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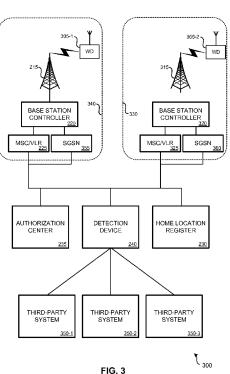
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[Continued on next page]

#### (54) Title: CONTROLLED ACCESS TO A WIRELESS NETWORK



(57) Abstract: Various arrangements for permitting a wireless device occasional access to a wireless network are described. Some arrangements for assigning a single MSISDN to multiple wireless devices are described. In such arrangements, the wireless devices may be associated with different visitor location registers. In some arrangements, a wireless device-initiated bearer service is initiated based on input from a remote system. In some arrangements, a wireless device is authenticated based on whether data needs to be sent to and/or received from the wireless device.



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MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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#### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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#### C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009-0149175 A1 (LOPRESTI ALEJANDRO et al.) 11 June 2009 See abstract; paragraphs [0042]-[0044], [0071]-[0081]; figures 4, 5.	1-32
A	US 7444148 B1 (COOK FRED S.) 28 October 2008 See abstract; column 2, lines 17-45; figures 2-4.	1-32
A	US 2010-0159924 A1 (LAGERMAN MIKAEL et al.) 24 June 2010 See abstract; paragraphs [0074]-[0087]; figures 3-5.	1-32
A	US 2010-0009659 A1 (NETANEL ERAN et al.) 14 January 2010 See abstract; paragraph [0058]; claim 1; figures 2, 4a.	1-32

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l	Further documents are	11-4-11-4	1	- f D O
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See patent family annex.

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	patent family members	PCI/C	JS2011/051456
Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009-0149175 A1	11.06.2009	CA 2697427 A1 EP 2218249 A1 US 8145212 B2 WO 2009-073305 A1	11.06.2009 18.08.2010 27.03.2012 11.06.2009
US 7444148 B1	28.10.2008	AT 300161 T AU 2002-246584 A1 DE 60112110 D1 EP 1330934 A2 EP 1330934 B1 WO 02-060194 A2 WO 02-060194 A3	15.08.2005 06.08.2002 25.08.2005 30.07.2003 20.07.2005 01.08.2002 10.10.2002
JS 2010-0159924 A1	24.06.2010	CN 101563944 A EP 2103165 A1 WO 2008-076031 A1	21.10.2009 23.09.2009 26.06.2008
JS 2010-0009659 A1	14.01.2010	EP 2140653 A1 US 2003-0166398 A1 US 2005-0181793 A1 US 2007-0300294 A1 US 2008-0026740 A1 US 2009-0025070 A1 US 2010-0173609 A1 US 7197301 B2 US 7565142 B2 US 7904072 B2 US 8046581 B2 WO 2008-118638 A1	06.01.2010 04.09.2003 18.08.2005 27.12.2007 31.01.2008 22.01.2009 08.07.2010 27.03.2007 21.07.2009 08.03.2011 25.10.2011 02.10.2008