

(43) International Publication Date
31 January 2013 (31.01.2013)

- (51) **International Patent Classification:**
H04W 12/02 (2009.01) *H04W 12/06* (2009.01)
- (21) **International Application Number:**
PCT/SE2012/050818
- (22) **International Filing Date:**
9 July 2012 (09.07.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
13/191,987 27 July 2011 (27.07.2011) US
- (71) **Applicant (for all designated States except US):** TELEFONAKTIEBOLAGET L M ERICSSON (PUBL) [SE/SE]; SE-164 83 Stockholm (SE).
- (72) **Inventors:** NYLANDER, Tomas; Högtorpsvägen 28, SE-139 34 Värmdö (SE). VIKBERG, Jari; Svalsättersvägen 12, SE-153 38 Järna (SE). OLOFSSON, Håkan; Brännkyrkagatan 90A, SE-117 92 Stockholm (SE).
- (74) **Agent:** HASSELGREN, Joakim; Ericsson AB, Patent Unit Kista RAN 1, SE-164 80 Stockholm (SE).
- (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, CL, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, 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).

Declarations under Rule 4.17:

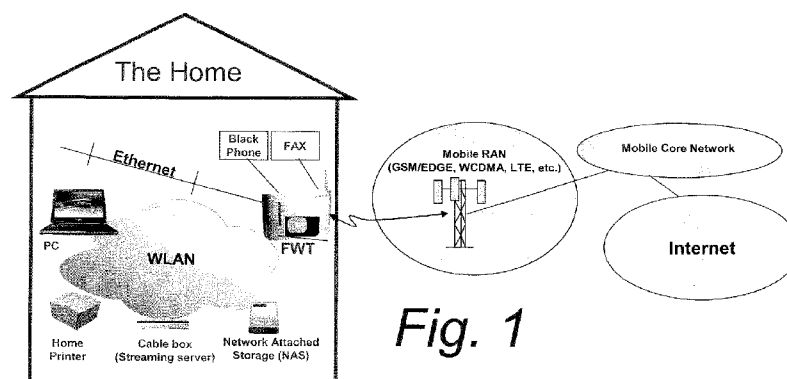
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

- (88) **Date of publication of the international search report:**
25 April 2013

(54) **Title:** METHODS AND APPARATUSES FOR CIRCUIT SWITCHED MOBILE TELEPHONY IN FIXED WIRELESS ACCESS

**Fig. 1**

(57) **Abstract:** A fixed wireless terminal (29) comprises interfaces (32, 34) and a controller (40), e.g., a Generic Access Network Controller (GANC). The controller (40) is configured to interwork Generic Access Network (GAN) signaling employed between the mobile wireless terminal (29) and the fixed wireless terminal (30) with circuit switched signaling employed between the fixed wireless terminal and the radio access network (22). The interworking enables the controller (40) to provide a circuit switched mobile telephony core network service to the mobile wireless terminal (30).

INTERNATIONAL SEARCH REPORT

International application No
PCT/SE2012/050818

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04W12/02 H04W12/06
ADD.

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)
H04W

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 practicable, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/081992 A1 (KELLER RALF [DE] ET AL) 27 June 2002 (2002-06-27) paragraphs [0009] - [0045]; figure 1 paragraphs [0071] - [0075]; figure 3 -----	1-34, 37-46
X	US 2009/264154 A1 (ROFOUGARAN AHMADREZA REZA [US]) 22 October 2009 (2009-10-22) paragraphs [0030] - [0038]; figures 1-3 -----	1-34, 37-46
A	WO 2007/015068 A1 (UBIQUISYS LTD [GB]; GIUSTINA ANDREA [IT]; BYRNE RICHARD [GB]) 8 February 2007 (2007-02-08) page 29, line 14 - page 30, line 21; figure 11 -----	1-34, 37-46
A	US 2011/053569 A1 (KARAOGUZ JEYHAN [US] ET AL) 3 March 2011 (2011-03-03) paragraphs [0042] - [0051]; figure 2 -----	1-34, 37-46

☐

Further documents are listed in the continuation of Box C.

☒

See patent family annex.

* Special categories of cited documents :

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

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

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of 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

29 November 2012

Date of mailing of the international search report

11/03/2013

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Günther, Steffen

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2012/050818

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 all searchable 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.:

see additional sheet(s)

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 PCT/ISA/ 210

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

1. claims: 1-34, 37-46

Relaying wireless communications signalling between wireless terminals and mobile network

2. claims: 35, 36

Controlling access to security infrastructure in dependence of determined device type

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/SE2012/050818

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002081992 A1	27-06-2002	AT 271743 T AU 8200801 A DE 60104430 D1 EP 1178693 A1 EP 1305963 A1 US 2002081992 A1 WO 0213554 A1	15-08-2004 18-02-2002 26-08-2004 06-02-2002 02-05-2003 27-06-2002 14-02-2002
US 2009264154 A1	22-10-2009	US 2009264154 A1 US 2012120837 A1	22-10-2009 17-05-2012
WO 2007015068 A1	08-02-2007	EP 1911306 A2 EP 1911307 A1 EP 1911311 A2 EP 1911316 A1 WO 2007015067 A2 WO 2007015068 A1 WO 2007015071 A2 WO 2007015075 A1	16-04-2008 16-04-2008 16-04-2008 16-04-2008 08-02-2007 08-02-2007 08-02-2007 08-02-2007
US 2011053569 A1	03-03-2011	NONE	