

WHAT IS CLAIMED IS:

1. A method for determining a location, comprising:

determining location information of a User Equipment (UE) based on distances between the UE and one or more Non-Terrestrial Networks (NTN) service ~~satellite(s)~~satellites of the UE at at least three different moments and location information of the one or more NTN service ~~satellite(s)~~satellites of the UE at the at least three different moments, wherein orbital locations of the one or more NTN service ~~satellite(s)~~satellites of the UE are different at the at least three different moments, and the orbital locations of the one or more NTN service ~~satellite(s)~~satellites of the UE belong to at least two different satellite orbits.

2. The method of claim 1, further comprising:

determining a distance between ~~the~~an NTN service satellite and the UE based on a signal time of flight between the UE and the NTN service satellite.

3. The method of claim 2, wherein determining the distance between the NTN service satellite and the UE based on the signal time of flight between the UE and the NTN service satellite comprises:

determining a signal time of flight for a first round trip signal between the NTN service satellite and the UE by subtracting a first launch response duration of the UE from a first interval duration between a first moment when the NTN service satellite sends a first positioning signal to the UE and a second moment when the NTN service satellite receives a second positioning signal sent by the UE; wherein the second positioning signal is sent by the UE in response to receiving the first positioning signal and the first launch response duration comprises: a time interval between a time when the first positioning signal is received by the UE and a time when the second positioning signal is sent; and

determining the distance between the NTN service satellite and the UE based on the signal time of flight for the first round trip signal.

4. The method of claim 3, wherein in response to determining, by the NTN service satellite, the distance between the NTN service satellite and the UE based on the signal time of flight for the first round trip signal, the method further comprises: receiving, by the NTN service satellite, indication information, sent by the UE, for indicating the first launch response duration.

5. The method of claim 2, wherein determining the distance between the NTN service satellite and the UE based on the signal time of flight between the NTN service satellite and the UE comprises:

determining a signal time of flight for a second round trip signal between the NTN service satellite and the UE by subtracting a second launch response duration of the NTN service satellite from a second interval duration between a third moment when the UE sends a third positioning signal to the NTN service satellite and a fourth moment when the UE receives a fourth positioning signal sent by the NTN service satellite; wherein the fourth positioning signal is sent by the NTN service satellite in response to receiving the third positioning signal and the second launch response duration comprises: a time interval between a time when the third positioning signal is received by the NTN service satellite and a time when the fourth positioning signal is sent; and

determining the distance between the NTN service satellite and the UE based on the signal time of flight for the second round trip signal.

6. The method of claim 5, wherein in response to determining, by the UE, the distance between the NTN service satellite and the UE based on the signal time of flight for the second round trip signal, the method further comprises: receiving, by the UE, indication information, sent by the NTN service satellite, for indicating the ~~third moment and the fourth moment~~second launch response duration.

7. The method of any one of claims 1 to 6, wherein the one or more NTN service ~~satellite(s)~~satellites of the UE at the at least three different moments at least comprise two satellites with different satellite orbits.

8. An apparatus for determining a location, comprising:

a first determining module, configured to determine location information of a User Equipment (UE) based on distances between the UE and one or more Non-Terrestrial Networks (NTN) service ~~satellite(s)~~satellites of the UE at at least three different moments and location information of the one or more NTN service ~~satellite(s)~~satellites of the UE at the at least three different moments, wherein orbital locations of the one or more NTN service ~~satellite(s)~~satellites of the UE are different at the at least three different moments, and the orbital locations of the one or more NTN service ~~satellite(s)~~satellites of the UE belong to at

least two different satellite orbits.

9. The apparatus of claim 8, further comprising:

a second determining module, configured to determine a distance between ~~the~~an NTN service satellite and the UE based on a signal time of flight between the UE and the NTN service satellite.

10. The apparatus of claim 9, wherein the second determining module comprises:

a first determining sub-module, configured to determine a signal time of flight for a first round trip signal between the NTN service satellite and the UE by subtracting a first launch response duration of the UE from a first interval duration between a first moment when the NTN service satellite sends a first positioning signal to the UE and a second moment when the NTN service satellite receives a second positioning signal sent by the UE; wherein the second positioning signal is sent by the UE in response to receiving the first positioning signal and the first launch response duration comprises: a time interval between a time when the first positioning signal is received by the UE and a time when the second positioning signal is sent; and

a second determining sub-module, configured to determine the distance between the NTN service satellite and the UE based on the signal time of flight for the first round trip signal.

11. The apparatus of claim 10, further comprising: a first receiving module, configured to, in response to determining, by the NTN service satellite, the distance between the NTN service satellite and the UE based on the signal time of flight for the first round trip signal, receive indication information, sent by the UE, for indicating the first launch response duration.

12. The apparatus of claim 9, wherein the second determining module comprises:

a third determining sub-module, configured to determine a signal time of flight for a second round trip signal between the NTN service satellite and the UE by subtracting a second launch response duration of the NTN service satellite from a second interval duration between a third moment when the UE sends a third positioning signal to the NTN service satellite and a fourth moment when the UE receives a fourth positioning signal sent by the NTN service satellite; wherein the fourth positioning signal is sent by the NTN service

satellite in response to receiving the third positioning signal and the second launch response duration comprises: a time interval between a time when the third positioning signal is received by the NTN service satellite and a time when the fourth positioning signal is sent; and

a fourth determining sub-module, configured to determine the distance between the NTN service satellite and the UE based on the signal time of flight for the second round trip signal.

13. The apparatus of claim 12, further comprising: a second receiving module, configured to, in response to determining, by the UE, the distance between the NTN service satellite and the UE based on the signal time of flight for the second round trip signal, receive indication information, sent by the NTN service satellite, for indicating the ~~third moment~~ second launch response duration and the ~~fourth moment~~.

14. The apparatus of any one of claims 8 to 13, wherein the one or more NTN service ~~satellite(s)~~ satellites of the UE at the at least three different moments at least comprise two satellites with different satellite orbits.

15. A communication device, comprising:

a processor, ~~;~~ and

a memory ~~and storing~~ an executable program stored on the memory and executable by the processor, wherein when the executable program is executed by the processor, a method for determining a location according to any one of claims 1 to 7 is performed.