



(51) International Patent Classification:

H04W 56/00 (2009.01) H04B 1/7156 (2011.01)
H04B 1/7143 (2011.01) H04W 84/20 (2009.01)

(21) International Application Number:

PCT/US2021/032508

(22) International Filing Date:

14 May 2021 (14.05.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

16/887,695 29 May 2020 (29.05.2020) US

(71) Applicant: **LANDIS+GYR INNOVATIONS, INC.**
[US/US]; 30000 Mill Creek Avenue, Suite 100, Alpharetta,
Georgia 30022 (US).

(72) Inventors: **HANLEY, James, Patrick**; 30000 Mill Creek
Avenue, Suite 100, Alpharetta, Georgia 30022 (US).
HETT, Christopher, Scott; 30000 Mill Creek Avenue,
Suite 100, Alpharetta, Georgia 30022 (US).

(74) Agent: **HOLMES, Brenda, Ozaki et al.**; Kilpatrick
Townsend & Stockton LLP, IP Docketing - 22nd Floor,
1100 Peachtree Street NE, Suite 2800, Atlanta, Georgia
30309 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN,
KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO,
NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW,

(54) Title: MULTI-RADIO SYNCHRONIZATION WITHIN A SINGLE CONNECTED SYSTEM

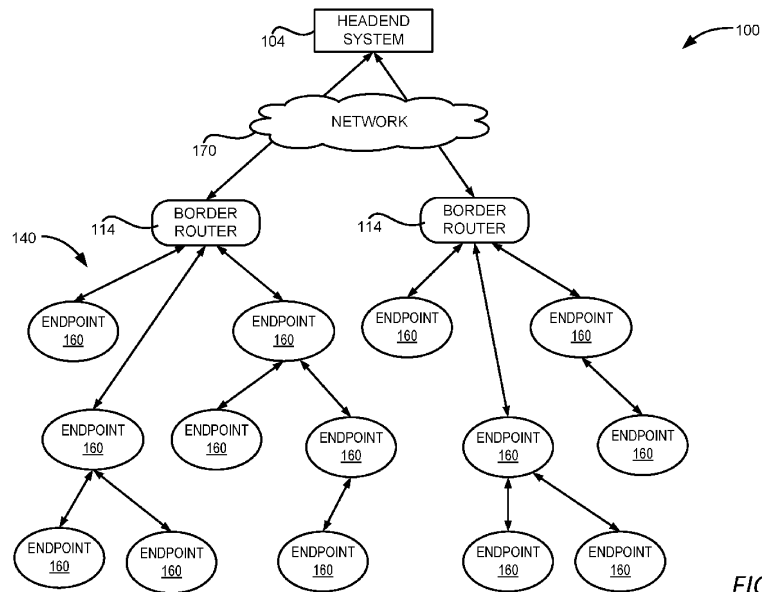


FIG. 1

(57) Abstract: A multi-radio border router for synchronizing communications of multiple border router radios is provided. For example, the border router includes a border router component connected to each of the plurality of border router radios. The border router component configured for selecting one of the plurality of border router radios as a master radio and assigning channel offset parameters for each of the plurality of border router radios. The master radio is configured for broadcasting synchronization beacons based on which the non-master radios synchronize their respective clocks with that of the master radio. After the synchronization, each of the border router radios communicates with endpoints associated therewith according to a channel hopping pattern modified by applying a channel offset determined based on the channel offset parameters assigned to the respective radio.

[Continued on next page]

SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*