

CLAIMS

1. A method of wireless communication at a base station, comprising:
 - configuring a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;
 - configuring a second initial CORESET for at least a second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and
 - transmitting a control channel in at least one of the first initial CORESET or the second initial CORESET,wherein the first initial CORESET comprises a first frequency range, and wherein the second initial CORESET comprises a second frequency range that is within the first frequency range.
2. The method of claim 1, wherein the first initial CORESET and the second initial CORESET have a same center frequency.
3. A method of wireless communication at a base station, comprising:
 - configuring a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;
 - configuring a second initial CORESET for at least a second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and
 - transmitting a control channel in at least one of the first initial CORESET or the second initial CORESET,wherein the first initial CORESET comprises a first set of symbols in time, and wherein the second initial CORESET comprises a second set of symbols that are within with the first set of symbols.
4. A method of wireless communication at a base station, comprising:
 - configuring a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;
 - configuring a second initial CORESET for at least a second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and
 - transmitting a control channel in at least one of the first initial CORESET or the second

initial CORESET,

wherein the second initial CORESET is nested within at least one of frequency resources or time resources of the first initial CORESET, and wherein the control channel is transmitted to UEs of the first UE type and the second UE type in the second initial CORESET.

5. The method of claim 4, further comprising: selecting a first set of control channel candidates from a plurality of control channel candidates based on the second bandwidth capability of the second UE type;

mapping the first set of control channel candidates to time and frequency resources within a center bandwidth shared by the first initial CORESET and the second initial CORESET;

selecting a second set of control channel candidates from remaining control channel candidates of the plurality of control channel candidates; and

mapping the second set of control channel candidates to time and frequency resources of the second initial CORESET that do not overlap the first initial CORESET.

6. The method of claim 5, wherein a first Control Channel Element (CCE) allocation for a first control channel transmission is based on a first number of first set of control channel candidates and a second CCE allocation for a second control channel transmission is based on a second number of the second set of control channel candidates.

7. The method of claim 5, wherein Control Channel Element to Resource Element Group (CCE-to-REG) interleaving is performed separately for the center bandwidth shared by the first initial CORESET and the second initial CORESET and for a non-overlapping bandwidth of the second initial CORESET that does not overlap the first initial CORESET.

8. An apparatus for wireless communication at a base station, comprising:

means for configuring a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;

means for configuring a second initial CORESET for at least a second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and

means for transmitting a control channel in at least one of the first initial CORESET or the second initial CORESET,

wherein the first initial CORESET comprises a first frequency range, and wherein the

second initial CORESET comprises a second frequency range that is within the first frequency range.

9. The apparatus of claim 8, wherein the first initial CORESET and the second initial CORESET have a same center frequency.

10. An apparatus for wireless communication at a base station, comprising:

means for configuring a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;

means for configuring a second initial CORESET for at least a second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and

means for transmitting a control channel in at least one of the first initial CORESET or the second initial CORESET,

wherein the first initial CORESET comprises a first set of symbols in time, and wherein the second initial CORESET comprises a second set of symbols that are within with the first set of symbols.

11. An apparatus for wireless communication at a base station, comprising:

means for configuring a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;

means for configuring a second initial CORESET for at least a second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and

means for transmitting a control channel in at least one of the first initial CORESET or the second initial CORESET,

wherein the second initial CORESET is nested within at least one of frequency resources or time resources of the first initial CORESET, and wherein the control channel is transmitted to UEs of the first UE type and the second UE type in the second initial CORESET.

12. The apparatus of claim 11, further comprising:

means for selecting a first set of control channel candidates from a plurality of control channel candidates based on the second bandwidth capability of the second UE type;

means for mapping the first set of control channel candidates to time and frequency resources within a center bandwidth shared by the first initial CORESET and the second initial

CORESET;

means for selecting a second set of control channel candidates from remaining control channel candidates of the plurality of control channel candidates; and

means for mapping the second set of control channel candidates to time and frequency resources of the second initial CORESET that do not overlap the first initial CORESET.

13. The apparatus of claim 12, wherein a first Control Channel Element (CCE) allocation for a first control channel transmission is based on a first number of first set of control channel candidates and a second CCE allocation for a second control channel transmission is based on a second number of the second set of control channel candidates.

14. The apparatus of claim 12, wherein Control Channel Element to Resource Element Group (CCE-to-REG) interleaving is performed separately for the center bandwidth shared by the first initial CORESET and the second initial CORESET and for a non-overlapping bandwidth of the second initial CORESET that does not overlap the first initial CORESET.

15. An apparatus for wireless communication at a base station, comprising:

a memory; and

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

configure a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;

configure a second initial CORESET for at least the second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and

transmit a control channel in at least one of the first initial CORESET or the second initial CORESET,

wherein the first initial CORESET comprises a first frequency range, and wherein the second initial CORESET comprises a second frequency range that is within the first frequency range.

16. The apparatus of claim 15, wherein the first initial CORESET and the second initial CORESET have a same center frequency.

17. An apparatus for wireless communication at a base station, comprising:

a memory; and

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

configure a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;

configure a second initial CORESET for at least the second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and

transmit a control channel in at least one of the first initial CORESET or the second initial CORESET,

wherein the first initial CORESET comprises a first set of symbols in time, and wherein the second initial CORESET comprises a second set of symbols that are within with the first set of symbols.

18. An apparatus for wireless communication at a base station, comprising:

a memory; and

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

configure a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;

configure a second initial CORESET for at least the second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and

transmit a control channel in at least one of the first initial CORESET or the second initial CORESET,

wherein the second initial CORESET is nested within at least one of frequency resources or time resources of the first initial CORESET, and wherein the control channel is transmitted to UEs of the first UE type and a second UE type in the second initial CORESET.

19. The apparatus of claim 18, the at least one processor further configured to:

select a first set of control channel candidates from a plurality of control channel candidates based on the second bandwidth capability of the second UE type;

map the first set of control channel candidates to time and frequency resources within a center bandwidth shared by the first initial CORESET and the second initial CORESET;

select a second set of control channel candidates from remaining control channel candidates of the plurality of control channel candidates; and

map the second set of control channel candidates to time and frequency resources of the second initial CORESET that do not overlap the first initial CORESET.

20. The apparatus of claim 19, wherein a first Control Channel Element (CCE) allocation for a first control channel transmission is based on a first number of first set of control channel candidates and a second CCE allocation for a second control channel transmission is based on a second number of the second set of control channel candidates.

21. The apparatus of claim 19, wherein Control Channel Element to Resource Element Group (CCE-to-REG) interleaving is performed separately for the center bandwidth shared by the first initial CORESET and the second initial CORESET and for a non-overlapping bandwidth of the second initial CORESET that does not overlap the first initial CORESET.

22. A non-transitory computer-readable medium storing computer executable code for wireless communication at a base station, the code when executed by a processor cause the processor to:

- configure a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;

- configure a second initial CORESET for at least a second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and

- transmit a control channel in at least one of the first initial CORESET or the second initial CORESET,

- wherein the first initial CORESET comprises a first frequency range, and wherein the second initial CORESET comprises a second frequency range that is within the first frequency range.

23. A non-transitory computer-readable medium storing computer executable code for wireless communication at a base station, the code when executed by a processor cause the processor to:

- configure a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;

- configure a second initial CORESET for at least a second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and

transmit a control channel in at least one of the first initial CORESET or the second initial CORESET,

wherein the first initial CORESET comprises a first set of symbols in time, and wherein the second initial CORESET comprises a second set of symbols that are within with the first set of symbols.

24. A non-transitory computer-readable medium storing computer executable code or wireless communication at a base station, the code when executed by a processor cause the processor to:

configure a first initial Control Resource Set (CORESET) for a first User Equipment (UE) type having a first bandwidth capability;

configure a second initial CORESET for at least a second UE type having a second bandwidth capability that is lower than the first bandwidth capability; and

transmit a control channel in at least one of the first initial CORESET or the second initial CORESET,

wherein the second initial CORESET is nested within at least one of frequency resources or time resources of the first initial CORESET, and wherein the control channel is transmitted to UEs of the first UE type and a second UE type in the second initial CORESET.