230, or through uncoupling the subscriber unit 122 from a previously coupled external device 230. At step 408, if a change in the accessibility of an application has occurred, then the

processing system 206 accesses the updater element 228 and updates 410 the application registry 226. The processing system 206 then controls the transmitter 209 to communicate 412 the change to the fixed portion 102, so that the processing system 310 of the controller 112 can update its copy 324 of the application registry corresponding to the subscriber unit 122. Flow then returns to step 404. If, on the other hand, at step 408 no change in the accessibility of an application has occurred, then the flow simply returns to step 404.

FIG. 5 is a flow diagram 500 depicting a first operation of the controller 112 in accordance with the present invention. At step 514 the processing system 310 of the controller 112 keeps a current copy 324 of the application registry 226 of each subscriber unit 122 in the wireless communication system. The current copy 324 is preferably programmed into the mass medium 314 when the subscriber unit 122 is initially activated in the wireless communication system. The current copy 324 is updated in response to communications from the subscriber unit 122 whenever the subscriber unit 122 updates its application registry 226. In addition, the controller 112 preferably performs periodic synchronization routines, using well-known techniques to ensure that the current copies 324 of application registries remain identical to the application registries 226 in the subscriber units 122.

At step 516, the processing system 310 determines whether it has data to send to one of the subscriber units 122. If not, at step 518 the processing system 310 returns to step 514. If, on the other hand, the processing system 310 does have data to send to one of the subscriber units 122, then after step 518 the processing system 310 checks 520 the current copy 324 of the application registry of the subscriber unit 122 to determine 522 whether an application compatible with the data is accessible to the subscriber unit 122. If so, at step 524 the processing system 310 sends 526 the data to the subscriber unit 122, and the flow returns to step 514. If, on the other hand, the processing system 310 determines that no application compatible with the data is accessible to the subscriber unit 122, then at step 524 the processing system 310 accesses the conversion element 330 to determine 528 whether the data can be converted to a format compatible with an application that is accessible to the subscriber unit 122. If so, at step 530 the processing system 310 converts 532 the data to a format compatible with an application that is accessible to the subscriber unit 122,

and then sends 526 the data to the subscriber unit 122, after which the flow returns to step 514. If, on the other hand, the processing system 310 determines that the data cannot be converted to a format compatible with an application that is accessible to the subscriber unit 122, the flow moves from step 530 to step 534. At step 534 the processing system 310 checks whether the user of the subscriber unit 122 requested the data. If so, the processing system 310 holds the data in the mass medium 314, and notifies the user that the data is being held, but requires an application that is not currently accessible to the subscriber unit 122. Flow then returns to step 514. If, on the other hand, at step 534 the user did not request the data, then the processing system 310 discards 538 the data, and informs the sender about the compatibility problem. Flow then returns to step 514.

FIG. 6 is a flow diagram 600 depicting a second operation of the controller 112 in accordance with the present invention. The flow begins with the processing system 310 determining 602 whether a demographic report is needed. The demographic report can, for example, be requested by the wireless service provider through a keyboard-display terminal (not shown) coupled to the processing system 310. If the report is needed, then the processing system 310 accesses the report generating element 332 and examines the current copies 324 of the application registries corresponding to the subscriber units 122 to generate a report of how many users use which version of which applications. In any case, flow then moves to step 606, where the processing system 310 checks whether an update has been received from one of the subscriber units 122. If so, the processing system 310 enters 608 the update in the current copy 324 of the application registry corresponding to the subscriber unit 122. The processing system 310 then determines 609 whether the update was to add an application that has become accessible to the subscriber unit 122. If so, the processing system 310 checks 610 the application version number to determine whether the application is an old version. If, at step 612, the application version is old, the processing system 310 takes 618 a predetermined action, as described herein above, to trigger a software update. If not, the flow moves to step 614. If, on the other hand, at step 609 the update was not to add an application, the flow simply moves to step 614.

If, on the other hand, at step 606 no update has been received, the flow moves to step 614, where the processing system 310 checks whether a new application version has appeared in the wireless communication system since the last check. If so, the processing system 310 checks 616 the application version numbers of the subscriber units 122 that have access to the application that has been upgraded to the new version. If at step 620, any of the version numbers are old, then the processing system 310 takes 622 a predetermined action, as described herein above, to trigger a software update by the affected subscriber units 122. The flow then returns to step 602. If at step 620 none of the version numbers are old, then the flow simply returns to step 602.

Thus, it should be clear from the preceding disclosure that the present invention provides a method and apparatus for controlling the delivery of data from the fixed portion of a messaging system to a subscriber unit. Advantageously, the method and apparatus does not require specific vector types and corresponding class-of-service information to define the types of data which the subscriber unit can utilize. In addition, the method and apparatus advantageously does not require an over-the-air session for each delivery of data to determine whether the subscriber unit can utilize a specific data type.

Many modifications and variations of the present invention are possible in light of the above teachings. Thus, it is to be understood that, within the scope of the appended claims, the invention can be practiced other than as described herein above.

What is claimed is:

11

Sub A17

CLAIMS

1. A method in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit, the method comprising in the subscriber unit the step of:

maintaining an application registry for registering applications accessible to the subscriber unit; and

in the fixed portion of the wireless communication system, the steps of:

keeping a current copy of the application registry of the subscriber unit;

checking the current copy of the application registry in response to having the data to send to the subscriber unit; and

sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit.

2. The method of claim 1, further comprising, in the fixed portion before the sending step, the step of

converting incompatible data to a format compatible with one of the applications accessible to the subscriber unit.

3. The method of claim 1, wherein the maintaining step comprises, in response to a change in accessibility of an application, the steps of:

updating the application registry; and

communicating the change to the fixed portion of the wireless communication system.

4. The method of claim 1,

wherein the maintaining step comprises the step of

registering an application version number for at least one of the applications accessible to a plurality of subscriber units; and

wherein the method further comprises, in the fixed portion of the wireless communication system, the step of

examining a plurality of current copies of application registries corresponding to the plurality of subscriber units to generate a report of how many users use which version of which applications.

5. The method of claim 1,

wherein the maintaining step comprises the step of

registering an application version number for at least one of the applications accessible to the subscriber unit; and

wherein the method further comprises, in the fixed portion of the wireless communication system, the steps of:

checking the application version number for the at least one of the applications in response to a predetermined stimulus; and

taking a predetermined action to trigger a software update when the application version number is an old version.

6. The method of claim 5, wherein the step of checking the application version number is performed in response to one of: a) a receipt of an update to the application registry of the subscriber unit which adds an application not present in the current copy, b) an appearance in the wireless communication system of a new application version number, and c) a registration of a new subscriber unit in the wireless communication system.

Sub A27

7. A controller in a fixed portion of a wireless communication system for controlling a delivery of data to a subscriber unit which maintains an application registry for registering applications accessible to the subscriber unit, the controller comprising:

a network interface for accepting the data from an originator;

a processing system coupled to the network interface for processing the data, the processing system comprising a memory; and

a base station interface coupled to the processing system for controlling a base station to transmit the data;

wherein the processing system is programmed to:

keep in the memory a current copy of the application registry of the subscriber unit;

check the current copy of the application registry in response to having the data to send to the subscriber unit; and

send the data only when an application compatible with the data is accessible to the subscriber unit.

8. The controller of claim 7, wherein the processing system is further programmed to

convert incompatible data to a format compatible with one of the applications accessible to the subscriber unit.

9. The controller of claim 7,

wherein a plurality of subscriber units register an application version number for at least one of the applications accessible to the plurality of subscriber units, and

wherein the processing system is further programmed to examine a plurality of current copies of application registries corresponding to the plurality of subscriber units to generate a report of how many users use which version of which applications.

10. The controller of claim 7,

wherein the subscriber unit registers an application version number for at least one of the applications accessible to the subscriber unit, and

wherein the processing system is further programmed to:

check the application version number for the at least one of the applications in response to a predetermined stimulus; and

take a predetermined action to trigger a software update when the application version number is an old version.

11. The controller of claim 10, wherein the processing system is further programmed to check the application version number in response to one of: a) a receipt of an update to the application registry of the subscriber unit which adds an application not present in the current copy, b) an appearance in the wireless communication system of a new application version number, and c) a registration of a new subscriber unit in the wireless communication system.

Sub A37

12. A subscriber unit in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system, the subscriber unit comprising:

a receiver for receiving the data;

a processing system coupled to the receiver for processing the data; and

a transmitter coupled to the processing system for communicating with the fixed portion of the wireless communication system,

wherein the processing system is programmed to:

maintain an application registry for registering applications accessible to the subscriber unit; and

in response to a change in accessibility of an application,

update the application registry; and

control the transmitter to communicate the change to the fixed portion of the wireless communication system.

13. The subscriber unit of claim 12, wherein the processing system is further programmed to

register an application version number for at least one of the applications accessible to the subscriber unit.

METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

Abstract

A subscriber unit (122) maintains an application registry (226) for registering (404) applications accessible to the subscriber unit. A fixed portion (102) of a wireless communication system keeps (514) a current copy (324) of the application registry of the subscriber unit, and checks (520) the current copy of the application registry in response to having data to send to the subscriber unit. The fixed portion sends (526) the data only when the fixed portion determines (522) that an application compatible with the data is accessible to the subscriber unit.

09/596964.061298

COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

Attorney Docket **PF01596NA**

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 I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA,** the specification of which is attached hereto unless the following box is checked:

☐ was filed on ____________ as Application No. ____________
and was amended on ____________

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Claimed
____________ (Number)	____________ (County)	____________ (Day/Month/Year Filed)	☐ Yes ☐ No
____________ (Number)	____________ (County)	____________ (Day/Month/Year Filed)	☐ Yes ☐ No

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

(Application Number)	(Filing Date)
(Application Number)	(Filing Date)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Number)	(Filing Date)	(Status - patented, pending, abandoned)
(Application Number)	(Filing Date)	(Status - patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Charles W. Bethards, Reg. No. 36,453
R. Louis Breeden, Reg. No. 37,286
Philip P. Macnak, Reg. No. 33,308
Pablo Meles, Reg. No. 33,739
John H. Moore, Reg. No. 27,149
Daniel K. Nichols, Reg. No. 29,420;
L. Bruce Terry, Reg. No. 38,336.

Send Written Correspondence To:

MOTOROLA, INC.
Intellectual Property Dept.
5401 North Beach Street, MS E230
Fort Worth, TX 76137
Direct Telephone Calls to: (817) 245-4604

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

FULL NAME OF FIRST INVENTOR	INVENTOR'S SIGNATURE	DATE:
Dwight Randall Smith	[signature]	11 JUN 98
RESIDENCE: 2132 Brownstone Court, Grapevine, Texas 76051		CITIZENSHIP: USA
POST OFFICE ADDRESS Same as above		

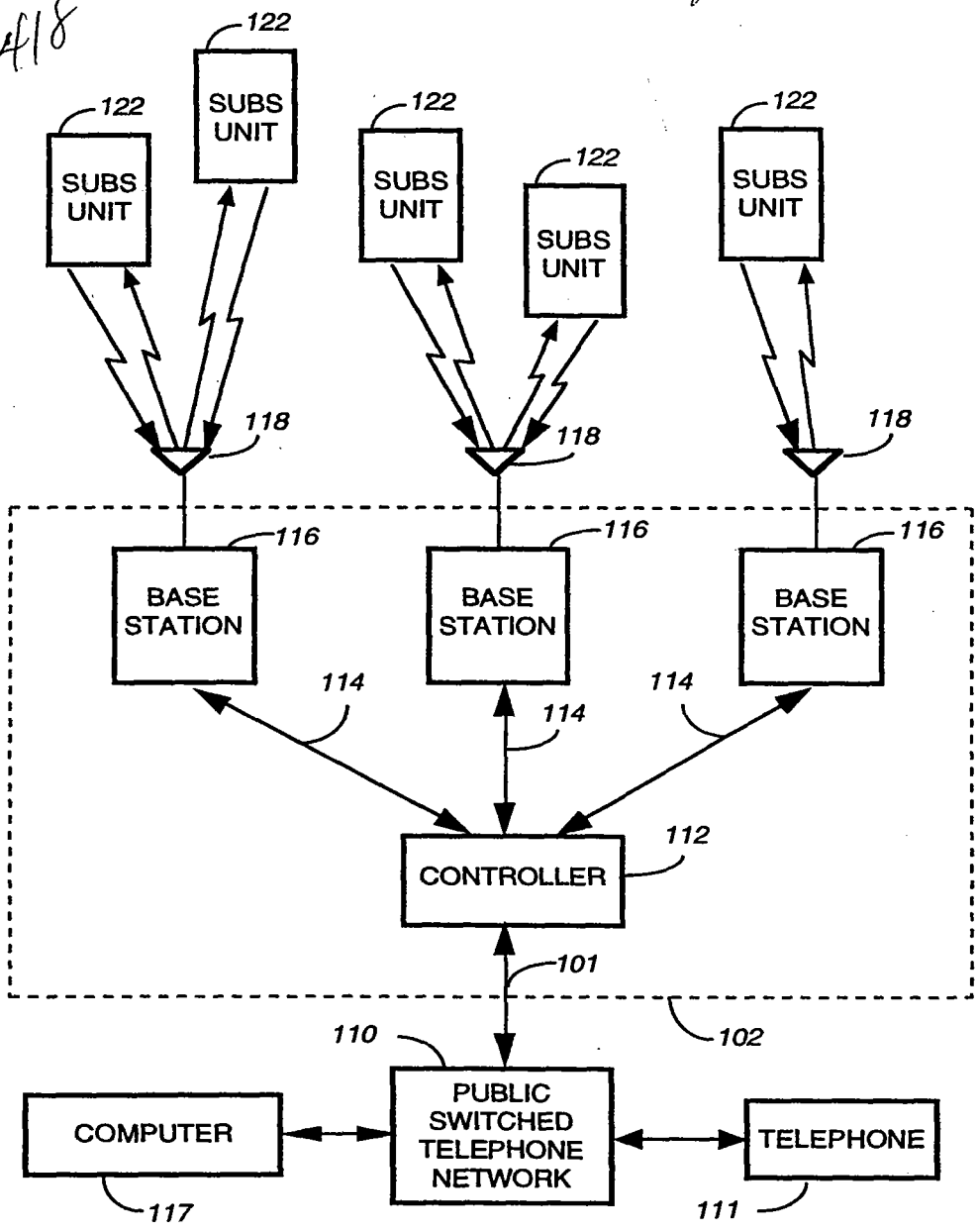

FIG. 1

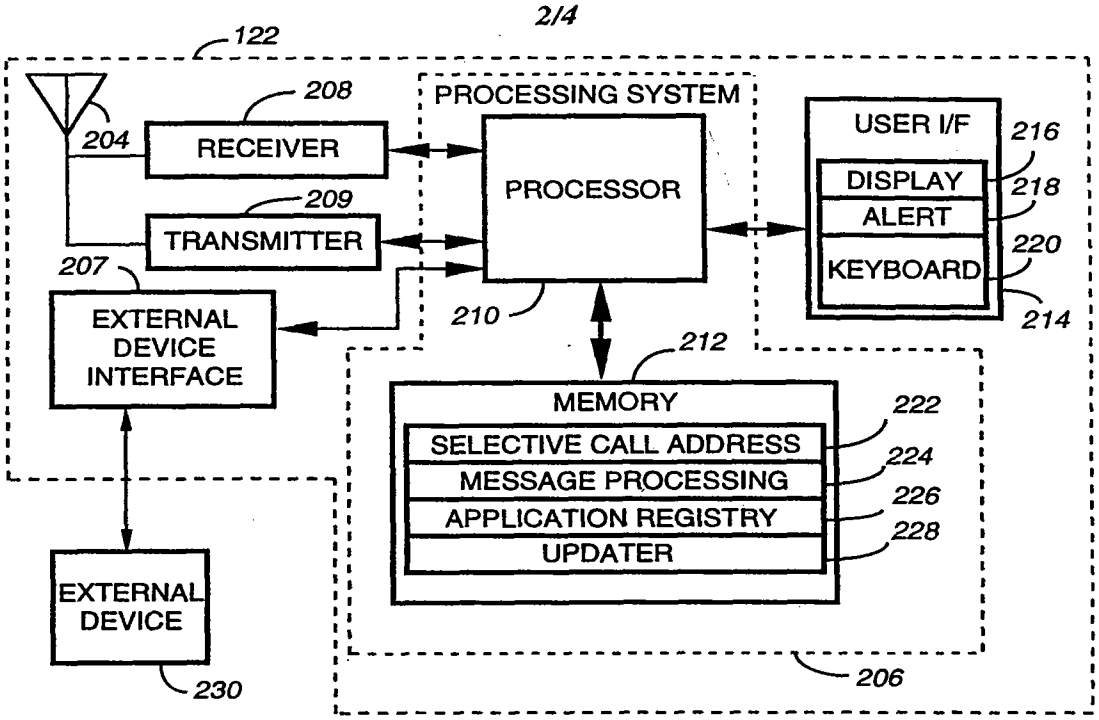

FIG. 2

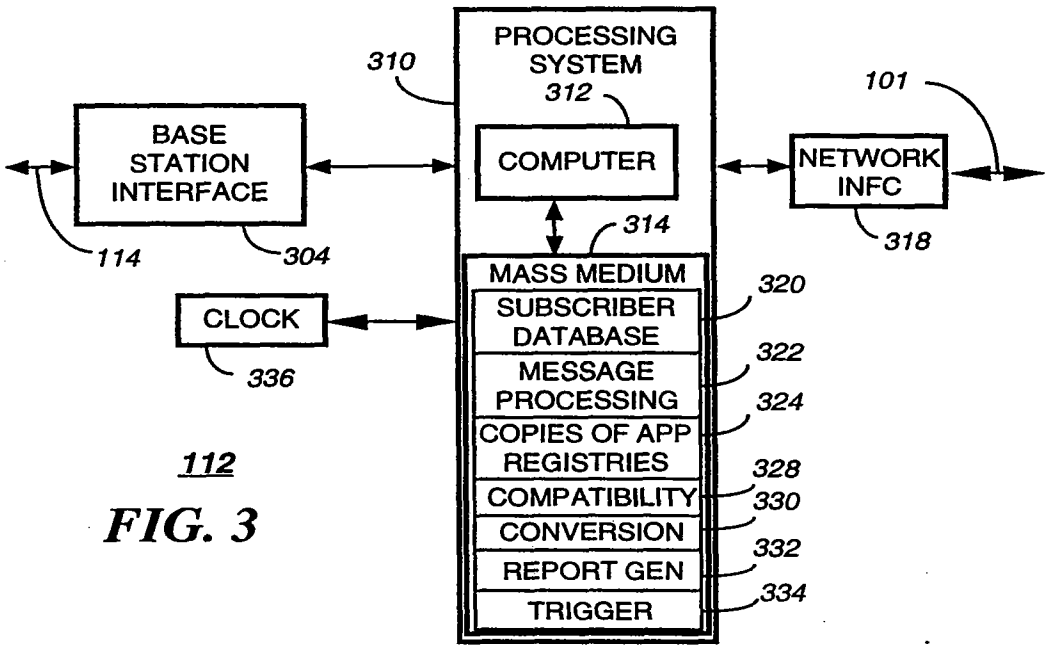

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FIG. 3

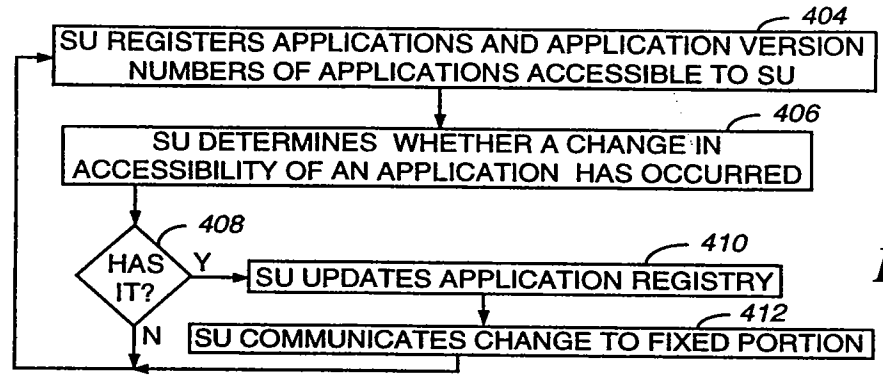

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FIG. 4

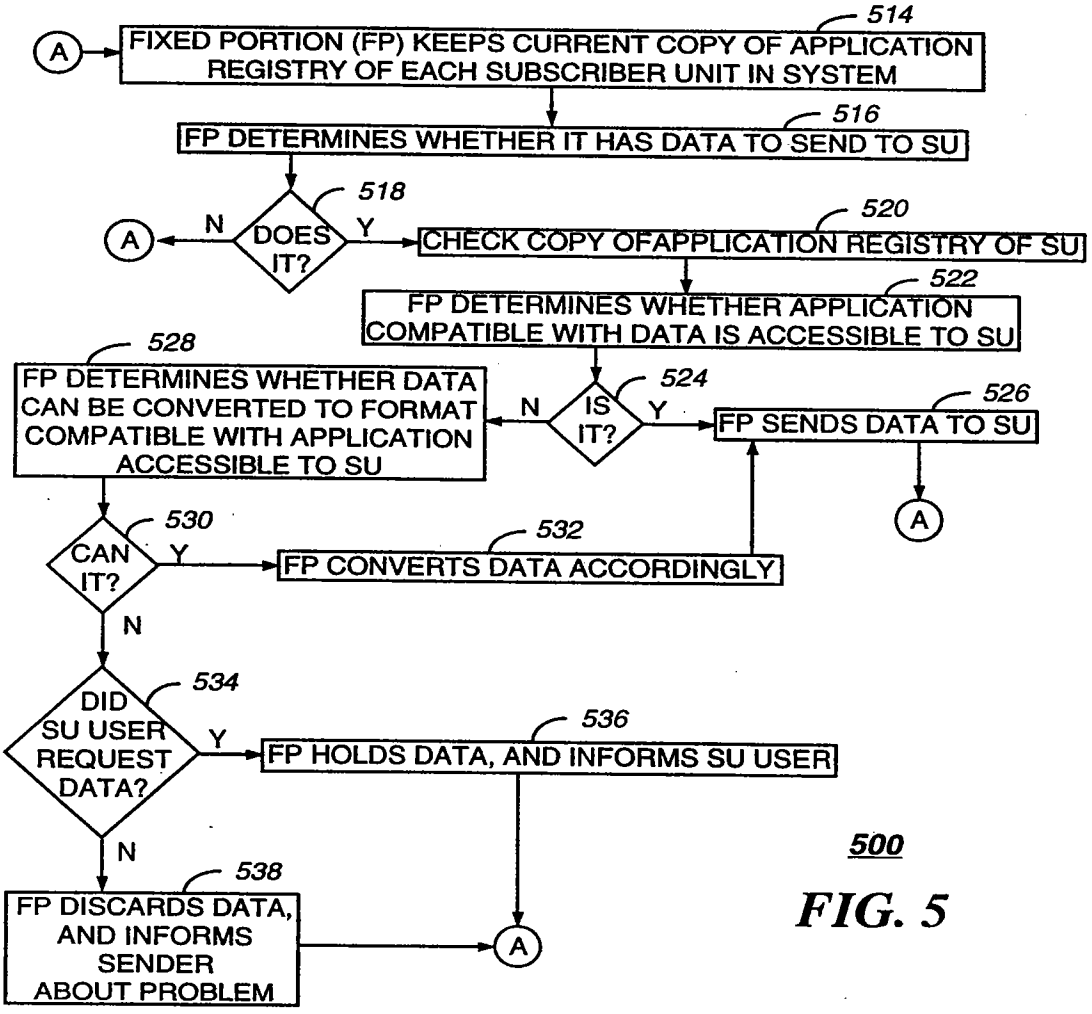

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FIG. 5

PRINT OF DRAWINGS
AS ORIGINALLY FILED

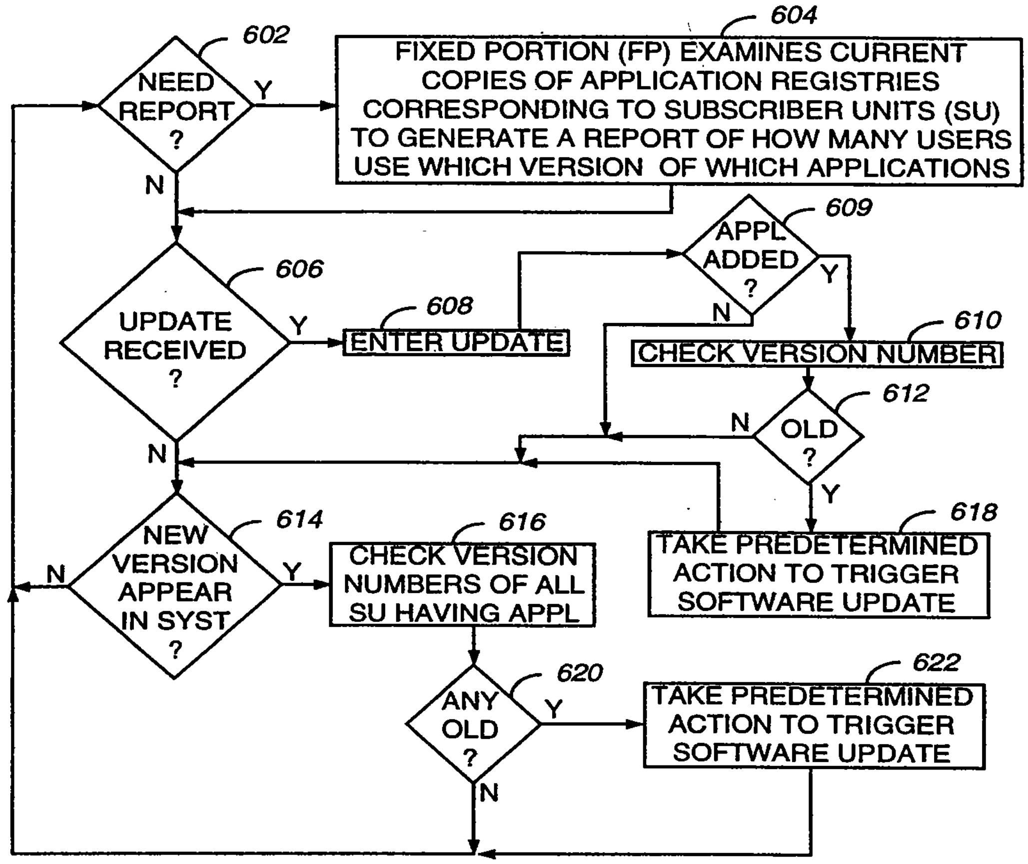

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FIG. 6

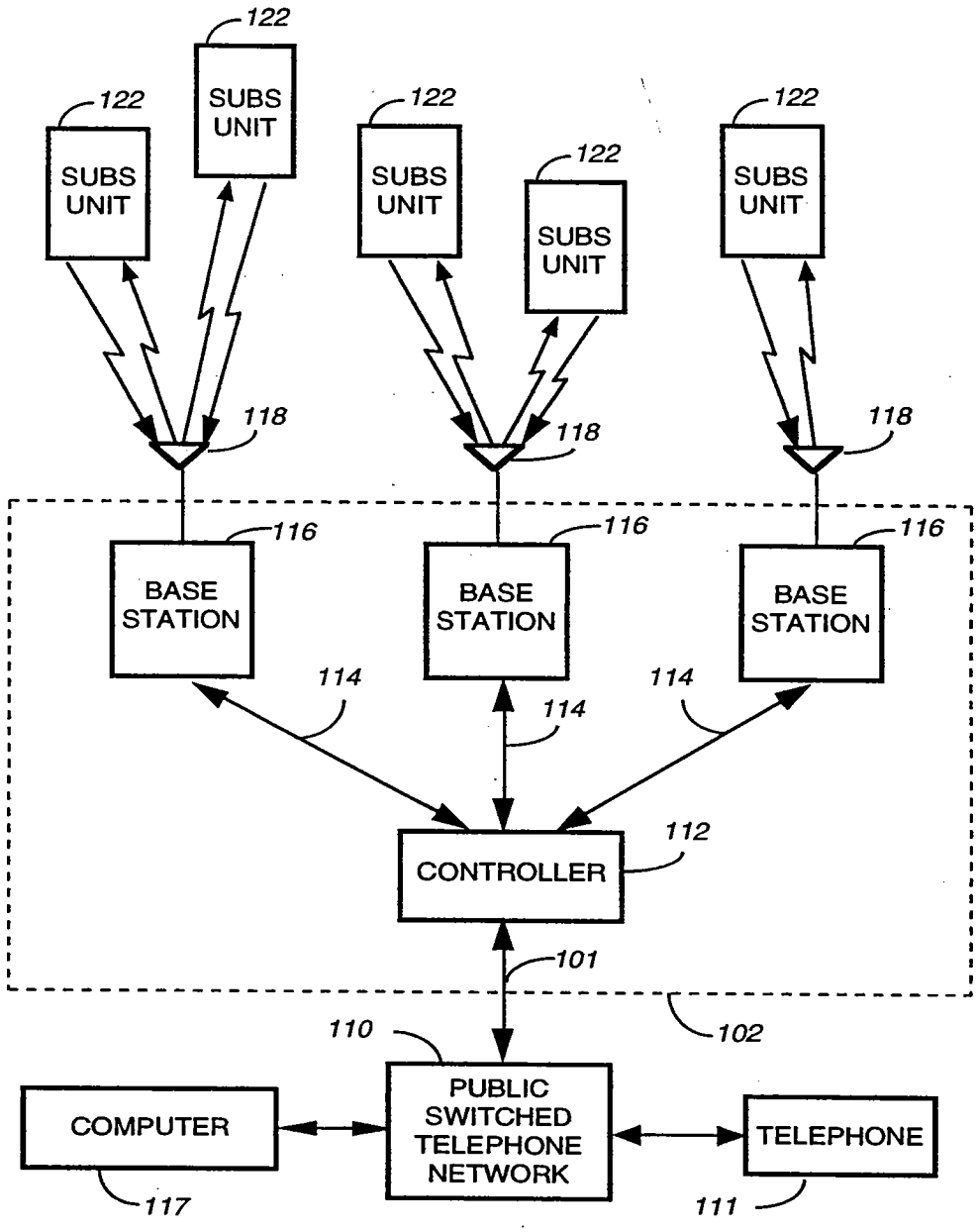

FIG. 1

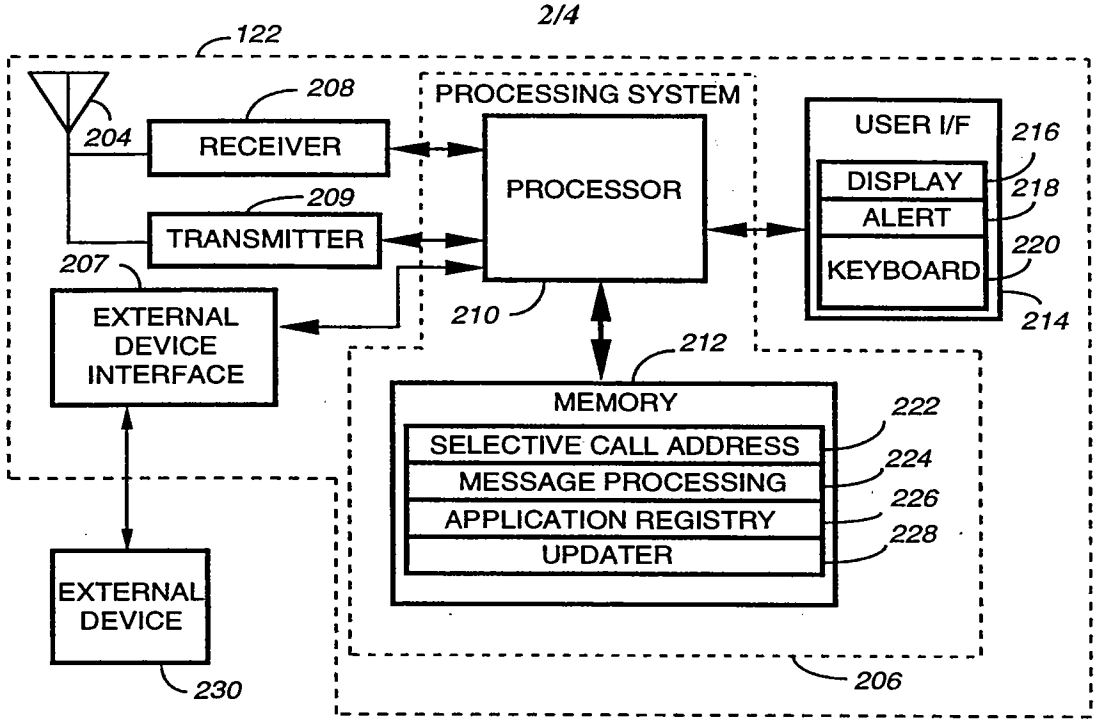

FIG. 2

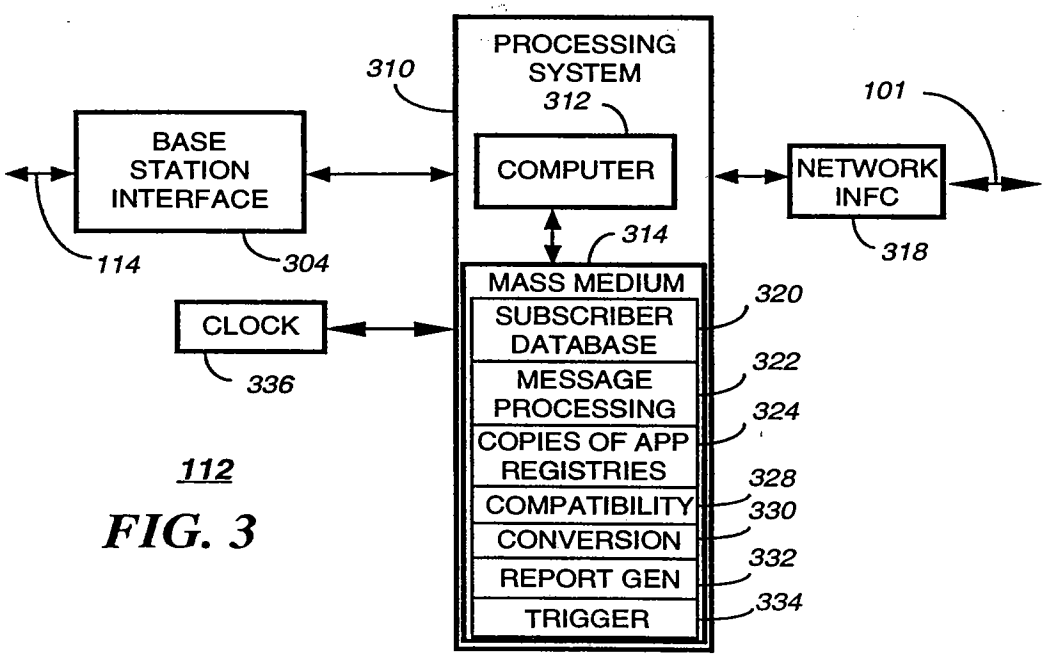

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FIG. 3

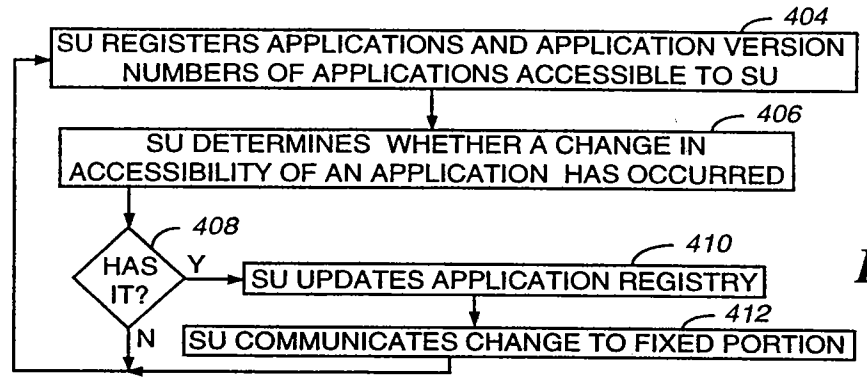

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FIG. 4

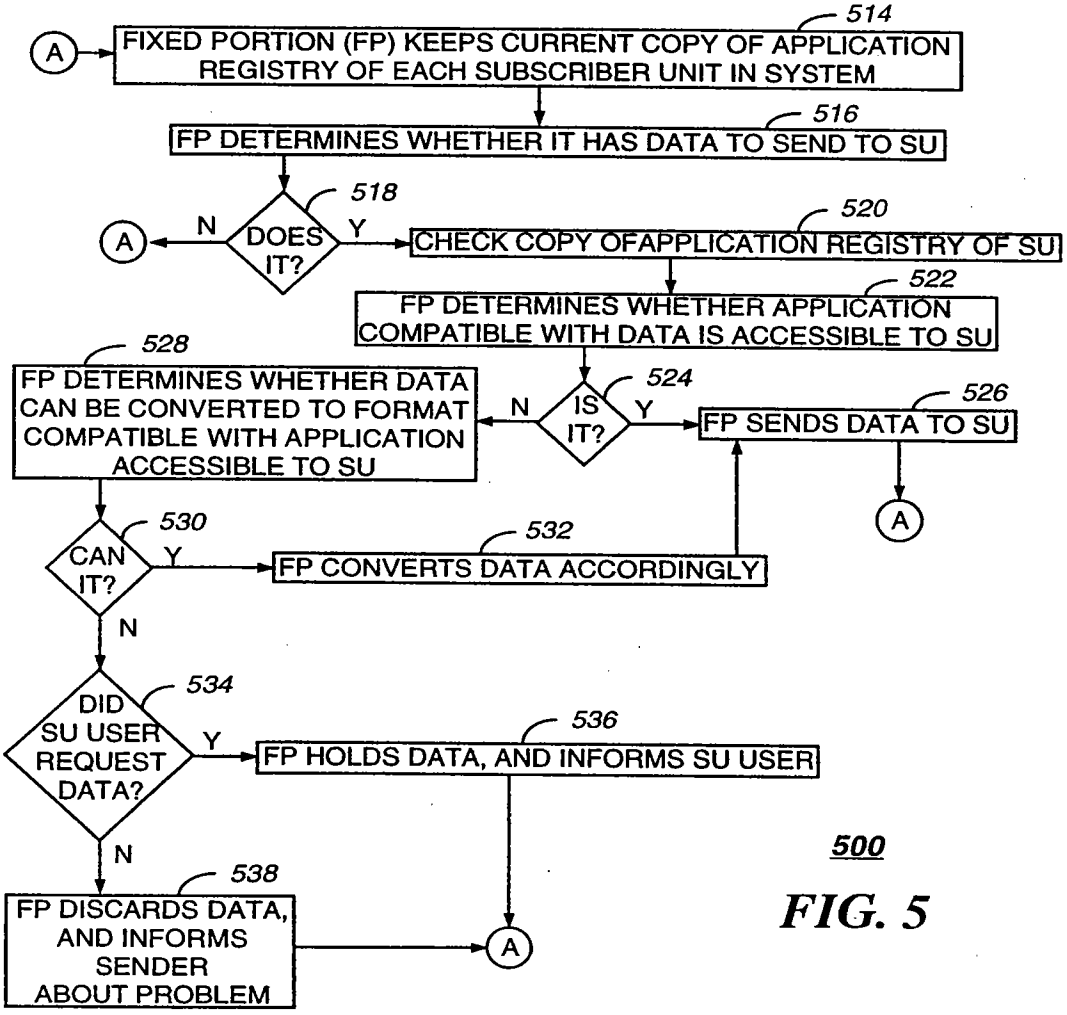

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FIG. 5

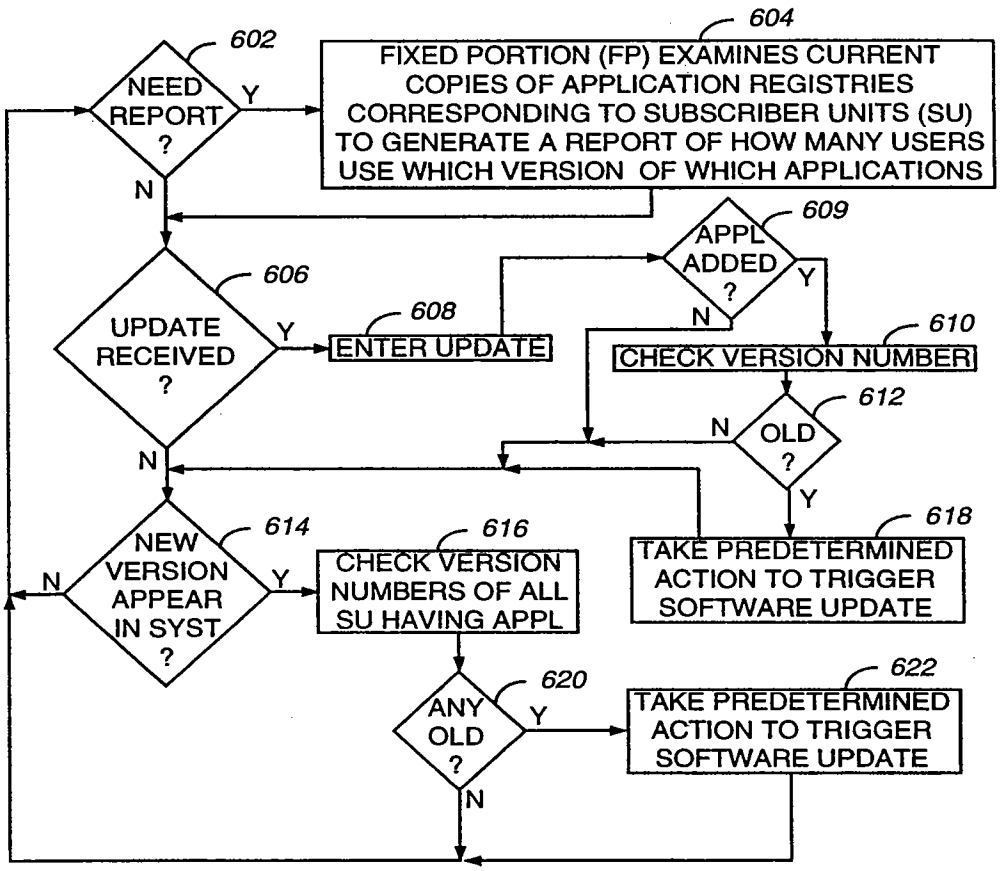

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FIG. 6

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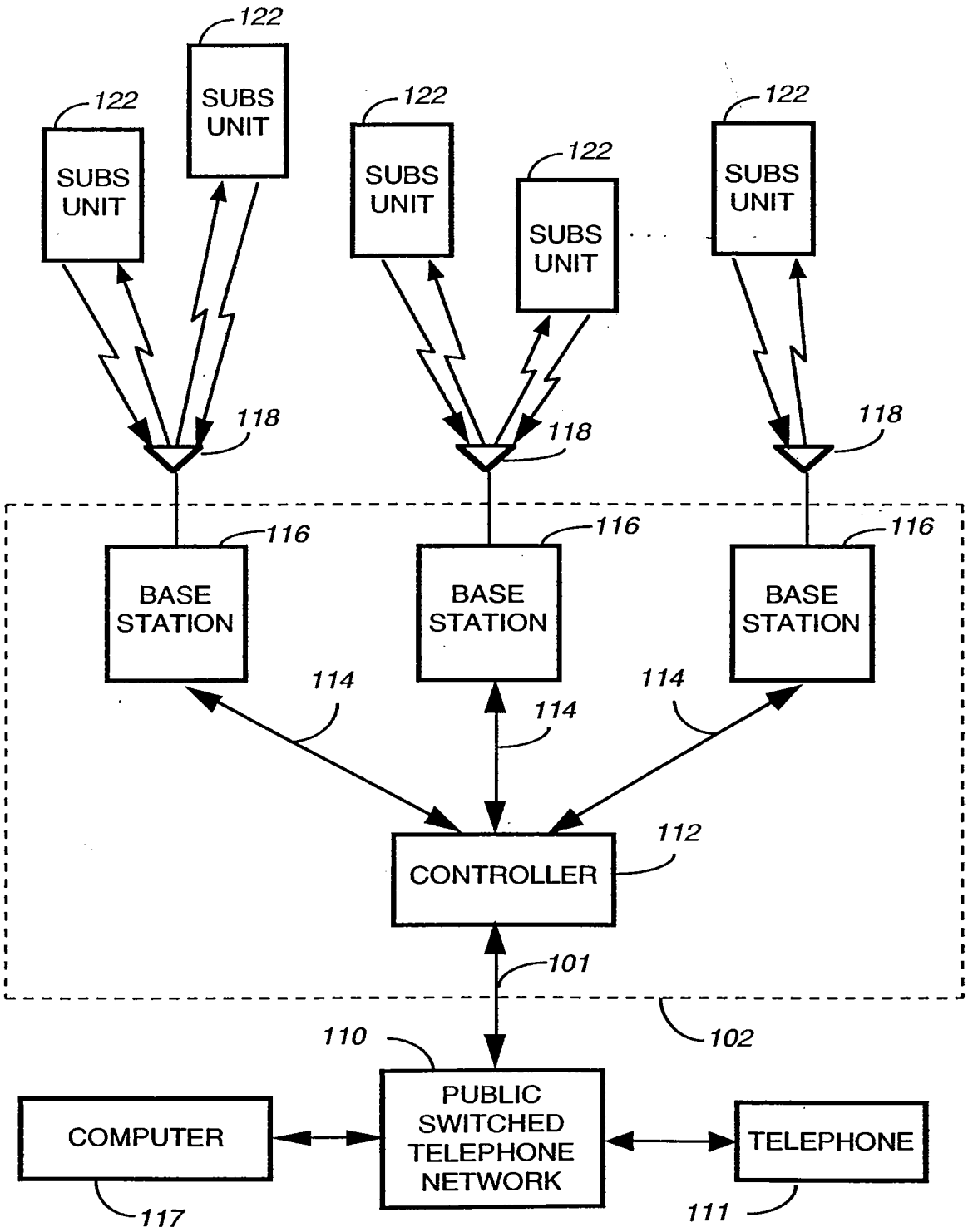

FIG. 1

(817) 245-4604
Motorola, Inc.
5401 N. Beach Street MSE230
Fort Worth, Texas 76137

Inventors: **Smith**
Case No.: **PF01596NA**
Filed: **Herewith**
Title: METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

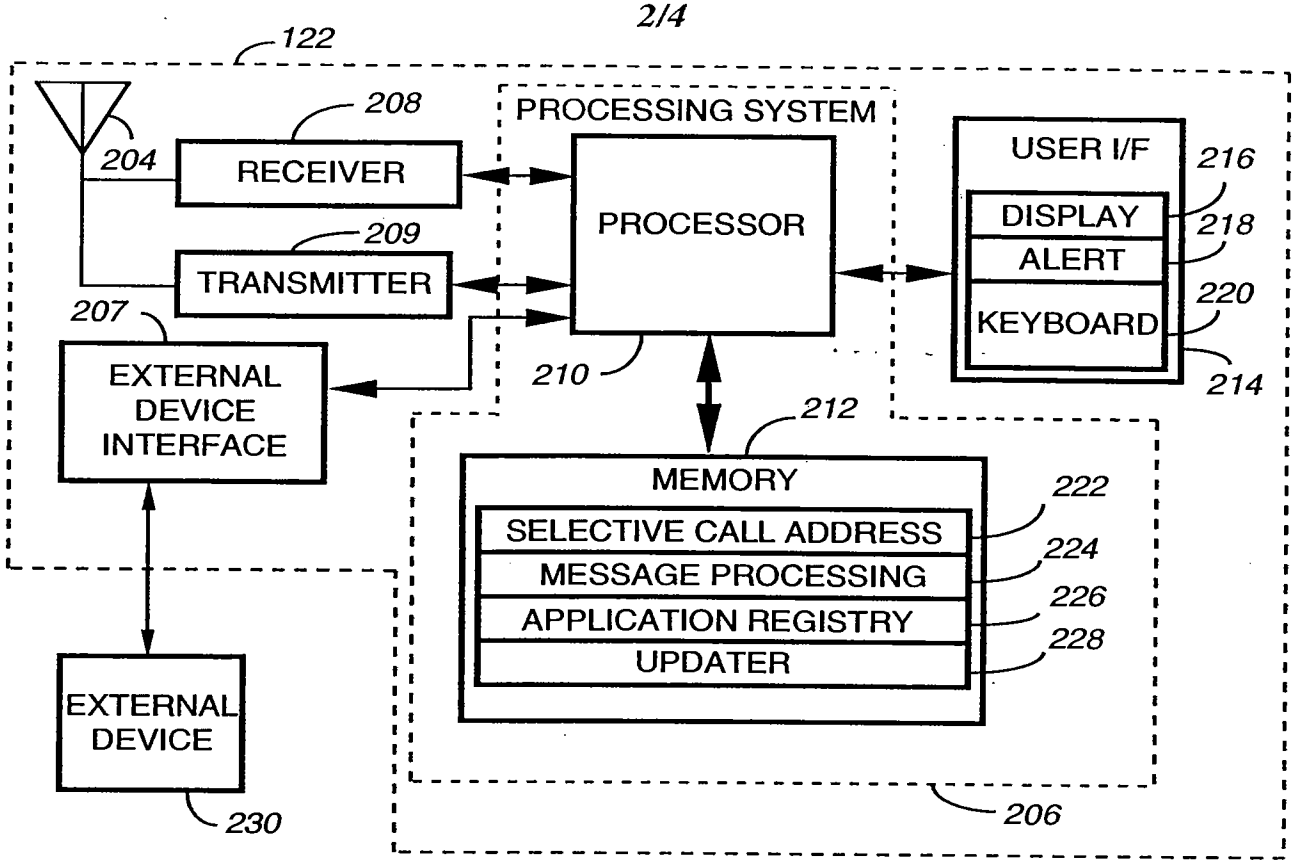

FIG. 2

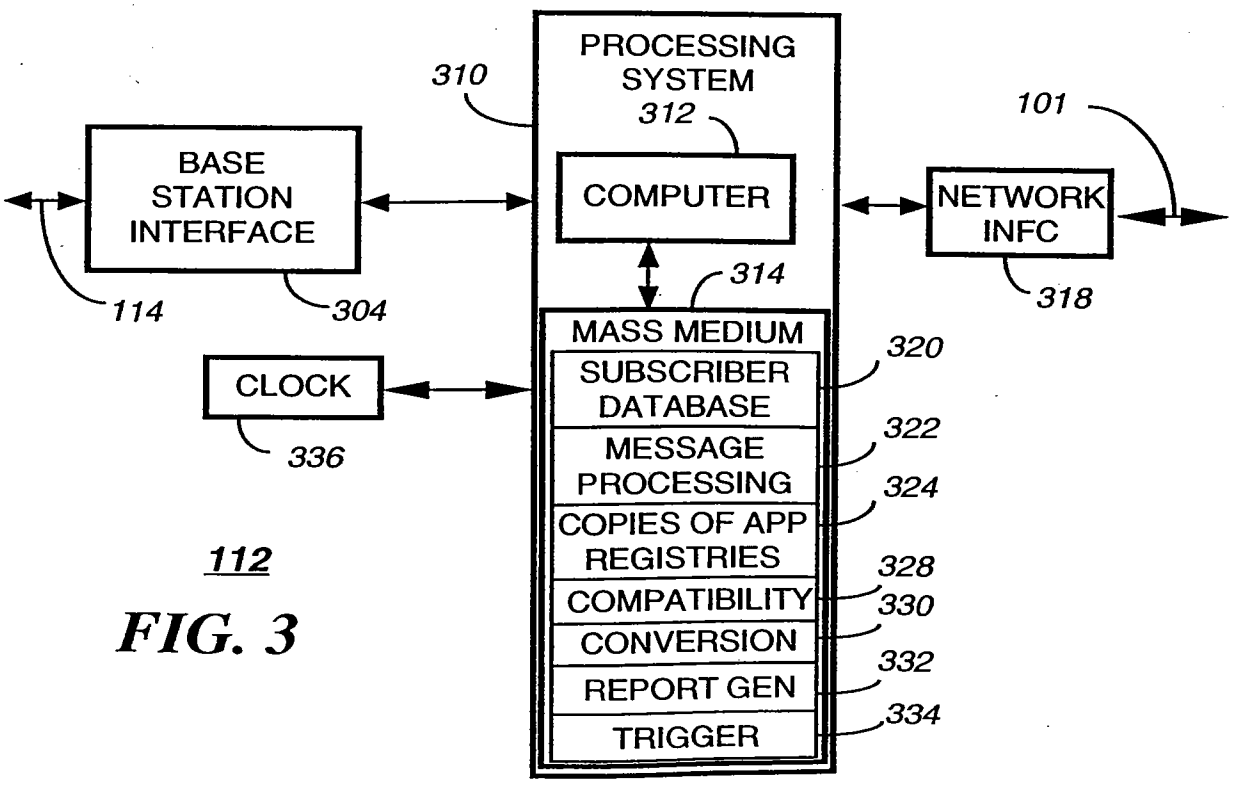

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FIG. 3

(817) 245-4604
Motorola, Inc.
5401 N. Beach Street MSE230
Fort Worth, Texas 76137

Inventors: **Smith**
Case No.: **PF01596NA**
Filed: **Herewith**
Title: METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

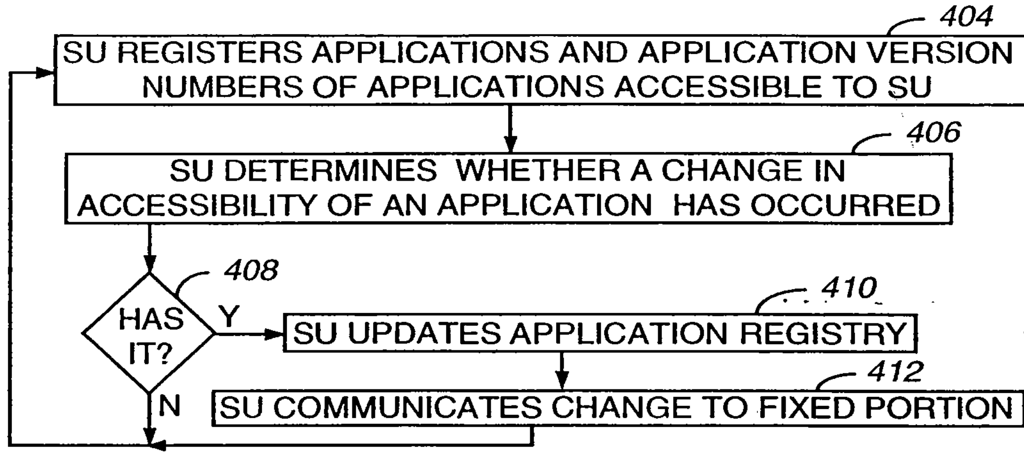

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FIG. 4

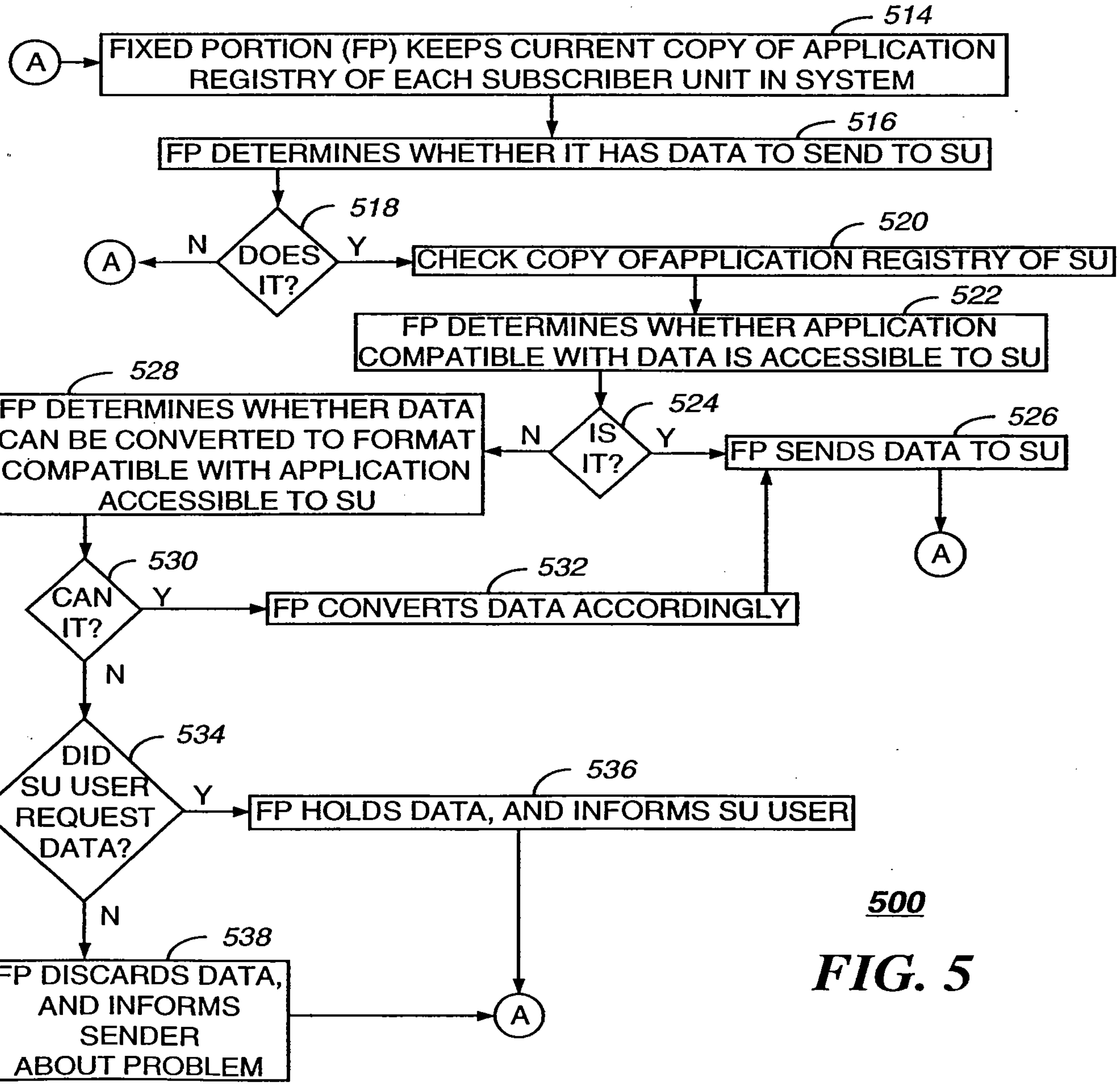

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FIG. 5

(817) 245-4604
Motorola, Inc.
5401 N. Beach Street MSE230
Fort Worth, Texas 76137

Inventors: **Smith**
Case No.: **PF01596NA**
Filed: **Herewith**
Title: METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

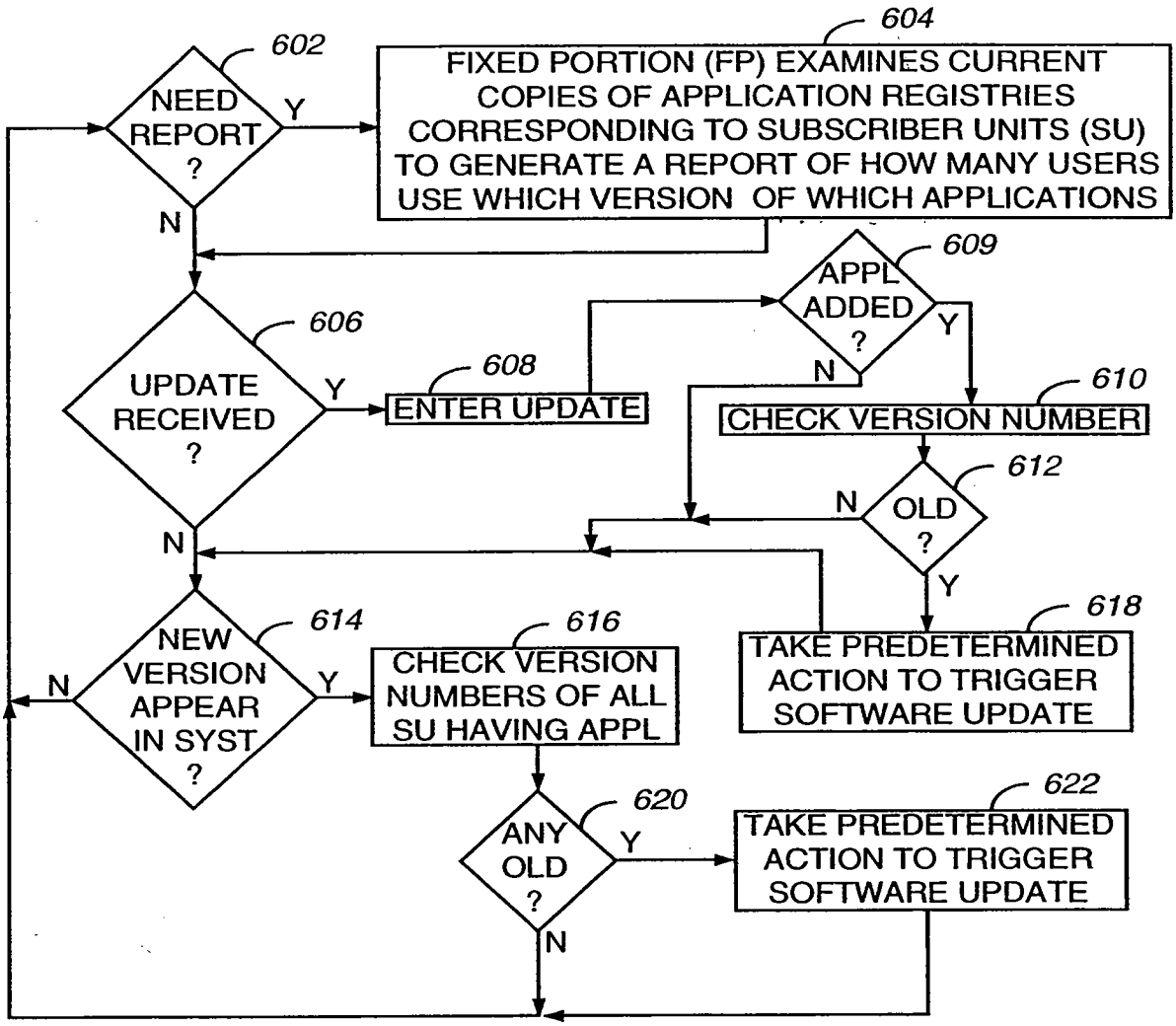

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FIG. 6

(817) 245-4604
Motorola, Inc.
5401 N. Beach Street MSE230
Fort Worth, Texas 76137

Inventors: **Smith**
Case No.: **PF01596NA**
Filed: **Herewith**
Title: METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

DOCKET NUMBER: **PF01596NA**

APPLICANTS: **Smith**

FILED: **Herewith**

#2

ENTITLED: **METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA**

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97

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

Sir:

Applicant submits herewith the art listed below of which the Applicant is aware, which the Applicant believes may be material to the examination of the subject application and in respect of which there may be a duty to disclose in accordance with 37 C.F.R. § 1.56. This citation of information, also appearing on the attached Form PTO-1449, "List of Art Cited by Applicant" is made pursuant to 37 C.F.R. §§ 1.56, 1.97, and 1.98.

A copy of the art listed below is enclosed herewith, unless the art is cumulative as noted below, or the art is a pending U.S. Patent Application, or the art has been cited in a prior application from which an earlier filing date is claimed for the subject application, the earlier application noted below.

The filing of this Information Disclosure Statement shall not be construed as a representation that a search has been made, an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists. Further, the filing of this Information Disclosure Statement shall not be construed as an admission against interest in any manner.

Pursuant to 37 C.F.R. § 1.98, as amended March 16, 1992, no explanation of the relevance of the English language references is presented.

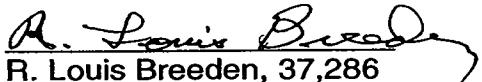
Applications

Application No. 09/061,645 filed April 17, 1998 by Smith, entitled "Wireless Modem and Method Therefor for Routing Data to an Application or to Storage".

The agent signing below is making this Information Disclosure Statement on the basis of information supplied by the inventor, an individual associated with the filing and prosecution of the subject application and/or information in the agent's files. The citation of this information does not constitute either an admission of priority or a waiver of any right applicant may have under applicable statutes, Rules of Practice in patent cases, or otherwise.

Respectfully submitted,

Smith



R. Louis Breeden, 37,286
Phone: (817) 245-4604
Fax: (817) 245-2137

Please direct all correspondence to:

Motorola, Inc.
Intellectual Property Department
5401 N. Beach Street, MS E230
Fort Worth, TX 76137

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

10

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/096,664	06/12/98	SMITH D	PF01596NA

LM01/0202

MOTOROLA INC
INTELLECTUAL PROPERTY DEPT
5401 NORTH BEACH STREET MS E230
FORT WORTH TX 76137

EXAMINER	
CHOW, C	
ART UNIT	**PAPER NUMBER**
2749	3

DATE MAILED: 02/02/00

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

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)

1- File Copy

Office Action Summary

Application No.	Applicant(s)
09/096,664	Dwight Smith
Examiner	**Group Art Unit**
Charles Chow	2749

☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL.**

☐ 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.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) ~~1-12~~ 1-13. is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) ~~1-12~~ 1-13 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 3, 7, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent 5,974,085) in view of Mills (US Patent 5,881,235).

Smith teaches claim 1, "a method in a wireless communication system for controlling a delivery of data from a fixed portion...to subscriber unit". See Fig. 1, a wireless communication system. The fixed portion is item 102 and the portable subscriber unit is item 122. See column 1, line 48-51, The data is routed according to the routing information in the application registry and the accessibility status.

Smith teaches "in the fixed portion...keep a current copy of the application registry of the subscriber unit". See Fig. 3, there is a copy of the application registry. Also, see column 1, line 64-67, a memory storing the application registry.

Smith teaches "checking the current copy of the application registry in response to ...subscriber unit" and "sending the data only when....an application compatible with the data is accessible to subscriber unit". See Fig. 6, in step 606 and 608, the

application registry is checked for available applications. Then, in step 628, the data is sending out to internal application and external application in step 614.

Smith does not teach application registry in subscriber unit. Mills teaches "maintaining an application registry for registering applicaitons...subscriber unit". See Fig. 5, the application module. In Fig. 4, the item 170 sms message has data format using operation code, sequence tag and parameter tag for application module. Also, column 6, line 27-31, the application 160 stores sms message 170 into memory in order to maintain the application module.
Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Mills' remote programming of the home location register (HLR) network address using application module in the mobile terminal to Smith, such that remote information update for mobile terminal would be improved without trial-an-error search, hardware components, and it takes less processing time (column 1, line 61 to column 2, line 16).

Mills teaches **claim 3**, "updating application registry" and "communicating the change to the fixed portion". See column 6, line 23-31, the application module updates the memory register with newly assigned HLR address. Also, see column 7, line 2-10, the mobile terminal 110 transmits the data, IMSI and network address to mobile switching center (MSC) 40, thus, MSC could update with the correct HLR address.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Mills' remote programming of newly assigned HLR network address using application module in the mobile terminal to Smith, such that the mobile terminal could be updated with the new network address.

Regarding **claim 7**, see claim 1 above.

Regarding **claim 12**, see claim 3 above.

2. Claims 2, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent 5,974,085) in view of Mills (US Patent 5,881,235), as applied to claims 1, 7 above, and further in view of Holmes (US Patent 5,790,809).

Smith teaches programmed application registry and data routing according to routing information and accessibility. Mills teaches remotely programming a mobile terminal with HLR network address. Smith as modified by Mills above does not teach the compatible format.

Holmes teaches claim 2,"converting incompatible data to a format compatible with one of the applications accessible to the subscriber unit". See abstract, line 1-12 from top, a computer system has non-compatible clients and servers using registries to communicate between clients and servers. The first registry routes data from database and translates the registry specific message into a pre-selected protocol format. Since the format is transparent,

therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Holmes's translation into compatible registry format to Smith as modified by Mills such that the fixed portion would be independent from the application platform and protocol.(column 2, line 33-35).

Regarding **claim 8**, see claim 2 above.

3. Claims 4, 5, 9, 10, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent 5,974,085) in view of Mills (US Patent 5,881,235), as applied to claims 1, 7, 12 above, and further in view of Averbuch et al. (US Patent 5,890,566).

Smith teaches programmed application registry and data routing according to routing information and accessibility. Mills teaches remotely programming a mobile terminal with HLR network address. Smith as modified by Mills above does not teach the version number, examining current application registry for report, checking version number, and trigger software update.

Averbuch et al. teach **claim 4**, "registering an application version number for at least one of the applications...subscriber units" and "examining a plurality of current copies of application registries corresponding to the plurality of subscriber units to generate report of how many users use which version of which application". See column 5, line line 38-46, it shows the server 104 verifies the version number based on previously received software versions from portable units. In column 5, line 59-65, it shows the

software version update is based on the usage from the users. Thus, the numbers of users for software version are recorded into the memory for information display. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Averbuch et al.'s software update based on software version, user's usage and priority threshold for communication units to Smith as modified by Mills such that the software update for portable units could be performed over the transmission link according to the software versions.

Averbuch et al. teach **claim 5**, "checking the application version number for the at least one of the applications in response to predetermined stimulus". See claim 4 above, the server 104 verifies the version number.

Averbuch et al. teach "taking a predetermined action to trigger a software update when the application version number is an old version". See column 5, line 38-46, it shows when software version is less recent than the updated software, the portable unit would received a software update query to trigger the update of the software.

Averbuch et al. teach "registering an application version number...subscriber unit". See claim 4 above.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Averbuch et al.'s software update queries, response, and acknowledgment to Smith as modified by Mills such that the software update would be automatic, efficient, requiring less communication resources (column 6,

line 21-33).

Regarding **claim 9**, see claim 4 above.

Regarding **claim 10** and **13,** see claim 5 above.

4. Claims 6, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent 5,974,085) in view of Mills (US Patent 5,881,235), as applied to claim 1 above, and further in view of Averbuch et al. (US Patent 5,890,566), and further in view of Beasley et al. (US Patent (5,699,275), Reed et al. (US Patent 5,862,325) and Grundy (US Patent 5,291,598).

Smith teaches programmed application registry and data routing according to routing information and accessibility. Mills teaches remotely programming a mobile terminal with HLR network address. Averbuch et al. teach software update for portable units based on version number, usage and priority.

Smith as modified by Mills and Averbuch et al. above does not teach adding an application, appearance of new application version number, registration of new subscriber unit.

Beasley et al. teach **claim 6**, "a receipt of an update to the application registry of the subscriber unit which adds an application not present in the current copy".

See column 1, line 29-42, a central computer system updates software on user remote system using remote patching of operation code. In column 2, line 6-12, it shows the remote patching of the operation code would add new functionality

or replacing the existing code for mobile unit. Thus, through operation code patching, new application could be added.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Beasley et al.'s. remote patching of the operation code in mobile unit to Smith as modified by Mills and Averbuch et al. such that the newly improved functionality could be added to mobile unit efficiently by using the patching of operation code (column 2, line 25-31).

Reed et al. teach "an appearance in the wireless communication system of a new application version number". See column 4, line 9-20, it shows Smart Bookmark can update a web page. In Fig. 27, the web browser and its version number is illustrated. In column 61, line 31-52, it teaches when version value of the component communications object 901 changes, the version value of the page subscription instance needs to be updated. Thus, the appearance of the application version number is updated therein.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Reed et al.'s version value update in web page subscription instance for customer computer to Smith as modified by Mills, Averbuch et al. and Beasley et al., such that the version number in the web page could be changed in order to communicate with the users of the updated software.

Grundy teaches "a registration of a new subscriber unit in the wireless communication

system". See column 14, line 31-38, it shows the manufacture control agency's computer processor 15 performs an authorization process to register a new user of the host software product. In abstract line 5 to 10, the registration code contains user's identity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Grundy's. authorization process for registering a new user to Smith as modified by Mills, Averbuch et al., Beasley et al. and Reed et al., such that the usage of the software for new users could be controlled through the authorization registration process.

Regarding **claim 11**, see claim 6 above.

Conclusion

5. The form, PTO-1449, information disclosure has not been received for a list of applicant's cited prior arts. Therefore, the consideration is using application no. 09/061,645 as mentioned in the letter, 06/12/98. A copy of list of applicant's cited prior arts is required.

6. In view of the above discussion, Smith teaches programmed application registry and data routing according to routing information and accessibility. Mills teaches remotely programming a mobile terminal with HLR network address. Averbuch et al. teach software update for portable units based on version number, usage and priority. Beasley et al. teach the remote patching of the operation code in mobile unit to add

new functionality. Reed et al. teach the version value update in web page for customer computer. Grundy teaches authorization process for registering a new user using identity code.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Below is a list of the cited prior arts.

1. US Patent 5,930,704, July, 1999, Kay teaches the down-loading program to configure a subscriber station.
2. US Patent 5,594,740, Jan, 1997, LaDue teaches data manipulation for application specific apparatus for wireless communication without causing system overloading or limitating normal system activity.
3. US Patent 5,909,437, June, 1999, Rhodes et al. teach software download for subscriber terminal based on multi-layer protocol and the report of the sequence number error
4. US Patent 6,005, 884, Dec, 1999, Cook et al. teach wireless data communication involving a repeater to communicate with remote terminals. Base station communicates to host computer via a second communication link for incoming data and sends outgoing data to repeater on the first communication link.
5. US Patent 5,970,090, Oct, 1999, Lazaridis teaches remote computer uses wireless data communication network to communicate with the user at data terminal equipment.

8. Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington D. C. 20231

Or Faxed to: (703)-308-6306 (for formal communications intended for entry)

Or hand-delivered to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor, Receptionist.

For general inquiry or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703)-305-3900

C. Chow Jan/24/2000.

DANIEL S. HUNTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2700

Notice of References Cited

Application No.	Applicant(s)		
09/096,664	Dwight Smith		
Examiner		Group Art Unit	Page 1 of 1
Charles Chow		2749	

U.S. PATENT DOCUMENTS

	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
A	5,974,085	10/1999	Smith	375	222
B	5,881,235	3/1999	Mills	395	200.51
C	5,790,809	8/1998	Holmes	395	200.58
D	5,896,566	4/1999	Averbuch et al.	455	419
E	5,699,275	12/1997	Beasley et al.	364	514
F	5,862,325	1/1999	Reed et al.	395	200.31
G	5,291,598	3/1994	Grundy	395	650
H	5,930,704	7/1999	Kay	455	419
I	5,594,740	1/1997	LaDue	379	59
J	5,909,437	6/1999	Rhodes E Tal.	370	349
K	6,005,884	12/1999	Cook et al.	375	202
L	5,970,090	10/1999	Lazaridis	375	222
M				---	---

FOREIGN PATENT DOCUMENTS

	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS
N						
O						
P						
Q						
R						
S						
T						

NON-PATENT DOCUMENTS

	DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
U		
V		
W		
X		

AP 2749

4/A entered 4-11-00 A.J.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Smith

EXAMINER: Chow, C.

SERIAL NO.: 09/096,664

ART UNIT: 2749

FILED: June 12, 1998

CASE NO.: PF01596NA

APPLICATION: METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

Motorola, Inc.
Intellectual Property Law Dept.
5401 North Beach St., MS E230
Fort Worth, TX 76137
March 30, 2000

AMENDMENT PURSUANT TO 37 C.F.R. §§1.111

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO: ASSISTANT COMMISSIONER OF PATENTS WASHINGTON, D.C. 20231, ON: March 30, 2000
Date of Deposit

R. LOUIS BREEDEN
Name of Applicant, Assignee or Registered Representative

R. Louis Breeden 3/30/00
SIGNATURE DATE

Assistant Commissioner of Patents
Washington, DC 20231

Sir:

This amendment is in response to an Office action dated February 2, 2000, for which a shortened statutory period for response was set to expire three months from that date. The following amendment and remarks are respectfully submitted in connection with the above identified application. Reconsideration of the application is requested at this time.

In the Claims

Please amend the claims as follows:

Sub B1

1. (Amended) A method in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit, the method comprising in the subscriber unit the step of:

maintaining an application registry [for registering] comprising a list of software applications that are accessible to the subscriber unit; and

in the fixed portion of the wireless communication system, the steps of:

keeping a current copy of the application registry of the subscriber unit;

checking the current copy of the application registry in response to having the data to send to the subscriber unit; and

sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit.

Claims 2-6 are unchanged.

Sub B2

7. (Amended) A controller in a fixed portion of a wireless communication system for controlling a delivery of data to a subscriber unit which maintains an application registry [for registering] comprising a list of software applications that are accessible to the subscriber unit, the controller comprising:

a network interface for accepting the data from an originator;

a processing system coupled to the network interface for processing the data, the processing system comprising a memory; and

a base station interface coupled to the processing system for controlling a base station to transmit the data;

wherein the processing system is programmed to:

keep in the memory a current copy of the application registry of the subscriber unit;

check the current copy of the application registry in response to having the data to send to the subscriber unit; and

send the data only when an application compatible with the data is accessible to the subscriber unit.

Claims 8-11 are unchanged.

Sub B37

12. (Amended) A subscriber unit in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system, the subscriber unit comprising:

a receiver for receiving the data;

a processing system coupled to the receiver for processing the data; and

A3

a transmitter coupled to the processing system for communicating with the fixed portion of the wireless communication system,

wherein the processing system is programmed to:

maintain an application registry [for registering] comprising a list of software applications that are accessible to the subscriber unit; and

in response to a change in accessibility of an application,

update the application registry; and

control the transmitter to communicate the change to the fixed portion of the wireless communication system.

Claim 13 is unchanged.

REMARKS

Claims 1-13 are pending in the application. Claims 1-13 were rejected.

I. RESPONSE TO OFFICE ACTION

In response to the Office action, claims 1, 7, and 12 were amended.

II. CITED PRIOR ART

U.S. Patent No. 5,974,085 to Smith discloses a wireless modem and method therefor for routing data to an application or to storage.

U.S. Patent No. 5,881,235 to Mills discloses a method and apparatus for remotely programming a mobile terminal with a home location register address.

U.S. Patent No. 5,790,809 to Holmes discloses registry communications middleware.

U.S. Patent No. 5,896,566 to Averbuch et al. discloses a method for indicating availability of updated software to portable wireless communication units.

U.S. Patent No. 5,699,275 to Beasley et al. discloses a system and method for remote patching of operating code located in a mobile unit.

U.S. Patent No. 5,862,325 to Reed et al. discloses a computer-based communication system and method using metadata defining a control structure.

U.S. Patent No. 5,291,598 to Grundy discloses a method and system for decentralized manufacture of copy-controlled software.

III. REMARKS AND ARGUMENTS

(The section numbers below correspond to those used in the Office action.)

1. Rejection under 35 U.S.C. 103(a)

Claims 1, 3, 7, and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Mills. Applicant has amended claims 1, 7, and 12 to clarify the claimed invention and to *remedy* the rejection. Claim 1, as amended recites:

"A method in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit, the method comprising in the subscriber unit the step of:

maintaining an application registry **comprising a list of software applications that are accessible to the subscriber unit**; and

in the fixed portion of the wireless communication system, the **steps** of:

keeping a current copy of the application registry of the subscriber unit;

checking the current copy of the application registry in response to having the data to send to the subscriber unit; and

sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit." (Emphasis added.)

A similar language was added to claims 7 and 12. Support for the amended language can be found in the originally filed specification at page 1, lines 18-22; at page 4, lines 34-36; at page 5, lines 24-25; and at page 6, lines 32-37. Applicant thus submits that no new matter is added by the amendment.

In the subject Office action, the Examiner wrote "Smith teaches claim 1, 'a method in a wireless communication system for controlling a delivery of data from a fixed portion...to subscriber unit'." Applicant respectfully disagrees. Smith teaches a method **in a wireless modem** for routing data to an application or to storage. Smith does not teach **controlling** the **delivery** of data **from the fixed portion to the wireless modem**. The Smith reference teaches that data is simply received by the wireless modem, and the wireless modem then routes the data in accordance with Smith's application registry. Please see Smith's FIG. 6.

The Examiner continues, "Smith teaches 'in the fixed portion...keep a current copy of the application registry of the subscriber unit. See Fig. 3, there is a copy of the application registry'." Applicant respectfully disagrees. FIG. 3 does depict Smith's application registry 226, but the application registry 226 is **not** in the fixed portion 102. The application registry 226 is in the wireless modem 124, which is **not** part of the fixed portion 102. (The Examiner is referred to FIGs. 1, 2, and 3, which will confirm this.)

The Examiner further continues, "Smith teaches 'checking the current copy of the application registry in response to...subscriber unit' and 'sending the data only

when...an application compatible with the data is accessible to the subscriber unit'." Applicant respectfully disagrees. Applicant calls the Examiner's attention to the fact that in claim 1 the last three steps are performed in the **fixed portion** of the wireless communication system. Smith does not teach or suggest performing in the fixed portion of the wireless communication system the steps of checking the current copy of the application registry in response to having the data to send to the subscriber unit, and sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit, as recited in claim 1.

The Examiner goes on to say "Smith does not teach application registry in subscriber unit. Mills teaches 'maintaining an application registry for registering applications...subscriber unit'." Claim 1, as amended, recites "...in the subscriber unit the step of maintaining an application registry comprising a list of software applications that are accessible to the subscriber unit." Mills does not teach or suggest a step of maintaining an application registry comprising a list of software applications that are accessible to the subscriber unit. Mills merely stores a HLR network address in a SIM card memory register. (See Mills Abstract.)

An advantage of keeping a copy of the application registry of the subscriber unit in the fixed portion is pointed out in the originally filed specification at page 10, lines 18-20: "In addition, the method and apparatus advantageously does not require an over-the-air session for each delivery of data to determine whether the subscriber unit can utilize a specific data type." The invention disclosed in the Smith reference does not teach, suggest, or provide any such feature. The Smith invention teaches routing data which has already been received by the wireless modem. The routing is done according to routing information kept in the application registry of the wireless modem. The instant invention as claimed and the invention disclosed in the Smith reference are two different inventions which perform two distinctly different functions.

For the reasons argued above, Applicant believes that claims 1, 7, and 12, as amended, are patentable over the Smith/Mills combination. Claim 3 depends from claim 1. Applicant thus also believes claim 3 is patentable over the Smith/Mills combination. Applicant respectfully requests reconsideration and removal of the rejection at this time.

2. Rejection under 35 U.S.C. 103(a)

Claims 2 and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Mills as applied to claims 1 and 7 above, and further in view of Holmes. Applicant respectfully traverses the rejection. For the reasons argued above, Applicant believes that claims 1 and 7, as amended, are patentable over the Smith/Mills/Holmes combination. Claims 2 and 8 depend from claims 1 and 7, respectively. Applicant thus also believes that claims 2 and 8 are patentable over the Smith/Mills/Holmes combination. Applicant respectfully requests reconsideration and removal of the rejection at this time.

3. Rejection under 35 U.S.C. 103(a)

Claims 4, 5, 9, 10, and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Mills as applied to claims 1, 7, and 12 above, and further in view of Averbuch et al. (hereinafter Averbuch). Applicant respectfully traverses the rejection. For the reasons argued above, Applicant believes that claims 1, 7 and 12, as amended, are patentable over the Smith/Mills/Averbuch combination. Claims 4, 5, 9, 10, and 13 each depend from one of claims 1, 7, and 12. Applicant thus also believes that claims 4, 5, 9, 10, and 13 are patentable over the Smith/Mills/Averbuch combination. Applicant respectfully requests reconsideration and removal of the rejection at this time.

4. Rejection under 35 U.S.C. 103(a)

Claims 6 and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Mills as applied to claim 1 above, and further in view of Averbuch, and further in view of Beasley et al. (hereinafter Beasley), Reed et al. (hereinafter Reed), and Grundy. Applicant respectfully traverses the rejection. For the reasons argued above, Applicant believes that claims 1 and 7, as amended, are patentable over the Smith/Mills/Averbuch/Beasley/Reed/Grundy combination. Claims 6 and 11 depend from claims 1 and 7, respectively. Applicant thus also believes that claims 6 and 11 are patentable over the Smith/Mills/Averbuch/Beasley/Reed/Grundy combination. Applicant respectfully requests reconsideration and removal of the rejection at this time.

5. Form PTO-1449

The Examiner has requested the form PTO-1449 referred to in Applicant's Information Disclosure Statement of 6/12/98. The U.S. Patent Application No. 09/061,645 was the only art of which the Applicant was aware at the time of filing the instant application which the Applicant believed might be material to the examination thereof. The reference to the form PTO-1449 in Applicant's Information Disclosure Statement of 6/12/98 was thus made in error. U.S. Application No. 09/061,645 has subsequently issued as U.S. Patent No. 5,974,085 to Smith, which was made of record when cited by the Examiner in the subject Office action. Applicant thus believes that no further action is required on the part of the Applicant regarding the form PTO-1449.

6. (No response required)

7. Prior art not relied upon

Applicant has carefully examined the references made of record and not relied upon, and believes that they, alone or in combination, do not anticipate or render unpatentable Applicant's claimed invention.

Miscellaneous

Claims 1-13 remain in the application. Claims 1, 7, and 12 were amended. Reconsideration of the application is respectfully requested at this time.

Applicant has paid for 3 independent claims and 20 total claims. The application now contains 3 independent claims and 13 total claims. Applicant thus believes that no additional fees are due. Please charge any additional fees, or credit overpayment to Deposit Account No. 50-0280.

With this amendment, the application is believed to be in condition for allowance, and a favorable response at an early date is earnestly solicited. If the Examiner believes

that there are any informalities that can be corrected by Examiner's amendment, a telephone call to the undersigned at (817) 245-2555 is respectfully solicited.

Respectfully submitted,
Smith

By R. Louis Breeden

R. Louis Breeden
Agent for Applicant
Registration No. 37,286
Phone (817) 245-2555

Please address all inquiries to: Motorola, Inc., Patent Department-MS E230, 5401 North Beach St., Fort Worth, TX 76137

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/096,664	06/12/98	SMITH	D . FF01596NA

023447
MOTOROLA INC
5401 NORTH BEACH STREET
MAILSTOP E230
FORT WORTH TX 76137

LM02/0616

EXAMINER	
CHOW,C	
ART UNIT	**PAPER NUMBER**
2749	5

DATE MAILED: 06/16/00

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

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)

1- File Copy

Office Action Summary

Application No.	Applicant(s)
09/096,664	Dwight Smith
Examiner	**Group Art Unit**
Charles Chow	2749

☒ Responsive to communication(s) filed on *4/10/00*

☐ This action is **FINAL.**

☐ 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.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-13* is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-13* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Office Action for
Applicant's amendment
(4/10/2000)

Claim Rejections - 35 USC § 102

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 a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

1. Claims 1, 3, 7, 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Deluca et al. (US Patent 6,008,737).

Deluca et al. teach **claim 1,** "a method in a wireless communication (comm) system for controlling a delivery of data form a fixed portion ...to a Subscriber unit". See in Fig.1, and in column 2, line 3-21, it shows a comm system having fixed portion 102, controller 112 in fixed portion, portable communication device 122 in portable portion 104, . See in Fig. 2, it shows the detailed blocks for the fixed portion. The controller 112 has process records and portable device for registered portable communication device. the controller 112 of the fixed portion also contains list checker for checking a match of the process record in the fixed portion. In Fig. 2, it shows the details for the portable portion 122, having processor 308 interacted with RAM 378 containing software modules for processes.

Deluca et al. teach "maintaining an application registry comprising list of software

application that are accessible to the subscriber unit" and "keeping the current copy of the application registry of the subscriber unit". See in Fig. 2 and column 3, line 58-65, and column 16, line 59-63, it shows the fixed portion has list of processes 226 in the database having many of the authorized software processes available for use by the portable 122. The current software in 226 for portable 122 is to keep the current copy of applications for subscriber unit, thus, the list of software processes 226 has to be maintained in database.

Deluca et al. teach checking the current copy of the application registry in response to having the data to send to the subscriber unit". See in column 3, line 39-50, it shows the processor 210 of the fixed portion searches the database, list of process records 220, for software and hardware process for portable 122. In column 5, line 48-56, it shows the list checker is looking for a match of the process name, process size and the secure CRC.

Deluca et al. teach "sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber". See in Fig. 6, in column 16, line 47-50, and in column 16, line 64-67, it shows the steps 508, 514, 510 for the fixed portion for authentication of the software utilization for portable 122 before transmitting software transmission. In step 502, 504, 506, it shows the checking of the portable valid address, software process identity.

Regarding **claim** 7, see the disclosure in claim 1 for the same rationale. The controller is

shown to be controller 112. The network interfaces are shown in Fig. 2 for the Rcvr interface 206, xmtr interface 208, and public telephone interface 212.

Deluca et al. teach **claim 12**, "a subscriber unit in a wireless comm system...a receiver for receiving data; a processing system coupled to receiver ...data" and "a transmitter coupled to the processing system for communicating with the fixed portion...system". See the disclosure in claim 1 above for the same rationale. In Fig. 3, it shows the portable device 122 contains transceiver 302 coupled to processor 308.

Deluca et al. teach "wherein the processing system is programmed to: maintain an application registry comprising a list of software applications that are accessibility of an application, in response to a change in accessibility of application, update the application registry". See in Fig. 3, and column 7, line 52-63, the portable device 122 has processor 308 in communication with RAM 378, ROM 310, and program interface 347. The RAM 378 has the software modules 392 list in the application registry. Also, see in column 7, line 15-31 for determining the software needs to be downloaded and the licensing agreement terms.

Deluca et al. teach "control the transmitter to communicate the change to the fixed portion of the wireless communication system". See in column 47, -51, it shows the transceiver 302 transmits response message back to fixed portion after demodulation of the received information.

Deluca et al. teach **claim 3**, "...wherein maintaining step...updating the application registry; and communicating the change to the fixed portion of the wireless communication system". See in column 6, line 38-41, it shows the processor 210 of the the fixed portion uses ROM 228 to maintain a list of the authorized process in the process records 220. Also see in column 16, line 52-54, for maintaining the list of software processes.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 2, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable Deluca et al. (US Patent 6,008,737), as applied to claims 1, 7 above, and further in view of Holmes (US Patent 5,790,809).

Holmes teaches **claim 2**,"converting incompatible data to a format compatible with one of the applications accessible to the subscriber unit". See abstract, line 1-12 from top, a

computer system has non-compatible clients and servers using registries to communicate between clients and servers. The first registry routes data from database and translates the registry specific message into a pre-selected protocol format. Since the format is transparent.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Holmes's translation into compatible registry format to Deluca et al., such that the fixed portion would be independent from the application platform and protocol.(column 2, line 33-35).

Regarding **claim 8**, see claim 2 above.

3. Claims 4, 5, 9, 10, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca et al. (US Patent 6,008,737), as applied to claims 1, 7, 12 above, and further in view of Averbuch et al. (US Patent 5,890,566).

Averbuch et al. teach **claim 4**, "registering an application version number for at least one of the applications...subscriber units" and "examining a plurality of current copies of application registries corresponding to the plurality of subscriber units to generate report of how many users use which version of which application". See column 5, line line 38-46, it shows the server 104 verifies the version number based on previously received software versions from portable units. In column 5, line 59-65, it shows the software version update is based on the usage from the users. Thus, the numbers of users for software version are recorded into the memory for information display.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Averbuch et al.'s software update based on software version, user's usage and priority threshold for communication units to Deluca et al., such that the software update for portable units could be performed over the transmission link according to the software versions.

Averbuch et al. teach **claim 5**, "checking the application version number for the at least one of the applications in response to predetermined stimulus". See claim 4 above, the server 104 verifies the version number.

Averbuch et al. teach "taking a predetermined action to trigger a software update when the application version number is an old version". See column 5, line 38-46, it shows when software version is less recent than the updated software, the portable unit would received a software update query to trigger the update of the software.

Averbuch et al. teach "registering an application version number...subscriber unit". See claim 4 above.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Averbuch et al.'s software update queries, response, and acknowledgment to Deluca et al., such that the software update would be automatic, efficient, requiring less communication resources (column 6, line 21-33).

Regarding **claim 9**, see claim 4 above.

Regarding **claim 10** and **13,** see claim 5 above.

4. Claims 6, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca et al. (US Patent 6,008,737), as applied to claim 1 above, and further in view of Averbuch et al. (US Patent 5,890,566), and further in view of Beasley et al. (US Patent (5,699,275), Reed et al. (US Patent 5,862,325) and Grundy (US Patent 5,291,598).

Beasley et al. teach **claim 6**, "a receipt of an update to the application registry of the subscriber unit which adds an application not present in the current copy". See column 1, line 29-42, a central computer system updates software on user remote system using remote patching of operation code. In column 2, line 6-12, it shows the remote patching of the operation code would add new functionality or replacing the existing code for mobile unit. Thus, through operation code patching, new application could be added. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Beasley et al.'s. remote patching of the operation code in mobile unit to Deluca et al. as modified by Averbuch et al. such that the newly improved functionality could be added to mobile unit efficiently by using the patching of operation code (column 2, line 25-31).

Reed et al. teach "an appearance in the wireless communication system of a new application version number". See column 4, line 9-20, it shows Smart Bookmark can update a web page. In Fig. 27, the web browser and its version number is illustrated. In column 61, line 31-52, it teaches when version value of the component communications object 901 changes, the version value of the page subscription instance

needs to be updated. Thus, the appearance of the application version number is updated therein.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Reed et al.'s version value update in web page subscription instance for customer computer to Deluca et al. as modified above, such that the version number in the web page could be changed in order to communicate with the users of the updated software.

Grundy teaches "a registration of a new subscriber unit in the wireless communication system". See column 14, line 31-38, it shows the manufacture control agency's computer processor 15 performs an authorization process to register a new user of the host software product. In abstract line 5 to 10, the registration code contains user's identity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Grundy's. authorization process for registering a new user to Deluca et al. as modified above, such that the usage of the software for new users could be controlled through the authorization registration process.

Regarding **claim 11**, see claim 6 above.

Conclusion

5. In view of above discussion, Deluca et al. teach the claimed features for claim 1, 3, 7, 12. Deluca et al. teach the list of software applications, in the fixed portion, accessible to portable comm device 122; the controlling the delivery of data from the fixed portion to

the portable comm device; the checking or current copy of application registry; the maintaining of the application registry; and the keeping of a copy of application registry in the fixed portion.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington D. C. 20231

Or Faxed to: (703)-308-6306 (for formal communications intended for entry)

Or hand-delivered to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor, Receptionist.

For general inquiry or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703)-305-3900

C. Chow

June/7/2000.

DANIEL S. HUNTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2700

Notice of References Cited

Application No.	Applicant(s)		
09/096,664	Dwight Smith		
Examiner		Group Art Unit	Page 1 of 1
Charles Chow		2749	

U.S. PATENT DOCUMENTS

		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
	A	6,008,737	12/1999	Deluca et al.	340	825.34
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS
	N						
	O						
	P						
	Q						
	R						
	S						
	T						

NON-PATENT DOCUMENTS

		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
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Date: September 7, 2000 Total page (including fax sheet): 11

To: C. Chow
Art Unit 2749

Company: U.S. Patent and Trademark Office

Facsimile: 703/308-9051 or 9052

From: R. Louis Breeden

Message: Applicant: Smith
Serial No. 09/096,664
Filed: June 12, 1998
Docket No. PF0596NA
Title: Method and Apparatus in a Wireless Communication System for Controlling A Delivery of Data

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#6/Amdt B 9-9-00 Entered A.D.

APPLICANT: Smith

EXAMINER: Chow, C.

SERIAL NO.: 09/096,664

ART UNIT: 2749

FILED: June 12, 1998

CASE NO.: PF01596NA

APPLICATION: METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

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AMENDMENT PURSUANT TO 37 C.F.R. §1.111

Box: NON-FEE AMENDMENT
Assistant Commissioner of Patents
Washington, DC 20231

Sir:

This amendment is in response to an Office action dated June 16, 2000, for which a shortened statutory period for response was set to expire three months from that date. The following amendment and remarks are respectfully submitted in connection with the above-identified application. Reconsideration of the application is requested at this time.

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In the Claims

Please amend the claims as follows:

1. (Twice amended) A method in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit, the method comprising in the subscriber unit the step of:

maintaining an application registry comprising a list of all software applications that are currently accessible to the subscriber unit; and

B1

in the fixed portion of the wireless communication system, the steps of:

keeping a current copy of the application registry of the subscriber unit;

checking the current copy of the application registry in response to having the data to send to the subscriber unit; and

sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit.

Claims 2-6 are unchanged.

7. (Twice amended) A controller in a fixed portion of a wireless communication system for controlling a delivery of data to a subscriber unit which maintains an application registry comprising a list of all software applications that are currently accessible to the subscriber unit, the controller comprising:

a network interface for accepting the data from an originator;

B2 cont.

a processing system coupled to the network interface for processing the data, the processing system comprising a memory; and

a base station interface coupled to the processing system for controlling a base station to transmit the data;

wherein the processing system is programmed to:

keep in the memory a current copy of the application registry of the subscriber unit;

check the current copy of the application registry in response to having the data to send to the subscriber unit; and

send the data only when an application compatible with the data is accessible to the subscriber unit.

B2 cont'd

Claims 8-11 are unchanged.

12. (Twice amended) A subscriber unit in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system, the subscriber unit comprising:

a receiver for receiving the data;

a processing system coupled to the receiver for processing the data; and

a transmitter coupled to the processing system for communicating with the fixed portion of the wireless communication system,

B3

wherein the processing system is programmed to:

maintain an application registry comprising a list of all software applications that are currently accessible to the subscriber unit; and

in response to a change in accessibility of an application,

update the application registry; and

control the transmitter to communicate the change to the fixed portion of the wireless communication system.

Claim 13 is unchanged.

REMARKS

Claims 1-13 are pending in the application. Claims 1-13 were rejected.

I. CITED PRIOR ART

U.S. Patent No. 6,008,737 to Deluca et al. discloses an apparatus for controlling utilization of software added to a portable communication device.

U.S. Patent No. 5,790,809 to Holmes discloses registry communications middleware.

U.S. Patent No. 5,896,566 to Averbuch et al. discloses a method for indicating availability of updated software to portable wireless communication units.

U.S. Patent No. 5,699,275 to Beasley et al. discloses a system and method for remote patching of operating code located in a mobile unit.

U.S. Patent No. 5,862,325 to Reed et al. discloses a computer-based communication system and method using metadata defining a control structure.

U.S. Patent No. 5,291,598 to Grundy discloses a method and system for decentralized manufacture of copy-controlled software.

II. REMARKS AND ARGUMENTS

(The section numbers below correspond to those used in the Office action.)

1. Rejection under 35 U.S.C. 102(e)

Claims 1, 3, 7, and 12 were rejected under 35 U.S.C. 102(e) as being anticipated by Deluca et al. (hereinafter Deluca). Applicant has amended independent claims 1, 7, and 12 to *remedy* the rejection.

Because the Examiner stated that Deluca discloses everything claimed in claims 1, 3, 7, and 12 of the present application (before amendment), Applicant would like to begin with a comparison the Background of the Invention portion of the instant application with that of Deluca. The Background portion presents a capsule summary of known problems with the prior art, and sets up a need for the invention to be disclosed and claimed in the following

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portions of the application or patent. Thus, if the instant application discloses and claims, and Deluca discloses, the same or similar inventions, it would be reasonable to expect the Background portions of the instant application and of Deluca to set up the need for similar inventions. Let's see.

The Background of the instant application reads:

"Prior-art messaging systems have utilized specific vector types, such as tone-only, numeric, and alphanumeric vector types, to control the type of data the fixed portion of the messaging system would send to a specific subscriber unit. Typically, control of the specific vector type has been implemented through class-of-service information.

As subscriber units become increasingly user customizable with enhanced software application upgradability, it is impractical to expect that a class-of-service distinction or a subscriber unit class can define all the types of data that the applications accessible to a specific subscriber unit can support. Further, it is unlikely that all subscriber units of a specific type will have identical applications having identical application version numbers. Nonetheless, it remains desirable not to send data to a subscriber unit that the subscriber unit cannot utilize.

Thus, what is needed is a method and apparatus for controlling the delivery of data from the fixed portion of the messaging system to the subscriber unit. Preferably, the method and apparatus will not require specific vector types and corresponding class-of-service information to define the types of data which the subscriber unit can utilize. In addition, the method and apparatus preferably will not require an over-the-air session for each delivery of data to determine whether the subscriber unit can utilize the specific data type."

The Background of Deluca reads:

"In the past, paging devices were limited to alpha-numeric and voice paging. With technology improvements in circuit integration and more efficient communication protocols that provide two-way communication, paging devices have grown in sophistication and services provided. With today's technology improvements, paging devices are expected to acquire more sophisticated functions such as electronic mailing services, spread sheet applications, investment finance services such as stock market charts, quotation requests, purchase and sale

transactions, etc. These services require sophisticated software applications and/or hardware modules to be operated in the paging device. Paging devices using sophisticated services such as these will require a means for registration and licensing to prevent unauthorized use of processes, including software applications and hardware modules. In prior art devices registration has been accomplished by mailing a signed certificate with a purchase receipt of a software application or hardware module. This form of registration, however, does not prevent an unscrupulous user from using pirated software applications and/or unauthorized hardware modules.

Thus, what is needed is a method and apparatus for controlling utilization of a process added to a portable communication device. Preferably, the method and apparatus should serve as a mechanism to prevent unauthorized use of software applications and hardware modules."

Applicant believes the inventions being set up by these two Backgrounds do not sound very similar. The invention being set up by the Background of the present application is an invention for controlling the delivery of data from the fixed portion of the messaging system to the subscriber unit. As explained in the Background, a reason for doing this is to prevent data from being sent to a subscriber unit that the subscriber unit cannot utilize, because the data is incompatible with the application software of the subscriber unit.

Deluca's Background, on the other hand, sets up a need for an invention that can control utilization of a process added to a portable communication device. Preferably, the method and apparatus should serve as a mechanism to prevent unauthorized use of software applications and hardware modules.

The two inventions appear different. One checks for compatible application software accessible to the subscriber unit before sending data that could be useless to the subscriber unit. The other checks whether the subscriber unit is authorized before allowing it to utilize a process.

With the Background comparison in mind, let us now compare the claimed invention with the Deluca disclosure. Claim 1, as amended, recites:

"1. A method in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit, the method comprising in the subscriber unit the step of:

maintaining an application registry comprising a list of all software applications that are currently accessible to the subscriber unit; and

in the fixed portion of the wireless communication system, the steps of:

keeping a current copy of the application registry of the subscriber unit;

checking the current copy of the application registry in response to having the data to send to the subscriber unit; and

sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit."

The amended language is substantively supported in the originally filed specification and drawings by FIG. 4 and the text at page 7, line 26, through page 8, line 8, and further supported at page 9, lines 6-9. Applicant thus submits that no new matter is added by the amendment.

Applicant points out that in claim 1, as amended, the maintaining step takes place in the subscriber unit. Deluca's Fig. 3, depicting the elements of the subscriber unit, does not include "an application registry comprising a list of all software applications that are currently accessible to the subscriber unit." Deluca's Fig. 3 depicts software modules and authorization records of processes, either software or hardware, which have been authorized for use by the portable subscriber unit. (See Deluca, col. 7, lines 57-62.) The software modules and authorization records do not define "a list of all software applications that are currently accessible to the subscriber unit", because "external authorizations" can be requested when necessary, and additional software can be downloaded from the system over the air. (See Deluca Fig. 7 and col. 3, lines 57-64.)

The Examiner stated in rejecting other elements of claim 1 that "Deluca et al. teach 'checking the current copy of the application registry in response to having the data to send to

the subscriber unit'." Applicant must respectfully disagree. Deluca instead teaches checking whether the subscriber unit is authorized to utilize a hardware or software process, in response to receiving a request for authorization from the subscriber unit, not in response to having data to send to the subscriber unit. (See Deluca Fig. 6.)

The Examiner also stated that Deluca et al. teach "sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber" [unit]. Applicant also must respectfully disagree with this statement. First, Deluca does not teach or suggest determining whether an application compatible with data which the fixed portion wants to send to the subscriber unit is accessible to the subscriber unit. Deluca instead checks whether an authorization request received from the subscriber unit is valid. If so, Deluca sends a process authorization. If not, Deluca sends a "not authorized" command. (See Deluca, Fig. 6.)

Applicant believes the above presented evidence and arguments overwhelmingly demonstrate that claim 1, as amended, is not anticipated by Deluca. Claim 3 depends from claim 1. Applicant thus also believes that claim 3 is not anticipated by Deluca. Regarding claim 7, Applicant believes it is not anticipated by Deluca for the same rationale as claim 1.

Claim 12 recites:

"12. A subscriber unit in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system, the subscriber unit comprising:

a receiver for receiving the data;

a processing system coupled to the receiver for processing the data; and

a transmitter coupled to the processing system for communicating with the fixed portion of the wireless communication system,

wherein the processing system is programmed to:

maintain an application registry comprising a list of all software applications that are currently accessible to the subscriber unit; and

in response to a change in accessibility of an application,

update the application registry; and

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control the transmitter to communicate the change to the fixed portion of the wireless communication system."

Deluca does not teach or suggest "A subscriber unit in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system, the subscriber unit comprising ... a processing system ... wherein the processing system is programmed to:

maintain an application registry comprising a list of all software applications that are currently accessible to the subscriber unit; and

in response to a change in accessibility of an application,

update the application registry; and

control the transmitter to communicate the change to the fixed portion of the wireless communication system."

Note from Deluca Fig. 3, which depicts the portable subscriber unit, that the subscriber unit has no application registry comprising a list of all software applications that are currently accessible to the subscriber unit. Fig. 3 depicts internal authorization records (382) and software modules (392), but these are not defined as a list of all software applications that are currently accessible to the subscriber unit. Deluca instead teaches (Fig. 7) that an external authorization can be requested when an internal authorization is not available, and further teaches (col. 3, lines 57-64) that software processes can be delivered to the portable communication devices over the air. Thus, the internal authorization records (382) and software modules (392) do not represent an application registry comprising a list of all software applications that are currently accessible to the subscriber unit.

For the reasons argued herein above, Applicant respectfully requests reconsideration and removal of the rejection at this time.

2-4. Rejection under 35 U.S.C. 103(a)

Claims 2, 4-6, 8-11 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca in view of various combinations with Holmes, Averbuch, Beasley et al. (hereinafter Beasley), Reed et al. (hereinafter Reed), and Grundy. Applicant respectfully

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traverses the rejection. For the reasons argued above, Applicant believes that claims 1, 7, and 12, as amended, are patentable over Deluca in the various combinations with Holmes, Averbuch, Beasley, Reed, and Grundy. Claims 2, 4-6, 8-11 and 13 depend from one of claims 1, 7, and 12. Applicant thus also believes that claims 2, 4-6, 8-11 and 13 are patentable over Deluca in the various combinations with Holmes, Averbuch, Beasley, Reed, and Grundy. Applicant respectfully requests reconsideration and removal of the rejection at this time.

Miscellaneous

Claims 1-13 remain in the application. Claims 1, 7, and 12 were amended. Reconsideration of the application is respectfully requested at this time.

Applicant has paid for 3 independent claims and 20 total claims. The application now contains 3 independent claims and 13 total claims. Applicant thus believes that no additional fees are due. Please charge any additional fees, or credit overpayment to Deposit Account No. 50-0280.

With this amendment, the application is believed to be in condition for allowance, and a favorable response at an early date is earnestly solicited. If the Examiner believes that there are any informalities that can be corrected by Examiner's amendment, a telephone call to the undersigned at (817) 245-2555 is respectfully solicited.

Respectfully submitted,
Smith

By R. Louis Breeden

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/096,664	06/12/98	SMITH D	PF01596NA

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WM02/1122

EXAMINER	
CHOW, C	
ART UNIT	**PAPER NUMBER**
2684	

DATE MAILED: 11/22/00

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

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)
*U.S. GPO: 2000-473-000/44602

1- File Copy

Office Action Summary

Application No.	Applicant(s)
09/096,664	Dwight Smith
Examiner	**Group Art Unit**
Charles Chow	2684

☒ Responsive to communication(s) filed on *9/8/00*

☒ This action is **FINAL.**

☐ 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.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-13* is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-13* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Office Action for
Applicant's amendment
(9/8/2000)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 3, 7, 12 are rejected under 35 U.S.C. ~~102(e)~~ 103(a) as being unpatentable over Deluca et al. (US Patent 6,008,737) in view of Grube (US 6,026,366).

Deluca et al. disclose **claim 1,** "a method in a wireless communication (comm) system for controlling a delivery of data form a fixed portion ...to a Subscriber unit". See in Fig.1, and in column 2, line 3-21, it shows a comm system having fixed portion 102, controller 112 in fixed portion, portable communication device 122 in portable portion 104, . See in Fig. 2, it shows the detailed blocks for the fixed portion. The controller 112 has process records and portable device for registered portable communication device. the controller 112 of the fixed portion also contains list checker for checking a match of the process record in the fixed portion. In Fig. 2, it shows the details for the portable portion 122, having processor 308 interacted with RAM 378 containing software modules for processes.

Deluca et al. teach "maintaining an application registry comprising ..software application that are accessible to the subscriber unit" and "keeping the current copy of the application registry of the subscriber unit". See in Fig. 2 and column 3, line 58-65, and column 16, line 59-63, it shows the fixed portion has list of processes 226 in the database having many of the authorized software processes available for use by the portable 122. The current software in 226 for portable 122 is to keep the current copy of applications for subscriber unit, thus, the list of software processes 226 has to be maintained in database.

Deluca et al. does not explicitly indicate the checking of current copy of the software. Grube teaches "list of all software applications"; "checking the current copy of the application registry in response to having the data to send to the subscriber unit"; "sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber". See in Fig. 1, 2, abstract, in column 6,line 55 to column 7, line 30, it shows *the method for providing software to a remote computer 116, having radio communication device 117 for communicating with the host computer. The remote computer informs to the host computer of the* list of software applications presently contained within the remote computer. *Based on the received configuration information, the host computer determines whether the remote computer is in need of software that compliments the software applications presently contained within the remote computer. When the remote computer is in need of such complimenting software, the host computer selects software applications, and transmits a list of the complimenting software to remote computer via host computer's radio communication device. Upon receiving the list of complimenting software, the remote computer determines and selects the desired software list. The remote computer then transmits the list of selected software to the host computer via remote communication device for updating*

the software. The host computer transmits the selected software applications to the remote computer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Grube's list of all software applications, the determining selecting of the desired software applications, the down loading of the list of software from the host computer via radio communication device, toDeluca et al., such that the portable communication device could be conveniently update the desired list of software applications to the current market version, such as Mirosoft Office.

Regarding **claim** 7, refer to the patent disclosure discussion in claim 1 above for the list of software; the update of the software.

Regarding **claim 12**, refer to the patent disclosure discussion in claim 1 above for the list of software; the determining of the software in need at remote computer; the receiving and updating of at least one software

Deluca et al. teach "wherein the processing system is programmed to: maintain an application registry comprising software application that are accessibility of an application, in response to a change in accessibility of application, update the application registry". See in Fig. 3, and column 7, line 52-63, the portable device 122 has processor 308 in communication with RAM 378, ROM 310, and program interface 347. The RAM 378 has the software modules 392 list in the application registry. Also, see in column 7, line 15-31 for determining the software needs to be downloaded and the licensing agreement terms.

Deluca et al. teach "control the transmitter to communicate the change to the fixed

portion of the wireless communication system". See in column 47, -51, it shows the transceiver 302 transmits response message back to fixed portion after demodulation of the received information.

Deluca et al. teach **claim 3**, "...wherein maintaining step...updating the application registry; and communicating the change to the fixed portion of the wireless communication system". See in column 6, line 38-41, it shows the processor 210 of the the fixed portion uses ROM 228 to maintain a list of the authorized process in the process records 220. Also see in column 16, line 52-54, for maintaining the list of software processes.

2. Claims 2, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca et al. in view of Grube, as applied to claims 1, 7 above, and further in view of Holmes (US Patent 5,790,809).

Holmes teaches **claim 2**,"converting incompatible data to a format compatible with one of the applications accessible to the subscriber unit". See abstract, line 1-12 from top, a computer system has non-compatible clients and servers using registries to communicate between clients and servers. The first registry routes data from database and translates the registry specific message into a pre-selected protocol format. Since the format is transparent.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Holmes's translation into compatible registry format to Deluca et al., such that the fixed portion would be independent from the application platform and protocol.(column 2, line 33-35).

Regarding **claim 8**, refer to the patent disclosure discussion in claim 2 above.

3. Claims 4, 5, 9, 10, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca et al. in view of Grube, as applied to claims 1, 7, 12 above, and further in view of Averbuch et al. (US Patent 5,890,566).

Averbuch et al. teach **claim 4**, "registering an application version number for at least one of the applications...subscriber units" and "examining a plurality of current copies of application registries corresponding to the plurality of subscriber units to generate report of how many users use which version of which application". See column 5, line line 38-46, it shows the server 104 verifies the version number based on previously received software versions from portable units. In column 5, line 59-65, it shows the software version update is based on the usage from the users. Thus, the numbers of users for software version are recorded into the memory for information display. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Averbuch et al.'s software update based on software version, user's usage and priority threshold for communication units to Deluca et al., such that the software update for portable units could be performed over the

transmission link according to the software versions.

Averbuch et al. teach **claim 5**, "checking the application version number for the at least one of the applications in response to predetermined stimulus". See claim 4 above, the server 104 verifies the version number.

Averbuch et al. teach "taking a predetermined action to trigger a software update when the application version number is an old version". See column 5, line 38-46, it shows when software version is less recent than the updated software, the portable unit would received a software update query to trigger the update of the software.

Averbuch et al. teach "registering an application version number...subscriber unit". See claim 4 above.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Averbuch et al.'s software update queries, response, and acknowledgment to Deluca et al., such that the software update would be automatic, efficient, requiring less communication resources (column 6, line 21-33).

Regarding **claim 9**, refer to the patent disclosure discussion in claim 4 above.

Regarding **claim 10** and **13,** refer to the patent disclosure discussion in claim 5 above.

4. Claims 6, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca et al. in view of Grube, as applied to claim 1 above, and further in view of Averbuch et al., and further in view of Beasley et al. (US Patent (5,699,275), Reed et al. (US Patent 5,862,325) and Grundy (US Patent 5,291,598).

Beasley et al. teach **claim 6**, "a receipt of an update to the application registry of the subscriber unit which adds an application not present in the current copy". See column 1, line 29-42, a central computer system updates software on user remote system using remote patching of operation code. In column 2, line 6-12, it shows the remote patching of the operation code would add new functionality or replacing the existing code for mobile unit. Thus, through operation code patching, new application could be added. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Beasley et al.'s. remote patching of the operation code in mobile unit to Deluca et al. as modified by Averbuch et al. such that the newly improved functionality could be added to mobile unit efficiently by using the patching of operation code (column 2, line 25-31).

Reed et al. teach "an appearance in the wireless communication system of a new application version number". See column 4, line 9-20, it shows Smart Bookmark can update a web page. In Fig. 27, the web browser and its version number is illustrated. In column 61, line 31-52, it teaches when version value of the component communications object 901 changes, the version value of the page subscription instance needs to be updated. Thus, the appearance of the application version number is updated therein.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Reed et al.'s version value update in web page

subscription instance for customer computer to Deluca et al. as modified above, such that the version number in the web page could be changed in order to communicate with the users of the updated software.

Grundy teaches "a registration of a new subscriber unit in the wireless communication system". See column 14, line 31-38, it shows the manufacture control agency's computer processor 15 performs an authorization process to register a new user of the host software product. In abstract line 5 to 10, the registration code contains user's identity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Grundy's. authorization process for registering a new user to Deluca et al. as modified above, such that the usage of the software for new users could be controlled through the authorization registration process.

Regarding **claim 11**, see claim 6 above.

Response to Arguments

5. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's arguments for the maintaining application registry; the list of all software applications currently accessible to the subscriber; the updating of the software applications; the control transmitting communication for the change of the software applications; are disclosed from the previously introduced prior arts and the newly introduced prior art, Grube. Thus, the arguments are moot, and claims 1-13 are remaining in the

rejection manner.

Conclusion

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

7. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2684.
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington D. C. 20231

Or Faxed to: (703)-308-6306 (for formal communications intended for entry)

Or hand-delivered to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor, Receptionist.

For general inquiry or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703)-305-3900

C. Chow

Nov/17/2000.

DANIEL HUNTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Notice of References Cited

Application No.	Applicant(s)		
09/096,664	Dwight Smith		
Examiner		Group Art Unit	Page 1 of 1
Charles Chow		2684	

U.S. PATENT DOCUMENTS

		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
	A	6.026,366	2/2000	Grube	705	10
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS
	N						
	O						
	P						
	Q						
	R						
	S						
	T						

NON-PATENT DOCUMENTS

		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	U		
	V		
	W		
	X		

12 26-00 CPA/2684

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Continued Prosecution Application (CPA) Request Transmittal

#8/Req for CPA 1-6-01 A.C.

(Use ONLY for Continuation or Divisional applications under 37 CFR 1.53(d))

Atty/Agent Docket No.: **PF01596NA**

Mailing Date: **December 20, 2000**

Express Mail Label No.: EL626111827US

To: Assistant Commissioner for Patents
Box CPA
Washington, D.C. 20231

Dear Sir:

This is a request for a **XX** Continuation or _____ Divisional Application under 37 CFR 1.53(d), (Continued Prosecution Application (CPA)) of prior application No. **09/096,664** filed on **6/12/98**, having US Examiner **C. Chow**, in Group Art Unit **2684**, entitled **METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA**, by first named inventor **Smith**.

(NOTE: A CIP (Continuation-in Part) APPLICATION CAN NOT BE FILED AS A CPA UNDER 37 CFR 1.53(d). CIPs **MUST** be filed under 37 CFR 1.53(b).)

This transmittal has 2 total pages.

Please abandon, as required under 37 CFR 1.53(d), the above identified prior application and transfer all of its contents to the present CPA application as of the CPA filing date

1._____Enter the unentered 37 CFR 1.116 amendment filed on June 1, 1999 in the prior application

2._____A preliminary amendment, which includes no new matter, is enclosed.

2a.____Please cancel pending/filed claims _____.

3._____This application is filed by fewer than all the inventors named in the prior application, 37 CFR 1.53(d)(4).

____a. Delete the following inventor(s) named in the prior nonprovisional application:

_____

_____

____b. The inventor(s) to be deleted are set forth on a separate sheet attached hereto.

4._____A new power of attorney or authorization of agent is enclosed.

12/27/2000 HVUONG1 00000036 500280 09096664

01 FC:131 710.00 CH

5._____An Information Disclosure Statement (IDS) is enclosed, along with:
a.__ PTO-1449
b.___ Copies of IDS Citations

CLAIMS AS FILED, LESS ANY CLAIMS CANCELED BY AMENDMENT

	NUMBER FILED	NUMBER EXTRA	RATE	ADDITIONAL FEE
TOTAL CLAIMS	13 - 20* =		X $22	= $ 0.00
INDEPENDENT CLAIMS	3 - 3* =		X $82	= $ 0.00
MULTIPLE DEPENDENT CLAIMS			$270	= $ 0.00
			BASIC FEE	=$710.00
			TOTAL FILING FEE	=$ 710.00

* For a Reissue CPA, see 37 CFR 1.16(i) and (j) for how many claims to deduct.

6. ___ A Petition for Extension of Time is attached herewith.

7. **X** Please charge Deposit Account No. **50-0280** in the amount of $ 710.00 for the above Total Filing Fee. Two duplicate copies of this sheet are enclosed.

8. **X** The Commissioner is hereby authorized to charge any additional fees which may be required now or in the future under 37 CFR 1.16 or 37 CFR 1.17, including any present or future time extension fees which may be required, or credit any overpayment to Deposit Account No. **50-0280.** Two duplicate copies of this sheet are enclosed.

9. **X** Enclosed is a Return Receipt Postcard specifically listing all enclosures.

10. **X** Enclosed are preliminary remarks addressing the Final Office action mailed 11/22/00.

Date: December 20, 2000

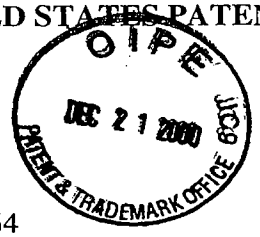
Signature: R. Louis Breeden

Please forward all correspondence to:

Motorola, Inc.
Intellectual Property Department
5401 N. Beach Street/MS E230
Fort Worth, TX 76137

R. Louis Breeden
Attorney/Agent for Applicant(s)
Registration No. **37, 286**
MOTOROLA, INC.
Phone: (817) 245-2555
Fax: (817) 245-2137

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



#9 Response 1-6-01

APPLICANT: Smith

EXAMINER: Chow, C.

SERIAL NO.: 09/096,664

ART UNIT: 2684 A.7.

FILED:

CASE NO.: PF01596NA

APPLICATION: METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

PRELIMINARY RESPONSE PURSUANT TO 37 C.F.R. §§1.111

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO:
ASSISTANT COMMISSIONER OF PATENTS
WASHINGTON, D.C. 20231, ON: December 20, 2000
Date of Deposit

R. LOUIS BREEDEN
Name of Applicant, Assignee or Registered Representative

R. Louis Breeden
SIGNATURE DATE

Assistant Commissioner of Patents
Washington, DC 20231

Sir:

These remarks are in response to an Office action dated November 22, 2000 on the parent case from which the above identified CPA is derived. Reconsideration of the application is requested at this time.

REMARKS

Claims 1-13 are pending in the application. In the parent case, these claims were rejected.

In each 103 obviousness rejection of one or more claims of the parent application (including the obviousness rejection of claims 1, 3, 7, and 12, which apparently was mislabeled as a 102 rejection), the Examiner has cited two patents. The two patents are U.S. Patent No. 6,008,737 issued to DeLuca et al., and U.S. Patent No. 6,026,366 issued to Grube. At the time the invention claimed in the instant application was made, U.S. Patent No. 6,008,737 and U.S. Patent No. 6,026,366 were commonly owned by the assignee of the instant application. As evidence of the common ownership, Applicant submits herewith copies of the recordation of assignment for the instant application and the two patents cited, in accordance with 37 CFR 3.11, which convey the entire rights in the corresponding applications to Motorola at the time of the invention.

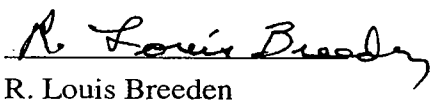
In accordance with section 4807 of the recently enacted American Inventors Protection Act (AIPA), subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of 35 U.S.C., shall not preclude patentability under section 103 where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. This change to 103(c) applies to any patent application filed on or after November 29, 1999, including continuation applications. For further information regarding post-AIPA examination guidelines, the Examiner is respectfully directed to the USPTO web site at:

http://www.uspto.gov/web/offices/com/sol/og/2000/week15/patamin.htm

Applicant believes that U.S. Patent No. 6,008,737 and U.S. Patent No. 6,026,366 qualify as prior art only under subsection (e) of section 102 of 35 U.S.C. Applicant thus also believes that neither U.S. Patent No. 6,008,737 nor U.S. Patent No. 6,026,366, alone

or in combination, can be used to preclude patentability under 35 U.S.C. 103 of the instant invention as claimed in the above identified CPA.

Respectfully submitted,
Smith

By 

R. Louis Breeden
Agent for Applicant
Registration No. 37,286
Phone (817) 245-2555

Please address all inquiries to: Motorola, Inc., Patent Department-MS E230, 5401 North Beach St., Fort Worth, TX 76137

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
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Washington, D.C. 20231

AUGUST 27, 1998

PTAS

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MOTOROLA, INC.
R. LOUIS BREEDEN
IP LAW DEPT. - MS E230
5401 N. BEACH STREET
FORT WORTH, TX 76137

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RECORDATION DATE: 06/12/1998

REEL/FRAME: 9253/0743
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
SMITH, DWIGHT RANDALL

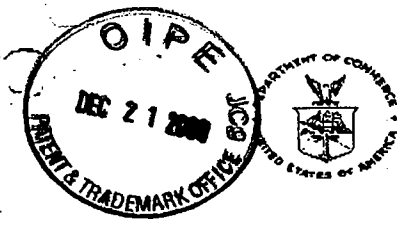
DOC DATE: 06/11/1998

ASSIGNEE:
MOTOROLA, INC.
1303 EAST ALGONQUIN ROAD
SCHAUMBURG, ILLINOIS 60196

SERIAL NUMBER: 09096664
PATENT NUMBER:

FILING DATE: 06/12/1998
ISSUE DATE:

SHARMALLA SIMPSON, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS



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FEBRUARY 09, 1998

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MOTOROLA, INC.
DANIEL C. CRILLY
CORPORATE OFFICES INTEL. PROPERTY DEPT.
1303 E. ALGONQUIN ROAD
SCHAUMBURG, IL 60196

MOTOROLA, INC.

FEB 17 1998

PATENT DEPT.
U.S. DOCKETING

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RECORDATION DATE: 10/14/1997

REEL/FRAME: 8857/0581
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
GRUBE, GARY W.

DOC DATE: 10/14/1997

ASSIGNEE:
MOTOROLA, INC.
1303 E. ALGONQUIN ROAD
CORPORATE OFFICES INTELLECTUAL PROPERTY DEPARTMENT
SCHAUMBURG, ILLINOIS 60196

SERIAL NUMBER: 08950502
PATENT NUMBER:

FILING DATE: 10/14/1997
ISSUE DATE:

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PEARLENE FOSTER, EXAMINER
ASSIGNMENT DIVISION
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Patent and Trademark Office
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OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APRIL 30, 1997

PTAS

100250575A

MOTOROLA, INC.
LOU BREEDEN
INTELLECTUAL PROPERTY DEPT. - MS 96
1500 GATEWAY BOULEVARD
BOYNTON BEACH, FL 33426-8292

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RECORDATION DATE: 06/24/1996

REEL/FRAME: 8381/0194
NUMBER OF PAGES: 5

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
DELUCA, MICHAEL J. ✓
DOC DATE: 06/11/1996

ASSIGNOR:
KRAUL, DOUG ✓
DOC DATE: 06/12/1996

ASSIGNOR:
DAVIS, WALTER L. ✓
DOC DATE: 06/17/1996

ASSIGNEE:
MOTOROLA, INC.
1303 EAST ALGONQUIN ROAD
SCHAUMBURG, ILLINOIS 60196

SERIAL NUMBER: 08672004
PATENT NUMBER:

FILING DATE: 06/24/1996
ISSUE DATE:

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ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

UNITED STAT DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/096,664	06/12/98	SMITH D	PF01596NA

023447
MOTOROLA INC
5401 NORTH BEACH STREET
MAILSTOP E230
FORT WORTH TX 76137

WM01/0307

EXAMINER	
CHOW, C	
ART UNIT	**PAPER NUMBER**
2684	10

DATE MAILED: 03/07/01

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

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)
*U.S. GPO: 2000-473-000/44602

1- File Copy

Office Action Summary

Application No.	Applicant(s)
09/096,664	Dwight Smith
Examiner	**Group Art Unit**
Charles Chow	2684

☒ Responsive to communication(s) filed on *12/21/00*

☐ This action is **FINAL.**

☐ 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.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-13* is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-13* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Office Action for
Applicant's amendment
(12/21/2000)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 3, 7, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca et al. (US Patent 6,008,737) in view of Grube (US 6,026,366).

Deluca et al. disclose **claim 1,** "a method in a wireless communication (comm) system for controlling a delivery of data form a fixed portion ...to a Subscriber unit". See in Fig.1, and in column 2, line 3-21, it shows a comm system having fixed portion 102, controller 112 in fixed portion, portable communication device 122 in portable portion 104, . See in Fig. 2, it shows the detailed blocks for the fixed portion. The controller 112 has process records and portable device for registered portable communication device. the controller 112 of the fixed portion also contains list checker for checking a match of the process record in the fixed portion. In Fig. 2, it shows the details for the portable portion 122, having processor 308 interacted with RAM 378 containing software modules for processes.

Deluca et al. teach "maintaining an application registry comprising ..software application that are accessible to the subscriber unit" and "keeping the current copy of the application registry of the subscriber unit". See in Fig. 2 and column 3, line 58-65, and column 16, line 59-63, it shows the fixed portion has list of processes 226 in the database having many of the authorized software processes available for use by the portable 122. The current software in 226 for portable 122 is to keep the current copy of applications for subscriber unit, thus, the list of software processes 226 has to be maintained in database.

Deluca et al. does not explicitly indicate the checking of current copy of the software. Grube teaches "list of all software applications"; "checking the current copy of the application registry in response to having the data to send to the subscriber unit"; "sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber". See in Fig. 1, 2, abstract, in column 6,line 55 to column 7, line 30, it shows *the method for providing software to a remote computer 116, having radio communication device 117 for communicating with the host computer. The remote computer informs to the host computer of the* list of software applications presently contained within the remote computer. *Based on the received configuration information, the host computer determines whether the remote computer is in need of software that compliments the software applications presently contained within the remote computer. When the remote computer is in need of such complimenting software, the host computer selects software applications, and transmits a list of the complimenting software to remote computer via host computer's radio communication device. Upon receiving the list of complimenting software, the remote computer determines and selects the desired software list. The remote computer then transmits the list of selected software to the host computer via remote communication device for updating*

the software. The host computer transmits the selected software applications to the remote computer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Grube's list of all software applications, the determining selecting of the desired software applications, the down loading of the list of software from the host computer via radio communication device, toDeluca et al., such that the portable communication device could be conveniently update the desired list of software applications to the current market version, such as Mirosoft Office.

Regarding **claim 7**, refer to the patent disclosure discussion in claim 1 above for the list of software; the update of the software.

Regarding **claim 12**, refer to the patent disclosure discussion in claim 1 above for the list of software; the determining of the software in need at remote computer; the receiving and updating of at least one software

Deluca et al. teach "wherein the processing system is programmed to: maintain an application registry comprising software application that are accessibility of an application, in response to a change in accessibility of application, update the application registry". See in Fig. 3, and column 7, line 52-63, the portable device 122 has processor 308 in communication with RAM 378, ROM 310, and program interface 347. The RAM 378 has the software modules 392 list in the application registry. Also, see in column 7, line 15-31 for determining the software needs to be downloaded and the licensing agreement terms.

Deluca et al. teach "control the transmitter to communicate the change to the fixed

portion of the wireless communication system". See in column 47, -51, it shows the transceiver 302 transmits response message back to fixed portion after demodulation of the received information.

Deluca et al. teach **claim 3**, "...wherein maintaining step...updating the application registry; and communicating the change to the fixed portion of the wireless communication system". See in column 6, line 38-41, it shows the processor 210 of the the fixed portion uses ROM 228 to maintain a list of the authorized process in the process records 220. Also see in column 16, line 52-54, for maintaining the list of software processes.

2. Claims 2, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca et al. in view of Grube, as applied to claims 1, 7 above, and further in view of Holmes (US Patent 5,790,809).

Holmes teaches **claim 2**,"converting incompatible data to a format compatible with one of the applications accessible to the subscriber unit". See abstract, line 1-12 from top, a computer system has non-compatible clients and servers using registries to communicate between clients and servers. The first registry routes data from database and translates the registry specific message into a pre-selected protocol format. Since the format is transparent.

Therefore, it would have been obvious to one of ordinary skill in the art at the time

of invention to modify and add Holmes's translation into compatible registry format to Deluca et al., such that the fixed portion would be independent from the application platform and protocol.(column 2, line 33-35).

Regarding **claim 8**, refer to the patent disclosure discussion in claim 2 above.

3. Claims 4, 5, 9, 10, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca et al. in view of Grube, as applied to claims 1, 7, 12 above, and further in view of Averbuch et al. (US Patent 5,890,566).

Averbuch et al. teach **claim 4**, "registering an application version number for at least one of the applications...subscriber units" and "examining a plurality of current copies of application registries corresponding to the plurality of subscriber units to generate report of how many users use which version of which application". See column 5, line line 38-46, it shows the server 104 verifies the version number based on previously received software versions from portable units. In column 5, line 59-65, it shows the software version update is based on the usage from the users. Thus, the numbers of users for software version are recorded into the memory for information display. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Averbuch et al.'s software update based on software version, user's usage and priority threshold for communication units to Deluca et al., such that the software update for portable units could be performed over the transmission link according to the software versions.

Averbuch et al. teach **claim 5**, "checking the application version number for the at least one of the applications in response to predetermined stimulus". See claim 4 above, the server 104 verifies the version number.

Averbuch et al. teach "taking a predetermined action to trigger a software update when the application version number is an old version". See column 5, line 38-46, it shows when software version is less recent than the updated software, the portable unit would received a software update query to trigger the update of the software.

Averbuch et al. teach "registering an application version number...subscriber unit". See claim 4 above.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Averbuch et al.'s software update queries, response, and acknowledgment to Deluca et al., such that the software update would be automatic, efficient, requiring less communication resources (column 6, line 21-33).

Regarding **claim 9**, refer to the patent disclosure discussion in claim 4 above.

Regarding **claim 10** and **13,** refer to the patent disclosure discussion in claim 5 above.

4. Claims 6, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deluca et al. in view of Grube, as applied to claim 1 above, and further in view of Averbuch et al., and further in view of Beasley et al. (US Patent (5,699,275), Reed et al. (US Patent 5,862,325) and Grundy (US Patent 5,291,598).

Beasley et al. teach **claim 6**, "a receipt of an update to the application registry of the subscriber unit which adds an application not present in the current copy". See column 1, line 29-42, a central computer system updates software on user remote system using remote patching of operation code. In column 2, line 6-12, it shows the remote patching of the operation code would add new functionality or replacing the existing code for mobile unit. Thus, through operation code patching, new application could be added. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Beasley et al.'s. remote patching of the operation code in mobile unit to Deluca et al. as modified by Averbuch et al. such that the newly improved functionality could be added to mobile unit efficiently by using the patching of operation code (column 2, line 25-31).

Reed et al. teach "an appearance in the wireless communication system of a new application version number". See column 4, line 9-20, it shows Smart Bookmark can update a web page. In Fig. 27, the web browser and its version number is illustrated. In column 61, line 31-52, it teaches when version value of the component communications object 901 changes, the version value of the page subscription instance needs to be updated. Thus, the appearance of the application version number is updated therein.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Reed et al.'s version value update in web page subscription instance for customer computer to Deluca et al. as modified above,

such that the version number in the web page could be changed in order to communicate with the users of the updated software.

Grundy teaches "a registration of a new subscriber unit in the wireless communication system". See column 14, line 31-38, it shows the manufacture control agency's computer processor 15 performs an authorization process to register a new user of the host software product. In abstract line 5 to 10, the registration code contains user's identity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Grundy's. authorization process for registering a new user to Deluca et al. as modified above, such that the usage of the software for new users could be controlled through the authorization registration process.

Regarding **claim 11**, refer to the discussion of patent disclosure in claim 6 above.

Response to Remarks

5. The mislabeled 102(e) rejection for claims 1, 3, 7, 12 is withdrawn and the 103 (a) type of rejection is applied to the claims 1, 3, 7, 12. Therefore, the dependent claims 2-6, 8-11, 13 are also rejected under the 103 (a).

6. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2684.

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington D. C. 20231

Or Faxed to: (703)-308-6306 (for formal communications intended for entry)

Or hand-delivered to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor, Receptionist.

For general inquiry or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703)-305-4700.

C. Chow

Feb/27/2001.

DANIEL HUNTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

49

V 22691 - 044

3-7-01

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

2749

CHANGE OF ADDRESS/POWER OF ATTORNEY

346-5615

LOCATION 27C1 SERIAL NUMBER 09096664 PATENT NUMBER

THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 23447

THE PRACTITIONERS OF RECORD HAVE BEEN CHANGED TO CUSTOMER # 23447

THE FEE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 23447

3-30-01 MB

ON 03/30/00 THE ADDRESS OF RECORD FOR CUSTOMER NUMBER 23447 IS:

MOTOROLA INC
5401 NORTH BEACH STREET
MAILSTOP E230
FORT WORTH TX 76137

AND THE PRACTITIONERS OF RECORD FOR CUSTOMER NUMBER 23447 ARE:

28970 29420 33308 36062 36453 37286 37816 38336

PTO INSTRUCTIONS: PLEASE TAKE THE FOLLOWING ACTION WHEN THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER NUMBER: RECORD, ON THE NEXT AVAILABLE CONTENTS LINE OF THE FILE JACKET, 'ADDRESS CHANGE TO CUSTOMER NUMBER'. LINE THROUGH THE OLD ADDRESS ON THE FILE JACKET LABEL AND ENTER ONLY THE 'CUSTOMER NUMBER' AS THE NEW ADDRESS. FILE THIS LETTER IN THE FILE JACKET. WHEN ABOVE CHANGES ARE ONLY TO FEE ADDRESS AND/OR PRACTITIONERS OF RECORD, FILE LETTER IN THE FILE JACKET.

PTO-FMD
TALBOT-1/97

Notice of Allowability

Application No.	Applicant(s)
09/096,664	Dwight Smith
Examiner	**Art Unit**
Charles Chow	2684

--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 and Issue Fee Due 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 *12/21/2000*

2. ☒ The allowed claim(s) is/are *1-13*

3. ☒ The drawings filed on *6/12/98* are acceptable as formal drawings.

4. ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

   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: _____

5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

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 FOR SUBMITTING NEW FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION. This three-month period for complying with the REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL is extendable under 37 CFR 1.136(a).**

6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

7. ☐ Applicant MUST submit NEW FORMAL DRAWINGS

   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

   1) ☐ hereto or 2) ☐ to Paper No. _____ .

   (b) ☐ including changes required by the proposed drawing correction filed _____ , which has been approved by the examiner.

   (c) ☐ including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No. _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

1 ☐ Notice of References Cited (PTO-892)
2 ☐ Notice of Informal Patent Application (PTO-152)
3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
4 ☐ Interview Summary (PTO-413), Paper No. _____ .
5 ☐ Information Disclosure Statement(s) (PTO-1449), Paper No(s). _____
6 ☐ Examiner's Amendment/Comment
7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
8 ☒ Examiner's Statement of Reasons for Allowance
9 ☐ Other

Office Action for
Applicant's Continued Prosecution Application
(12/21/2000)

Allowable Subject Matter

1. Withdrawal of the claims rejection for the office action dated, Feb./27/2001. It is due to the American Inventors Protection Act, section 4807, the prior arts belongs to the assignee of this application for the applicant's Continued Prosecution of Application, filed on 12/21/2000. The withdraw of the office rejection is because the prior arts, Deluca et al. and Grube, are utilized as the primary and secondary reference in the office action mailed on Feb./27/2001.
2. Since the primary and secondary prior arts, in the claims rejection, are belongs to the assignee, therefore, claims 1-13 are allowable over the prior art of record.
3. The following is an examiner's statement of reasons for allowance:

   Claims 1-13 are allowable because the combination of the prior arts does not disclose the claimed features in claims 1, 7, 12. They are as follows:

   A method in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit, the method comprising the subscriber unit the step of: maintaining an application registry comprising a list of all software applications that are currently accessible to the subscriber to the subscriber unit; and in the fixed portion of the wireless communication system, the system, the steps of: keeping a current copy of the application registry of the subscriber unit; checking the current copy of the application registry in response to having the data to send to the subscriber unit; and sending the data only when the checking step determines that an application compatible with the data accessible to the subscriber unit (claim 1).

   A controller in a fixed portion of a wireless communication system for controlling a delivery of data to a subscriber unit which maintains an application registry comprising a list of all software applications that are

currently accessible to the subscriber unit, the controller comprising: a network interface for accepting the data from an originator; a processing system coupled to the network interface for processing the data, the processing system comprising a memory; and a base station interface coupled ot the processing system for controlling a base station to transmit the data; wherein the processing system is programmed to: keep in the memory a current copy of the application registry of the subscriber unit: check the current copy of the application registry in response to having the data to send to the subscriber unit; and send the data when an application compatible with the data is accessible to the subscriber unit (claim 7).

A subscriber unit in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system, the subscriber unit comprising: a receiver for receiving the data; a processing system coupled to the receiver for processing the data; and a transmitter coupled to the processing system for communicating with the fixed portion of the wireless communication system, wherein the processing system is programmed to: maintain application registry comprising a list of all software application that are currently accessible to the subscriber unit; and in response to a change in accessibility of an application, update the application registry; and control the transmitter to communicate the change to the fixed portion of the wireless communication system (claim12).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee, and to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2684.

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington D. C. 20231

Or Faxed to: (703)-308-6306 (for formal communications intended for entry)

Or hand-delivered to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor, Receptionist.

For general inquiry or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703)-305-4700.

C. Chow

April/23/2001.

DANIEL HUNTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

MF

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

MF

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

023447 WM01/0430
MOTOROLA INC
5401 NORTH BEACH STREET
MAILSTOP E230
FORT WORTH TX 76137

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/096,664	06/12/98	013	CHOW, C 2684	04/30/01
First Named Applicant SMITH,		35 USC 154(b) term ext. =	0 Days.	

TITLE OF INVENTION METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 PF01596NA	455-418.000	F62	UTILITY	NO	$1240.00	07/30/01

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE 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.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number.
Please direct all communications prior to issuance to Box 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.

PATENT AND TRADEMARK OFFICE COPY

PTOL-85 (REV. 10-96) Approved for use through 06/30/99. (0651-0033)

MF

PART B—ISSUE FEE TRANSMITTAL

Complete and mail this form, together with applicable fees, to: **Box ISSUE FEE**
Assistant Commissioner for Patents
Washington, D.C. 20231

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, 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: Legibly mark-up with any corrections or use Block 1)

023447 WM01/0430
MOTOROLA INC
5401 NORTH BEACH STREET
MAILSTOP E230
FORT WORTH TX 76137

Note: The certificate of mailing below can only be used for domestic mailings of the Issue Fee 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.

Certificate of Mailing

I hereby certify that this Issue Fee Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above on the date indicated below.

Patrice Smith (Depositor's name)
Patrice Smith (Signature)
May 15, 2001 (Date)

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT		DATE MAILED
09/096,664	06/12/98	013	CHOW, C	2684	04/30/01

First Named Applicant: SMITH, 35 USC 154(b) term ext. = 0 Days.

TITLE OF INVENTION: METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 PF01596NA	455-418.000	F62	UTILITY	NO	$1240.00	07/30/01

1. Change of correspondence address or indication of " Fee Address" (37 CFR 1.363). Use of PTO form(s) and Customer Number are recommended, but not required.
   - ☐ 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) attached.

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 R. Louis Breeden
   2 _____
   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. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a subsitiute for filing an assignment.
   (A) NAME OF ASSIGNEE: Motorola, Inc.
   (B) RESIDENCE: (CITY & STATE OR COUNTRY): Schaumburg, IL.
   Please check the appropriate assignee category indicated below (will not be printed on the patent)
   ☐ individual ☒ corporation or other private group entity ☐ government

4a. The following fees are enclosed (make check payable to Commissioner of Patents and Trademarks):
   - ☐ Issue Fee
   - ☐ Advance Order - # of Copies _____

4b. The following fees or deficiency in these fees should be charged to:
   DEPOSIT ACCOUNT NUMBER 50-0280
   (ENCLOSE AN EXTRA COPY OF THIS FORM)
   - ☒ Issue Fee
   - ☐ Advance Order - # of Copies _____

The COMMISSIONER OF PATENTS AND TRADEMARKS IS requested to apply the Issue Fee to the application identified above.

(Authorized Signature) R. Louis Breeden (Date) 5/18/01

NOTE: The Issue Fee 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 Patent and Trademark Office.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND FEES AND THIS FORM TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

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.

09096664
05/21/2001 ETULU2 00000057 500280
01 FC:142 1240.00 CH

TRANSMIT THIS FORM WITH FEE

ATTACHMENT TO AND MODIFICATION OF NOTICE OF ALLOWABILITY (PTO-37)

(November, 2000)

NO EXTENSIONS OF TIME ARE PERMITTED TO FILE CORRECTED OR FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION, notwithstanding any indication to the contrary in the attached Notice of Allowability (PTO-37).

If the following language appears on the attached Notice of Allowability, the portion lined through below is of no force and effect and is to be ignored[1]:

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to comply will result in ABANDONMENT of this application. ~~Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).~~

Similar language appearing in any attachments to the Notice of Allowability, such as in an Examiner's Amendment/Comment or in a Notice of Draftperson's Patent Drawing Review, PTO-948, is also to be ignored.

---

[1] The language which is crossed out is contrary to amended 37 CFR 1.85(c) and 1.136. See "*Changes to Implement the Patent Business Goals*", 65 *Fed. Reg.* 54603, 54629, 54641, 54670, 54674 (September 8, 2000), 1238 *Off. Gaz. Pat. Office* 77, 99, 110, 135, 139 (September 19, 2000).

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 1997

Application or Docket Number: 0966664

CLAIMS AS FILED - PART I

	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA
FOR		
BASIC FEE		
TOTAL CLAIMS	12 minus 20 =	*
INDEPENDENT CLAIMS	3 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT		

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

SMALL ENTITY TYPE ☐ RATE	FEE	OR	OTHER THAN SMALL ENTITY RATE	FEE
	395.00	OR		790.00
x$11=		OR	x$22=	
x41=		OR	x82=	
+135=		OR	+270=	
TOTAL		OR	TOTAL	790

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	ADDITIONAL FEE
x$11=		OR	x$22=	
x41=		OR	x82=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
x$11=		OR	x$22=	
x41=		OR	x82=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
x$11=		OR	x$22=	
x41=		OR	x82=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. 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.

FORM PTO-875 (Rev. 8/97) *U.S. Government Printing Office: 1997 - 430-571/69194 Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

FORM PTO 948 (REV. 01-97) U.S. DEPARTMENT OF COMMERCE-Patent and Trademark Office Application No. 09/096664

NOTICE OF DRAFTPERSON'S PATENT DRAWING REVIEW

The drawing filed (insert date) 6/12/98 are:

A. ✓ not objected to by the Draftperson under 37 CFR 1.84 or 1.152.

B. _____ objected to by the Draftperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings whe necessary. Corrected drawings must be submitted according to the instructions on the back of this notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink. Color.
   - _____ Color drawing are not acceptable until petition is granted. Fig.(s) _____
   - _____ Pencil and non black ink is not permitted. Fig(s)_____
2. PHOTOGRAPHS. 37 CFR 1.84(b)
   - _____ Photographs are not acceptable until petition is granted,
   - _____ 3 full-tone sets are required. Fig(s)_____
   - _____ Photographs not properly mounted (must brystol board or photographic double-weight paper). Fig(s)_____
   - _____ Poor quailty (half-tone). Fig(s)_____
3. TYPE OF PAPER. 37 CFR 1.84(e)
   - _____ Paper not flexible, strong, white and durable. Fig.(s)_____
   - _____ Erasures, alterations, overwritings, interlineations, folds, copy machine marks not acceptable. (too thin)
   - _____ Mylar, vellum paper is not acceptable (too thin). Fig(s)_____
4. SIZE OF PAPER. 37 CFR 1.84(F): Acceptable sizes:
   - _____ 21.0 cm by 29.7 cm (DIN size A4)
   - _____ 21.6 cm by 27.9 cm (8 1/2 x 11 inches)
   - _____ All drawings sheets not the same size. Sheet(s)_____
5. MARGINS. 37 CFR 18.4(g): Acceptable margins:
   Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: A4 Size
   Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: 8 1/2 x 11
   - _____ Margins not acceptable. Fig(s)_____
   - _____ Top (T) _____ Left (L)
   - _____ Right (R) _____ Bottom (B)
6. VIEWS. CFR 1.84(h)
   REMINDER: Specification may require revision to correspond to drawing changes.
   - _____ Views connected by projection lines or lead lines. Fig.(s)_____

   Partial views. 37 CFR 1.84(h)(2)
   - _____ Brackets needed to show figure as one entity. Fig.(s)_____
   - _____ Views not labeled separately or properly. Fig.(s)_____
   - _____ Enlarged view not labeled separately or properly. Fig.(s)_____
7. SECTIONAL VIEWS. 37 CFR 1.84(h)(3)
   - _____ Hatching not indicated for sectional portions of an object. Fig.(s)_____
   - _____ Sectional designation should be noted with Arabic or Roman numbers. Fig.(s)_____
8. ARRANGEMENT OF VIEWS. 37.CFR 1.84(i)
   - _____ Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned, so that the top becomes the right side, except for graphs. Fig.(s)_____
   - _____ Views not on the same plane on drawing sheet. Fig.(s)_____
9. SCALE. 37 CFR 1.84(k)
   - _____ Scale not large enough to show mechansim with crowding when drawing is reduced in size to two-thirds in reproduction. Fig.(s)_____
10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)
    - _____ Lines, numbers & letters not uniformly thick and well defined, clean, durable and black (poor line quality). Fig.(s)_____
11. SHADING. 37 CFR 1.84(m)
    - _____ Solid black areas pale. Fig.(s) _____
    - _____ Solid black shading not permitted. Fig.(s)_____
    - _____ Shade lines, pale, rough and blurred. Fig.(s)
12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.48(p)
    - _____ Numbers and reference characters not plain and legible. Fig.(s)_____
    - _____ Figure legends are poor. Fig.(s)_____
    - _____ Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(3) Fig.(s)_____
    - _____ Engligh alphabet not used. 37 CFR 1.84(p)(3) Fig.(s)_____
    - _____ Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig.(s)_____
13. LEAD LINES. 37 CFR 1.84(q)
    - _____ Lead lines cross each other. Fig.(s)_____
    - _____ Lead lines missing. Fig.(s)_____
14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.48(t)
    - _____ Sheets not numbered consecutively, and in Ababic numerals beginning with number 1. Fig.(s)_____
15. NUMBERING OF VIEWS. 37 CFR 1.84(u)
    - _____ Views not numbered consecutively, and in Abrabic numerals, beginning with number 1. Fig.(s)_____
16. CORRECTIONS. 37 CFR 1.84(w)
    - _____ Corrections not made from PTO-948 dated _____
17. DESIGN DRAWINGS. 37 CFR 1.152
    - _____ Surface shading shown not appropriate. Fig.(s)_____
    - _____ Solid black shading not used for color contrast. Fig.(s)_____

COMMENTS

REVIEWER Tarik DATE 7/1/98 TELEPHONE NO. _____

ATTACHMENT TO PAPER NO._____

PTO COPY

REMINDER

Drawing changes may also require changes in the specification, e.g., if Fig. I is changed to Fig. IA, Fig. IB, Fig. IC, etc., the specification, at the Brief Description of the Drawings, must likewise be changed. Please make such changes by 37 CFR 1.312 Amendment at the time of submitting drawing changes.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities--37 CFR 1.85

File new drawings with the changes incorporated therein. The application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application, should be placed on the back of each sheet of drawings in accordance with 37 CFR I .84(c). Applicant may delay filing of the new drawings until receipt of the Notice of Allowability (PTOL-37). Extensions of time may be obtained under the provisions of 37 CFR 1 .136. The drawing should be filed as a separate paper with a transmittal letter addressed to the Drawing Review Branch.

2. Timing of Corrections

Applicant is required to submit **acceptable** corrected drawings within the three-month shortened statutory period set in the Notice of Allowability (PTOL-37). If a correction is determined to be unacceptable by the Office, applicant must arrange to have acceptable correction resubmitted within the original three-month period to avoid the necessity of obtaining as extension of time and paying the extension fee. Therefore, applicant should file corrected drawings as soon as possible.

Failure to take corrective action within set (or extended) period will result in **ABANDONMENT** of the Application.

3. Corrections other than Informalities Noted by the Drawing Review Branch on the Form PTO 948

All changes to the drawings, other than informalities noted by the Drawing Review Branch, **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

US006272333B1

(12) **United States Patent**
Smith

(10) **Patent No.: US 6,272,333 B1**
(45) **Date of Patent: Aug. 7, 2001**

(54) **METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA**

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(73) Assignee: **Motorola, Inc.**, Schaumburg, IL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/096,664**

(22) Filed: **Jun. 12, 1998**

(51) **Int. Cl.**[7] **H04M 3/00**
(52) **U.S. Cl.** **455/418**; 455/419; 455/575
(58) **Field of Search** 455/418, 419, 455/420, 38.1, 524, 525, 575, 551, 88, 68, 70, 186.1, 517; 375/222, 202; 395/200.15, 200.18, 200.2

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Assistant Examiner—C. Chow
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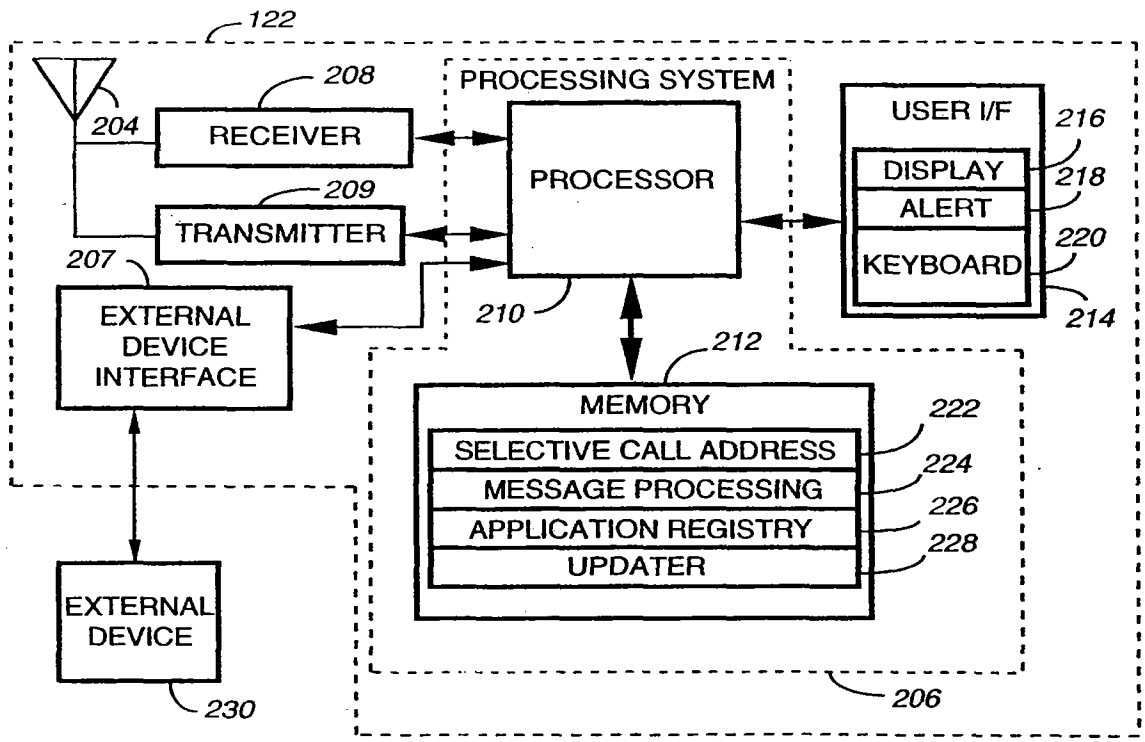
(57) **ABSTRACT**

A subscriber unit (**122**) maintains an application registry (**226**) for registering (**404**) applications accessible to the subscriber unit. A fixed portion (**102**) of a wireless communication system keeps (**514**) a current copy (**324**) of the application registry of the subscriber unit, and checks (**520**) the current copy of the application registry in response to having data to send to the subscriber unit. The fixed portion sends (**526**) the data only when the fixed portion determines (**522**) that an application compatible with the data is accessible to the subscriber unit.

13 Claims, 4 Drawing Sheets



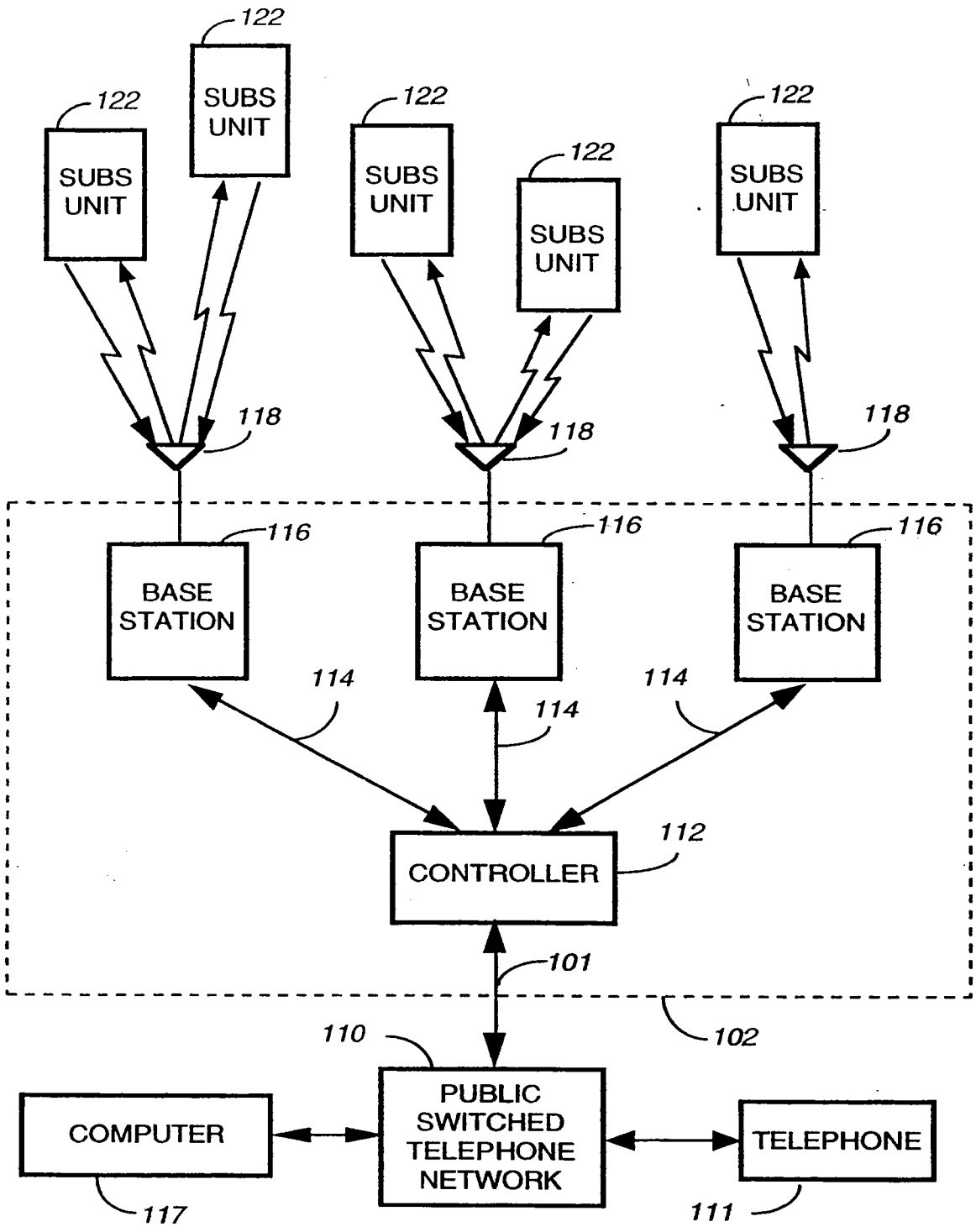

122
SUBS UNIT
122
SUBS UNIT
122
SUBS UNIT
122
SUBS UNIT
122
SUBS UNIT
118
118
118
116
116
116
BASE STATION
BASE STATION
BASE STATION
114
114
114
CONTROLLER
112
101
102
110
PUBLIC SWITCHED TELEPHONE NETWORK
COMPUTER
TELEPHONE
117
111

FIG. 1

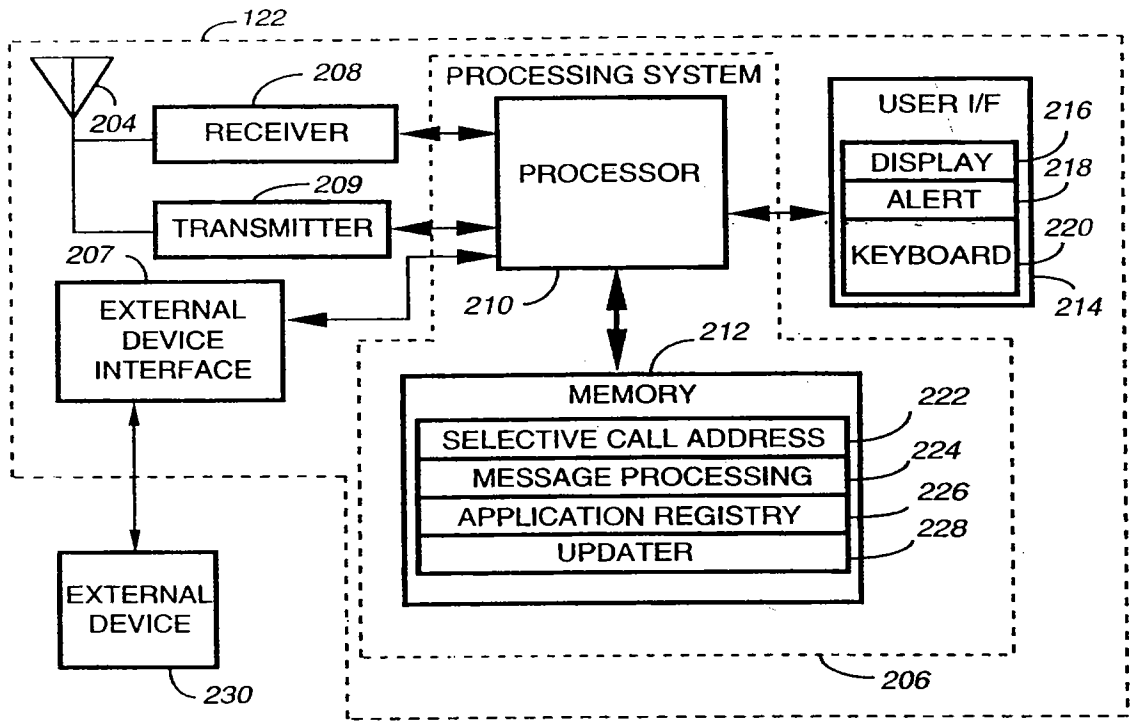
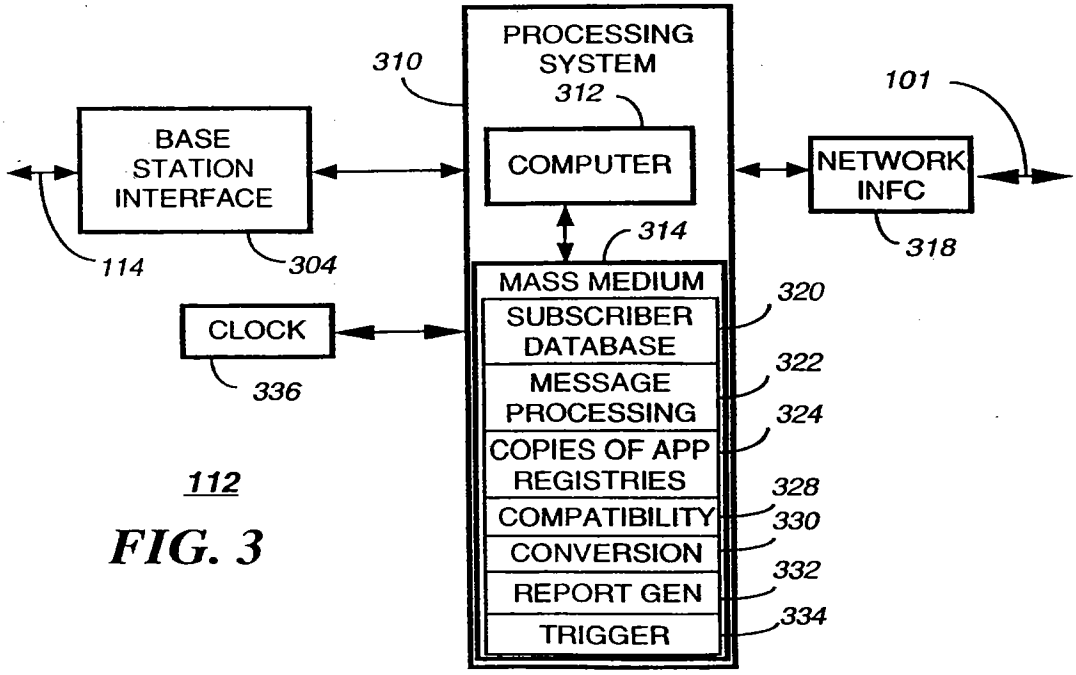
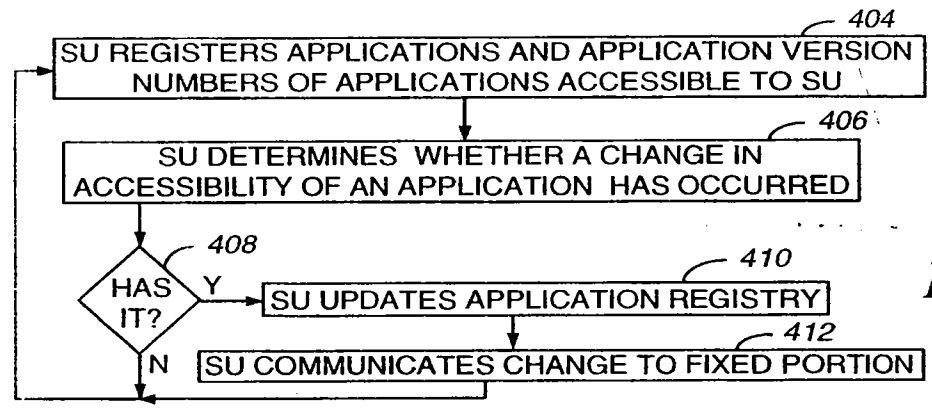


FIG. 2



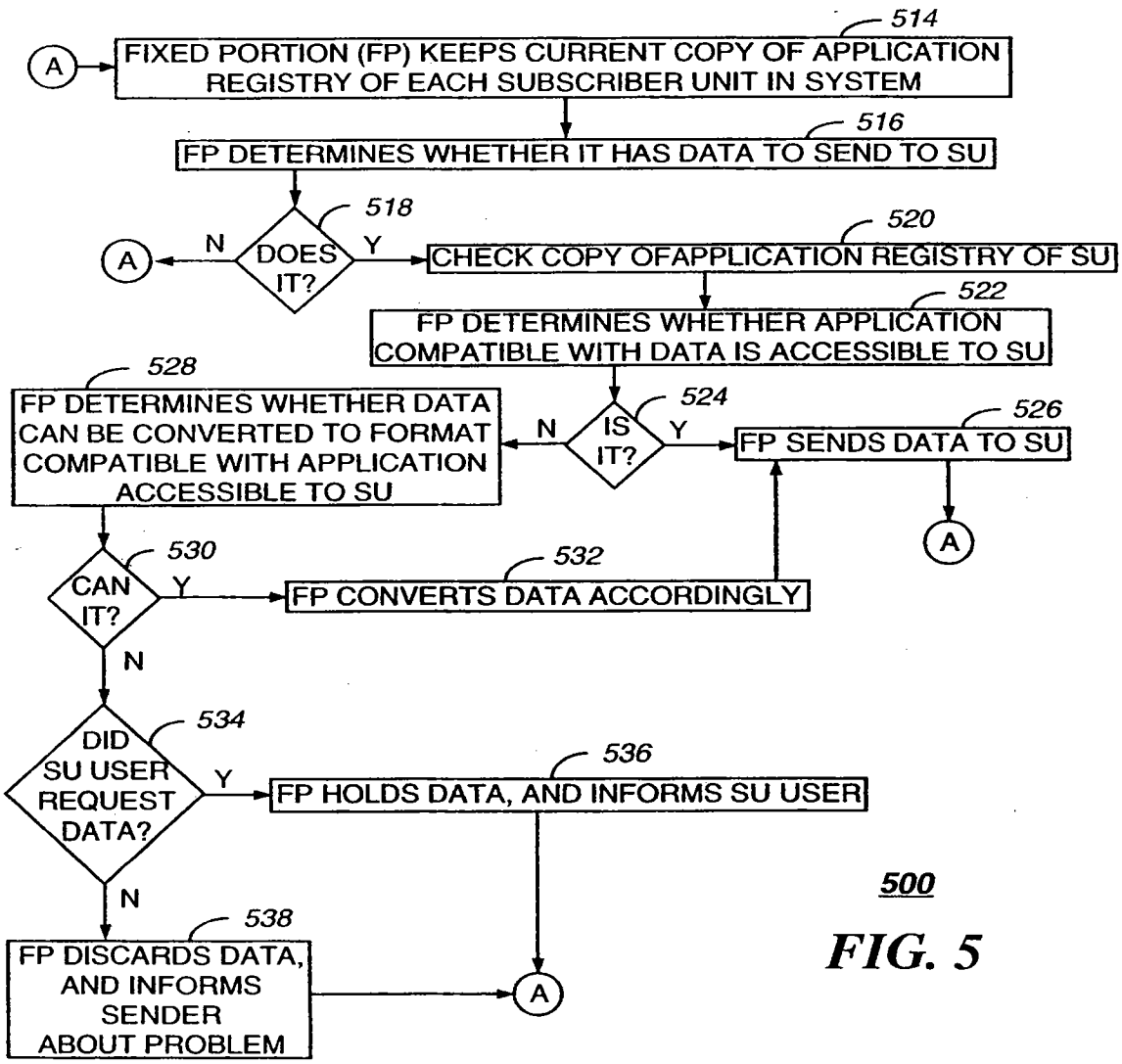
112

FIG. 3



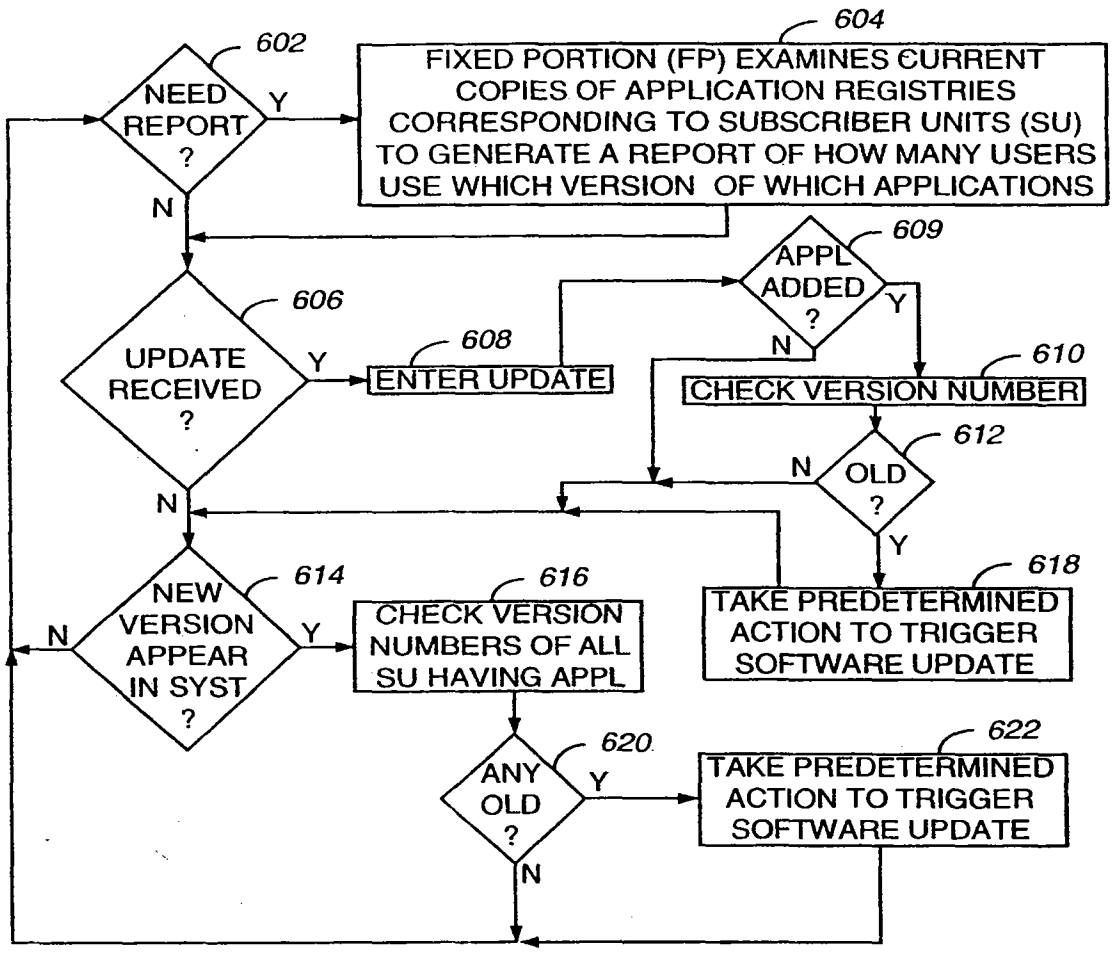
400

FIG. 4



500

FIG. 5


602
NEED REPORT ?
Y
N
604
FIXED PORTION (FP) EXAMINES CURRENT COPIES OF APPLICATION REGISTRIES CORRESPONDING TO SUBSCRIBER UNITS (SU) TO GENERATE A REPORT OF HOW MANY USERS USE WHICH VERSION OF WHICH APPLICATIONS
606
UPDATE RECEIVED ?
Y
N
608
ENTER UPDATE
609
APPL ADDED ?
Y
N
610
CHECK VERSION NUMBER
612
OLD ?
N
Y
614
NEW VERSION APPEAR IN SYST ?
N
Y
616
CHECK VERSION NUMBERS OF ALL SU HAVING APPL
618
TAKE PREDETERMINED ACTION TO TRIGGER SOFTWARE UPDATE
620
ANY OLD ?
Y
N
622
TAKE PREDETERMINED ACTION TO TRIGGER SOFTWARE UPDATE

600

FIG. 6

METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA

FIELD OF THE INVENTION

This invention relates in general to wireless communication systems, and more specifically to a method and apparatus in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit.

BACKGROUND OF THE INVENTION

Prior-art messaging systems have utilized specific vector types, such as tone-only, numeric, and alphanumeric vector types, to control the type of data the fixed portion of the messaging system would send to a specific subscriber unit. Typically, control of the specific vector type has been implemented through class-of-service information.

As subscriber units become increasingly user customizable with enhanced software application upgradability, it is impractical to expect that a class-of-service distinction or a subscriber unit class can define all the types of data that the applications accessible to a specific subscriber unit can support. Further, it is unlikely that all subscriber units of a specific type will have identical applications having identical application version numbers. Nonetheless, it remains desirable not to send data to a subscriber unit that the subscriber unit cannot utilize.

Thus, what is needed is a method and apparatus for controlling the delivery of data from the fixed portion of the messaging system to the subscriber unit. Preferably, the method and apparatus will not require specific vector types and corresponding class-of-service information to define the types of data which the subscriber unit can utilize. In addition, the method and apparatus preferably will not require an over-the-air session for each delivery of data to determine whether the subscriber unit can utilize the specific data type.

SUMMARY OF THE INVENTION

An aspect of the present invention is a method in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit. The method comprises in the subscriber unit the step of maintaining an application registry for registering applications accessible to the subscriber unit. The method further comprises, in the fixed portion of the wireless communication system, the steps of keeping a current copy of the application registry of the subscriber unit, and checking the current copy of the application registry in response to having the data to send to the subscriber unit. The method further comprises, in the fixed portion of the wireless communication system, the step of sending the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit.

Another aspect of the present invention is a controller in a fixed portion of a wireless communication system for controlling a delivery of data to a subscriber unit which maintains an application registry for registering applications accessible to the subscriber unit. The controller comprises a network interface for accepting the data from an originator, and a processing system coupled to the network interface for processing the data, the processing system comprising a memory. The controller further comprises a base station interface coupled to the processing system for controlling a base station to transmit the data. The processing system is programmed to keep in the memory a current copy of the application registry of the subscriber unit, and to check the current copy of the application registry in response to having the data to send to the subscriber unit. The processing system is further programmed to send the data only when the checking step determines that an application compatible with the data is accessible to the subscriber unit.

Another aspect of the present invention is a subscriber unit in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system. The subscriber unit comprises a receiver for receiving the data, and a processing system coupled to the receiver for processing the data. The subscriber unit further comprises a transmitter coupled to the processing system for communicating with the fixed portion of the wireless communication system. The processing system is programmed to maintain an application registry for registering applications accessible to the subscriber unit; and, in response to a change in accessibility of an application, to update the application registry and control the transmitter to communicate the change to the fixed portion of the wireless communication system.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an electrical block diagram of a wireless communication system in accordance with the present invention.

FIG. **2** is an electrical block diagram of a subscriber unit in accordance with the present invention.

FIG. **3** is an electrical block diagram of a controller in accordance with the present invention.

FIG. **4** is a flow diagram depicting operation of the subscriber unit for maintaining an application registry in accordance with the present invention.

FIG. **5** is a flow diagram depicting a first operation of the controller in accordance with the present invention.

FIG. **6** is a flow diagram depicting a second operation of the controller in accordance with the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring to FIG. **1**, an electrical block diagram depicts an exemplary wireless communication system in accordance with the present invention comprising a fixed portion **102** including a controller **112** and a plurality of conventional base stations **116**, the communication system also including a plurality of subscriber units **122**. The base stations **116** preferably communicate with the subscriber units **122** utilizing conventional radio frequency (RF) techniques, and are coupled by conventional communication links **114** to the controller **112**, which controls the base stations **116**.

The hardware of the controller **112** is preferably a combination of the Wireless Messaging Gateway (WMG™) Administrator! paging terminal, and the RF-Conductor!™ message distributor manufactured by Motorola, Inc. The software of the controller **112** is modified in accordance with the present invention. The hardware of the base stations **116** is preferably a combination of the RF-Orchestra! transmitter and RF-Audience!™ receivers manufactured by Motorola, Inc. The subscriber units **122** are preferably similar to PageWriter™ 2000 data messaging units, also manufactured by Motorola, Inc., and having software modified in accordance with the present invention. It will be appreciated that other similar hardware can be utilized as well for the controller **112**, the base stations **116**, and the subscriber units **122**.

Each of the base stations **116** transmits RF signals to the subscriber units **122** via an antenna **118**. The base stations **116** preferably each receive RF signals from the plurality of subscriber units **122** via the antenna **118**. The RF signals transmitted by the base stations **116** to the subscriber units **122** (outbound messages) comprise selective call addresses identifying the subscriber units **122**, and data messages originated by a message originator, as well as commands originated by the controller **112** for adjusting operating parameters of the radio communication system. The RF signals preferably transmitted by the subscriber units **122** to the base stations **116** (inbound messages) comprise responses that include scheduled messages, such as positive acknowledgments (ACKs) and negative acknowledgments (NAKs), and unscheduled messages, such as registration requests and application registry updates, in accordance with the present invention.

The controller **112** preferably is coupled by telephone links **101** to a public switched telephone network (PSTN) **110** for receiving selective call message originations therefrom. Selective call originations comprising data messages from the PSTN **110** can be generated, for example, from a conventional telephone **111** or a conventional computer **117** coupled to the PSTN **110**.

The over-the-air protocol utilized for outbound and inbound messages is preferably selected from Motorola's well-known FLEX™ family of digital selective call signaling protocols. These protocols utilize well-known error detection and error correction techniques and are therefore tolerant to bit errors occurring during transmission, provided that the bit errors are not too numerous. It will be appreciated that other suitable protocols can be used as well.

FIG. **2** is an electrical block diagram of an exemplary subscriber unit **122** in accordance with the present invention. The subscriber unit **122** is depicted coupled to an external device **230**, such as a personal computer for accessing software applications therefrom. The subscriber unit **122** comprises an antenna **204** for intercepting an outbound message and for transmitting an inbound message. The antenna **204** is coupled to a conventional receiver **208** for receiving the outbound message and coupled to a conventional transmitter **209** for transmitting the inbound message. The receiver **208** and transmitter **209** are coupled to a processing system **206** for processing the outbound and inbound messages. A user interface **214** preferably is also coupled to the processing system **206** for interfacing with a user. The user interface **214** comprises a conventional display **216** for displaying the inbound and outbound messages, a conventional alert element **218** for alerting the user when the outbound message arrives, and a conventional keyboard **220** for generating the inbound message and for controlling the subscriber unit **122**. A conventional external device interface **207** preferably is also coupled to the processing system **206** for coupling the subscriber unit **122** to the external device **230**.

The processing system **206** comprises a conventional processor **210** and a conventional memory **212**. The memory **212** comprises software elements and other variables for programming the processing system **206** in accordance with the present invention. The memory **212** preferably includes a selective call address **222** to which the subscriber unit **122** is responsive. In addition, the memory **212** includes a message processing element **224** for programming the processing system **206** to process messages through well-known techniques. The memory **212** further comprises an application registry **226** in accordance with the present invention. The application registry **226** comprises a list of applications that are accessible to the subscriber unit **122**. The applications can reside either internal to or external to the subscriber unit **122**, e.g., in a personal computer to which the subscriber unit **122** is connected. In addition, the application registry **226** preferably includes an application version number corresponding to each application. The memory **212** also includes an updater element **228** for programming the processing system **206** to control the transmitter **209** to communicate a change in the application registry **226** to the fixed portion **102** of the wireless communication system.

FIG. **3** is an electrical block diagram depicting an exemplary controller **112** in accordance with the present invention. The controller **112** comprises a network interface **318** for receiving a message from a message originator via the telephone links **101**. The network interface **318** is coupled to a processing system **310** for controlling and communicating with the network interface **318**. The processing system is coupled to a base station interface **304** for controlling and communicating with the base stations **116** via the communication links **114**. The processing system **310** is also coupled to a conventional clock **336** for providing a timing signal to the processing system **310**. The processing system **310** comprises a conventional computer **312** and a conventional memory, preferably a mass medium **314**, e.g., a magnetic disk drive, programmed with information and operating software in accordance with the present invention. The mass medium **314** comprises a conventional subscriber database **320** for storing profiles defining service for subscribers using the system. The mass medium **314** further comprises a message processing element **322** for processing messages through well-known techniques.

The mass medium **314** also includes current copies **324** of application registries of the subscriber units **122** operating in the wireless communication system, in accordance with the present invention. In addition, the mass medium **314** includes a compatibility element **328** for programming the processing system **310** to check the current copy **324** of the application registry of the subscriber unit **122** in response to having data to send to the subscriber unit **122**, and to send the data only when the current copy **324** of the application registry indicates that an application compatible with the data is accessible to the subscriber unit **122** for which the data is intended. The mass medium **314** also includes a conversion element **330** for programming the processing system **310** to convert data that is incompatible with the applications accessible to the subscriber unit **122** for which the data is intended, to a format that is compatible with one of the applications accessible to the subscriber unit **122**. The mass medium **314** further comprises a report generating element **332** for programming the processing system **310** to examine the current copies **324** of application registries of the subscriber units **122** to generate a report of how many users use which version of which applications. The mass medium **314** also includes a trigger element **334** for programming the processing system **310** to check the application version number of an application in response to a predetermined stimulus, and to take a predetermined action to trigger a software update when the application version number is an old version. The predetermined stimulus can be, for example, the receipt of an update to the application registry **226** of the subscriber unit **122** which adds an application not present in the current copy **324**. This can occur when a user purchases and installs a new application, or when the user connects the subscriber unit **122** to a previously disconnected external device. Another example of the predetermined stimulus is an appearance in the

wireless communication system of a new application version number, resulting, for example, from a system software update. Still another example of the predetermined stimulus is a registration of a new subscriber unit **122** in the wireless communication system.

An example of taking a predetermined action to trigger a software update when the application version number is an old version, is generating a notification message to the users corresponding to the old version. The notification message can, for example, advise that a new version is available, state where and how to obtain the new version, provide hints and tips about the new version, and recommend add-ons that will enhance the new version. Another example of a predetermined action (preferably for small applications) is to automatically download the new version over the air. Still another example is to disable the currently running application when it is no longer being supported by the wireless communication system. Another alternative (preferred for larger programs) is to provide wireline access to the latest version, and to notify the affected users to download the latest version by wireline, e.g., via the Internet. The alternative selected depends mainly upon the desires of the wireless service provider and the size of the application.

FIG. **4** is a flow diagram **400** depicting operation of the subscriber unit **122** for maintaining the application registry in accordance with the present invention. At step **404** the processing system **206** of the subscriber unit **122** registers the applications accessible to the subscriber unit **122**, along with the corresponding application version numbers, into the application registry **226**. The processing system **206** then monitors the status of the subscriber unit **122** to determine **406** whether a change in the accessibility of an application has occurred, e.g., through the installation of a new application, or through coupling the subscriber unit **122** to a previously uncoupled external device **230**, or through uncoupling the subscriber unit **122** from a previously coupled external device **230**. At step **408**, if a change in the accessibility of an application has occurred, then the processing system **206** accesses the updater element **228** and updates **410** the application registry **226**. The processing system **206** then controls the transmitter **209** to communicate **412** the change to the fixed portion **102**, so that the processing system **310** of the controller **112** can update its copy **324** of the application registry corresponding to the subscriber unit **122**. Flow then returns to step **404**. If, on the other hand, at step **408** no change in the accessibility of an application has occurred, then the flow simply returns to step **404**.

FIG. **5** is a flow diagram **500** depicting a first operation of the controller **112** in accordance with the present invention. At step **514** the processing system **310** of the controller **112** keeps a current copy **324** of the application registry **226** of each subscriber unit **122** in the wireless communication system. The current copy **324** is preferably programmed into the mass medium **314** when the subscriber unit **122** is initially activated in the wireless communication system. The current copy **324** is updated in response to communications from the subscriber unit **122** whenever the subscriber unit **122** updates its application registry **226**. In addition, the controller **112** preferably performs periodic synchronization routines, using well-known techniques to ensure that the current copies **324** of application registries remain identical to the application registries **226** in the subscriber units **122**.

At step **516**, the processing system **310** determines whether it has data to send to one of the subscriber units **122**. If not, at step **518** the processing system **310** returns to step **514**. If, on the other hand, the processing system **310** does have data to send to one of the subscriber units **122**, then after step **518** the processing system **310** checks **520** the current copy **324** of the application registry of the subscriber unit **122** to determine **522** whether an application compatible with the data is accessible to the subscriber unit **122**. If so, at step **524** the processing system **310** sends **526** the data to the subscriber unit **122**, and the flow returns to step **514**. If, on the other hand, the processing system **310** determines that no application compatible with the data is accessible to the subscriber unit **122**, then at step **524** the processing system **310** accesses the conversion element **330** to determine **528** whether the data can be converted to a format compatible with an application that is accessible to the subscriber unit **122**. If so, at step **530** the processing system **310** converts **532** the data to a format compatible with an application that is accessible to the subscriber unit **122**, and then sends **526** the data to the subscriber unit **122**, after which the flow returns to step **514**. If, on the other hand, the processing system **310** determines that the data cannot be converted to a format compatible with an application that is accessible to the subscriber unit **122**, the flow moves from step **530** to step **534**. At step **534** the processing system **310** checks whether the user of the subscriber unit **122** requested the data. If so, the processing system **310** holds the data in the mass medium **314**, and notifies the user that the data is being held, but requires an application that is not currently accessible to the subscriber unit **122**. Flow then returns to step **514**. If, on the other hand, at step **534** the user did not request the data, then the processing system **310** discards **538** the data, and informs the sender about the compatibility problem. Flow then returns to step **514**.

FIG. **6** is a flow diagram **600** depicting a second operation of the controller **112** in accordance with the present invention. The flow begins with the processing system **310** determining **602** whether a demographic report is needed. The demographic report can, for example, be requested by the wireless service provider through a keyboard-display terminal (not shown) coupled to the processing system **310**. If the report is needed, then the processing system **310** accesses the report generating element **332** and examines the current copies **324** of the application registries corresponding to the subscriber units **122** to generate a report of how many users use which version of which applications. In any case, flow then moves to step **606**, where the processing system **310** checks whether an update has been received from one of the subscriber units **122**. If so, the processing system **310** enters **608** the update in the current copy **324** of the application registry corresponding to the subscriber unit **122**. The processing system **310** then determines **609** whether the update was to add an application that has become accessible to the subscriber unit **122**. If so, the processing system **310** checks **610** the application version number to determine whether the application is an old version. If, at step **612**, the application version is old, the processing system **310** takes **618** a predetermined action, as described herein above, to trigger a software update. If not, the flow moves to step **614**. If, on the other hand, at step **609** the update was not to add an application, the flow simply moves to step **614**.

If, on the other hand, at step **606** no update has been received, the flow moves to step **614**, where the processing system **310** checks whether a new application version has appeared in the wireless communication system since the last check. If so, the processing system **310** checks **616** the application version numbers of the subscriber units **122** that have access to the application that has been upgraded to the new version. If at step **620**, any of the version numbers are

old, then the processing system **310** takes **622** a predetermined action, as described herein above, to trigger a software update by the affected subscriber units **122**. The flow then returns to step **602**. If at step **620** none of the version numbers are old, then the flow simply returns to step **602**.

Thus, it should be clear from the preceding disclosure that the present invention provides a method and apparatus for controlling the delivery of data from the fixed portion of a messaging system to a subscriber unit. Advantageously, the method and apparatus does not require specific vector types and corresponding class-of-service information to define the types of data which the subscriber unit can utilize. In addition, the method and apparatus advantageously does not require an over-the-air session for each delivery of data to determine whether the subscriber unit can utilize a specific data type.

Many modifications and variations of the present invention are possible in light of the above teachings. Thus, it is to be understood that, within the scope of the appended claims, the invention can be practiced other than as described herein above.

What is claimed is:

1. A method in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system to a subscriber unit, the method comprising in the subscriber unit the step of:

maintaining an application registry comprising a list of all software applications that are currently accessible to the subscriber unit; and

in the fixed portion of the wireless communication system, the steps of:

keeping a current copy of the application registry of the subscriber unit;

checking the current copy of the application registry in response to having the data to send to the subscriber unit; and

sending the data only when the checking step determines that an application compatible with the data is accessible lo the subscriber unit.

2. The method of claim **1**, further comprising, in the fixed portion before the sending step, the step of

converting incompatible data to a format compatible with one of the applications accessible to the subscriber unit.

3. The method of claim **1**, wherein the maintaining step comprises, in response to a change in accessibility of an application, the steps of:

updating the application registry; and

communicating the change to the fixed portion of the wireless communication system.

4. The method of claim **1**,

wherein the maintaining step comprises the step of

registering an application version number for at least one of the applications accessible to a plurality of subscriber units; and

wherein the method further comprises, in the fixed portion of the wireless communication system, the step of

examining a plurality of current copies of application registries corresponding to the plurality of subscriber units to generate a report of how many users use which version of which applications.

5. The method of claim **1**,

wherein the maintaining step comprises the step of

registering an application version number for at least one of the applications accessible to the subscriber unit; and

wherein the method further comprises, in the fixed portion of the wireless communication system, the steps of:

checking the application version number for the at least one of the applications in response to a predetermined stimulus; and

taking a predetermined action to trigger a software update when the application version number is an old version.

6. The method of claim **5**, wherein the step of checking the application version number is performed in response to one of: a) a receipt of an update to the application registry of the subscriber unit which adds an application not present in the current copy, b) an appearance in the wireless communication system of a new application version number, and c) a registration of a new subscriber unit in the wireless communication system.

7. A controller in a fixed portion of a wireless communication system for controlling a delivery of data to a subscriber unit which maintains an application registry comprising a list of all software applications that are currently accessible to the subscriber unit, the controller comprising:

a network interface for accepting the data from an originator;

a processing system coupled to the network interface for processing the data, the processing system comprising a memory; and

a base station interface coupled to the processing system for controlling a base station to transmit the data;

wherein the processing system is programmed to:

keep in the memory a current copy of the application registry of the subscriber unit;

check the current copy of the application registry in response to having the data to send to the subscriber unit; and

send the data only when an application compatible with the data is accessible to the subscriber unit.

8. The controller of claim **7**, wherein the processing system is further programmed to

convert incompatible data to a format compatible with one of the applications accessible to the subscriber unit.

9. The controller of claim **7**,

wherein a plurality of subscriber units register an application version number for at least one of the applications accessible to the plurality of subscriber units, and

wherein the processing system is further programmed to examine a plurality of current copies of application registries corresponding to the plurality of subscriber units to generate a report of how many users use which version of which applications.

10. The controller of claim **7**,

wherein the subscriber unit registers an application version number for at least one of the applications accessible to the subscriber unit, and

wherein the processing system is further programmed to:

check the application version number for the at least one of the applications in response to a predetermined stimulus; and

take a predetermined action to trigger a software update when the application version number is an old version.

11. The controller of claim **10**, wherein the processing system is further programmed to check the application version number in response to one of: a) a receipt of an update to the application registry of the subscriber unit which adds an application not present in the current copy, b) an appearance in the wireless communication system of a

new application version number, and c) a registration of a new subscriber unit in the wireless communication system.

12. A subscriber unit in a wireless communication system for controlling a delivery of data from a fixed portion of the wireless communication system, the subscriber unit comprising:

a receiver for receiving the data;

a processing system coupled to the receiver for processing the data; and

a transmitter coupled to the processing system for communicating with the fixed portion of the wireless communication system,

wherein the processing system is programmed to:

maintain an application registry comprising a list of all software applications that are currently accessible to the subscriber unit; and

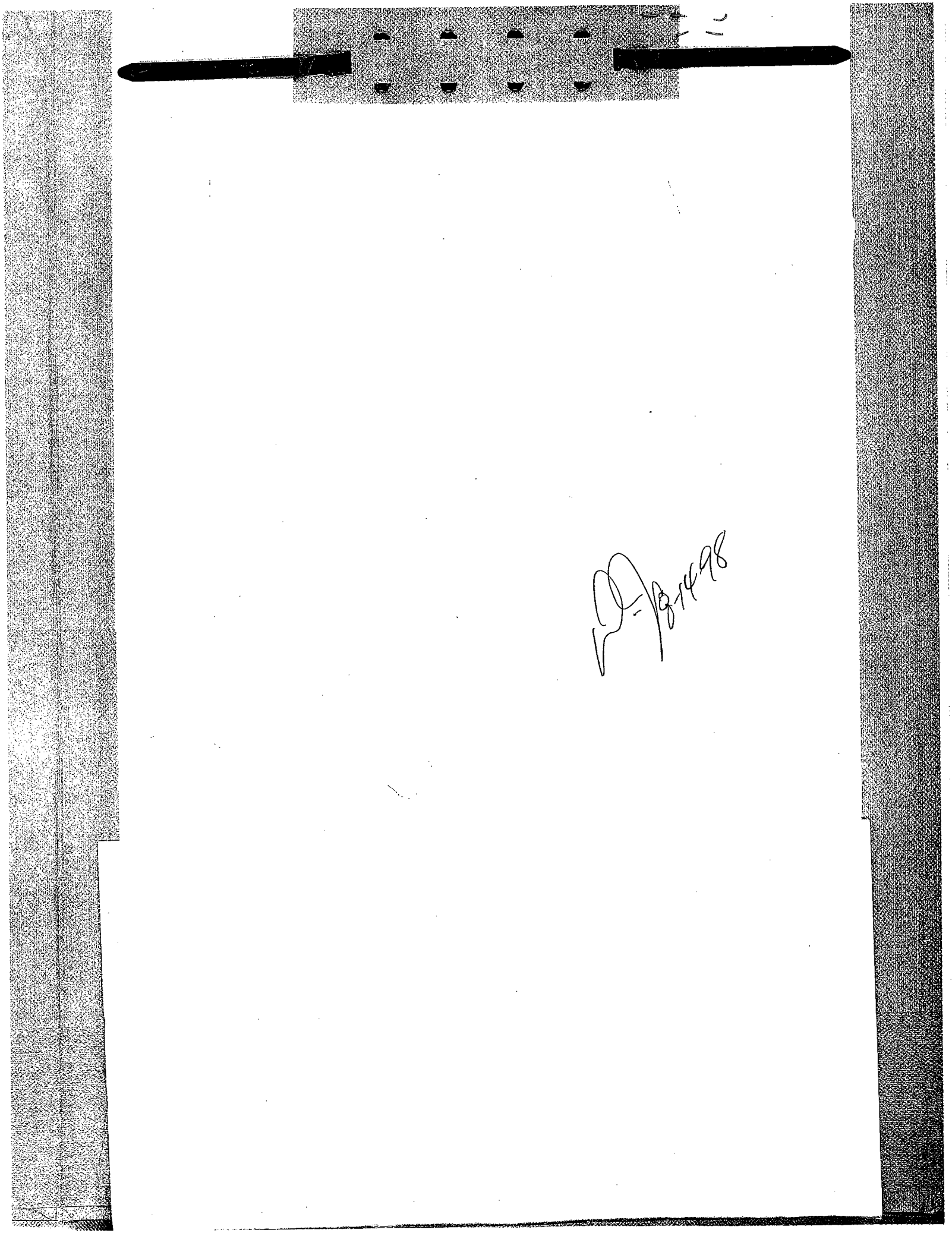
in response to a change in accessibility of an application, update the application registry; and

control the transmitter to communicate the change to the fixed portion of the wireless communication system.

13. The subscriber unit of claim **12**, wherein the processing system is further programmed to

register an application version number for at least one of the applications accessible to the subscriber unit.

* * * * *



ISSUE SLIP STAPLE AREA (for additional cross references)

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION	SMT		
O.I.P.E. CLASSIFIER		10	6-19-98
FORMALITY REVIEW	JDB	65373	6/30/98

INDEX OF CLAIMS

✔ ..... Rejected
= ..... Allowed
— (Through numeral) Canceled
÷ ..... Restricted
N ..... Non-elected
I ..... Interference
A ..... Appeal
O ..... Objected

Claim Final	Claim Original	Date 1/19/00	6/20	11/17/00	12/27/00	4/23/01	6/01
1	(1)	✔	✔	✔	✔	=	
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5	5	✔	✔	✔	✔	=	
6	6	✔	✔	✔	✔	=	
7	(7)	✔	✔	✔	✔	=	
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If more than 150 claims or 10 actions staple additional sheet here

(LEFT INSIDE)

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SEARCHED

Class	Sub.	Date	Exmr.
455	418 419 420 38.1 524 525 575 551 88 38.1 68 70 186.1 517	1-27-00	C.C.
375	222 202		
395	200.15 200.18 200.2		
search updated		4-23-01	C.C.

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
455	418 419 575	4-23-01	C.C.

SEARCH NOTES
(INCLUDING SEARCH STRATEGY)

	Date	Exmr.
-wireless system - delivery data -Base station, controller -subscriber units -maintaining application registry -application compatible with data. -check current copy. -send data when application is accessible. -convert compatible Format, -update Application registry -examine version number for users for which version -Trigger software update - add new applications -appearance of new applications version number - register new subscriber unit,	1-27-00	C.C.

(RIGHT OUTSIDE)

PATENT APPLICATION

09096664

jc542 U.S. PTO
09/096664
06/12/98

JUN 199834
INITIALS ________

CONTENTS

		Date received (Incl. C. of M.) or Date Mailed			Date received (Incl. C. of M.) or Date Mailed
1.	Application 4 pts papers.		42.		
2.	IDS	6-12-98	43.		
3.	Rej (3)	2-2-00	44.		
4.	Amdt A	4-6-00	45.		
5.	Rej (3)	6-16-00	46.		
6.	Amdt B	9-8-00	47.		
7.	Final Rej (3)	11-22-00	48.		
8.	Req for CPA	12-21-00	49.		
9.	Response	12-21-00	50.		
10.	Rej (3)	3-7-01	51.		
11.	Change of Address	3-30-00	52.		
12.	Notice of allowance	4/30/01	53.		
13.			54.		
14.			55.		
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