US 20240214157A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0214157 A1**

Singh et al. (43) **Pub. Date: Jun. 27, 2024**

(54) **SIGNALING METHODS FOR DYNAMICALLY SWITCHING TCI STATES BETWEEN SINGLE TRP OPERATION AND MULTI TRP OPERATION**

(71) Applicants: **Centre of Excellence in Wireless Technology**, Taramani (IN); **Indian Institute of Technology Madras**, Chennai (IN)

(72) Inventors: **Vishakha Singh**, Chennai (IN); **Thirunageswaram Ramachandran Ramya**, Chennai (IN); **Jeniston Deviraj Klutto Milleth**, Chennai (IN); **Bhaskar Ramamurthi**, Chennai (IN)

(21) Appl. No.: **18/395,092**

(22) Filed: **Dec. 22, 2023**

(30) **Foreign Application Priority Data**

Dec. 23, 2022 (IN) 202241075009

Publication Classification

(51) **Int. Cl.**
H04L 5/00 (2006.01)
H04W 72/231 (2006.01)

(52) **U.S. Cl.**
CPC ***H04L 5/0053*** (2013.01); ***H04L 5/0035*** (2013.01); ***H04W 72/231*** (2023.01)

(57) **ABSTRACT**

A method for performing signaling in a multi Transmission/Reception Point (TRP) wireless communication system is described. The method comprises receiving, by a second node (**104**), a Medium Access Control-Control Element (MAC-CE) from a first node (**102**). The MAC-CE comprises a code-point. The code-point maps to a Transmission Configuration Indicator (TCI) state. The second node (**104**) receives at least one of a flag, TCI field, TCI selection field, signaling index and an index of a bit map from a plurality of bit maps in a Downlink Control Information (DCI) from the first node (**102**). The TCI field comprises at least one bit to indicate the code-point of the MAC-CE. The second node (**104**) activates the TCI state based on the DCI. The second node (**104**) performs at least one of a Downlink (DL) reception and an Uplink (UL) transmission using the TCI state activated.