(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
18 December 2008 (18.12.2008)

PCT

(10) International Publication Number
WO 2008/154218 A1

(51) International Patent Classification:
H04Q 7/38 (2006.01)

(21) International Application Number:
PCT/US2008/065637

(22) International Filing Date: 3 June 2008 (03.06.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/942,286 6 June 2007 (06.06.2007) US
60/942,674 8 June 2007 (08.06.2007) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

[Continued on next page]

(54) **Title:** METHOD AND APPARATUS FOR PROVIDING CELL INFORMATION LIST FOR NON-3GPP CAPABLE USER EQUIPMENT OPERATING IN A 3GPP NETWORK AND SUPPORTING LAYER-2 BASED HANDOFF FROM A UTRAN SYSTEM TO A NON-3GPP SYSTEM

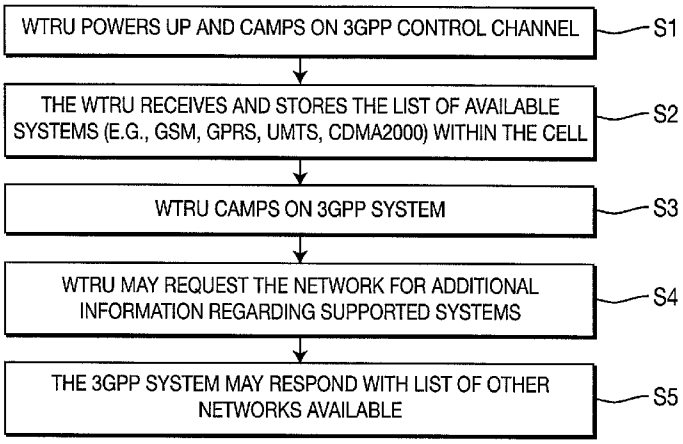

FIG. 2

(57) **Abstract:** Method and apparatus providing cell information list for non-third generation partnership project (3GPP) capable wireless transmitter/receiver unit (WTRU) operating in a 3GPP network, which camps on a 3GPP channel to obtain information of at least one network available in the cell. The WTRU may request a list having at least one of a trusted IEEE 802.11 network, a non-trusted IEEE 802.11 network, a trusted WiMAX network, and a fixed broadband network. In an inter radio access technology (RAT) procedure for an inter-RAT handover, a list of available systems and at least one of intra-frequency, inter-frequency, and inter-radio access technology (RAT) cells is received and stored while the WTRU is engaged in a call. While moving, the WTRU detects and performs radio frequency (RF) measurements on target cells and systems and reports inter-RAT handover information. Upon receipt of a command, the WTRU initiates a handover, followed by a complete message.

WO 2008/154218 A1

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

[0001] METHOD AND APPARATUS FOR PROVIDING CELL INFORMATION LIST FOR NON-3GPP CAPABLE USER EQUIPMENT OPERATING IN A 3GPP NETWORK AND SUPPORTING LAYER-2 BASED HANDOFF FROM A UTRAN SYSTEM TO A NON-3GPP SYSTEM

[0002] FIELD OF INVENTION

[0003] The present invention is related to wireless communication systems.

[0004] BACKGROUND

[0005] Currently the mobile communication industry is moving toward convergence and interworking between various wireless technologies, (e.g., 3rd Generation Partnership Project-based (3GPP-based), 3GPP2-based, WiFi 802.11, WiMAx 802.16, and Fixed Broadband Access). The main purpose is to allow a subscriber to access home-based services anywhere and via any technology. In order to support this objective, the industry standards in 3GPP have defined the interworking architecture between the home public land mobile network (HPLMN) and the non-3GPP networks, as shown in Figure 1. For such operation to be achieved effectively, various information describing these different systems has to be provided over the 3GPP network for mobile units operating in such technology (general packet radio services (GPRS), universal mobile telecommunication system (UMTS), and/or long term evolution (LTE)).

[0006] The following interfaces are shown in Figure 1, except as otherwise noted.

- **S1 Mobility Management Entity (MME) S1-MME, S1-U, S3, S4, S10, S11** are defined in 3GPP in TS 23.401.
- **S2a:** Provides the user plane with related control and mobility support between trusted non-3GPP Internet protocol (IP) access and the Packet Data Network (PDN) Gateway (GW).
- **S2b:** Provides the user plane with related control and mobility support between the evolved packet data gateway (ePDG) and the PDN GW.

- **S2c:** Provides the user plane with related control and mobility support between WTRU and the PDN GW. This reference point is implemented over trusted and/or untrusted non-3GPP Access and/or 3GPP access. The portion of S2c extending through the "ACCESS" oval is shown dotted to indicate a direct connection between the PDN GW and the WTRU.
- **S5:** Provides user plane tunneling and tunnel management between the Serving Gateway (GW) and PDN GW and is used for Serving GW relocation due to WTRU mobility and in case the Serving GW needs to connect to a non co-located PDN GW for the required PDN connectivity.
- **S6a:** This interface is defined between the MME and the Home Subscriber Server (HSS) for authentication and authorization and is defined in TS 23.401.
- **S6c:** Is the reference point between the PDN GW in the HPLMN and the 3GPP authentication, authorization and accounting (AAA) server for mobility related authentication, if needed. This reference point may also be used to retrieve and request storage of mobility parameters.
- **S7:** Provides transfer of Quality of Service (QoS) policy and charging rules from the Policy and Charging Rules Function (PCRF) to a Policy and Charging Enforcement Point (PCEF). PCEF was previously part of the GGSN. However, in LTE, it is a separate function box which may be implemented separately and is therefore not shown in Figure 1 for purposes of simplicity.
- **S8b:** Is the roaming interface in case of roaming with home routed traffic and provides the user plane with related control between Gateways in the VPLMN and HPLMN. S8b is not relevant to the embodiments set forth herein and has been omitted from Figure 1 for purposes of simplicity.

- **S9:** Indicates the roaming variant of the S7 reference point for the enforcement in the VPLMN of dynamic control policies from the HPLMN. S9 is not relevant to the embodiments set forth herein and has been omitted from Figure 1 for purposes of simplicity.
- **SGi:** Is the reference point between the PDN GW and the PDN. The Packet data network may be an operator external public or private PDN or an intra-operator PDN, e.g. for provision of IP multi-media subsystem (IMS) services. This reference point corresponds to Gi and Wi functionalities and supports any 3GPP and non-3GPP access system.
- **Wa:** Connects the Untrusted non-3GPP IP Access with the 3GPP AAA Server/Proxy and transports access, authentication, authorization and charging-related information in a secure manner.

- **Ta:** Connects the Trusted non-3GPP IP Access with the 3GPP AAA Server/Proxy and transports access, authentication, authorization, mobility parameters and charging-related information in a secure manner.
- **Wd:** Connects the 3GPP AAA Proxy, possibly via intermediate networks, to the 3GPP AAA Server. Differences are compared to Wd. Wd is not relevant to the embodiments set forth herein and has been omitted from Figure 1 for purposes of simplicity.
- **Wm:** This reference point is located between 3GPP AAA Server/Proxy and the ePDG and is used for AAA signaling (transport of mobility parameters, tunnel authentication and authorization data). Differences are compared to Wm.
- **Wn:** Is the reference point between the Untrusted Non-3GPP IP Access and the ePDG. Traffic on this interface for a WTRU-initiated tunnel has to be forced towards ePDG. The existence of an entity corresponding to WAG in I-WLAN and its impact on Wn* is FFS.

- **Wx:** This reference point is located between 3GPP AAA Server and the HSS, the database for subscriber information and is used for transport of authentication data.
- **RX+** Is an IP-based interface between the PCRF and IMS to provide policies and Policy decisions to Multimedia-based decisions.
- The **S1** interface for e-UTRAN is the same for both Roaming and Non-Roaming architectures.

[0007] It should be noted that all untrusted non-3GPP access, see terms marked with an asterisk (*) in Figure 1, requires an ePDG interface.

[0008] Protocol assumptions for handoff are as follows:

- S2a interface and S2b interface are based on current or future Internet Engineering Task Force (IETF) Request For Comments (RFCs). S2a is based on Proxy Mobile IP (PMIP). To enable access via Trusted Non- 3GPP IP accesses that do not support PMIP, S2a also supports the Client Mobile IPv4 Foreign Agent (IPv4 FA) mode. S2b is based on PMIP.
- S2c is based on the Client Mobile IP co-located mode. (The exact protocol decision is for further study (FFS))
- The S5, S8b and S2a/S2b interfaces described above are based on the same protocols and differences shall be minimized. The S5 interface is based on current or future IETF RFCs. The GPRS Tunneling Protocol (GTP) variant of the S5 interface is described in TS 23.401.
- The S8b interface is based on current or future IETF RFCs. The GTP variant interface (S8a) is described in TS 23.401.

[0009] The Evolved Packet System (EPS) shall allow the operator to configure a type of access (3GPP or non-3GPP) as the "home link" for Client Mobile IP purposes. Redundancy support on reference points S5 and S8b should be taken into account.

[0010] Figure 2, in addition to providing a capability according to one of the embodiments herein, also includes a conventional process for providing a cell

information list. Upon power up of a WTRU, the WTRU, at step S1, camps on a 3GPP control channel. The WTRU receives and stores the list of available systems, (e.g., global standards for mobile communication (GSM), GPRS, UMTS, CDMA2000) within the cell of a system, at S2. The WTRU camps on the 3GPP system at S3. According to one embodiment the WTRU, at S4, may request the network for additional information regarding supported systems. The 3GPP system, at S5, may respond with a list of other networks available, i.e., the non-3GPP networks.

[0011] The Handover Commands presently in use are set forth below.

[0012] **Existing Handover Commands in TS 23.331:**

[0013] **10.2.16b HANDOVER TO UTRAN COMMAND**

[0014] This message, as set forth below, is sent to the WTRU via another system for a handover to the UTRAN.

[0015] Radio Link Control-Service Access Point (RLC-SAP): N/A (Sent through a different Radio Access Technology (RAT))

[0016] Logical channel: N/A (Sent through a different RAT)

[0017] Direction: UTRAN → WTRU

Information Element/Group name	Need	Multi	Type and reference	Semantics description
New U--RNTI	MP		U-RNTI Short 10.3.3.48	
Ciphering algorithm	OP		Ciphering algorithm 10.3.3.4	
CHOICE *specification mode*	MP			
>Complete specification				
RB information elements				
>>Signalling RB information to setup list	MP	1 to <maxSRBsetup>		For each signalling radio bearer established
>>>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
>>RAB information to setup list	OP	1 to <maxRAB setup>		For each RAB established
>>>RAB information for setup	MP		RAB information for setup	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			10.3.4.10	
Uplink transport channels				
>>UL Transport channel information common for all transport channels	MP		UL Transport channel information common for all transport channels 10.3.5.24	
>>Added or Reconfigured TrCH information	MP	1 to <maxTrCH>		
>>>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
Downlink transport channels				
>>DL Transport channel information common for all transport channels	MP		DL Transport channel information common for all transport channels 10.3.5.6	
>>Added or Reconfigured TrCH information	MP	1 to <maxTrCH>		
>>>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1	
Uplink radio resources				
>>Uplink DPCH info	MP		Uplink DPCH info 10.3.6.88	
>>CHOICE *mode*	MP			
>>>FDD				
>>>>Common Power Control Channel (CPCH) SET Info	OP		CPCH SET Info 10.3.6.13	
Downlink radio resources				
>>>>Downlink Physical Downlink Shared Channel (PDSCH) information	OP		Downlink PDSCH information 10.3.6.30	
>>>TDD				(no data)
>>Downlink information	MP		Downlink	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
common for all radio links			information common for all radio links 10.3.6.24	
>>Downlink information per radio link	MP	1 to <maxRL>		
>>>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	
>Preconfiguration				
>>CHOICE *Preconfiguration mode*	MP			
>>>Predefined configuration	MP		Predefined configuration identity 10.3.4.5	
>>>Default configuration				
>>>>Default configuration mode	MP		Enumerated (FDD, TDD)	Indicates whether the FDD or TDD version of the default configuration shall be used
>>>>Default configuration identity	MP		Default configuration identity 10.3.4.0	
>>Radio Access Bearer (RAB) info	OP		RAB info Post 10.3.4.9	One RAB is established
>>Uplink DPCH info	MP		Uplink DPCH info Post 10.3.6.89	
Downlink radio resources				
>>Downlink information common for all radio links	MP		Downlink information common for all radio links Post 10.3.6.25	
>>Downlink information per radio link	MP	1 to <maxRL>		Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.
>>>Downlink information for each radio link	MP		Downlink information for each radio link Post 10.3.6.28	
>>CHOICE *mode*	MP			
>>>FDD				(no data)

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>TDD				
>>>>Primary (Common Control Physical Channel (CCPCH) Tx Power	MP		Primary CCPCH Tx Power 10.3.6.59	
Frequency info	MP		Frequency info 10.3.6.36	
Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.39	

[0018] **10.2.16b HANDOVER TO UTRAN COMPLETE**

[0019] This message, as set forth below, is sent by the WTRU when a handover to UTRAN has been completed.

[0020] RLC-SAP: Acknowledge Mode (AM)

[0021] Logical channel: Dedicated Control Channel (DCCH)

[0022] Direction: WTRU → UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
WTRU Information elements				
START list	Channel (CH)	1 to <maxCN domains>		START [40] values for all Core Network (CN) domains.
>CN domain identity	MP		CN domain identity 10.3.1.1	
>START	MP		START 10.3.3.38	
Radio Bearer (RB) Information elements				
COUNT-C activation time	OP		Activation time 10.3.3.1	Used for radio bearers mapped on RLC-TM.

[0023] **10.2.16c INITIAL DIRECT TRANSFER**

[0024] This message, as set forth below, is used to initiate a signaling connection based on an indication from the upper layers, and to transfer a Network Access Server (NAS) message.

[0025] RLC-SAP: AM

[0026] Logical channel: DCCH

[0027] Direction: WTRU -> UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
WTRU information elements					
Integrity check info	CH		Integrity check info 10.3.3.16		
PLMN identity	OP		PLMN identity 10.3.1.11	This IE indicates the PLMN to which the WRTU requests the signalling connection to be established.	REL-6
CN information elements					
CN domain identity	MP		CN domain identity 10.3.1.1		
Intra Domain NAS Node Selector	MP		Intra Domain NAS Node Selector 10.3.1.6		
NAS message	MP		NAS message 10.3.1.8		
START	OP		START 10.3.3.38	START value to be used in the CN domain as indicated in the IE "CN domain identity". This IE shall always be present in this version of the protocol.	
Establishment cause	OP		Establishment cause 10.3.3.11		Rel-5
Measurement information elements					
Measured results on Random Access Channel (RACH)	OP		Measured results on RACH 10.3.7.45		
MBMS joined information	OP				REL-6
>Packet-Temporary Mobile Subscriber Identity (P-TMSI)	OP		P-TMSI (GSM-MAP) 10.3.1.13		REL-6

[0028] **Existing Inter RAT Handover Information/Commands in TS 23.331:**

[0029] **10.2.16d INTER RAT HANDOVER INFORMATION**

[0030] This message, as set forth below, is sent by the WTRU via another RAT to provide information to the target RNC when preparing for a handover to the UTRAN.

[0031] RLC-SAP: N/A (Sent through a different RAT)

[0032] Logical channel: N/A (Sent through a different RAT)

[0033] Direction: WTRU → UTRAN

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
Radio Bearer IEs					
Predefined configuration status information	OP		Predefined configuration status information 10.3.4.5a		
Predefined configuration status information compressed	OP		Predefined configuration status information compressed 10.3.4.5b		REL-5
WTRU Information elements					
WTRU security information	OP		WTRU security information 10.3.3.42b		
>**WTRU** Specific Behaviour Information 1 interRAT	OP		WTRU Specific Behaviour Information 1 interRAT 10.3.3.52	This IE shall not be included in this version of the protocol	
WTRU capability container	OP				
>WTRU radio access capability	MP		WTRU radio access capability 10.3.3.42		
>WTRU radio access capability extension	MP		WTRU radio access capability extension 10.3.3.42a	Although this IE is not always required, the need has been set to MP to align with the ASN.1	
WTRU radio access capability compressed	OP		WTRU radio access capability compressed 10.3.3.42o		REL-5

[0034] SUMMARY

[0035] A method and apparatus is disclosed for providing a cell information list for a non-3GPP capable WTRU operating in a 3GPP network. In a wireless communication system including a 3GPP network, the WTRU camps on a 3GPP control channel, and the 3GPP network provides information regarding at least one non-3GPP network available in the 3GPP network. The WTRU requests information, which may be a cell information list including cell information on at least one of intra-frequency, inter-frequency, and inter-radio access technology (inter-RAT) cells. The information list may also include at least one of a trusted IEEE 802.11 network information, a non-trusted IEEE 802.11 network information, a trusted WiMAX network information, and fixed broadband network information. Also provided is an inter-RAT procedure for performing an inter-RAT handover. The WTRU receives a broadcasted list and stores the list of available systems within a cell while engaged in a call. While moving, the WTRU detects and performs radio frequency (RF) measurements on target cells/systems and reports inter-RAT handover information to the systems and waits for directives. If a handoff command is received, handover procedures are initiated and a handover complete message is sent upon completion,.

[0036] BRIEF DESCRIPTION OF THE DRAWINGS

[0037] A more detailed understanding of the embodiments may be had from the following description, given by way of example and to be understood in conjunction with the accompanying drawings wherein:

[0038] Figure 1 shows conventional interworking architecture.

[0039] Figure 2 shows a process for providing a cell information list.

[0040] Figure 3 shows existing operations used to perform handoff to a UTRAN system in 3GPP; and

[0041] Figure 4 is a flow diagram of handoff procedures according to an embodiment described below and in addition to the existing operations obtainable through the related art shown in Figure 3.

[0042] DETAILED DESCRIPTION

[0043] When referred to hereafter, the terminology "WTRU" includes but is not limited to a user equipment (UE), a mobile station, a fixed or mobile subscriber unit, a pager, a cellular telephone, a personal digital assistant (PDA), a computer, or any other type of user device capable of operating in a wireless environment. When referred to hereafter, the terminology "base station" includes but is not limited to a Node-B, a site controller, an access point (AP), or any other type of interfacing device capable of operating in a wireless environment.

[0044] Cell information not heretofore obtainable in presently existing systems is obtained in harmony with presently available information using an operation to download and update the network with the capabilities of a WTRU to support non-3GPP technologies as well as the various elements pertaining to these technologies defined in the 3GPP standard TS 25.331, employing the embodiments set forth herein. This expanded operation incorporates the non-3GPP technologies and networks in the cell information list defined in TS 25.331 to thereby facilitate interworking with non-3GPP technologies.

[0045] The CELL_INFO_LIST variable in TS 25.331 contains cell information on intra-frequency, inter-frequency and inter-radio access technology (RAT) cells, as received in messages System Information Block (SIB) Type 11, SIB Type 12, and MEASUREMENT CONTROL. The first position in the intra-frequency cell information list corresponds to intra-frequency cell identity (ID) 0, the second to intra-frequency cell ID 1, etc. The first position in the inter-frequency cell information list corresponds to inter-frequency cell ID 0, the second to inter-frequency cell ID 1, etc. The first position in an inter-RAT cell information list corresponds to inter-RAT cell ID 0, the second to inter-RAT cell ID 1, etc. This variable shall be cleared at cell re-selection, when leaving the universal terrestrial radio access (UTRA) radio resource control (RRC) connected mode, when switched off as well as at selection of a new public land mobile network (PLMN).

[0046] The following Table shows a cell information list with new information provided to the WTRU employing the method shown in Figure 2. The new information which is obtained at step S5 in Figure 2, is shown in bold.

Information Element / Group name	*Need*	*Multi*	*Type and reference*	*Semantics description*
Intra-frequency cell info	OP	1..<max CellMeas>		
>CHOICE *position status*	MP			
>>Occupied				
>>>Cell info	MP		Cell info 10.3.7.2	
>>Vacant				No data
Inter-frequency cell info	OP	1..<max CellMeas>		
>CHOICE *position status*	MP			
>>Occupied				
>>>Frequency info	MP		Frequency info 10.3.6.36	
>>>Cell info	MP		Cell info 10.3.7.2	
>>Vacant				No data
Inter-RAT cell info list	OP			
>Inter-RAT cell info	OP	1..<max CellMeas>		
>>CHOICE *position status*	MP			
>>>Occupied				
>>>>CHOICE *Radio Access Technology*				
>>>>>GSM				
>>>>>>Cell selection and re-selection info	MP		Cell selection and re-selection info for SIB11/12 10.3.2.4	
>>>>>>BSIC	MP		BSIC 10.3.8.2	
>>>>>>BCCH ARFCN	MP		Integer (0..1023)	[3GPP TS 44.018]
>>>>>IS-2000				
>>>>>>System specific measurement info			enumerated (freq. timeslot, colour code, output power, PN offset)	For IS-2000, use fields from TIA/EIA/IS-2000.5, subclause 3. 7.3.3.2.27, *Candidate Frequency Neighbour List Message*
>>>>>802.11 Trusted				
>>>>>>Wireless local area network (WLAN) selection and re-selection info	**MP**			
>>>>>>Service set	**MP**			

Information Element / Group name	*Need*	*Multi*	*Type and reference*	*Semantics description*
identifier (SSID) /Operator Information				
>>>>>>System Specific measurement info	**MP**		**enumerated (frequency, beacon, output power)**	**For 802.11 a b g n ..., use fields from .., ...,**
>>>>>802.11 Non-Trusted				
>>>>>>WLAN selection and re-selection info	**MP**			
>>>>>>SSID/Operator Information	**MP**			
>>>>>>System Specific measurement info	**MP**		**enumerated (frequency, beacon, output power)**	**For 802.11, a b g n ... use fields from .., ,**
>>>>>WiMAX Trusted				
>>>>>>WiMAX selection and re-selection info	**MP**			
>>>>>>SID/Operator information	**MP**			
>>>>>>System Specific measurement info	**MP**		**enumerated (frequency, beacon, output power)**	**For 802.16, a e g use field from ...,**
>>>>>Fixed Broadband				
>>>>>>Fixed Broadband selection and re-selection info	**MP**			
>>>>>>Operator ID	**MP**			
>>>>>>System Specific measurement info	**MP**		**enumerated (frequency, beacon, output power)**	

Note: MP = Mandatory and OP = Optional.

[0047] Figure 3 is a flow diagram showing a conventional handoff procedure. As shown in Figure 3, a list of available systems is broadcast, at step S6. The WTRU, at S7, receives and stores the list of available systems within the cell. While engaged in active voice of a data call, S8, and while moving, at S9, the WTRU detects and performs RF measurements on target cells/systems and reports inter-RAT handover information to the systems and then waits for directives. If a handoff command is received, at S10, handover procedures are

initiated at S11 and, upon completion, a handover complete message is sent, at S12.

[0048] Figure 4 is a flow diagram showing handoff procedures, which comprises an inter-RAT procedure for performing an inter-RAT handover. As shown in Figure 4, a list of available systems is broadcast, at step S13, including information of Non-3GPP systems as well as 3GPP systems obtainable through the existing method of Figure 2. The WTRU, at S14, receives and stores the list of available systems within the cell. While engaged in active voice of a data call, S15, and while moving, at S16, the WTRU detects and performs RF measurements on target cells/systems and, according to one embodiment, also reports inter-RAT handover information to the systems and then waits for directives. If a handoff command is received, at S17, handover procedures are initiated at S18 and, upon completion, a handover complete message is sent, at S19.

[0049] **Proposed Modified Message Formats are set forth below:**

[0050] **INTER RAT HANDOVER INFORMATION**

[0051] This message, set forth below, is sent by the WTRU via another radio access technology to provide information to the target RNC when preparing for a handover to Other Systems from UTRAN.

[0052] RLC-SAP: N/A (Sent through a different RAT)

[0053] Logical channel: N/A (Sent through a different RAT)

[0054] Direction: WTRU → UTRAN

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
Radio Bearer IEs					
Predefined configuration status information	OP		WiFi/WiMAX Predefined configuration status information		
Predefined configuration status information compressed	OP		WiFi/WiMAX Predefined configuration status information compressed		REL-8
WTRU Information elements					
WTRU security information	OP		WTRU security		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			information: >WiMAX Protocol (Trusted) >WiFi Protocol (Non-Trusted) >WiFI Protocol (Trusted)		
>WTRU Specific Behaviour Information 1 interRAT	OP		WTRU Specific Behaviour Information 1 interRAT >WiMAX Protocol (Trusted) >WiFi Protocol (Non-Trusted) >WiFi Protocol (Trusted) >Fixed Broadband	This IE shall not be included in this version of the protocol	
WTRU capability container	OP				
>WTRU radio access capability	MP		WTRU radio access capability >WiMAX Protocol >WiFi Protocol >Fixed Broadbandl		

[0055] **10.3.3.42 Modified WTRU radio access capability**

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Access stratum release indicator	MP		Enumerated(R99)	Indicates the release of the WTRU according to [35]. The IE also indicates the release of the RRC transfer syntax supported by the WTRU..	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
	Code Value (CV)- *not_rrc_connectionSetupComplete*		Enumerated(REL-4,	13 spare values are needed.	REL-4
			REL-5		REL-5
			REL-6)		REL-6
DL capability with simultaneous HS-DSCH configuration	OP		Enumerated(32kbps, 64kbps, 128kbps, 384kbps)		REL-5
PDCP capability	MP		PDCP capability 10.3.3.24		
RLC capability	MP		RLC capability 10.3.3.34		
Transport channel capability	MP		Transport channel capability 10.3.3.40		
RF capability FDD	OP		RF capability FDD 10.3.3.33		
RF capability WiFi	OP		RF capability WiFi		
RF capability WiMAX	OP		RF capability WiMAX		
RF capability Fixed Broadband	OP		RF capability Broadband		
RF capability TDD	OP		RF capability TDD 10.3.3.33b	One "TDD RF capability" entity shall be included for every Chip rate capability supported.	
		1 to 2			REL-4
Physical channel capability	MP		Physical channel capability 10.3.3.25		
WTRU multi-mode/multi-RAT capability	MP		WTRU multi-mode/multi-RAT capability		
Security capability	MP		Security capability >WiMAX Protocol (Trusted) >WiFi		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			Protocol (Non-Trusted) >WiFi Protocol (Trusted) >Fixed Broadband		
WTRU positioning capability	MP		WTRU positioning capability >WiMAX >WiFi >Fixed Broadband		
Measurement capability	CH-*fdd_req_sup*		Measurement capability >WiMAX >WiFi >Fixed Broadband		

[0056] **Modified WTRU multi-mode/multi-RAT capability**

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
Multi-RAT capability					
Support of GSM	MP		Boolean		
Support of multi-carrier	MP		Boolean		
Multi-mode capability	MP		Enumerated (TDD, FDD, FDD/TDD)		
Support Non-3GPP WiMAX	MP		Boolean		
Support Non-3GPP WiFi	MP		Boolean		
Support Non-3GPP Fixed Broadband	MP		Boolean		
Support of UTRAN to GERAN NACC	CV-*not_iRAT_HoInfo*		Boolean		REL-5

[0057] Although the features and elements are described in the preferred embodiments in particular combinations, each feature or element can be used alone without the other features and elements of the preferred embodiments or in various combinations with or without other features and elements. The methods or flow charts provided may be implemented in a computer program, software, or firmware tangibly embodied in a computer-readable storage medium for execution by a general purpose computer or a processor. Examples of computer-readable storage mediums include a read only memory (ROM), a random access memory (RAM), a register, cache memory, semiconductor memory devices,

magnetic media such as internal hard disks and removable disks, magneto-optical media, and optical media such as CD-ROM disks, and digital versatile disks (DVDs).

[0058] Suitable processors include, by way of example, a general purpose processor, a special purpose processor, a conventional processor, a digital signal processor (DSP), a plurality of microprocessors, one or more microprocessors in association with a DSP core, a controller, a microcontroller, Application Specific Integrated Circuits (ASICs), Field Programmable Gate Arrays (FPGAs) circuits, any other type of integrated circuit (IC), and/or a state machine.

[0059] A processor in association with software may be used to implement a radio frequency transceiver for use in a wireless transmit receive unit (WTRU), user equipment (UE), terminal, base station, radio network controller (RNC), or any host computer. The WTRU may be used in conjunction with modules, implemented in hardware and/or software, such as a camera, a video camera module, a videophone, a speakerphone, a vibration device, a speaker, a microphone, a television transceiver, a hands free headset, a keyboard, a Bluetooth® module, a frequency modulated (FM) radio unit, a liquid crystal display (LCD) display unit, an organic light-emitting diode (OLED) display unit, a digital music player, a media player, a video game player module, an Internet browser, and/or any wireless local area network (WLAN) module.

[0060] EMBODIMENTS

1. In a wireless communication system including a third generation partnership project (3GPP) network, a method for providing a cell information list for non-3GPP capable wireless transmitter/receiver unit (WTRU) operating in the 3GPP network, the method comprising:

the WTRU:

camping on a 3GPP channel; and

the 3GPP network providing cell information regarding at least one available network.

2. The method of embodiment 1 further comprising:

the UE requesting the 3GPP network for the cell information.

3. A method as in any one of embodiments 1-2, wherein the information is a cell information list.

4. The method of embodiment 3 wherein the cell information list includes cell information on at least one of intra-frequency, inter-frequency, and inter-radio access technology (RAT) cells.

5. The method as in any one of embodiments 3-4, wherein the cell information list is included in at least one of a system information block (SIB) type 11 message, an SIB type 12 message, and a MEASUREMENT CONTROL message.

6. A method as in any one of embodiments 3-5, wherein the cell information list is cleared at cell re-selection.

7. A method as in any one of embodiments 3-6, wherein the cell information list is cleared when leaving universal terrestrial radio access (UTRA) radio resource control (RRC) connected mode.

8. A method as in any one of embodiments 3-7, wherein the cell information list is cleared when the UE is switched off.

9. A method as in any one of embodiments 3-8, wherein the cell information list is cleared at selection of a new public land mobile network (PLMN).

10. A method as in any one of embodiments 3-9, wherein the cell information list includes trusted IEEE 802.11 network information.

11. The method of embodiment 10 wherein the cell information list includes wireless local area network (WLAN) selection and re-selection information.

12. A method as in any one of embodiments 10-11, wherein the cell information list includes service set identifier (SSID) and operator information.

13. A method as in any one of embodiments 10-12, wherein the cell information list includes system specific measurement information.

14. The method of embodiment 13 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

15. A method as in any one of embodiments 3-14, wherein the cell information list includes non-trusted IEEE 802.11 network information.

16. The method of embodiment 15 wherein the cell information list includes wireless local area network (WLAN) selection and re-selection information.

17. A method as in any one of embodiments 15-16, wherein the cell information list includes service set identifier (SSID) and operator information.

18. A method as in any one of embodiments 15-17, wherein the cell information list includes system specific measurement information.

19. The method of embodiment 18 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

20. A method as in any one of embodiments 3-19, wherein the cell information list includes trusted WiMAX network information.

21. The method of embodiment 20 wherein the cell information list includes WiMAX selection and re-selection information.

22. A method as in any one of embodiments 20-21, wherein the cell information list includes service identifier (SID) and operator information.

23. A method as in any one of embodiments 20-22, wherein the cell information list includes system specific measurement information.

24. The method of embodiment 23 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

25. A method as in any one of embodiments 3-24, wherein the cell information list includes fixed broadband network information.

26. The method of embodiment 25 wherein the cell information list includes fixed broadband selection and re-selection information.

27. A method as in any one of embodiments 25-26, wherein the cell information list includes operator information.

28. A method as in any one of embodiments 25-27, wherein the cell information list includes system specific measurement information.

29. The method of embodiment 28 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

30. A method as in any one of embodiments for use by a wireless transmitter/receiver unit (WTRU) to perform an inter radio access technology (inter-RAT) handover, comprising:

the WTRU:

(a) receiving and storing a list including at least one available system within a cell;

(b) obtaining radio frequency (RF) measurements of at least one of a target cell and a system;

(c) reporting inter-RAT handover information to at least one of the systems;

(d) performing a handover responsive to a handoff command; and

(e) sending a handover complete message responsive to handover completion.

31. The method of embodiment 30 wherein step (d) further comprises performing the handoff to a universal terrestrial radio access network (UTRAN) system from another system.

32. The method of embodiment 31 wherein UTRAN is an E-UTRAN.

33. The method of embodiment 32 wherein the said another system is a non third generation partnership project (non-3GPP) system.

34. The method of embodiment 30 wherein step (d) further comprises performing the handoff from a universal terrestrial radio access network (UTRAN) system to another system.

35. The method of embodiment 34 wherein the said another system is a non third generation partnership project (non-3GPP) system.

36. The method of embodiment 30 wherein the inter-RAT handover information is sent via another RAT to provide information to a target radio network controller (RNC) preparatory to a handover from one system to another system.

37. The method of embodiment 36 wherein one of the systems is a universal terrestrial radio access network (UTRAN) system.

38. The method of embodiment 37 wherein said UTRAN is an E-UTRAN.

39. The method of embodiment 37 wherein the said another system is a non third generation partnership project (non-3GPP) system.

40. For use in any one of the previous embodiments, a wireless transmitter receiver unit (WTRU) for communicating with a plurality of systems, the WTRU::

being configured to receive a list of at least one available system;

being configured to store the list;

being configured to perform radio frequency (RF) measurements on at least one of a target cell and a system;

being configured to report inter radio access technology (RAT) handover information; and

being configured to initiate a handover responsive to a handoff command.

41. The WTRU of embodiment 40, being configured to obtain RF measurements from at least one of a universal terrestrial radio access network (UTRAN) system and a non third generation partnership project (non-3GPP) system.

42. The WTRU of embodiment 40, being configured to perform a handoff from the UTRAN system to the non-3GPP system.

43. The WTRU of embodiment 40, being configured to perform a handoff from the non-3GPP system to the UTRAN system.

44. The WTRU of embodiment 40 wherein the list further comprises cell information on at least one of intra-frequency, inter-frequency, and inter-radio access technology (RAT) cells.

45. The WTRU of embodiment 40, wherein the list further includes at least one of a system information block (SIB) type 11 message, an SIB type 12 message, and a MEASUREMENT CONTROL message.

46. The WTRU of embodiment 40, wherein the memory is cleared of the list at cell re-selection.

47. The WTRU of embodiment 40, wherein the memory is cleared when leaving a universal terrestrial radio access (UTRA) radio resource control (RRC) connected mode.

48. The WTRU of embodiment 40, wherein the memory is cleared when the WTRU is deactivated.

49. For use in any of the preceding embodiments, a method employed by a wireless transmitter/receiver unit (WTRU) for use in a wireless communication system comprising a third generation partnership project (3GPP) network, the method comprising:

the WTRU:

camping on a 3GPP channel in a cell;

receiving first information relating to the cell;

camping on the 3GPP network; and

requesting second information from the 3GPP network regarding other networks in the cell.

50. The method of embodiment 49 further comprising:

the WTRU:

receiving the second information regarding at least one network accessible by the WTRU and which is not a 3GPP network.

51. The method of embodiment 49, wherein the second information is a cell information list.

52. The method of embodiment 49, wherein the list includes information regarding at least one wireless local area network (WLAN).

53. The method of embodiment 52, wherein the WLAN is a trusted 802.11 network.

54. The method of embodiment 52, wherein the list includes information regarding WLAN selection and reselection.

55. The method of embodiment 52, wherein the list includes at least one of Service Set Identifier (SSID) and operator information.

56. The method of embodiment 52, wherein the list includes system specific measurement information.

57. The method of embodiment 56, wherein the system specific measurement information relates to one of frequency, beacon and output power.

58. The method of embodiment 52, wherein the WLAN is a non-trusted 802.11 network.

59. The method of embodiment 58, wherein the list includes information regarding WLAN selection and reselection.

60. The method of embodiment 58, wherein the list includes at least one of Service Set Identifier (SSID) and operator information.

61. The method of embodiment 58, wherein the list includes system specific measurement information.

62. The method of embodiment 61, wherein the system specific measurement information relates to one of frequency, beacon and output power.

63. The method of embodiment 49, wherein the list includes information regarding at least one fixed broadband network.

64. The method of embodiment 63, wherein the list includes information regarding fixed broadband selection and reselection.

65. The method of embodiment 63, wherein the list includes operator information.

66. The method of embodiment 63, wherein the list includes system specific measurement information.

67. The method of embodiment 66, wherein the system specific measurement information relates to at least one of frequency, beacon and output power.

68. The method of embodiment 52, wherein the list includes trusted WiMAX network information.

69. The method of embodiment 68 wherein the list includes selection and re-selection information.

70. The method of embodiment 68, wherein the list includes one of service set identifier (SSID) and operator information.

71. The method of embodiment 68, wherein the cell information list includes system specific measurement information.

72. The method of embodiment 71 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

73 For use in any of the proceeding embodiments, a WTRU having a memory being cleared responsive to selection of a new public land mobile network (PLMN).

74. A wireless communication system configured to implement a method as in any one of embodiments 1-72.

75. An apparatus configured to implement a method as in any one of embodiments 1-72.

76. An integrated circuit (IC) configured to implement a method as in any one of embodiments 1-72.

* * *

CLAIMS

What is claimed is:

1. In a wireless communication system including a third generation partnership project (3GPP) network, a method for providing a cell information list for non-3GPP capable wireless transmitter/receiver unit (WTRU) operating in the 3GPP network, the method comprising:

the WTRU:

camping on a 3GPP channel; and

the 3GPP network providing cell information regarding at least one available network.

2. The method of claim 1 further comprising:

the UE requesting the 3GPP network for the cell information.

3. A method as in any one of claims 1-2, wherein the information is a cell information list.

4. The method of claim 3 wherein the cell information list includes cell information on at least one of intra-frequency, inter-frequency, and inter-radio access technology (RAT) cells.

5. The method as in any one of claims 3-4, wherein the cell information list is included in at least one of a system information block (SIB) type 11 message, an SIB type 12 message, and a MEASUREMENT CONTROL message.

6. A method as in any one of claims 3-5, wherein the cell information list is cleared at cell re-selection.

7. A method as in any one of claims 3-6, wherein the cell information list is cleared when leaving universal terrestrial radio access (UTRA) radio resource control (RRC) connected mode.

8. A method as in any one of claims 3-7, wherein the cell information list is cleared when the UE is switched off.

9. A method as in any one of claims 3-8, wherein the cell information list is cleared at selection of a new public land mobile network (PLMN).

10. A method as in any one of claims 3-9, wherein the cell information list includes trusted IEEE 802.11 network information.

11. The method of claim 10 wherein the cell information list includes wireless local area network (WLAN) selection and re-selection information.

12. A method as in any one of claims 10-11, wherein the cell information list includes service set identifier (SSID) and operator information.

13. A method as in any one of claims 10-12, wherein the cell information list includes system specific measurement information.

14. The method of claim 13 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

15. A method as in any one of claims 3-14, wherein the cell information list includes non-trusted IEEE 802.11 network information.

16. The method of claim 15 wherein the cell information list includes wireless local area network (WLAN) selection and re-selection information.

17. A method as in any one of claims 15-16, wherein the cell information list includes service set identifier (SSID) and operator information.

18. A method as in any one of claims 15-17, wherein the cell information list includes system specific measurement information.

19. The method of claim 18 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

20. A method as in any one of claims 3-19, wherein the cell information list includes trusted WiMAX network information.

21. The method of claim 20 wherein the cell information list includes WiMAX selection and re-selection information.

22. A method as in any one of claims 20-21, wherein the cell information list includes service identifier (SID) and operator information.

23. A method as in any one of claims 20-22, wherein the cell information list includes system specific measurement information.

24. The method of claim 23 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

25. A method as in any one of claims 3-24, wherein the cell information list includes fixed broadband network information.

26. The method of claim 25 wherein the cell information list includes fixed broadband selection and re-selection information.

27. A method as in any one of claims 25-26, wherein the cell information list includes operator information.

28. A method as in any one of claims 25-27, wherein the cell information list includes system specific measurement information.

29. The method of claim 28 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

30. A method as in any one of claims for use by a wireless transmitter/receiver unit (WTRU) to perform an inter radio access technology (inter-RAT) handover, comprising:

the WTRU:

(a) receiving and storing a list including at least one available system within a cell;

(b) obtaining radio frequency (RF) measurements of at least one of a target cell and a system;

(c) reporting inter-RAT handover information to at least one of the systems;

(d) performing a handover responsive to a handoff command; and

(e) sending a handover complete message responsive to handover completion.

31. The method of claim 30 wherein step (d) further comprises performing the handoff to a universal terrestrial radio access network (UTRAN) system from another system.

32. The method of claim 31 wherein UTRAN is an E-UTRAN.

33. The method of claim 32 wherein the said another system is a non third generation partnership project (non-3GPP) system.

34. The method of claim 30 wherein step (d) further comprises performing the handoff from a universal terrestrial radio access network (UTRAN) system to another system.

35. The method of claim 34 wherein the said another system is a non third generation partnership project (non-3GPP) system.

36. The method of claim 30 wherein the inter-RAT handover information is sent via another RAT to provide information to a target radio network controller (RNC) preparatory to a handover from one system to another system.

37. The method of claim 36 wherein one of the systems is a universal terrestrial radio access network (UTRAN) system.

38. The method of claim 37 wherein said UTRAN is an E-UTRAN.

39. The method of claim 37 wherein the said another system is a non third generation partnership project (non-3GPP) system.

40. For use in any one of the previous claims, a wireless transmitter receiver unit (WTRU) for communicating with a plurality of systems, the WTRU::

being configured to receive a list of at least one available system;

being configured to store the list;

being configured to perform radio frequency (RF) measurements on at least one of a target cell and a system;

being configured to report inter radio access technology (RAT) handover information; and

being configured to initiate a handover responsive to a handoff command.

41. The WTRU of claim 40, being configured to obtain RF measurements from at least one of a universal terrestrial radio access network (UTRAN) system and a non third generation partnership project (non-3GPP) system.

42. The WTRU of claim 40, being configured to perform a handoff from the UTRAN system to the non-3GPP system.

43. The WTRU of claim 40, being configured to perform a handoff from the non-3GPP system to the UTRAN system.

44. The WTRU of claim 40 wherein the list further comprises cell information on at least one of intra-frequency, inter-frequency, and inter-radio access technology (RAT) cells.

45. The WTRU of claim 40, wherein the list further includes at least one of a system information block (SIB) type 11 message, an SIB type 12 message, and a MEASUREMENT CONTROL message.

46. The WTRU of claim 40, wherein the memory is cleared of the list at cell re-selection.

47. The WTRU of claim 40, wherein the memory is cleared when leaving a universal terrestrial radio access (UTRA) radio resource control (RRC) connected mode.

48. The WTRU of claim 40, wherein the memory is cleared when the WTRU is deactivated.

49. For use in any of the preceeding claims, a method employed by a wireless transmitter/receiver unit (WTRU) for use in a wireless communication

system comprising a third generation partnership project (3GPP) network, the method comprising:

the WTRU:

camping on a 3GPP channel in a cell;

receiving first information relating to the cell;

camping on the 3GPP network; and

requesting second information from the 3GPP network regarding other networks in the cell.

50. The method of claim 49 further comprising:

the WTRU:

receiving the second information regarding at least one network accessible by the WTRU and which is not a 3GPP network.

51. The method of claim 49, wherein the second information is a cell information list.

52. The method of claim 49, wherein the list includes information regarding at least one wireless local area network (WLAN).

53. The method of claim 52, wherein the WLAN is a trusted 802.11 network.

54. The method of claim 52, wherein the list includes information regarding WLAN selection and reselection.

55. The method of claim 52, wherein the list includes at least one of Service Set Identifier (SSID) and operator information.

56. The method of claim 52, wherein the list includes system specific measurement information.

57. The method of claim 56, wherein the system specific measurement information relates to one of frequency, beacon and output power.

58. The method of claim 52, wherein the WLAN is a non-trusted 802.11 network.

59. The method of claim 58, wherein the list includes information regarding WLAN selection and reselection.

60. The method of claim 58, wherein the list includes at least one of Service Set Identifier (SSID) and operator information.

61. The method of claim 58, wherein the list includes system specific measurement information.

62. The method of claim 61, wherein the system specific measurement information relates to one of frequency, beacon and output power.

63. The method of claim 49, wherein the list includes information regarding at least one fixed broadband network.

64. The method of claim 63, wherein the list includes information regarding fixed broadband selection and reselection.

65. The method of claim 63, wherein the list includes operator information.

66. The method of claim 63, wherein the list includes system specific measurement information.

67. The method of claim 66, wherein the system specific measurement information relates to at least one of frequency, beacon and output power.

68. The method of claim 52, wherein the list includes trusted WiMAX network information.

69. The method of claim 68 wherein the list includes selection and re-selection information.

70. The method of claim 68, wherein the list includes one of service set identifier (SSID) and operator information.

71. The method of claim 68, wherein the cell information list includes system specific measurement information.

72. The method of claim 71 wherein the system specific measurement information includes at least one of frequency, beacon, and output power.

73 For use in any of the proceeding claims, a WTRU having a memory being cleared responsive to selection of a new public land mobile network (PLMN).

74. A wireless communication system configured to implement a method as in any one of claims 1-72.

75. An apparatus configured to implement a method as in any one of claims 1-72.

76. An integrated circuit (IC) configured to implement a method as in any one of claims 1-72.

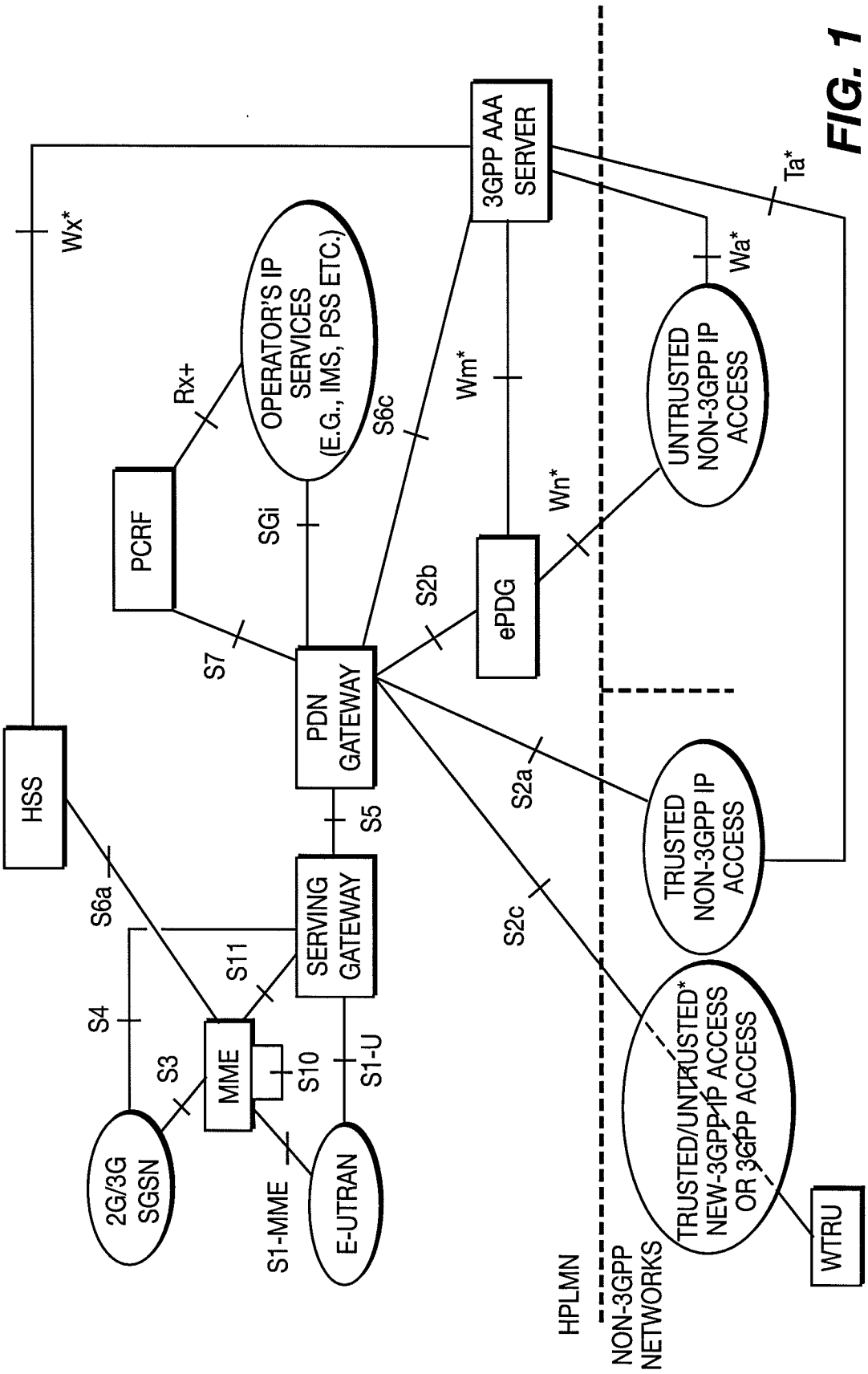

FIG. 1
RELATED ART

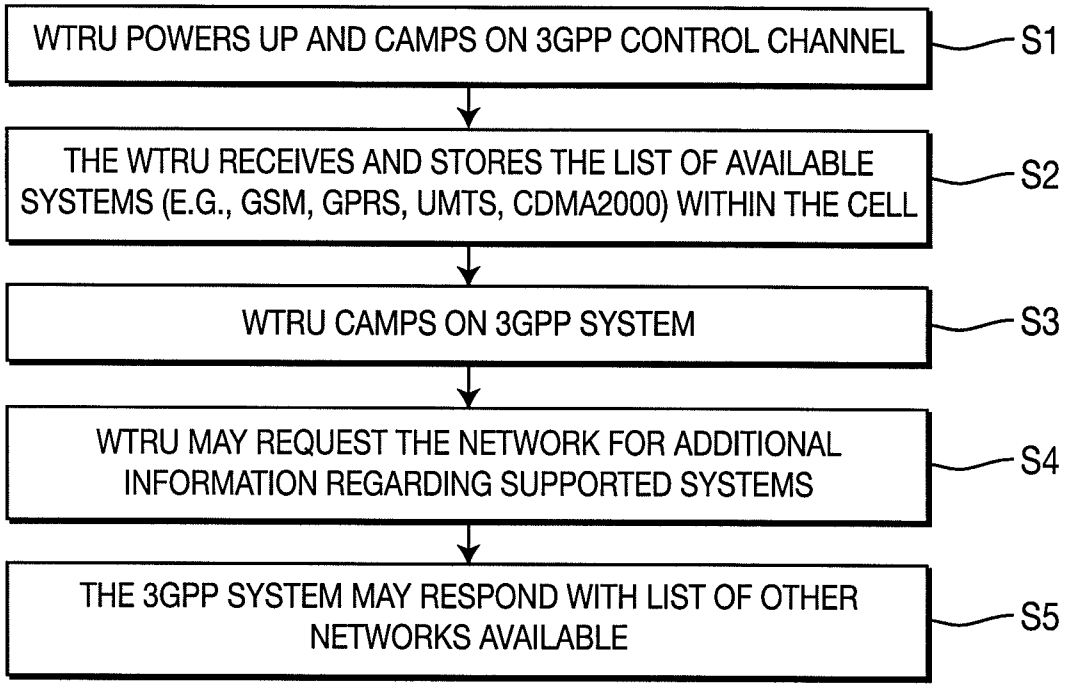

FIG. 2

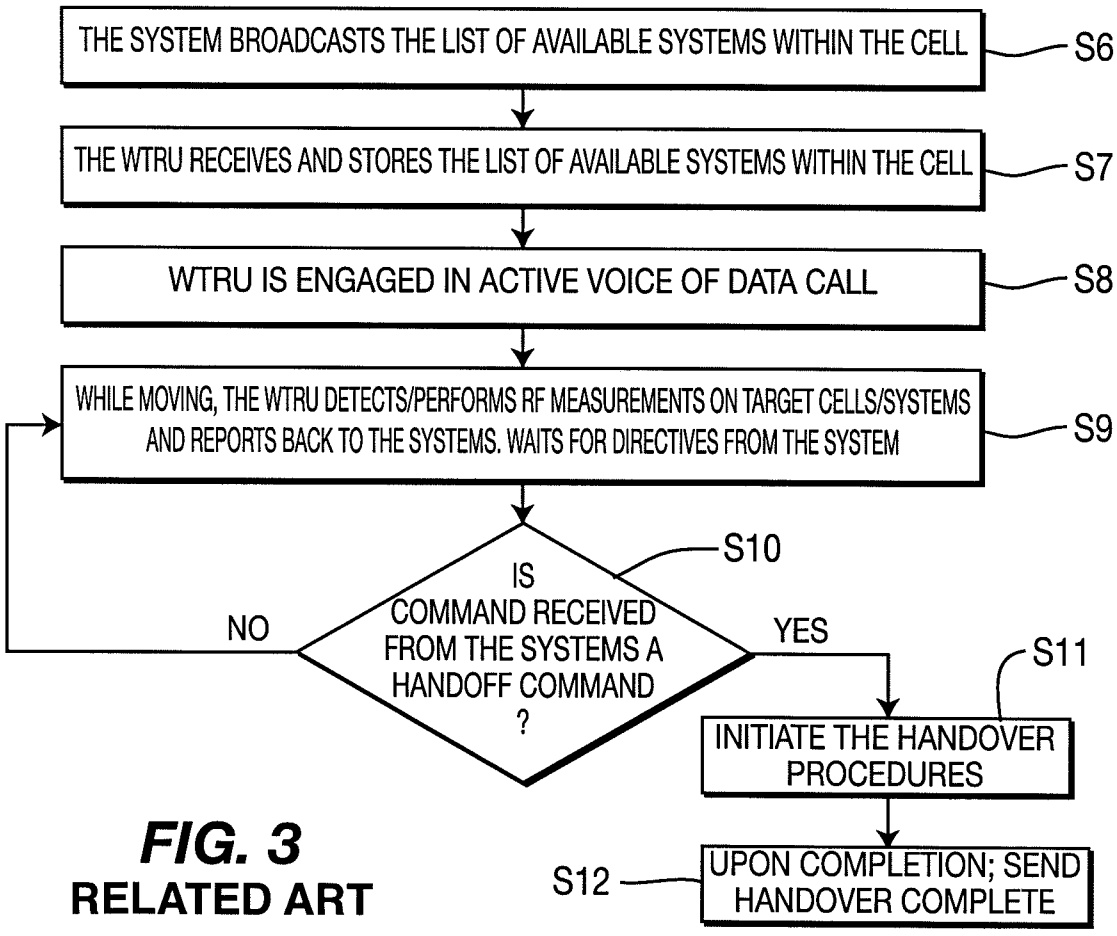

FIG. 3
RELATED ART

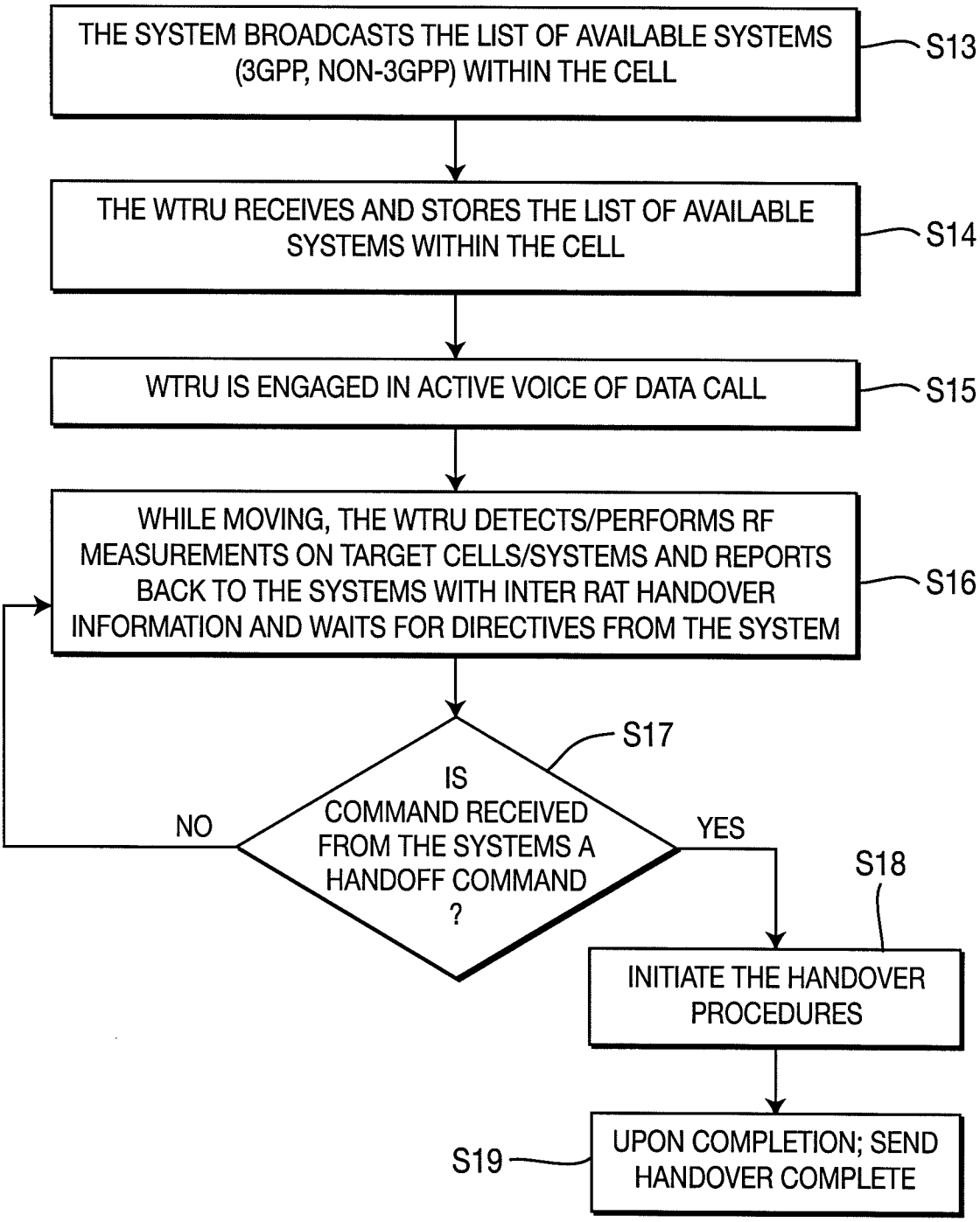
THE SYSTEM BROADCASTS THE LIST OF AVAILABLE SYSTEMS (3GPP, NON-3GPP) WITHIN THE CELL
S13
THE WTRU RECEIVES AND STORES THE LIST OF AVAILABLE SYSTEMS WITHIN THE CELL
S14
WTRU IS ENGAGED IN ACTIVE VOICE OF DATA CALL
S15
WHILE MOVING, THE WTRU DETECTS/PERFORMS RF MEASUREMENTS ON TARGET CELLS/SYSTEMS AND REPORTS BACK TO THE SYSTEMS WITH INTER RAT HANDOVER INFORMATION AND WAITS FOR DIRECTIVES FROM THE SYSTEM
S16
S17
IS COMMAND RECEIVED FROM THE SYSTEMS A HANDOFF COMMAND ?
NO
YES
S18
INITIATE THE HANDOVER PROCEDURES
S19
UPON COMPLETION; SEND HANDOVER COMPLETE

FIG. 4

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/065637

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04Q7/38

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H04Q

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 545 146 A (SAMSUNG ELECTRONICS CO LTD [KR]) 22 June 2005 (2005-06-22) paragraphs [0004], [0016], [0021] - [0042], [0049] - [0051], [0087], [0088] figures 1-3,10	1-76
X	US 2007/019575 A1 (SHAHEEN KAMEL M [US]) 25 January 2007 (2007-01-25) paragraphs [0003] - [0005], [0016] - [0021]	1-76

-/--

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

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

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

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

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

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

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
7 November 2008	18/11/2008

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Zembery, Peter

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/065637

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	"Universal Mobile Telecommunications System (UMTS); Radio Resource Control (RRC); Protocol specification (3GPP TS 25.331 version 7.4.0 Release 7); ETSI TS 125 331" ETSI STANDARDS, LIS, SOPHIA ANTIPOLIS CEDEX, FRANCE, vol. 3-R2, no. V7.4.0, 1 March 2007 (2007-03-01), XP014037920 ISSN: 0000-0001 cited in the application sections 8.1.1.6.11, B.3.5 and B.6.1	1-76
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