



- (51) **International Patent Classification:**
H04L 5/00 (2006.01) *H04W 72/00* (2009.01)
- (21) **International Application Number:**
PCT/IB2020/050160
- (22) **International Filing Date:**
09 January 2020 (09.01.2020)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
62/790,736 10 January 2019 (10.01.2019) US
- (71) **Applicant:** **TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)** [SE/SE]; SE-164 83 Stockholm (SE).
- (72) **Inventors:** **MURUGANATHAN, Siva**; 275 Denali Way, Stittsville, Ontario K2S0R3 (CA). **FRENNE, Mattias**; Arkeologvägen 20, SE-754 43 Uppsala (SE). **FAXÉR, Sebastian**; Frihetsvägen 33, SE-177 53 Järfälla (SE). **JÄRMYR, Simon**; Luftfartsgatan 8, SE-128 34 Skarpnäck (SE).
- (74) **Agent:** **WEISBERG, Alan M.**; Christopher & Weisberg, P.A., 1232 N. University Drive, Plantation, Florida 33322 (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, 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, 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,

(54) **Title:** PHYSICAL DOWNLINK SHARED CHANNEL (PDSCH) RESOURCE MAPPING FOR MULTI-TRANSMISSION POINT (TRP)

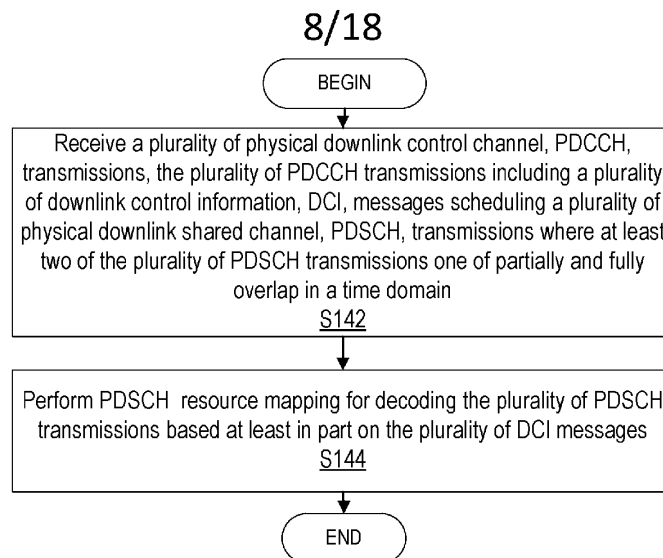


FIG. 14

(57) **Abstract:** Methods and apparatuses are disclosed for resource mapping. In one embodiment, a wireless device is provided. The wireless device includes processing circuitry (84) configured to: receive a plurality of physical downlink control channel, PDCCH, transmissions where the plurality of PDCCH transmissions includes a 5 plurality of downlink control information, DCI, messages scheduling a plurality of physical downlink shared channel, PDSCH, transmissions, and at least two of the plurality of PDSCH transmissions one of partially and fully overlap in a time domain; and perform PDSCH resource mapping for decoding the plurality of PDSCH transmissions based at least in part on the plurality of DCI messages.

[Continued on next page]



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).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

- *with international search report (Art. 21(3))*
- *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*