

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
19 August 2021 (19.08.2021)



(10) International Publication Number
WO 2021/162632 A1

(51) International Patent Classification:

H04B 7/0413 (2017.01) *H04L 5/00* (2006.01)
H04W 16/06 (2009.01) *H04W 28/06* (2009.01)

(21) International Application Number:

PCT/SG2020/050691

(22) International Filing Date:

25 November 2020 (25.11.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10202001391S 14 February 2020 (14.02.2020) SG

(71) Applicant: **PANASONIC INTELLECTUAL PROPERTY CORPORATION OF AMERICA** [US/US]; 20000 Mariner Avenue, Suite 200, Torrance, California 90503 (US).

(72) Inventors: **HUANG, Lei**; c/o Panasonic R&D Center Singapore, 202 Bedok South Avenue 1 #02-11, Singapore 469332 (SG). **URABE, Yoshio**; Panasonic Corporation, 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8501 (JP). **CHITRAKAR, Rojan**; c/o Panasonic R&D Center Singapore, 202 Bedok South Avenue 1 #02-11, Singapore 469332 (SG).

(74) Agent: **SPRUSON & FERGUSON (ASIA) PTE LTD**; P.O. Box 1531, Robinson Road Post Office, Singapore 903031 (SG).

(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,

(54) Title: COMMUNICATION APPARATUS AND COMMUNICATION METHOD FOR CONTROL SIGNALING

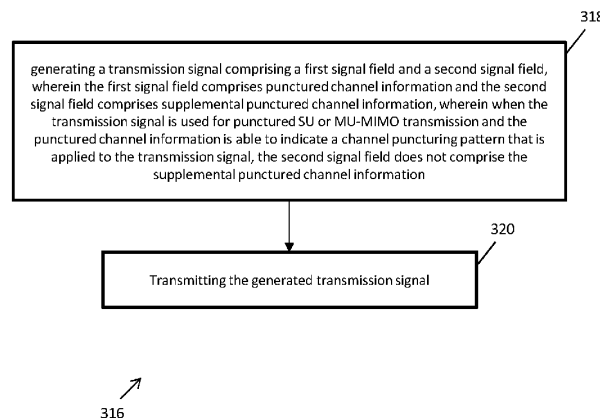


Fig. 3B

(57) Abstract: The present disclosure provides communication apparatus and communication method for control signaling. The communication apparatus comprises: circuitry, which, in operation, generates a transmission signal comprising a first signal field and a second signal field, wherein the first signal field comprises punctured channel information and the second signal field comprises supplemental punctured channel information, wherein when the transmission signal is used for punctured single-user (SU) or multi-user (MU) multiple input multiple output (MIMO) transmission and the punctured channel information is able to indicate a channel puncturing pattern that is applied to the transmission signal, the second signal field does not comprise the supplemental punctured channel information; and a transmitter, which, in operation, transmits the transmission signal.

[Continued on next page]

WO 2021/162632 A1

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, 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:

- *of inventorship (Rule 4.17(iv))*

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*