



- (51) **International Patent Classification:**
H04W 74/08 (2009.01)
- (21) **International Application Number:**
PCT/US2020/016426
- (22) **International Filing Date:**
03 February 2020 (03.02.2020)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
62/803,288 08 February 2019 (08.02.2019) US
16/778,956 31 January 2020 (31.01.2020) US
- (71) **Applicant: QUALCOMM INCORPORATED** [US/US];
ATTN: International IP Administration, 5775 Morehouse
Drive, San Diego, California 92121-1714 (US).
- (72) **Inventors: LEI, Jing;** 5775 Morehouse Drive, San Diego,
California 92121-1714 (US). **HE, Linhai;** 5775 More-
house Drive, San Diego, California 92121-1714 (US). **LY,**
Hung Dinh; 5775 Morehouse Drive, San Diego, California
92121-1714 (US). **PARK, Seyong;** 5775 Morehouse Drive,
San Diego, California 92121-1714 (US). **BHUSHAN,**
Naga; 5775 Morehouse Drive, San Diego, California
92121-1714 (US). **WANG, Ying;** 5775 Morehouse Drive,

San Diego, California 92121-1714 (US). **CHEN, Wanshi;**
5775 Morehouse Drive, San Diego, California 92121-1714
(US). **SORIAGA, Joseph Binamira;** 5775 Morehouse Drive,
San Diego, California 92121-1714 (US).

(74) **Agent: LARSEN, Per;** Holland & Hart LLP, P.O. Box
11583, Salt Lake City, Utah 84147 (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,
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,

(54) **Title:** FALLBACK PROCEDURES FOR TWO-STEP RANDOM ACCESS PROCEDURES

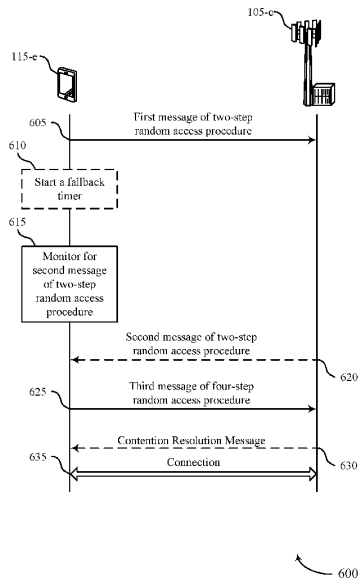


FIG. 6

(57) **Abstract:** Fallback procedures for user equipments (UEs) described provide efficient fallback to a four-step random access procedure from a two-step random access procedure. For example, after transmitting a first message of a two-step random access procedure, a UE may start a fallback timer or counter and monitor for a second message of the two-step random access procedure for the duration of the fallback timer or counter. At the expiration of the fallback timer or counter, the UE may fall back to a four-step random access procedure. In some cases, the UE may transmit multiple repetitions of the first message and monitor for responses after transmitting the repetitions or after each repetition. Additionally or alternatively, the base station may transmit an explicit signal to the UE that may signal to the UE to perform a fallback procedure at a beginning or middle of a random access procedure.

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))*