**TECHNIQUES AND APPARATUSES FOR TRANSMITTING DOWNLINK CONTROL INFORMATION (DCI) ON A PHYSICAL DOWNLINK SHARED CHANNEL (PDSCH)**

#### FIELD OF THE DISCLOSURE

1. Aspects of the present disclosure generally relate to wireless communication, and more particularly to techniques and apparatuses for transmitting downlink control information (DCI) on a physical downlink shared channel (PDSCH).

#### BACKGROUND

1. Wireless communication systems are widely deployed to provide various telecommunication services such as telephony, video, data, messaging, and broadcasts. Typical wireless communication systems may employ multiple-access technologies capable of supporting communication with multiple users by sharing available system resources (e.g., bandwidth, transmit power, and/or the like). Examples of such multiple-access technologies include code division multiple access (CDMA) systems, time division multiple access (TDMA) systems, frequency-division multiple access (FDMA) systems, orthogonal frequency-division multiple access (OFDMA) systems, single-carrier frequency-division multiple access (SC-FDMA) systems, time division synchronous code division multiple access (TD-SCDMA) systems, and Long Term Evolution (LTE). LTE/LTE-Advanced is a set of enhancements to the Universal Mobile Telecommunications System (UMTS) mobile standard promulgated by the Third Generation Partnership Project (3GPP).
2. A wireless communication network may include a number of base stations (BSs) that can support communication for a number of user equipment (UEs). A user equipment (UE) may communicate with a base station (BS) via the downlink and uplink. The downlink (or forward link) refers to the communication link from the BS to the UE, and the uplink (or reverse link) refers to the communication link from the UE to the BS. As will be described in more detail herein, a BS may be referred to as a Node B, a gNB, an access point (AP), a radio head, a transmit receive point (TRP), a new radio (NR) BS, a 5G Node B, and/or the like.
3. The above multiple access technologies have been adopted in various telecommunication standards to provide a common protocol that enables different user equipment to communicate on a municipal, national, regional, and even global level. New radio (NR), which may also be referred to as 5G, is a set of enhancements to the LTE mobile standard promulgated by the Third Generation Partnership Project (3GPP). NR is designed to better support mobile broadband Internet access by improving spectral efficiency, lowering costs, improving services, making use of new spectrum, and better integrating with other open standards using orthogonal frequency division multiplexing (OFDM) with a cyclic prefix (CP) (CP-OFDM) on the downlink (DL), using CP-OFDM and/or SC-FDM (e.g., also known as discrete Fourier transform spread OFDM (DFT-s-OFDM)) on the uplink (UL), as well as supporting beamforming, multiple-input multiple-output (MIMO) antenna technology, and carrier aggregation. However, as the demand for mobile broadband access continues to increase, there exists a need for further improvements in LTE and NR technologies. Preferably, these improvements should be applicable to other multiple access technologies and the telecommunication standards that employ these technologies.

#### SUMMARY

1. In some aspects, a method of wireless communication, performed by a base station (BS), may include receiving a capability indicator from a user equipment (UE) that indicates a capability of the UE to decode downlink control information (DCI) on a physical downlink shared channel (PDSCH). The method may include transmitting, to the UE, the DCI on the PDSCH based at least in part on the capability indicator indicating that the UE can decode the DCI on the PDSCH.

In some aspects, a base station for wireless communication may include memory and one or more processors operatively coupled to the memory. The memory and the one or more processors may be configured to receive a capability indicator from a user equipment (UE) that indicates a capability of the UE to decode downlink control information (DCI) on a physical downlink shared channel (PDSCH). The memory and the one or more processors may be configured to transmit, to the UE, the DCI on the PDSCH based at least in part on the capability indicator indicating that the UE can decode the DCI on the PDSCH.

1. In some aspects, a non-transitory computer-readable medium may store one or more instructions for wireless communication. The one or more instructions, when executed by one or more processors of a base station, may cause the one or more processors to receive a capability indicator from a user equipment (UE) that indicates a capability of the UE to decode downlink control information (DCI) on a physical downlink shared channel (PDSCH). The one or more instructions, when executed by the one or more processors, may cause the one or more processors to transmit, to the UE, the DCI on the PDSCH based at least in part on the capability indicator indicating that the UE can decode the DCI on the PDSCH.
2. In some aspects, an apparatus for wireless communication may include means for receiving a capability indicator from a user equipment (UE) that indicates a capability of the UE to decode downlink control information (DCI) on a physical downlink shared channel (PDSCH). The apparatus may include means for transmitting, to the UE, the DCI on the PDSCH based at least in part on the capability indicator indicating that the UE can decode the DCI on the PDSCH.
3. In some aspects, a method of wireless communication, performed by a user equipment (UE), may include transmitting, to a base station (BS), a capability indicator that indicates a capability of the UE to decode downlink control information (DCI) on a physical downlink shared channel (PDSCH). The method may include receiving, from the BS, the DCI on the PDSCH based at least in part on the capability indicator indicating that the UE can decode the DCI on the PDSCH.

In some aspects, a user equipment (UE) for wireless communication may include memory and one or more processors operatively coupled to the memory. The memory and the one or more processors may be configured to transmit, to a base station (BS), a capability indicator that indicates a capability of the UE to decode downlink control information (DCI) on a physical downlink shared channel (PDSCH). The memory and the one or more processors may be configured to receive, from the BS, the DCI on the PDSCH based at least in part on the capability indicator indicating that the UE can decode the DCI on the PDSCH.