

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 October 2003 (02.10.2003)

PCT

(10) International Publication Number
WO 03/081787 A3

(51) International Patent Classification⁷: **H04B 7/00**

(21) International Application Number: PCT/IB03/00897

(22) International Filing Date: 11 March 2003 (11.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/105,320 26 March 2002 (26.03.2002) US

(71) Applicants: **NOKIA CORPORATION** [FI/FI]; Keilalahdentie 4, FIN-FIN-02150 Espoo (FI). **NOKIA INC.** [US/US]; 6000 Connection Drive, Irving, TX 75039 (US).

(72) Inventors: **KOTOLA, Sakari**; Alppitie 10B, FIN-02700 Kauniainen (FI). **HUSSMANN, Holger**; Satakunnankatu 22E 125, FIN-33210 Tampere (FI).

(74) Agents: **REDMOND, Joseph, C.** et al.; c/o Morgan & Finnegan, LLP, 345 Park Avenue, New York, NY 10154-0053 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

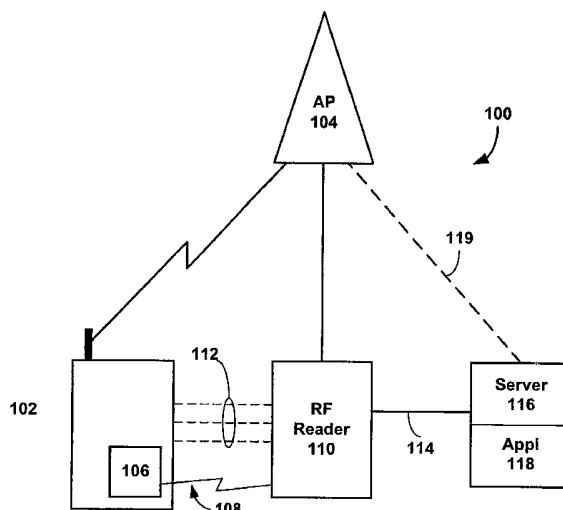
Published:

- 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

(88) Date of publication of the international search report:
24 December 2003

[Continued on next page]

(54) Title: RADIO FREQUENCY IDENTIFICATION (RF-ID) BASED DISCOVERY FOR SHORT RANGE RADIO COMMUNICATION



(57) Abstract: An RF-ID base wireless terminal (102) has shorted session set-up and user identification time for conducting transactions with interactive service applications (118). The wireless terminal (102) includes a terminal identification number and a user identification number as an RF-ID tag (106). An RF-ID reader (110) transmits an RF field for detecting the RF-ID tag (106) in the terminal (102) and provides an output signal when the terminal is within the reader field. The output signal establishes a connectionless communication to an access point (104) or terminal which initiates a wireless paging operation, in lieu of conducting a terminal discovery process, based upon the content of the RF-ID tag (106). The terminal (102) initiates a wireless session between the terminal (102) and the access point (106) or terminal for conducting transactions with a service application (118) linked to the access point or terminal.

WO 03/081787 A3



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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB03/00897

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04B 7/00

US CL : 455/41.2

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)

U.S. : 455/41.2, 41.1, 41.3, 517, 518, 519; 340/10.1, 10.4, 10.52

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)
EAST (BRS) key terms: RF-ID, bluetooth, interrogation

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---------------------|--|---|
| X, P --- Y, P | US 2003/0008647 A1 (TAKATORI et al) 09 January 2003 (09.01.2003) See Figures 1-7, Paragraphs 0058-0139 | 1-4,7-13,15-20,22-24,27-33,35-43,46-49,51-62,64-65,68,71 ----- 5,6,14,21,25,26,34,44,45,50,63,66,67,69,70 |
| Y,P | US 6,456,039 B1 (LAUPER et al) 24 September 2002 (24.09.2002) see column 3 lines 22-34; column 4 lines 39-51 | 5,6,14,21,25,26,34,44,45,50,63,66,67,69,70 |
| A | US 6,282,407, B1 (VEGA et al) 28 August 2001 (28.08.2001), ALL | 1-71 |
| A | WO 01/45038 A2 (HUM et al) 21 June 2001 (21.06.2001), ALL | 1-71 |
| A | US 6,104,333 A (WOOD, JR et al) 15 August 2000 (15.08.2000), ALL | 1-71 |

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

| | |
|---|--|
| * Special categories of cited documents: | "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 |
| "A" document defining the general state of the art which is not considered to be of particular relevance | "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 |
| "E" earlier application or patent published on or after the international filing date | "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 |
| "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) | "&" document member of the same patent family |
| "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 | |

Date of the actual completion of the international search

20 September 2003 (20.09.2003)

Date of mailing of the international search report

17 OCT 2003

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Lewis G. West

Telephone No. 703-308,9298