

CLAIMS

~~WHAT IS CLAIMED IS:~~

1. ____ A method of wireless communication of user equipment (UE), comprising:
 - receiving a set of resource blocks from a base station comprising enhanced mobile broadband (eMBB) data in a physical downlink shared channel (PDSCH);
 - receiving an ultra-reliable low-latency communications (URLLC) indicator ~~from the base station, the URLLC indicator being received within downlink control information (DCI) of a group common physical downlink control channel (PDCCH);~~ that is group encoded from the base station, the URLLC indicator indicating whether URLLC data is embedded within the eMBB data in the set of resource blocks; wherein the set of resource blocks is received in a first slot before a second slot in which the URLLC indicator is received, the URLLC indicator comprising a post indication indicating whether the set of resource blocks received in the first slot includes the URLLC data, indication bits of the URLLC indicator being jointly encoded, and is embedded a comb based structure in the set of resource blocks;
 - determining, based on the URLLC indicator, whether the set of resource blocks includes the URLLC data embedded within the eMBB data; and
 - processing the set of resource blocks based on a result of determining whether the set of resource blocks includes the URLLC data.
2. ____ The method of claim 1, further comprising transmitting one of an acknowledgment (ACK) or a negative acknowledgement (NACK) based on whether the set of resource blocks are properly decoded when processing the set of resource blocks.
3. ____ The method of claim 1, wherein the set of resource blocks from the base station comprises the URLLC data in the PDSCH, and the URLLC indicator indicates that the URLLC data is present in the set of resource blocks.
4. ~~The method of claim 1, wherein the set of resource blocks is received in a slot before a slot in which the URLLC indicator is received, the URLLC indicator comprising a post indication indicating whether the set of resource blocks received in the slot before the slot in which the URLLC indicator is received includes the URLLC data.~~

5. ____ The method of claim 1, wherein the URLLC indicator is wideband based and indicates that the URLLC data extends across all subcarriers of a carrier, or is subband based and indicates that the URLLC data extends across one or more subsets of the subcarriers of the carrier.

6.5. ____ The method of claim 1, further comprising receiving a configuration for the URLLC indicator, wherein the configuration specifies a periodicity at which the URLLC indicator is received.

6. ____ The method of claim 1, wherein the URLLC indicator signals a granularity of the indication provided by the URLLC indicator.

7. ____ An apparatus for wireless communication, the apparatus being a user equipment (UE), comprising:

a memory; and

at least one processor coupled to the memory and configured to cause the UE to:

———receive a set of resource blocks from a base station comprising enhanced mobile broadband (eMBB) data in a physical downlink shared channel (PDSCH);

receive an ultra-reliable low-latency communications (URLLC) indicator ~~from the base station, the URLLC indicator being received within~~ downlink control information (DCI) of a group common physical downlink control channel (PDCCH), that is group encoded from the base station, the URLLC indicator indicating whether URLLC data is embedded within the eMBB data in the set of resource blocks, wherein the set of resource blocks is received in a first slot before a second slot in which the URLLC indicator is received, the URLLC indicator comprising a post indication indicating whether the set of resource blocks received in the first slot includes the URLLC data, indication bits of the URLLC indicator being jointly encoded, and is embedded with a comb based structure in the set of resource blocks;

determine, based on the URLLC indicator, whether the set of resource blocks includes the URLLC data embedded within the eMBB data; and

process the set of resource blocks based on a result of determining whether the set of resource blocks includes the URLLC data.

8. ____ The apparatus of claim 7, wherein the at least one processor is further configured to cause the UE to transmit one of an acknowledgment (ACK) or a negative acknowledgement (NACK) based on whether the set of resource blocks are properly decoded when processing the set of resource blocks.

9. ____ The apparatus of claim 7, wherein the set of resource blocks from the base station comprises the URLLC data in the PDSCH, and the URLLC indicator indicates that the URLLC data is present in the set of resource blocks.

~~10. The apparatus of claim 7, wherein the set of resource blocks is received in a slot before a slot in which the URLLC indicator is received, the URLLC indicator comprising a post-indication indicating whether the set of resource blocks received in the slot before the slot in which the URLLC indicator is received includes the URLLC data.~~

~~11. ____~~ The apparatus of claim 7, wherein the URLLC indicator is wideband based and indicates that the URLLC data extends across all subcarriers of a carrier, or is subband based and indicates that the URLLC data extends across one or more subsets of the subcarriers of the carrier.

~~12. ____~~ The apparatus of claim 7, wherein the at least one processor is further configured to cause the UE to receive a configuration for the URLLC indicator, wherein the configuration specifies a periodicity at which the URLLC indicator is received.

~~13. ____~~ A method of wireless communication of a base station, comprising:

generating a set of resource blocks including at least one of enhanced mobile broadband (eMBB) data or ultra-reliable low-latency communications (URLLC) data in a physical downlink shared channel (PDSCH), the URLLC data being one of embedded in the eMBB data or not embedded in the eMBB data;

generating a URLLC indicator indicating whether the set of resource blocks includes the URLLC data; and

sending, to at least one user equipment (UE), the URLLC indicator and the set of resource blocks including the at least one of the eMBB data or the URLLC data, the URLLC indicator being sent separate from the URLLC data within downlink control information (DCI) of a physical

~~downlink control channel (PDCCH);~~group common physical downlink control channel (PDCCH)
that is group encoded, wherein the set of resource blocks is transmitted in a first slot before a
second slot in which the URLLC indicator is transmitted, the URLLC indicator comprising a post
indication indicating whether the set of resource blocks transmitted in the first slot includes the
URLLC data, indication bits of the URLLC indicator being jointly encoded, and is embedded with
a comb structure in the set of resource blocks.

~~14.~~13._____The method of claim ~~13~~12, wherein the set of resource blocks from the base station
comprises the eMBB data, and the URLLC indicator indicates whether the URLLC data is
embedded within the eMBB data.

~~15.~~14._____The method of claim ~~13~~12, wherein the set of resource blocks from the base station
comprises the URLLC data in the PDSCH, and the URLLC indicator indicates that the URLLC
data is present in the set of resource blocks.

~~16.~~15._____The method of claim ~~13~~, ~~wherein the set of resource blocks is transmitted in a slot~~
~~before a slot in which the URLLC indicator is transmitted, the URLLC indicator comprising a post~~
~~indication indicating whether the set of resource blocks transmitted in the slot before the slot in~~
~~which the URLLC indicator is transmitted includes the URLLC data.~~

~~17.~~_____The method of claim ~~13~~12, wherein the URLLC indicator is wideband based and indicates that
the URLLC data extends across all subcarriers of a carrier, or is subband based and indicates that
the URLLC data extends across one or more subsets of the subcarriers of the carrier.

~~18.~~16._____The method of claim ~~13~~12, further comprising transmitting a configuration to the
at least one UE for the URLLC indicator, wherein the configuration specifies a periodicity at which
the URLLC indicator is transmitted.

~~19.~~17._____An apparatus for wireless communication, the apparatus being a base station,
comprising:

a memory; and

at least one processor coupled to the memory and configured to cause the base station to:

generate a set of resource blocks including at least one of enhanced mobile broadband (eMBB) data or ultra-reliable low-latency communications (URLLC) data in a physical downlink shared channel (PDSCH), the URLLC data being one of embedded in the eMBB data or not embedded in the eMBB data;

generate a URLLC indicator indicating whether the set of resource blocks includes the URLLC data; and

send, to at least one user equipment (UE), the URLLC indicator and the set of resource blocks including the at least one of the eMBB data or the URLLC data, the URLLC indicator being sent separate from the URLLC data within downlink control information (DCI) of a ~~physical downlink control channel (PDCCH)~~group common physical downlink control channel (PDCCH) that is group encoded, wherein the set of resource blocks is transmitted in a first slot before a second slot in which the URLLC indicator is transmitted, the URLLC indicator comprising a post indication indicating whether the set of resource blocks transmitted in the first slot includes the URLLC data, indication bits of the URLLC indicator being jointly encoded, and is embedded with a comb based structure in the set of resource blocks.

~~20-18.~~_____The apparatus of claim ~~19~~17, wherein the set of resource blocks comprises the eMBB data, and the indicator indicates whether the URLLC data is embedded within the eMBB data.

~~21-19.~~_____The apparatus of claim ~~19~~17, wherein the set of resource blocks comprises the URLLC data in the PDSCH, and the URLLC indicator indicates that the URLLC data is present in the set of resource blocks.

~~22. The apparatus of claim 19, wherein the set of resource blocks is transmitted in a slot before a slot in which the URLLC indicator is transmitted, the URLLC indicator comprising a post indication indicating whether the set of resource blocks transmitted in the slot before the slot in which the URLLC indicator is transmitted includes the URLLC data.~~

~~23. The apparatus of claim 19~~20._____The apparatus of claim 17, wherein the URLLC indicator is wideband based and indicates that the URLLC data extends across all subcarriers of a carrier, or

is subband based and indicates that the URLLC data extends across one or more subsets of the subcarriers of the carrier.

~~24.~~ 21. _____ The apparatus of claim ~~19~~17, wherein the at least one processor is further configured to send to the at least one UE a configuration for the URLLC indicator, wherein the configuration specifies a periodicity at which the URLLC indicator is transmitted.