

CLAIMS

1. A method of wireless communication operable at a subordinate entity, comprising:
 - communicating with a scheduling entity utilizing a plurality of self-contained subframes comprising a first subframe and a second subframe, each of the self-contained subframes comprising an uplink (UL) portion and a downlink (DL) portion;
 - receiving DL control information from the scheduling entity in the DL portion of the first subframe; and
 - transmitting UL data comprising a plurality of reference signal bursts to the scheduling entity in the UL portion of the first subframe, wherein the plurality of reference signal bursts are uniformly spaced in at least a portion of the UL portion of the first subframe.
2. The method of claim 1, further comprising:
 - transmitting UL data comprising a plurality of reference signal bursts to the scheduling entity in the UL portion of the second subframe, wherein the plurality of reference signal bursts are uniformly spaced in at least a portion of the UL portion of the second subframe, and
 - wherein the first subframe comprises a greater number of reference signal bursts than that of the second subframe.
3. The method of claim 1, wherein the transmitting comprises:
 - precoding the plurality of reference signal bursts differently from one another such that the plurality of reference signal bursts are transmitted by different antennas of the subordinate entity.
4. The method of claim 1, further comprising:
 - waking up from a discontinuous reception (DRX) off mode to receive the DL control information in the first subframe.

5. The method of claim 1, further comprising:

waking up from a discontinuous reception (DRX) off mode during a DL-centric subframe of the plurality of self-contained subframes, wherein the DL-centric subframe is earlier in time than the second subframe;

receiving DL control information, from the scheduling entity, in the DL-centric subframe; and

transmitting UL data comprising a plurality of reference signal bursts to the scheduling entity in the UL portion of the second subframe such that the plurality of reference signal bursts are uniformly spaced in at least a portion of the UL portion of the second subframe.

6. The method of claim 1, further comprising:

utilizing continuous phase modulation or constant phase modulation to transmit the reference signal bursts.

7. The method of claim 1,

wherein the DL control information comprises a suggested structure of the reference signal bursts, and further comprising:

configuring the UL data to indicate that the reference signal bursts conform with the suggested structure.

8. A method of wireless communication operable at a scheduling entity, comprising:

communicating with a subordinate entity utilizing a plurality of self-contained subframes comprising a first subframe and a second subframe, each of the self-contained subframes comprising an uplink (UL) portion and a downlink (DL) portion;

transmitting DL control information to the subordinate entity in the DL portion of the first subframe; and

receiving UL data comprising a plurality of reference signal bursts from the subordinate entity in the UL portion of the first subframe, wherein the plurality of reference signal bursts are uniformly spaced in at least a portion of the UL portion of the first subframe.

9. The method of claim 8, further comprising:
receiving UL data comprising a plurality of reference signal bursts from the subordinate entity in the UL portion of the second subframe, wherein the plurality of reference signal bursts are uniformly spaced in at least a portion of the UL portion of the second subframe, and
wherein the first subframe comprises a greater number of reference signal bursts than that of the second subframe.
10. The method of claim 8, wherein the DL control information is configured to request the subordinate entity to precode the plurality of reference signal bursts differently from one another such that the plurality of reference signal bursts are transmitted by different antennas of the subordinate entity.
11. The method of claim 8, wherein the receiving comprises:
receiving the plurality of reference signal bursts respectively from different antennas of the subordinate entity.
12. The method of claim 8, further comprising:
configuring the DL control information to indicate a predetermined periodicity of the reference signal bursts in the UL portion.
13. The method of claim 12, further comprising determining the predetermined periodicity based on at least one of:
a time duration that the subordinate entity has been in a sleep mode;
a link quality between the subordinate entity and the scheduling entity in a previous wake-up period;
an amount of DL data scheduled to be transmitted by the scheduling entity;
a delay spread of an uplink channel between the scheduling entity and the subordinate entity; or
a Doppler spread of an uplink channel between the scheduling entity and the subordinate entity.

14. The method of claim 8,
wherein the DL control information comprises a suggested structure of the reference signal bursts, and
wherein the UL data is configured to indicate that the reference signal bursts conform with the suggested structure.

15. An apparatus for wireless communication, comprising:
a communication interface configured to communicate with a scheduling entity;
a memory comprising executable code; and
a processor operatively coupled to the communication interface and the memory,
wherein the processor is configured by the executable code to:
communicate with the scheduling entity utilizing a plurality of self-contained subframes comprising a first subframe and a second subframe, each of the self-contained subframes comprising an uplink (UL) portion and a downlink (DL) portion;
receive DL control information from the scheduling entity in the DL portion of the first subframe; and
transmit UL data comprising a plurality of reference signal bursts to the scheduling entity in the UL portion of the first subframe, wherein the plurality of reference signal bursts are uniformly spaced in at least a portion of the UL portion of the first subframe.

16. The apparatus of claim 15, wherein the processor is further configured to:
transmit UL data comprising a plurality of reference signal bursts to the scheduling entity in the UL portion of the second subframe, wherein the plurality of reference signal bursts are uniformly spaced in at least a portion of the UL portion of the second subframe,
wherein the first subframe comprises a greater number of reference signal bursts than that of the second subframe.

17. The apparatus of claim 15, wherein the processor is further configured to:
- precode the plurality of reference signal bursts differently from one another such that the plurality of reference signal bursts are transmitted by different antennas of the subordinate entity.
18. The apparatus of claim 15, wherein the processor is further configured to:
- wake up from a discontinuous reception (DRX) off mode to receive the DL control information in the first subframe.
19. The apparatus of claim 15, wherein the processor is further configured to:
- wake up from a discontinuous reception (DRX) off mode during a DL-centric subframe of the plurality of self-contained subframes, wherein the DL-centric subframe is earlier in time than the second subframe;
- receive DL control information, from the scheduling entity, in the DL-centric subframe; and
- transmit UL data comprising a plurality of reference signal bursts to the scheduling entity in the UL portion of the second subframe such that the plurality of reference signal bursts are uniformly spaced in at least a portion of the UL portion of the second subframe.
20. The apparatus of claim 15, wherein the processor is further configured to:
- utilize continuous phase modulation or constant phase modulation to transmit the reference signal bursts.
21. The apparatus of claim 15,
- wherein the DL control information comprises a suggested structure of the reference signal bursts, and
- wherein the processor is further configured to:
- configure the UL data to indicate that the reference signal bursts conform with the suggested structure.

22. An apparatus for wireless communication, comprising:
a communication interface configured to communicate with a subordinate entity;
a memory comprising executable code; and
a processor operatively coupled to the communication interface and the memory,
wherein the processor is configured by the executable code to:
communicate with the subordinate entity utilizing a plurality of self-contained
subframes comprising a first subframe and a second subframe, each of the self-
contained subframes comprising an uplink (UL) portion and a downlink (DL) portion;
transmit DL control information to the subordinate entity in the DL portion of
the first subframe; and
receive UL data comprising a plurality of reference signal bursts from the
subordinate entity in the UL portion of the first subframe, wherein the plurality of
reference signal bursts are uniformly spaced in at least a portion of the UL portion of the
first subframe.

23. The apparatus of claim 22, wherein the processor is further configured
to:
receive UL data comprising a plurality of reference signal bursts from the
subordinate entity in the UL portion of the second subframe, wherein the plurality of
reference signal bursts are uniformly spaced in at least a portion of the UL portion of the
second subframe, and
wherein the first subframe comprises a greater number of reference signal bursts
than that of the second subframe.

24. The apparatus of claim 22, wherein the processor is further configured
to:
configure the DL control information to request the subordinate entity to precode
the plurality of reference signal bursts differently from one another such that the
plurality of reference signal bursts are transmitted by different antennas of the
subordinate entity.

25. The apparatus of claim 22, wherein the processor is further configured to:
- receive the plurality of reference signal bursts respectively from different antennas of the subordinate entity.
26. The apparatus of claim 22, wherein the processor is further configured to:
- configure the DL control information to indicate a predetermined periodicity of the reference signal bursts in the UL portion.
27. The apparatus of claim 26, wherein the processor is further configured to determine the predetermined periodicity based on at least one of:
- a time duration that the subordinate entity has been in a sleep mode;
 - a link quality between the subordinate entity and the scheduling entity in a previous wake-up period;
 - an amount of DL data scheduled to be transmitted by the scheduling entity;
 - a delay spread of an uplink channel between the scheduling entity and the subordinate entity; or
 - a Doppler spread of an uplink channel between the scheduling entity and the subordinate entity.
28. The apparatus of claim 22,
- wherein the DL control information comprises a suggested structure of the reference signal bursts, and
- wherein the UL data is configured to indicate that the reference signal bursts conform with the suggested structure.