WHAT IS CLAIMED IS:

1. A non-terrestrial network (NTN) communication method, performed by a user equipment (UE), comprising:

receiving an NTN system message sent by a network device, and determining that an uplink synchronization has been recovered before a time point indicated by the NTN system message.

2. The method according to claim 1, wherein the NTN system message comprises at least one of satellite auxiliary information, timing advance (TA) information, or validity duration information.

3. The method according to claim 1, wherein the NTN system message comprises any one of: SIB19, SIB31, or SIB31-NB.

4. The method according to any one of claims 1 to 3, further comprising:

sending capability information to the network device, wherein the capability information indicates whether or not the UE supports to use the NTN system message in advance, and the capability information is used to assist the network device to configure a parameter in the NTN system message.

5. The method according to claim 4, wherein in a case that the time point indicated by the NTN system message is a time point after the UE has received the NTN system message and the UE supports to use the NTN system message in advance, the UE using the NTN system message comprises at least one of:

determining satellite auxiliary information to be used between a current time point and the time point indicated by the NTN system message based on the satellite auxiliary information in the NTN system message, and using the satellite auxiliary information to be used between the current time point and the time point indicated by the NTN system message;

determining TA information to be used between the current time point and the time point indicated by the NTN system message based on the TA information in the NTN system message, and using the TA information to be used between the current time point and the time point indicated by the NTN system message; or

using the satellite auxiliary information and/or the TA information in the NTN system message.

6. The method according to any one of claims 1 to 3, wherein the determining that the uplink synchronization has been recovered comprises:

indicating, to another layer of the UE, that the uplink synchronization has been recovered, and/or indicating, to another layer of the UE, a time point when the uplink synchronization has been

recovered.

7. A non-terrestrial network (NTN) communication method, performed by a network device, comprising:

sending an NTN system message to a user equipment (UE), wherein the NTN system message is used to assist the UE to determine that an uplink synchronization has been recovered before a time point indicated by the NTN system message.

8. The method according to claim 7, wherein the NTN system message comprises at least one of satellite auxiliary information, timing advance (TA) information, or validity duration information.

9. The method according to any one of claims 7 to 8, further comprising:

receiving capability information sent by the UE, wherein the capability information indicates whether or not the UE supports to use the NTN system message in advance; and

configuring a parameter in the NTN system message based on the capability information.

10. The method according to claim 9, wherein the configuring the parameter in the NTN system message based on the capability information comprises:

in a case that the capability information indicates that the UE supports to use the NTN system message in advance, configuring validity durations of at least two NTN system messages to overlap with each other.

11. A non-terrestrial network (NTN) communication apparatus, comprising:

a transceiver module configured to receive an NTN system message sent by a network device, and determine that an uplink synchronization has been recovered before a time point indicated by the NTN system message.

12. A non-terrestrial network (NTN) communication apparatus, comprising:

a transceiver module configured to send an NTN system message to a user equipment (UE), wherein the NTN system message is used to assist the UE to determine that an uplink synchronization has been recovered before a time point indicated by the NTN system message.

13. A communication device, comprising:

a transceiver;

a memory; and

a processor coupled to the transceiver and the memory, respectively, and configured to execute computer-executable instructions in the memory to control the transceiver to receive and/or transmit a radio signal, and implement the method according to any one of claims 1 to 10.

14. A computer-readable storage medium storing therein computer-executable instructions,

wherein the computer executable instructions are executed by a processor to implement the method according to any one of claims 1 to 10.

15. A communication system, comprising:

a UE configured to implement the method according to any one of claims 1 to 6; and

a network device configured to implement the method according to any one of claims 7 to 10.