

## CLAIMS

1. A method of wireless communication, comprising:
  - receiving a beta offset indication in downlink control information (DCI) of a downlink control message, the beta offset indication dynamically indicating a beta offset value from a plurality of beta offset values available for an uplink shared channel transmission comprising data and uplink control information (UCI);
  - determining the beta offset value from the plurality of beta offset values for transmitting the UCI in the uplink shared channel transmission based at least in part on the beta offset indication, wherein the UCI comprises at least one of ACK/NACK information or channel state information (CSI);
  - identifying resources for the uplink shared channel transmission; and
  - transmitting, on the identified resources for the uplink shared channel transmission, the UCI interleaved with the data in a frequency-interleaved manner over a bandwidth of the identified resources based on the determined beta offset value.
2. The method of claim 1, wherein the determining the beta offset value comprises:
  - receiving a set of beta offset values in a radio resource control (RRC) configuration; and ,
  - identifying the beta offset value from among the set of beta offset values in the RRC configuration based on the beta offset indication comprised in the DCI.
3. The method of claim 1, wherein the beta offset value is based on a type of a waveform used for transmitting the UCI, wherein the type of the waveform comprises a single carrier frequency division multiplex (SC-FDM) waveform or an orthogonal frequency division multiplex (OFDM) waveform.
4. The method of claim 1, wherein the UCI comprises the ACK/NACK information and channel quality information (CQI), and wherein the CQI is frequency interleaved on a different group of tones than the ACK/NACK information.
5. The method of claim 4, wherein the ACK/NACK information is transmitted on a first set of symbols adjacent to a demodulation reference signal (DM-RS) symbol, and wherein a portion of the CSI comprising the CQI is transmitted on a second set of symbols different than the first

set of symbols.

6. The method of claim 5, wherein the DM-RS symbol is front loaded in the uplink shared channel transmission.

7. The method of claim 1, wherein the uplink shared channel transmission comprises a single carrier waveform or an OFDM waveform.

8. The method of claim 1, wherein the beta offset indication indicates different beta offset values corresponding to different types of UCI.

9. The method of claim 1, wherein the DCI comprises an uplink grant of the identified resources for the uplink shared channel transmission.

10. An apparatus for wireless communication at a user equipment, comprising:

a memory; and

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

receive a beta offset indication in downlink control information (DCI) of a downlink control message, the beta offset indication dynamically indicating a beta offset value from a plurality of beta offset values available for an uplink shared channel transmission comprising data and uplink control information (UCI);

determine the beta offset value from the plurality of beta offset values for transmitting the UCI in the uplink shared channel transmission based at least in part on the beta offset indication, wherein the UCI comprises at least one of ACK/NACK information or channel state information (CSI);

identify resources on an uplink shared channel for the uplink shared channel transmission; and

transmit, on the identified resources for the uplink shared channel transmission, the UCI interleaved with the data in a frequency-interleaved manner over a bandwidth of the identified resources based on the determined beta offset value.

11. The apparatus of claim 10, wherein the at least one processor is further configured to:

receive a set of beta offset values in a radio resource control (RRC) configuration; and ,

determine the beta offset value from among the set of beta offset values in the RRC

configuration based on the beta offset indication comprised in the DCI.

12. The apparatus of claim 10, wherein the beta offset value is based on a type of a waveform used for transmitting the UCI, wherein the type of the waveform comprises a single carrier frequency division multiplex (SC-FDM) waveform or an orthogonal frequency division multiplex (OFDM) waveform.

13. The apparatus of claim 10, wherein the UCI comprises the ACK/NACK information and channel quality information (CQI), and wherein the CQI is frequency interleaved on a different group of tones than the ACK/NACK information.

14. The apparatus of claim 13, wherein the ACK/NACK information is transmitted on a first set of symbols adjacent to a demodulation reference signal (DM-RS) symbol, and wherein a portion of the CSI comprising the CQI is transmitted on a second set of symbols different than the first set of symbols.

15. The apparatus of claim 14, wherein the DM-RS symbol is front loaded in the uplink shared channel transmission.

16. The apparatus of claim 10, wherein the uplink shared channel transmission comprises a single carrier waveform or an OFDM waveform.

17. The apparatus of claim 10, wherein the beta offset indication indicates different beta offset values corresponding to different types of UCI.

18. The apparatus of claim 10, wherein the DCI comprises an uplink grant of the identified resources for the uplink shared channel transmission.