

CLAIMS

1. An information transmission method, comprising:
 - 5 sending a synchronization signal according to a target numerology set, the target numerology set being determined from multiple numerology sets, wherein the synchronization signal comprises a Primary Synchronization Signal, PSS, and a Secondary Synchronization Signal, SSS, corresponding to the PSS.
- 10 2. The method of claim 1, further comprising:
 - determining the target numerology set from the multiple numerology sets.
3. The method of claim 1 or 2, wherein the target numerology set is determined from the multiple numerology sets according to at least one of the following information:
 - 15 a carrier frequency for sending the synchronization signal;
 - a transmission environment of the synchronization signal;
 - coverage of a carrier, a cell or a transmission node for sending the synchronization signal;
 - transmit power for sending the synchronization signal; or
 - 20 form, height, direction and a number of antenna array elements of a transmit antenna for sending the synchronization signal.
4. The method of claim 1, wherein a numerology set configured for sending the PSS in the target numerology set is the same as a numerology set configured for sending the SSS.
- 25 5. The method of claim 1, wherein a difference of time-domain starting locations of the PSS and the SSS corresponding to the PSS is determined according to a carrier frequency of the synchronization signal.
- 30 6. The method of claim 1 or 4, wherein the target numerology set comprises a first numerology set and a second numerology set;
 - determining the target numerology set from the multiple numerology sets comprises: selecting the first numerology set from a first subset of the multiple

numerology sets, wherein the first subset comprises at least one of the multiple numerology sets, and selecting the second numerology set from a second subset of the multiple numerology sets, wherein the second subset comprises at least one of the multiple numerology sets, the first subset and the second subset comprise at least one

5 different numerology set; and

sending the synchronization signal according to the target numerology set comprises: sending the PSS according to the first numerology set, and sending the SSS according to the second numerology set.

10 7. The method of claim 6, wherein a time-domain difference of time-domain starting locations of the PSS and the SSS corresponding to the PSS belongs to a time-domain difference set and the time-domain difference set is a finite set; and/or,

a difference of frequency-domain starting locations of the PSS and the SSS corresponding to the PSS belongs to a frequency-domain difference set and the
15 frequency-domain difference set is a finite set.

8. The method of claim 7, wherein at least one of the time-domain difference of the time-domain starting locations of the PSS and the SSS corresponding to the PSS or the difference of the frequency-domain starting locations of the PSS and the SSS
20 corresponding to the PSS is not zero.

9. The method of claim 7 or 8, wherein

a time-frequency location occupied by the PSS and a time-frequency location occupied by the SSS corresponding to the PSS are not overlapped.

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10. The method of any one of claims 1-9, further comprising:

sending master system information according to a numerology set corresponding to the master system information.

30 11. The method of claim 10, wherein the numerology set corresponding to the master system information is the same as or different from the target numerology set.

12. The method of claim 10 or 11, further comprising:

determining a time-frequency location of the master system information according to a time-frequency location of the synchronization signal;

wherein sending the master system information comprises:

5 sending the master system information according to the time-frequency location of the master system information.

13. The method of claim 1, wherein determining the time-frequency location of the master system information according to the time-frequency location of the synchronization signal comprises:

10 determining a time-domain starting location of the master system information according to at least one of a time-frequency starting location of the PSS, a time-domain starting location of the SSS or a time-domain difference of time-domain starting locations of the PSS and the SSS corresponding to the PSS.

15 14. The method of claim 10 or 11, wherein the synchronization signal is configured to indicate at least one of a time-frequency location, a modulation manner or a corresponding numerology set of the master system information.

20 15. The method of claim 14, wherein all or part of a sequence corresponding to the synchronization signal or a mask of the synchronization signal is configured to indicate at least one of the time-frequency location, the modulation manner or the corresponding numerology set of the master system information.

25 16. The method of any one of claims 1-15, wherein the numerology set comprises at least one of the following parameters:

a subcarrier spacing, a subcarrier number at a specific bandwidth, a number of subcarriers in a Physical Resource Block (PRB), a length of an Orthogonal Frequency Division Multiplexing (OFDM) symbol, a length of a Cyclic Prefix (CP) of the OFDM symbol, a point number of Fourier transform or inverse Fourier transform for
30 generating an OFDM signal, a number of OFDM symbols in a Transmission Time Interval (TTI) or a number of TTIs in a specific length of time.

17. The method of any one of claims 1-16, wherein the multiple numerology sets for

determining the target numerology set exist in a time period from establishment to disabling of a carrier, a cell or a transmission node for sending the synchronization signal.

5 18. An information transmission device, comprising:

 a transceiver unit, configured to send a synchronization signal according to a target numerology set, the target numerology set being determined from multiple numerology sets,

 wherein the synchronization signal comprises a Primary Synchronization
10 Signal, PSS, and a Secondary Synchronization Signal, SSS, corresponding to the PSS.