US 20220376710A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2022/0376710 A1**

XU et al. (43) **Pub. Date: Nov. 24, 2022**

(54) **LOW LATENCY COMMUNICATION WITH CARRIER-AGGREGATION-BASED FOUNTAIN CODES**

(71) Applicant: **Qualcomm Incorporated**, San Diego, CA (US)

(72) Inventors: **Changlong XU**, Beijing (CN); **Tao LUO**, San Diego, CA (US); **Hao XU**, Beijing (CN)

(21) Appl. No.: **17/761,262**

(22) PCT Filed: **Sep. 20, 2019**

(86) PCT No.: **PCT/CN2019/106945**

§ 371 (c)(1),
(2) Date: **Mar. 17, 2022**

Publication Classification

(51) **Int. Cl.**
H03M 13/37 (2006.01)
H04L 1/00 (2006.01)

(52) **U.S. Cl.**
CPC ***H03M 13/3761*** (2013.01); ***H04L 1/0045*** (2013.01); ***H04L 1/0041*** (2013.01)

(57) **ABSTRACT**

Methods, systems, and devices for wireless communications are described. An encoding device (e.g., a user equipment (UE) or a base station) may divide one or more data units (e.g., packet data convergence protocol (PDCP) protocol data units (PDU)) into a set of data blocks. The encoding device may encode the set of data blocks using a fountain code and may generate a set of data units (e.g., radio link control (RLC) PDUs) based on encoding the set of data blocks using the fountain code. The UE may allocate a first subset of the set of data units to a first carrier and a second subset of the set of data units to a second carrier and may transmit the first subset over the first carrier and the second subset over the second carrier.