

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 April 2007 (12.04.2007)

PCT

(10) International Publication Number
WO 2007/040453 A3

- (51) International Patent Classification:
H04Q 7/30 (2006.01) H04Q 7/38 (2006.01)
H04Q 7/36 (2006.01)
- (21) International Application Number:
PCT/SE2006/050372
- (22) International Filing Date: 3 October 2006 (03.10.2006)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/722,982 4 October 2005 (04.10.2005) US
60/722,983 4 October 2005 (04.10.2005) US
60/722,984 4 October 2005 (04.10.2005) US
60/723,946 6 October 2005 (06.10.2005) US
60/728,780 21 October 2005 (21.10.2005) US
60/731,495 31 October 2005 (31.10.2005) US
- (71) Applicant (for all designated States except US): TELEFONAKTIEBOLAGET LM ERICSSON (PUBL) [SE/SE]; S-164 83 Stockholm (SE).
- (72) Inventors: VIKBERG, Jari; Svalsättersvägen 12, S-153 38 Järna (SE). NYLANDER, Tomas; Högtorpsvägen 28, S-139 34 Värmdö (SE).
- (74) Agent: HASSELGREN, Joakim; Ericsson AB, Patent Unit Lte, S-164 80 Stockholm (SE).

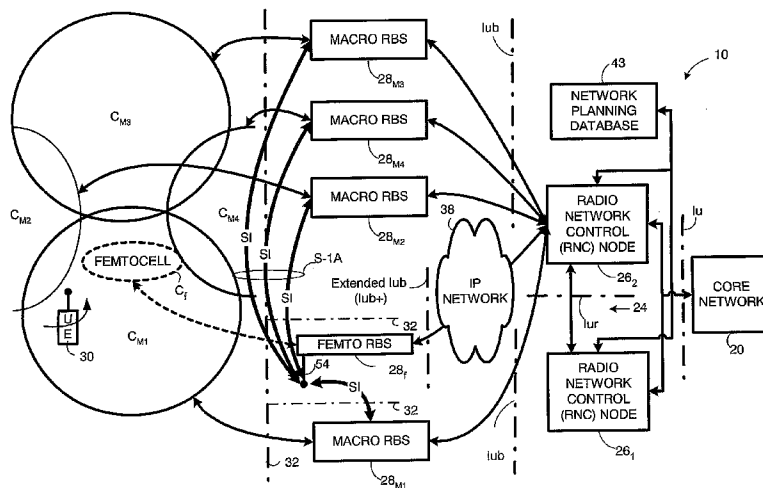
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, 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, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, 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))

[Continued on next page]

(54) Title: AUTOMATIC CONFIGURATION OF PICO RADIO BASE STATION



(57) Abstract: Methods and apparatus configure a femto radio base station (28f). A macro receiver of the femto radio base station (28f) is used to acquire detected coverage information of a radio access network (24). The detected coverage information is used to determine an operation parameter for use by the macro transceiver (52) of the femto radio base station (28f). In one embodiment, the detected coverage information is transmitted to a control node (26) of the radio access network. The control node (26) determines the operation parameter and communicates the operation parameter to the femto radio base station (28f). The femto radio base station (28f) is accordingly configured using the operation parameter for further operation towards UEs (30) accessing the femto radio base station (28f).

WO 2007/040453 A3



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

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

5 July 2007

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE2006/050372

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

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)

IPC: H04Q

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

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | US 20040204097 A1 (STEFAN SCHEINERT ET AL), 14 October 2004 (14.10.2004), claims 1,2,12-17,26, abstract, [0032]-[0042],[0048],[0056]-[0062], [0069]-[0077],[0087] -- | 1-23 |
| A | EP 1351530 B1 (TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)), 27 April 2005 (27.04.2005), claims 1-5, abstract, [0007]-[0008],[0017]-[0019], [0020]-[0022],[0027]-[0030],[0034]-[0035] -- | 1-23 |
| A | US 6041228 A (HAKAN NISKA ET AL), 21 March 2000 (21.03.2000), column 4, line 60 - column 5, line 55, claims 1-6, abstract -- | 1-23 |

 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

8 May 2007

Date of mailing of the international search report

09 -05- 2007

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Rune Bengtsson/MN

Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE2006/050372

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | US 6292891 B1 (MARTIN BERGENWALL ET AL), 18 Sept 2001 (18.09.2001), abstract -- | 1-23 |
| P,X | US 20050255890 A1 (SUGURU NAKADA), 17 November 2005 (17.11.2005), claims 1-12, abstract, [0014]-[0040],[0059]-[0067], [0073]-[0079],[0090]-[0116] -- ----- | 1-23 |

International patent classification (IPC)

H04Q 7/30 (2006.01)

H04Q 7/36 (2006.01)

H04Q 7/38 (2006.01)

Download your patent documents at www.prv.se

The cited patent documents can be downloaded at www.prv.se by following the links:

- In English/Searches and advisory services/Cited documents (service in English) or
- e-tjänster/anförda dokument (service in Swedish).

Use the application number as username.

The password is **XMBFOHEFKZ**.

Paper copies can be ordered at a cost of 50 SEK per copy from PRV InterPat (telephone number 08-782 28 85).

Cited literature, if any, will be enclosed in paper form.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/SE2006/050372

| | | | | | | | |
|-------|-------------|----|------------|----|--------------|-----|------------|
| WO | 2004040938 | A1 | 13/05/2004 | AU | 2003286591 | A | 00/00/0000 |
| | | | | US | 7117015 | B | 03/10/2006 |
| | | | | US | 20040204097 | A | 14/10/2004 |
| | | | | US | 20050068943 | A | 31/03/2005 |
| | | | | US | 20050148368 | A | 07/07/2005 |
| | | | | US | 20070054668 | A | 08/03/2007 |
| ----- | | | | | | | |
| EP | 1351530 | B1 | 27/04/2005 | AT | 281047 | T | 15/11/2004 |
| | | | | AT | 294487 | T | 15/05/2005 |
| | | | | DE | 60015361 | D,T | 02/02/2006 |
| | | | | EP | 1207708 | A,B | 22/05/2002 |
| | | | | ES | 2231100 | T | 16/05/2005 |
| | | | | US | 6925074 | B | 02/08/2005 |
| | | | | US | 20050239453 | A | 27/10/2005 |
| ----- | | | | | | | |
| US | 6041228 | A | 21/03/2000 | AU | 754461 | B | 14/11/2002 |
| | | | | AU | 9657798 | A | 17/05/1999 |
| | | | | CA | 2307125 | A | 06/05/1999 |
| | | | | CN | 1175698 | C | 10/11/2004 |
| | | | | CN | 1286003 | A,T | 28/02/2001 |
| | | | | DE | 69835442 | D | 00/00/0000 |
| | | | | EP | 1031248 | A,B | 30/08/2000 |
| | | | | SE | 1031248 | T3 | |
| | | | | JP | 2001522180 | T | 13/11/2001 |
| | | | | WO | 9922541 | A | 06/05/1999 |
| ----- | | | | | | | |
| US | 6292891 | B1 | 18/09/2001 | AT | 284592 | T | 15/12/2004 |
| | | | | AU | 1880099 | A | 26/07/1999 |
| | | | | DE | 69922492 | D,T | 10/11/2005 |
| | | | | EP | 1058989 | A,B | 13/12/2000 |
| | | | | JP | 2002501333 | T | 15/01/2002 |
| | | | | NO | 20003480 | A | 06/07/2000 |
| ----- | | | | | | | |
| US | 20050255890 | A1 | 17/11/2005 | CN | 1697538 | A | 16/11/2005 |
| | | | | DE | 102005021531 | A | 08/12/2005 |
| | | | | JP | 2005328152 | A | 24/11/2005 |
| ----- | | | | | | | |

Fig. 1A

