

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 March 2006 (23.03.2006)

PCT

(10) International Publication Number
WO 2006/031547 A2

(51) International Patent Classification:
H04L 12/26 (2006.01)

(21) International Application Number:
PCT/US2005/031797

(22) International Filing Date:
9 September 2005 (09.09.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/938,263 10 September 2004 (10.09.2004) US

(71) Applicant (for all designated States except US): **NIVIS, LLC** [US/US]; 900 Circle 75 Parkway, Suite 1700, Atlanta, GA 30339 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **RATIU, Ovidiu** [RO/US]; 4405 Northside Pkwy, #2424, Atlanta, GA 30327 (US). **CHILOM, Marius, Ovidiu** [US/US]; 1224 Grand View Drive, Mableton, GA 30126 (US). **TICUS, Ion** [RO/RO]; Str. Anastasie Panu nr. 20, Bl. C15, Sc. 3, Apt. 91, Bucharest, Sector 3 (RO).

(74) Agent: **CRAIN, Andrew, N.**; Thomas, Kayden, Horstemeier & Risley, LLP, 100 Galleria Parkway, NW, Suite 1750, Atlanta, GA 30339-5948 (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, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, 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).

Published:

— without international search report and to be republished upon receipt of that report

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.

(54) Title: SYSTEM AND METHOD FOR A WIRELESS MESH NETWORK

(57) Abstract: A system for an access node coupled to a computer to wirelessly communicate with a plurality of disparately located radio nodes each coupled to a meter or other sensor is provided. The radio nodes within the communication range of the access node orient onto a first logical layer to directly communicate with the access node. Additional radio nodes beyond the communication range of the access node indirectly communicate with the access node by detecting communications from radio nodes on lower logical layers that are closer to the access node and selecting a radio node of the detected radio nodes to be a repeater node. The selected repeater node has available memory capacity and a suitable power number to qualify as a repeater, which may periodically change. Sensed data is directly or indirectly communicated to the access node for further communication to a backend system computer.



WO 2006/031547 A2