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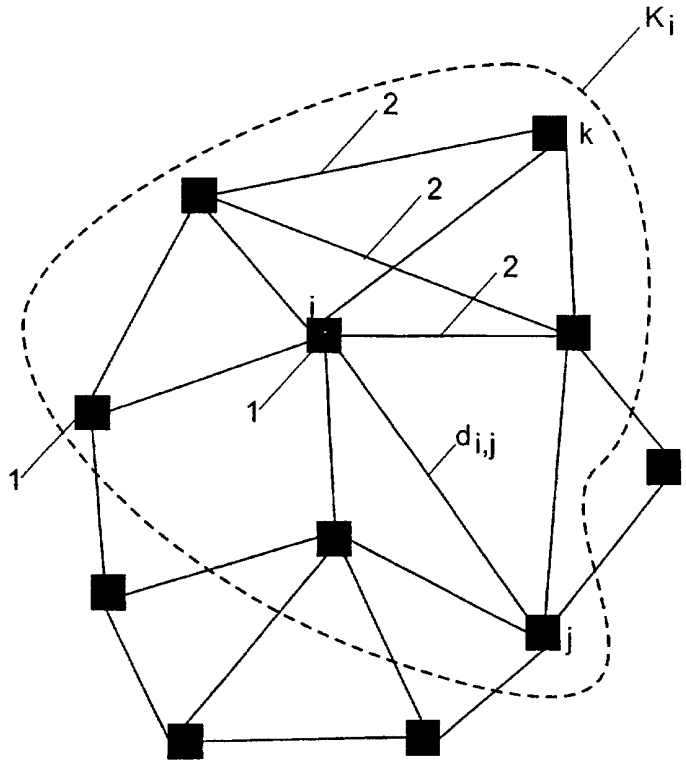
(54) Title: METHOD AND WIRELESS TERMINAL FOR GENERATING AND MAINTAINING A RELATIVE POSITIONING SYSTEM



(57) Abstract: Method for determining the relative position of wireless terminals (1) in an ad hoc network, wherein at least some of said wireless terminals can communicate over wireless links (2) in one or several hops with at least some of the other wireless terminals. The following steps are performed in the wireless terminals: measuring in a plurality of said wireless terminals the distances (d_{ij}) to one-hop neighbors, using the distances measured in at least two wireless terminals to compute the location (x, y) of at least one other wireless terminals. Advantage: GPS-less positioning in ad hoc networks.

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LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

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Declarations under Rule 4.17:

— *as to the identity of the inventor (Rule 4.17(i)) for all designations*

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG)*

— *of inventorship (Rule 4.17(iv)) for US only*

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01S5/14 H04L12/56

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B. FIELDS SEARCHED

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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 practical, search terms used)
EPO-Internal, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 14933 A (BEAUDRY BENNETT C ;MOTOROLA INC (US); TARVER BRYON (US); BERGSTROM) 16 March 2000 (2000-03-16) abstract; figure 1 page 1, line 22 - line 31 page 6, line 14 - line 24 ---	1-3, 25-27
X	US 5 987 011 A (TOH CHAI KEONG) 16 November 1999 (1999-11-16) abstract; claims 6,22 column 18, line 31 - line 47 column 19, line 17 - line 31 --- -/--	1,2,4, 24-26, 28,35

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Niemeijer, R

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
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A	SHU-LIN WU ET AL: "Intelligent medium access for mobile ad hoc networks with busy tones and power control" COMPUTER COMMUNICATIONS AND NETWORKS, 1999. PROCEEDINGS. EIGHT INTERNATIONAL CONFERENCE ON BOSTON, MA, USA 11-13 OCT. 1999, PISCATAWAY, NJ, USA,IEEE, US, 11 October 1999 (1999-10-11), pages 71-76, XP010359556 ISBN: 0-7803-5794-9 page 71, right-hand column, line 13 - line 30	1,24,25
A	DUPUY A: "NEST: A NETWORK SIMULATION & PROTOTYPING TESTBED*" PROCEEDINGS OF THE WINTER SIMULATION CONFERENCE. WASHINGTON, DEC. 4 - 6, 1989, NEW YORK, IEEE, US, 4 December 1989 (1989-12-04), pages 1058-1064, XP000207502 * Section 5.1 IPLS - a Distributed Incremental Position Location System, page 1063 *	1,24,25
X,P	CAPKUN S ET AL: "GPS-free positioning in mobile ad-hoc networks" PROCEEDINGS OF THE 34TH ANNUAL HAWAII INTERNATIONAL CONFERENCE ON SYSTEM SCIENCES, PROCEEDINGS OF HAWAII INTERNATIONAL CONFERENCE ON SYSTEM SCIENCES. HICSS-34, MAUI, HI, USA, 3-6 JAN. 2001, page 10 pp. XP008001836 2001, Los Alamitos, CA, USA, IEEE Comput. Soc, USA ISBN: 0-7695-0981-9 the whole document	1,24,25

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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