

WHAT IS CLAIMED IS:

CLAIMS

1. A method of wireless communication performed by a base station (BS), comprising:

_transmitting, for a first type of user equipment with a first user equipment capability, a first synchronization signal block₁ associated with a first set of configuration parameters, in a first synchronization channel raster, selected by the BS, of a first synchronization channel raster grid reserved for the first type of user equipment to indicate that the first synchronization signal block is for the first type of user equipment;
and

_transmitting, for a second type of user equipment with a second user equipment capability that is different from the first user equipment capability, a second synchronization signal block₂ associated with a second set of configuration parameters that is different from the first set of configuration parameters, in a second synchronization channel raster, selected by the BS, of a second synchronization channel raster grid reserved for the second type of user equipment to indicate that the second synchronization signal block is for the second type of user equipment.

2. The method of claim 1, wherein the second set of configuration parameters differs from the first set of configuration parameters with reference to at least one of: a numerology parameter, a periodicity parameter, a synchronization channel raster parameter, a synchronization channel time location parameter, a synchronization signal block bitmap configuration parameter, or a physical broadcast channel payload content.

~~a numerology parameter,~~

~~a periodicity parameter,~~

~~a synchronization channel raster parameter,~~

~~a synchronization channel time location parameter,~~

~~a synchronization signal block bitmap configuration parameter, or~~

~~a physical broadcast channel payload content.~~

3. The method of claim 1, wherein the first user equipment capability differs from the second user equipment capability with reference to at least one of: a latency characteristic, a reliability characteristic, a data rate characteristic, a coverage characteristic, a bandwidth characteristic, or a radio access technology characteristic.

~~a latency characteristic,~~

~~a reliability characteristic,~~

~~a data rate characteristic,~~

a coverage characteristic;
a bandwidth characteristic; or
a radio access technology characteristic.

4. The method of claim 1, further comprising:

indicating, in connection with the first synchronization signal block, that the first synchronization signal block is for the first type of user equipment; and

indicating, in connection with the second synchronization signal block, that the second synchronization signal block is for the second type of user equipment.

5. The method of claim 1, further comprising:

indicating that the first synchronization signal block is for the first type of user equipment based at least in part on a first primary synchronization signal position within the first synchronization signal block; and

indicating that the second synchronization signal block is for the second type of user equipment based at least in part on a second primary synchronization signal position within the second synchronization signal block.

6. The method of claim 1, further comprising:

indicating that the first synchronization signal block is for the first type of user equipment based at least in part on a first physical broadcast channel demodulation reference signal mapping or demodulation reference signal mapping sequence generation for the first synchronization signal block; and

indicating that the second synchronization signal block is for the second type of user equipment based at least in part on a second physical broadcast channel demodulation reference signal mapping or demodulation reference signal mapping sequence generation for the second synchronization signal block.

7. The method of claim 1, further comprising:

indicating that the first synchronization signal block is for the first type of user equipment based at least in part on a first physical broadcast channel data mapping or data scrambling sequence for the first synchronization signal block; and

indicating that the second synchronization signal block is for the second type of user equipment based at least in part on a second physical broadcast channel data mapping or data scrambling sequence for the second synchronization signal block.

8. The method of claim 1, further comprising:

indicating that the first synchronization signal block is for the first type of user equipment based at least in part on a first bit indicator of a first master information block; and

indicating that the second synchronization signal block is for the second type of user equipment based at least in part on a second bit indicator of a second master information block.

9. The method of claim 1, further comprising:

indicating that the first synchronization signal block is for the first type of user equipment based at least in part on a first bandwidth for a control resource set satisfying a threshold; and

indicating that the second synchronization signal block is for the second type of user equipment based at least in part on a second bandwidth for the control resource set not satisfying the threshold.

10. The method of claim 1, further comprising:

indicating that the first synchronization signal block is for the first type of user equipment based at least in part on conveying the first synchronization signal block using a first synchronization channel raster grid reserved for the first type of user equipment; and

indicating that the second synchronization signal block is for the second type of user equipment based at least in part on conveying the second synchronization signal block using a second synchronization channel raster grid reserved for the second type of user equipment.

11. The method of claim 10, wherein the second synchronization channel raster grid is a subset of the first synchronization channel raster grid.

~~125~~. The method of claim ~~101~~, wherein the second synchronization channel raster grid is separate from the first synchronization channel raster grid.

~~136~~. The method of claim ~~101~~, wherein the second synchronization channel raster grid is derived from at least one of the first synchronization channel raster grid or a frequency offset.

~~147~~. The method of claim 1, wherein at least a first portion of the first synchronization signal block is quasi-co-located with at least a second portion of the second synchronization signal block with respect to a receiver spatial parameter.

8. The method of claim 1, wherein the first type of user equipment has a first bandwidth satisfying a threshold, and wherein the second type of user equipment has a second bandwidth that does not satisfy the threshold.

~~159~~. A method of wireless communication performed by a user equipment, comprising:
 ~~receiving at least one of a first synchronization signal block associated with a first set of configuration parameters in a first synchronization channel raster, selected by a base station (BS), of a first synchronization channel raster grid, to determine that the first synchronization signal block is for a first type of user equipment with a first user equipment capability, or a second synchronization signal block associated with a second set of configuration parameters that is different from the first set of configuration parameters in a first synchronization channel raster, selected by the BS, of a second synchronization channel raster grid to determine that the second synchronization signal is for a second type of user equipment with a second user equipment capability that is different from the first user equipment capability; and~~
 , wherein the first synchronization signal block is associated with a first set of configuration parameters for the first type of user equipment, and the second synchronization signal block is associated with a second set of configuration parameters that is different from the first set of configuration parameters for the second type of user equipment, and wherein the first synchronization channel raster grid is reserved for the first type of user equipment, and the second synchronization channel raster grid is reserved for the second type of user equipment; and decoding at least one of the first synchronization signal block or the second synchronization signal block based at least in part on a particular user equipment capability of the user equipment.

~~1610~~. The method of claim ~~159~~, wherein the second set of configuration parameters differs from the first set of configuration parameters with reference to at least one of:

~~_a numerology parameter,~~
~~_a periodicity parameter,~~
~~_a synchronization channel raster parameter,~~
~~_a synchronization channel time location parameter,~~
~~_a synchronization signal block bitmap configuration parameter, or~~
~~_a physical broadcast channel payload content.~~

~~1711. The method of claim 159, wherein the first user equipment capability differs from the second user equipment capability with reference to at least one of:~~

~~_a latency characteristic,~~
~~_a reliability characteristic,~~
~~_a data rate characteristic,~~
~~_a coverage characteristic,~~
~~_a bandwidth characteristic, or~~
~~_a radio access technology characteristic.~~

~~1812. The method of claim 15, further comprising determining, in connection with the first synchronization signal block, that the first synchronization signal block is for the first type of user equipment or, in connection with the second synchronization signal block, that the second synchronization signal block is for the second type of user equipment.~~

~~19. The method of claim 15, further comprising determining that the first synchronization signal block is for the first type of user equipment based at least in part on a first primary synchronization signal position within the first synchronization signal block or that the second synchronization signal block is for the second type of user equipment based at least in part on a second primary synchronization signal position within the second synchronization signal block.~~

~~20. The method of claim 15, further comprising determining that the first synchronization signal block is for the first type of user equipment based at least in part on a first physical broadcast channel demodulation reference signal mapping or demodulation reference signal mapping sequence generation for the first~~

synchronization signal block or that the second synchronization signal block is for the second type of user equipment based at least in part on a second physical broadcast channel demodulation reference signal mapping or demodulation reference signal mapping sequence generation for the second synchronization signal block.

21. The method of claim 15, further comprising determining that the first synchronization signal block is for the first type of user equipment based at least in part on a first physical broadcast channel data mapping or data scrambling sequence for the first synchronization signal block or that the second synchronization signal block is for the second type of user equipment based at least in part on a second physical broadcast channel data mapping or data scrambling sequence for the second synchronization signal block.

22. The method of claim 15, further comprising determining that the first synchronization signal block is for the first type of user equipment based at least in part on a first bit indicator of a first master information block or that the second synchronization signal block is for the second type of user equipment based at least in part on a second bit indicator of a second master information block.

23. The method of claim 15, further comprising determining that the first synchronization signal block is for the first type of user equipment based at least in part on a first bandwidth for a control resource set exceeding a threshold or that the second synchronization signal block is for the second type of user equipment based at least in part on a second bandwidth for the control resource set not exceeding the threshold.

24. The method of claim 15, further comprising determining that the first synchronization signal block is for the first type of user equipment based at least in part on conveying the first synchronization signal block using a first synchronization channel raster grid reserved for the first type of user equipment or that the second synchronization signal block is for the second type of user equipment based at least in part on conveying the second synchronization signal block using a second synchronization channel raster grid reserved for the second type of user equipment.

~~25. The method of claim 249~~, wherein the second synchronization channel raster grid is a subset of the first synchronization channel raster grid.

~~2613~~. The method of claim ~~249~~, wherein the second synchronization channel raster grid is separate from the first synchronization channel raster grid.

~~2714~~. The method of claim ~~249~~, wherein the second synchronization channel raster grid is derived from at least one of the first synchronization channel raster grid or a frequency offset.

~~2815~~. The method of claim ~~159~~, wherein at least a first portion of the first synchronization signal block is quasi-co-located with at least a second portion of the second synchronization signal block with respect to a receiver spatial parameter.

16. The method of claim 9, wherein the first type of user equipment has a first bandwidth satisfying a threshold, and wherein the second type of user equipment has a second bandwidth that does not satisfy the threshold.

~~2917~~. A base station (BS) for wireless communication, comprising:

_a memory; and

_one or more processors ~~operatively coupled to the memory, the memory and the~~
one or more processors configured to:

_transmit, for a first type of user equipment with a first user equipment capability, a first synchronization signal block₁ associated with a first set of configuration parameters, in a first synchronization channel raster, selected by the BS, of a first synchronization channel raster grid reserved for the first type of user equipment to indicate that the first synchronization signal block is for the first type of user equipment; and

_transmit, for a second type of user equipment with a second user equipment capability that is different from the first user equipment capability, a second synchronization signal block₂ associated with a second set of configuration parameters that is different from the first set of configuration parameters, in a second synchronization channel raster, selected by the BS, of a second synchronization channel raster grid reserved for the second type of user equipment to indicate that the second synchronization signal block is for the second type of user equipment.

18. The BS of claim 17, wherein the second set of configuration parameters differs from the first set of configuration parameters with reference to at least one of: a numerology parameter, a periodicity parameter, a synchronization channel raster parameter, a synchronization channel time location parameter, a synchronization signal block bitmap configuration parameter, or a physical broadcast channel payload content.

19. The BS of claim 17, wherein the first user equipment capability differs from the second user equipment capability with reference to at least one of: a latency characteristic, a reliability characteristic, a data rate characteristic, a coverage characteristic, a bandwidth characteristic, or a radio access technology characteristic.

20. The BS of claim 17, wherein the second synchronization channel raster grid is a subset of the first synchronization channel raster grid.

21. The BS of claim 17, wherein the second synchronization channel raster grid is separate from the first synchronization channel raster grid.

22. The BS of claim 17, wherein the second synchronization channel raster grid is derived from at least one of the first synchronization channel raster grid or a frequency offset.

23. The BS of claim 17, wherein at least a first portion of the first synchronization signal block is quasi-co-located with at least a second portion of the second synchronization signal block with respect to a receiver spatial parameter.

24. A user equipment for wireless communication, comprising:

_a memory; and

_one or more processors operatively coupled to the memory, the memory and the one or more processors configured to:

_receive at least one of a first synchronization signal block associated with a first set of configuration parameters for in a first synchronization channel raster, selected by a base station (BS), of a first synchronization channel raster grid, to determine that the first synchronization signal block is for a first type of user equipment with a first user equipment capability or a second synchronization signal block, or a second synchronization signal block in a second synchronization channel raster, selected by the BS, of a second synchronization channel raster grid to determine that the second synchronization signal block is for a second type of user equipment with a second user equipment capability that is different from the first user equipment capability, wherein the first synchronization signal block is associated with a first set of configuration parameters for the first type of user equipment, and the second synchronization signal block is associated with a second set of configuration parameters that is different from the first set of

configuration parameters for the second type of user equipment with a, and wherein the first synchronization channel raster grid is reserved for the first synchronization channel raster grid, and the second synchronization channel raster grid is reserved for the second type of user equipment capability that is different from the first user equipment capability; and

; and decode at least one of the first synchronization signal block or the second synchronization signal block based at least in part on a particular user equipment capability of the user equipment.

25. The user equipment of claim 24, wherein the second set of configuration parameters differs from the first set of configuration parameters with reference to at least one of: a numerology parameter, a periodicity parameter, a synchronization channel raster parameter, a synchronization channel time location parameter, a synchronization signal block bitmap configuration parameter, or a physical broadcast channel payload content.

26. The user equipment of claim 24, wherein the first user equipment capability differs from the second user equipment capability with reference to at least one of: a latency characteristic, a reliability characteristic, a data rate characteristic, a coverage characteristic, a bandwidth characteristic, or a radio access technology characteristic.

27. The user equipment of claim 24, wherein the second synchronization channel raster grid is a subset of the first synchronization channel raster grid.

28. The user equipment of claim 24, wherein the second synchronization channel raster grid is separate from the first synchronization channel raster grid.

29. The user equipment of claim 24, wherein the second synchronization channel raster grid is derived from at least one of the first synchronization channel raster grid or a frequency offset.

30. The user equipment of claim 24, wherein at least a first portion of the first synchronization signal block is quasi-co-located with at least a second portion of the second synchronization signal block with respect to a receiver spatial parameter.