US 20230231651A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2023/0231651 A1**

Takeda et al. (43) **Pub. Date: Jul. 20, 2023**

(54) **SEMI-PERSISTENT CHANNEL STATE INFORMATION REFERENCE SIGNAL HANDLING FOR MULTICAST**

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

(72) Inventors: **Kazuki Takeda**, Minato-ku (JP); **Le Liu**, San Jose, CA (US); **Peter Gaal**, San Diego, CA (US); **Alberto Rico Alvarino**, San Diego, CA (US)

(21) Appl. No.: **17/955,433**

(22) Filed: **Sep. 28, 2022**

Related U.S. Application Data

(60) Provisional application No. 63/300,238, filed on Jan. 17, 2022.

Publication Classification

(51) **Int. Cl.**
H04L 1/00 (2006.01)
H04B 7/06 (2006.01)

(52) **U.S. Cl.**
CPC ***H04L 1/0067*** (2013.01); ***H04L 1/0061*** (2013.01); ***H04B 7/0626*** (2013.01)

(57) **ABSTRACT**

Methods, systems, and devices for wireless communications are described. The method may include a user equipment (UE) receiving, from a base station, signaling configuring the UE with a semi-persistent (SP) channel state information reference signal (CSI-RS) resource set. Additionally, the UE may receive, from the base station, signaling configuring the UE to communicate using multicast signaling via a multicast downlink shared channel. The UE may receive an activation command activating the SP CSI-RS resource set. The UE may apply a rule and based on the activation command and the rule perform rate matching on the multicast downlink shared channel around either multicast or unicast resources of the CSI-RS resource set.