CLAIMS

What is claimed is:

1. A method for supporting time-sensitive communication, performed by a first communications device, wherein the first communications device comprises at least one of a terminal UE and a first adapter, and the method is characterized by comprising:

transmitting first capability information, or transmitting first capability information and delay related information of the terminal UE, wherein

the first capability information comprises at least one of the following:

information related to a delay between the UE and the first adapter, transmission propagation delay related information of the first adapter, and transmission propagation delay related information of the UE co-located with the first adapter as a whole;

wherein the transmission propagation delay related information of the first adapter comprises a time required for transmitting from a port of the first adapter to a port of a connected station;

the transmission propagation delay related information of the UE co-located with the first adapter comprises a time required for transmitting from a port of the UE co-located with the first adapter to a port of a connected station;

the transmitting the first capability information comprises:

when the first communications device is the UE, transmitting the first capability information to a core network (CN) element; or

when the first communications device is the first adapter, transmitting the first capability information to the UE.

2. The method according to claim 1, wherein the information about a bandwidth supported by the first adapter is information about a bandwidth supported by a port of the first adapter; and

the information about a bandwidth supported by the UE co-located with the first adapter is information about a bandwidth supported by a port of the UE co-located with the first adapter.

3. The method according to claim 2, wherein the information about a bandwidth supported by a port comprises at least one of the following:

information related to the port, a bandwidth of the port, a bandwidth availability parameter of the port, and a transmission rate of the port;

wherein the information related to a port comprises at least one of the following:

identification information of the port, information related to a direction of the port being an egress or an ingress, a port number, a media access control (MAC) address of the port, an internet protocol (IP) address of the port, VLAN tag information associated with the port, or data filter information of the port.

4. The method according to claim 1, wherein the transmission propagation delay related information of a port comprises at least one of the following:

information related to the port, a transmission propagation delay of the port, and a traffic class.

5. The method according to claim 1, wherein the information related to a delay between the UE and the first adapter comprises at least one of the following:

information related to a first interface, information related to a second interface, the delay between the UE and the first adapter, and a traffic class associated with a data packet.

6. The method according to claim 5, wherein the delay between the UE and the first adapter comprises at least one of the following:

a time required for transmitting a data packet from the first interface to the second interface; and

a time required for transmitting a data packet from the second interface to the first interface;

wherein

in a case that the first interface is a first port, the information related to the first interface is port-related information of the first port; and

in a case that the second interface is a Uu interface of the UE, the information related to the second interface is information about a first tunnel of the UU interface; wherein

the first port is a port connected to a bridge or an end station.

7. A method for supporting time-sensitive communication, performed by a second communications device, wherein the second communications device is a core network (CN) element, and the method is characterized by comprising:

obtaining first information, wherein the first information comprises at least one of the following: first capability information, second capability information; or the first information comprises at least one of the first capability information and the second capability information, and delay related information of UE and delay related information of an anchor gateway, wherein the anchor gateway is a gateway that terminates a N6 interface; and

performing a first operation based on the first information; wherein

the first capability information comprises at least one of the following: transmission propagation delay related information of the first adapter, and transmission propagation delay related information of the UE co-located with the first adapter; wherein the transmission propagation delay related information of the first adapter comprises a time required for transmitting from a port of the first adapter to a port of a connected station, and the transmission propagation delay related information of the UE co-located with the first adapter comprises a time required for transmitting from a port of the UE co-located with the first adapter to a port of a connected station; and

the second capability information comprises at least one of the following: transmission propagation delay related information of the second adapter, and transmission propagation delay related information of the anchor gateway co-located with the second adapter;

wherein the transmission propagation delay related information of the second adapter comprises a time required for transmitting from a port of the second adapter to a port of a connected station;

the transmission propagation delay related information of the anchor gateway co-located with the second adapter comprises a time required for transmitting from a port of the anchor gateway co-located with the second adapter to a port of a connected station;

the first capability information is obtained by the second communications device from at least one of the UE, the first adapter and a radio access network (RAN) element currently accessed by the UE;

the second capability information is obtained by the second communications device from at least one of the UE, the anchor gateway and the second adapter.

8. The method according to claim 7, wherein the first operation comprises at least one of the following:

determining a bridge capability of a bridge formed by the UE, a time-sensitive network adapter, and/or a network;

determining second transmission configuration information for a time-sensitive data stream;

transmitting configuration information of the time-sensitive data stream, wherein the configuration information for a time-sensitive data stream is first transmission configuration information for the time-sensitive data stream or second transmission configuration information for the time-sensitive data stream;

determining bridge configuration information; and

disclosing or transmitting the bridge capability of the bridge formed by the UE, the time-sensitive network adapter, and/or the network.

9. A method for supporting time-sensitive communication, performed by a third communications device, wherein the third communications device is an anchor gateway or a second adapter, and the method is characterized by comprising:

transmitting second capability information and/or delay related information of the anchor gateway ; wherein

the second capability information comprises at least one of the following:

information related to a delay between an anchor gateway and a second adapter;

transmission propagation delay related information of the second adapter;

transmission propagation delay related information of the anchor gateway co-located with the second adapter;

wherein the transmission propagation delay related information of the second adapter comprises a time required for transmitting from a port of the second adapter to a port of a connected station;

the transmission propagation delay related information of the anchor gateway co-located with the second adapter comprises a time required for transmitting from a port of the anchor gateway co-located with the second adapter to a port of a connected station;

the transmitting the second capability information comprises:

transmitting the second capability information to a target end, wherein the target end comprises the anchor gateway, a radio access network (RAN) element or a core network (CN) element.

10. The method according to claim 9, wherein the information about a bandwidth supported by the second adapter is information about a bandwidth supported by a port of the second adapter; and

the information about a bandwidth supported by the anchor gateway co-located with the second adapter is information about a bandwidth supported by a port of the anchor gateway co-located with the second adapter.

11. The method according to claim 10, wherein the information about a bandwidth supported by a port comprises at least one of the following:

information related to the port, a bandwidth of the port, a bandwidth availability parameter of the port, and a transmission rate of the port;

wherein the information related to a port comprises at least one of the following:

identification information of the port, information related to a direction of the port being an egress or an ingress, a port number, a media access control MAC address of the port, an internet protocol IP address of the port, virtual local area network VLAN tag information associated with the port, or data filter information of the port.

12. The method according to claim 9, wherein the transmission propagation delay related information of a port comprises at least one of the following:

information related to the port, a transmission propagation delay of the port, and a traffic class.

13. The method according to claim 9, wherein the information related to a delay between the anchor gateway and the second adapter comprises at least one of the following:

information related to a fourth interface, information related to a third interface, the delay between the anchor gateway and the second adapter, and a traffic class associated with a data packet.

14. The method according to claim 13, wherein the delay between the anchor gateway and the second adapter comprises at least one of the following:

a time required for transmitting a data packet from the fourth interface to the third interface; and

a time required for transmitting a data packet from the third interface to the fourth interface.

15. The method according to claim 14, wherein

when the fourth interface is a second port, the information related to the first interface is port-related information of the second port; and

in a case that the third interface is an N3N9 interface of the anchor gateway, the information related to the third interface is information about a first tunnel of the N3N9 interface; wherein

the second port is a port connected to a bridge or an end station; and

the N3N9 interface is an N3 or N9 interface.

16. A communications device, comprising a processor, a memory, and a computer program stored in the memory and capable of running on the processor, wherein when the computer program is executed by the processor, the steps of the method for supporting time-sensitive communication according to any one of claims 1 to 6 are implemented.

17. A communications device, comprising a processor, a memory, and a computer program stored in the memory and capable of running on the processor, wherein when the computer program is executed by the processor, the steps of the method for supporting time-sensitive communication according claim 7 or 8 are implemented.

18. A communications device, comprising a processor, a memory, and a computer program stored in the memory and capable of running on the processor, wherein when the computer program is executed by the processor, the steps of the method for supporting time-sensitive communication according to any one of claims 9 to 15 are implemented.