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11/556,598 3 November 2006 (03.1.2006) US
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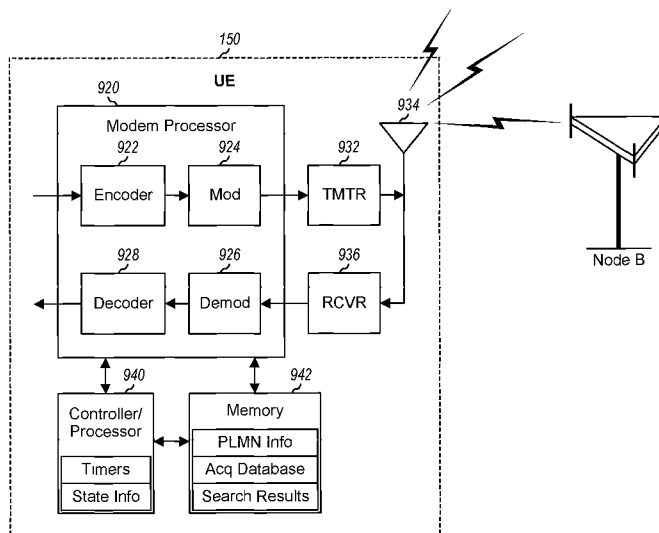
- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, 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
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(U))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(Hi))

[Continued on next page]

(54) **Title:** EFFICIENT SEARCH FOR WIRELESS NETWORKS IN CONNECTED MODE



(57) **Abstract:** Techniques for searching for wireless networks are described. In one scheme, a user equipment (UE) performs a manual search for detectable wireless networks while operating in a connected mode. The UE operates in the connected mode for communication with a wireless network and receives a request to search for detectable wireless networks. The UE performs a search for detectable wireless networks while operating in the connected mode, e.g., as background task during DRX time. In another scheme, the UE retains a search request received in an active state and performs a search at a later time after transitioning to an idle state. In yet another scheme, the UE efficiently handles a search across state transitions. The UE may cancel, suspend, resume, or continue the search after each transition from one state to another state based on the type of each state.

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Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/083561

A. CLASSIFICATION OF SUBJECT MATTER INV. H04Q7/38				
<small>*According to International Patent Classification (IPC) or to both national classification and IPC</small>				
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	"Universal Mobile Telecommunications System (UMTS); Radio Resource Control (RRC) protocol specification (3GPP TS 25.331 version 5.15.0 Release 5); ETSI TS 125 331" ETSI STANDARDS, EUROPEAN TELECOMMUNICATIONS STANDARDS INSTITUTE, SOPHIA-ANTIPO, FR, vol. 3-R2, no. V5150, December 2005 (2005-12), XP014032604 ISSN: 0000-0001 section 7 Protocol states ----- -/--	1-14		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. </td> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> See patent family annex. </td> </tr> </table>			<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.			
<small>* Special categories of cited documents :</small>				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;"> '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 </td> <td style="width: 50%; border: none; vertical-align: top;"> '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 </td> </tr> </table>			' 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
' 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 12 August 2008	Date of mailing of the international search report 22/08/2008			
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel (+31-70) 340-2040, Tx. 31 651 epo nl, Fax. (+31-70) 340-3016	Authorized officer Zembery, Peter			

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/083561

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NIELS PETER SKOV ANDERSEN: "Draft Report" 3GPP TSG SA WORKSHOP ON UE IN IDLE MODE, [Online] 7 February 2001 (2001-02-07), XP002472649 Retrieved from the Internet: URL: www.3gpp.org> [retrieved on 2008-03-13]	1-14
Y	page 4, line 22 - page 5, line 3 -----	15-34
X A	EP 1 545 146 A (SAMSUNG ELECTRONICS CO LTD [KR]) 22 June 2005 (2005-06-22) paragraphs [0021] - [0023], [0030], [0054] - [0061] -----	1,2,8,9, 11,13,14 3-7,10, 12
P,X	EP 1 802 158 A (HIGH TECH COMP CORP [TW]) 27 June 2007 (2007-06-27) abstract paragraphs [0028], [0029] -----	1-14
Y	EP 1 313 336 A (SAMSUNG ELECTRONICS CO LTD [KR]) 21 May 2003 (2003-05-21) paragraph [0018] figure 2 -----	15-34

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/083561

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM POT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14

an apparatus and a method for performing a search for detectable wireless networks while operating in a connected mode

2. claims: 15-34

an apparatus, a method and a processor readable media for handling search for detectable wireless networks across state transitions

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/083561

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 1545146	A	22-06-2005	CN	1674689 A		28-09-2005
			JP	2005184824 A		07-07-2005
			US	2005153692 A1		14-07-2005
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