CLAIMS

~~What is claimed is:~~

1. A time information obtaining method, ~~applied to~~performed by a terminal, comprising:

receiving a first message transmitted by a network device, wherein the first message comprises ~~at least one~~multiple pieces of time information, and the multiple~~each~~ pieces of time information correspond~~s~~ to ~~a~~ different respective clock sources providing different types of time information; and

obtaining, from the first message, time information corresponding to a clock source required by the terminal.

2. The method according to claim 1, wherein the ~~at least one~~multiple pieces of time information comprise~~s~~:

~~at least one~~multiple pieces of time information associated with the terminal; or

time information corresponding to multiple clock sources.

3. The method according to claim 2, wherein the ~~at least one~~multiple pieces of time information associated with the terminal comprise~~s~~:

~~at least one~~multiple pieces of time information subscribed to by subscription information of the terminal; or

~~at least one~~multiple pieces of time information requested by a request message transmitted by the terminal.

4. The method according to claim 3, wherein the request message comprises at least one of the following:

~~a~~ clock source identifiers, ~~a~~ time type identifiers, and ~~a~~ time precision identifiers, wherein

in a case that the request message comprises the clock source identifiers, ~~a~~ clock sources corresponding to the ~~at least one~~multiple pieces of time information ~~is~~ are ~~a~~ clock sources identified by the clock source identifiers; and/or

in a case that the request message comprises the time type identifiers, ~~a~~ time types of the ~~at least one~~multiple pieces of time information ~~is~~ are ~~a~~ time types identified by the time type identifiers; and/or

in a case that the request message comprises the time precision identifiers, time precisions of the ~~at least one~~multiple pieces of time information ~~is~~ are time precisions identified by the time precision identifiers.

5. The method according to any one of claims 1 to 4, wherein a clock source corresponding to each piece of time information is prescribed by a protocol; or

a clock source corresponding to each piece of time information is determined by subscription by the terminal with a network device.

6. The method according to any one of claims 1 to 4, wherein the first message further comprises ~~a~~ clock source identifiers of the clock sources corresponding to the ~~at least one~~multiple pieces of time information; or

~~a~~ clock source identifiers of the clock sources corresponding to the ~~at least one~~multiple pieces of time information ~~is~~ are implicitly indicated by a protocol; or

~~a~~ clock source identifiers of the clock sources corresponding to the ~~at least one~~multiple pieces of time information ~~is~~ are implicitly indicated by subscription by the terminal with a network device.

7. The method according to any one of claims 1 to 4, wherein the first message comprises:

a broadcast message or downlink dedicated signaling.

8. The method according to any one of claims 1 to 4, wherein different time information in the ~~at least one~~multiple pieces of time information correspond~~s~~ to different clock sources; or

~~in a case that the at least one piece of time information is multiple pieces of time information, M pieces of time information corresponding to a same clock source are present in the multiple pieces of time information, wherein M is an integer greater than 1, and M is less than or equal to the number of pieces of time information comprised in the first message; or~~

~~in a case that the at least one piece of time information is multiple pieces of time information,~~ N pieces of time information corresponding to different clock sources but belonging to a same time type are present in the multiple pieces of time information, wherein N is an integer greater than 1, and N is less than or equal to the number of pieces of time information comprised in the first message.

9. A time information transmission method, ~~applied to~~performed by a network device, comprising:

transmitting a first message to a terminal, wherein the first message comprises ~~at least one~~multiple pieces of time information, and the multiple~~each~~ pieces of time information corresponds ~~to~~ ~~a~~ different respective clock sources providing different types of time information.

10. The method according to claim 9, wherein the ~~at least one~~multiple pieces of time information comprise~~s~~:

~~at least one~~multiple pieces of time information associated with a terminal; or

time information corresponding to multiple clock sources.

11. The method according to claim 10, wherein the ~~at least one~~multiple pieces of time information associated with the terminal comprise~~s~~:

~~at least one~~multiple pieces of time information subscribed to by subscription information of the terminal; or

~~at least one~~multiple pieces of time information requested by a request message transmitted by the terminal.

12. The method according to claim 11, wherein the request message comprises at least one of the following:

~~a~~ clock source identifiers, ~~a~~ time type identifiers, and ~~a~~ time precision identifiers, wherein

in a case that the request message comprises the clock source identifiers, ~~a~~ clock sources corresponding to the ~~at least one~~multiple pieces of time information ~~is~~ are ~~a~~ clock sources identified by the clock source identifiers; and/or

in a case that the request message comprises the time type identifiers, ~~a~~ time types of the ~~at least one~~multiple pieces of time information ~~is~~ are ~~a~~ time types identified by the time type identifiers; and/or

in a case that the request message comprises the time precision identifiers, time precisions of the ~~at least one~~multiple pieces of time information ~~is~~ are time precisions identified by the time precision identifiers.

13. The method according to any one of claims 9 to 12, wherein a clock source corresponding to each piece of time information is prescribed by a protocol; or

a clock source corresponding to each piece of time information is determined by subscription by the terminal with the network device.

14. The method according to any one of claims 9 to 12, wherein the first message further comprises ~~a~~ clock source identifiers of the clock sources corresponding to the ~~at least one~~multiple pieces of time information; or

~~a~~ clock source identifiers of the clock sources corresponding to the ~~at least one~~multiple pieces of time information ~~is~~ are implicitly indicated by a protocol; or

~~a~~ clock source identifiers of the clock sources corresponding to the ~~at least one~~multiple pieces of time information ~~is~~ are implicitly indicated by subscription by the terminal with the network device.

15. The method according to any one of claims 9 to 12, wherein the first message comprises:

a broadcast message or downlink dedicated signaling.

16. The method according to any one of claims 9 to 12, wherein different time information in the ~~at least one~~multiple pieces of time information correspond~~s~~ to different clock sources; or

~~in a case that the at least one piece of time information is multiple pieces of time information, M pieces of time information corresponding to a same clock source are present in the multiple pieces of time information, wherein M is an integer greater than 1, and M is less than or equal to the number of pieces of time information comprised in the first message; or~~

~~in a case that the at least one piece of time information is multiple pieces of time information,~~ N pieces of time information corresponding to different clock sources but belonging to a same time type are present in the multiple pieces of time information, wherein N is an integer greater than 1, and N is less than or equal to the number of pieces of time information comprised in the first message.

17. A terminal, comprising:

a receiving module, configured to receive a first message, wherein the first message comprises ~~at least one~~multiple piece<u>s</u> of time information, and ~~each~~ <u>the multiple pieces</u> of time information correspond~~s~~ to ~~a~~<u>different</u> respective clock source<u>s providing different types of time information</u>; and

an obtaining module, configured to obtain, from the first message, time information corresponding to a clock source required by the terminal.

18. The terminal according to claim 17, wherein the ~~at least one~~multiple piece<u>s</u> of time information comprise~~s~~:

~~at least one~~multiple piece<u>s</u> of time information associated with the terminal; or

time information corresponding to multiple clock sources.

19. A network device, comprising:

a transmission module, configured to transmit a first message, wherein the first message comprises ~~at least one~~multiple piece<u>s</u> of time information, and ~~each~~ <u>the multiple pieces</u> of time information correspond~~s~~ to ~~a~~ <u>different</u> respective clock source<u>s providing different types of time information</u>.

20. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, and when the computer program is executed by a processor, the steps of the time information obtaining method according to any one of claims 1 to 8 are implemented, or when the computer program is executed by a processor, the steps of the time information transmission method according to any one of claims 9 to 16 are implemented.