(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 22 February 2007 (22.02.2007)

PCT

(10) International Publication Number WO 2007/022540 A3

(51) International Patent Classification: *G01R 31/08* (2006.01)

(21) International Application Number:

PCT/US2006/032826

- (22) International Filing Date: 9 August 2006 (09.08.2006)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

11/205,277

15 August 2005 (15.08.2005) US

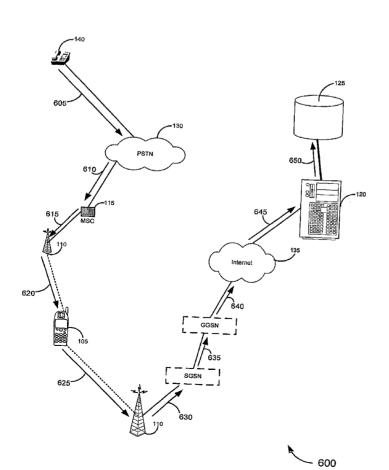
- (71) Applicant (for all designated States except US): IN-CODE TELECOM GROUP, INC. [US/US]; 9645 Scranton Road, Suite 110, San Diego, California 92121 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): DONOVAN, John [US/US]; 9645 Scranton Road, Suite 110, San Diego, California 92121 (US). LINK, Rene [US/US]; 9645 Scranton Road, Suite 110, San Diego, California 92121 (US).

CRICK, Todd [US/US]; 9645 Scranton Road, Suite 110, San Diego, California 92121 (US).

- (74) Agents: SZEPESI, Judith, A. et al.; Blakely, Sokoloff, Taylor & Zafman, LLP, 7th Floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025 (US).
- (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, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, 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,

[Continued on next page]

(54) Title: EMBEDDED WIRELESS BENCHMARKING SYSTEMS AND METHODS



(57) Abstract: Systems and methods for measuring the performance of a provider of communications service are described. A plurality of mobile communications devices measure average power received, signal to noise ratio, voice quality, blocked and dropped calls, or any combinations of such measurements. The device may also receive a set of data identifying the location of the device. The device may transmit one or more communications signals to a server computer system with such measurements and location data. The measurements and location data may be stored in a database, and new data may be created and transmitted illustrating a subset of the measurements and location data.

WO 2007/022540 A3 ||||||||||||||

WO 2007/022540 A3



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).

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.

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
- $\textbf{(88)} \ \ \textbf{Date of publication of the international search report:}$

14 June 2007

INTERNATIONAL SEARCH REPORT

International application No. PCT/US 06/32826

A. CLASSIFICATION OF SUBJECT MATTER IPC(8)- G01R 31/08 (2007.01) USPC - 370/241			
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) ISPC (8)- G01R 31/08 (2007.01) USPC - 370/241			
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)			
WEST (DB = USPT, USOC, EPAB, JPAB) Google Search terms:telecommunications systems and wireless and analyzing system			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where ap	propriate, of the relevant passages	Relevant to claim No.
х	US 6,603,966 B1 (SHEFFIELD) 05 August 2003 (05.08.2003) Col 1, ln 25-41; Col 1, ln 60-65; Col 2, ln 17-27; Col 2, ln 60-68; Col 3, ln 16-21; Col 3, ln 21-25; Col 3, ln 35-68; Col 4, ln 5-20; Col 5, 30-35; Col 5, ln 44-46; Col 5, ln 27-41; Col 5, ln 58-68; Col 6, ln 1-16; Col 6, ln 48-68; Col 7, ln 1-6; Col 7, ln 23-35; Col 7, ln 34-41; Col 8, ln 4-22; Col 9, ln 9-12		5-11, 32-41
Y			1-4, 12-31, 42-53
Y	US 6,819,924 B1 (MA et al.) 16 November 2004 (16.11.2004) Col 1, ln 39-43		17-31, 42-53
Y	US 6,614,126 B1 (MITCHELL) 02 September 2003 (02.09.2003) Col 1, ln 55-63; Col 2, ln 66-67; Col 3, ln 1-5; Col 3, ln 55-65		1-4, 12-31, 42-53
Further documents are listed in the continuation of Box C.			
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "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			
"E" earlier application or patent but published on or after the international "X" document of particular relevance; the claimed invention cannot filing date considered novel or cannot be considered to involve an invent			claimed invention cannot be ered to involve an inventive
"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) special reason (as specified) step when the document is taken alone document of particular relevance; the claimed invention considered to involve an inventive step when the			claimed invention cannot be
"O" document referring to an oral disclosure, use, exhibition or other means combined with one or more other such documents, such combine being obvious to a person skilled in the art			locuments, such combination
"P" document published prior to the international filing date but later than "&" document member of the same patent family the priority date claimed			
Date of the actual completion of the international search Date of mailing of the international search report			ch report
	2007 (10.02.2007)	30 APR 2007	
	nailing address of the ISA/US T, Attn: ISA/US, Commissioner for Patents	Authorized officer: Lee W. Young	
P.O. Box 145	50, Alexandria, Virginia 22313-1450	PCT Helpdesk: 571-272-4300	
Facsimile No. 571-273-3201 PCT OSP: 571-272-7774			