CLAIMS

What is claimed is:

1. An information control method, performed by a first communications device being a device-side time-sensitive network translator DS-TT, comprising:

receiving a first message, wherein the first message is an announce message in a generalized precision time protocol gPTP or an announce message in a precision time protocol PTP t;

performing a first operation; wherein

the first operation comprises:

sending the first message to a first target end, wherein the first target end comprises at least one of a network-side time-sensitive network translator NW-TT or a user-plane function UPF; the first message is used by the first target end to determine a second message and the first message is used by the first target end to determine an optimal master clock;

and

receiving the second message sent by the first target end, wherein the second message is an announce message in a gPTP or an announce message in a PTP, and the second message is generated based on the first message.

2. The method according to claim 1, wherein the first operation further comprises at least one of:

generating a message priority vector based on a first port and/or the first message;

discarding the first message;

performing a second-type operation of the first operation; or

sending first root information to a first target end; wherein

the second-type operation of the first operation comprises at least one of the following:

generating a path priority vector of the first root object based on the first port, the first message, and/or a path cost of a receiving port, or generating a path priority vector

of the first root object based on the message priority vector and/or a path cost of a receiving port; or

replacing a port priority vector of the first port with the message priority vector;

the first root information comprises at least one of the following: the first message, the message priority vector, the port priority vector of a first port, the path priority vector of the first root object, information about the first port, or the path cost of the receiving port;

the first port comprises a port for receiving the first message.

3. The method according to claim 1, wherein the first message comprises information about a first master clock, and the second message comprises information about an optimal master clock.

4. The method according to claim 2, wherein the performing a first operation comprises:

in a case that a first condition is satisfied, performing the second-type operation of the first operation; wherein

the first condition comprises that the message priority vector is superior to or equal to the port priority vector of the first port.

5. The method according to claim 2, wherein the discarding the first message comprises:

in a case that a second condition is satisfied, discarding the first message;

and/or, the method further comprises:

in a case that the second condition is satisfied, skipping performing the second-type operation of the first operation; wherein

the second condition comprises that the port priority vector of the first port is superior to or equal to the message priority vector.

6. The method according to claim 2, wherein the first root information is comprised in a first container for sending; and

the first container comprises one of the following: a port management information container of the first port and a management information container of a device-side time-sensitive networking adapter DS-TT.

7. The method according to claim 2, wherein the first root information is sent to the first target end through a first data channel; and

the first data channel is a data channel associated with the first port, or a data channel associated with any DS-TT port.

8. The method according to claim 1, wherein the first target end further comprises: an access function AF.

9. The method according to claim 1, further comprising:

obtaining second root information, wherein the second root information comprises at least one of the following: a second message or a second priority vector, information about a second port, or configuration information of a port status; and

performing a third operation based on the second root information; wherein

the third operation comprises at least one of the following:

adding egress port information to the obtained second message;

generating a second message;

sending the second message to a target port;

generating a second priority vector; or

replacing a port priority vector of the target port with a second priority vector, wherein the second priority vector is the generated second priority vector or the obtained second priority vector; wherein

the second port comprises at least one of the following: a port for sending the second message, a port for sending the second priority vector, a port for sending the second root information, and a port whose port status is a master port, a designated port, or a sending port; and

the second message is a message comprising information about an optimal root object.

10. An information control method, performed by a second communications device being at least one of a network-side time-sensitive network translator NW-TT or a user-plane function UPF, comprising:

receiving a first message from at least one of a device-side time-sensitive network translator DS-TT port or a network-side time-sensitive network translator NW-TT port;

wherein the first message is an announce message in a generalized precision time protocol gPTP or an announce message in a precision time protocol PTP; and

performing a second operation based on the first message; wherein

the second operation comprises:

determining an optimal master clock; and

determining a second message; and

sending the second message to a second target end being at least one of a terminal, a UPF, a device-side time-sensitive network translator DS-TT, or an AF; wherein

the second message is an announce message in a gPTP or an announce message in a PTP.

11. The method according to claim 10, wherein the second operation further comprises at least one of:

generating a message priority vector based on a first message and/or a first port;

generating a path priority vector of a first root object based on the first port, the first message, and/or a path cost of a receiving port, or generating the path priority vector of the first root object based on a message priority vector and/or the path cost of the receiving port, or generating the path priority vector of the first root object based on a port priority vector of the first port and/or the path cost of the receiving port;

determining a second root information and sending the second root information to the second target end.

12. The method according to claim 10, wherein the first message comprises information about a first master clock, and the second message comprises information about an optimal master clock.

13. The method according to claim 10, wherein the performing a second operation comprises:

in a case that a second priority vector of a port is superior to or equal to a port priority vector of the port, setting a state of the port to be a master port state, a designated port state, or a sending port state.

14. A first communications device, wherein the first communications device is a device-side time-sensitive network translator DS-TT, and the first communications

device comprises a processor, a memory, and a computer program stored on the memory and capable of running on the processor, the processor is configured to read the computer program to perform:

receiving a first message, wherein the first message is an announce message in a generalized precision time protocol gPTP or an announce message in a precision time protocol PTP;

performing a first operation, wherein

the first operation comprises:

sending the first message to a first target end, wherein the first target end comprises at least one of a network-side time-sensitive network translator NW-TT or a user-plane function UPF; the first message is used by the first target end to determine a second message and the first message is used by the first target end to determine an optimal master clock;

and

receiving the second message sent by the first target end, wherein the second message is an announce message in a gPTP or an announce message in a PTP, and the second message is generated based on the first message.

15. The first communications device according to claim 14, wherein the first target end further comprises an access function AF.

16. The first communications device according to claim 14, wherein the processor is configured to read the computer program to perform:

obtaining second root information, wherein the second root information comprises at least one of the following: a second priority vector, information about a second port, or configuration information of a port status; and

performing a third operation based on the second root information or the second message; wherein

the third operation comprises at least one of the following:

adding egress port information to the obtained second message;

generating a second message;

sending the second message to a target port;

generating a second priority vector; or

replacing a port priority vector of the target port with a second priority vector, wherein the second priority vector is the generated second priority vector or the obtained second priority vector; wherein

the second port comprises at least one of the following: a port for sending the second message, a port for sending the second priority vector, a port for sending the second root information, and a port whose port status is a master port, a designated port, or a sending port; and

the second message is a message comprising information about an optimal root object.

17. The first communications device according to claim 14, wherein the first operation further comprises at least one of:

generating a message priority vector based on a first port and/or the first message;

discarding the first message;

performing a second-type operation of the first operation; or

sending first root information to a first target end; wherein

the second-type operation of the first operation comprises at least one of the following:

generating a path priority vector of the first root object based on the first port, the first message, and/or a path cost of a receiving port, or generating a path priority vector of the first root object based on the message priority vector and/or a path cost of a receiving port; or

replacing a port priority vector of the first port with the message priority vector;

the first root information comprises at least one of the following: the first message, the message priority vector, the port priority vector of a first port, the path priority vector of the first root object, information about the first port, or the path cost of the receiving port;

the first port comprises a port for receiving the first message.

18. The first communications device according to claim 14, wherein the first message comprises information about a first master clock, and the second message comprises information about an optimal master clock.

19. The first communications device according to claim 17, wherein the processor is configured to read the computer program to perform:

in a case that a first condition is satisfied, performing the second-type operation of the first operation; wherein

the first condition comprises that the message priority vector is superior to or equal to the port priority vector of the first port.

20. A second communications device, wherein the second communications device is at least one of a network-side time-sensitive network translator NW-TT or a user-plane function UPF, and the second communications device comprises a processor, a memory, and a computer program stored on the memory and capable of running on the processor, the processor is configured to read the computer program to perform:

receiving a first message from at least one of a device-side time-sensitive network translator DS-TT port or a network-side time-sensitive network translator NW-TT port; wherein the first message is an announce message in a generalized precision time protocol gPTP or an announce message in a precision time protocol PTP; and

performing a second operation based on the first message; wherein

the second operation comprises:

determining an optimal master clock; and

determining a second message; and

sending the second message to a second target end being at least one of a terminal, a UPF, a device-side time-sensitive network translator DS-TT, or an AF; wherein

the second message is an announce message in a gPTP or an announce message in a PTP.