

CLAIMS

What is claimed is:

1. A communication method, wherein the method comprises:

determining, by an application server, a first transmission delay, wherein the first transmission
5 delay is used to represent a round-trip transmission latency requirement of service data in a network; and

sending, by the application server, the first transmission delay to a policy control network
element, wherein the first transmission delay is used by the policy control network element to
determine, based on the first transmission delay, delay budget information for transmitting the
10 service data, and the delay budget information indicates an uplink transmission delay budget
and/or a downlink transmission delay budget.

2. The method according to claim 1, wherein the method further comprises:

obtaining, by the application server, a second transmission delay, wherein the second
transmission delay is a round-trip transmission latency currently supported by the network;

15 adjusting, by the application server, an application server processing delay based on the
second transmission delay;

updating, by the application server, the first transmission delay based on one or more of a
service end-to-end delay, a terminal processing delay, and the application server processing delay;
and

20 sending, by the application server, an updated first transmission delay to the policy control
network element.

3. The method according to claim 2, wherein the obtaining, by the application server, a second
transmission delay comprises:

receiving, by the application server, the second transmission delay from the policy control
25 network element, wherein the second transmission delay is determined based on network
transmission delay information; or

receiving, by the application server, network transmission delay information from the policy
control network element, and determining the second transmission delay based on the network
transmission delay information.

30 4. The method according to any one of claims 1 to 3, wherein before the sending, by the

application server, the first transmission delay to a policy control network element, the method further comprises:

determining, by the application server, that the first transmission delay is greater than or equal to a transmission delay threshold.

5 5. A communication method, wherein the method comprises:

obtaining, by a policy control network element, a first transmission delay, wherein the first transmission delay is used to represent a round-trip transmission latency requirement of service data in a network;

10 determining, by the policy control network element based on the first transmission delay, delay budget information for transmitting the service data, wherein the delay budget information indicates an uplink transmission delay budget and/or a downlink transmission delay budget; and

sending, by the policy control network element, the delay budget information to a session management network element.

15 6. The method according to claim 5, wherein the determining, by the policy control network element based on the first transmission delay, delay budget information for transmitting the service data comprises:

sending, by the policy control network element, the first transmission delay to a network data analytics network element; and

20 receiving, by the policy control network element, the delay budget information from the data analytics network element, wherein the delay budget information is determined based on the first transmission delay.

7. The method according to claim 5, wherein the determining, by the policy control network element based on the first transmission delay, delay budget information for transmitting the service data comprises:

25 obtaining, by the policy control network element, network transmission delay information, wherein the network transmission delay information indicates an uplink transmission delay supported by the network and/or a downlink transmission delay supported by the network; and

30 determining, by the policy control network element based on the first transmission delay and the network transmission delay information, the delay budget information for transmitting the service data.

8. The method according to any one of claims 5 to 7, wherein the method further comprises:
obtaining, by the policy control network element, the network transmission delay information,
wherein the network transmission delay information indicates the uplink transmission delay
supported by the network and/or the downlink transmission delay supported by the network; and
5 determining, by the policy control network element, a second transmission delay based on
the network transmission delay information, wherein the second transmission delay is a round-trip
transmission latency currently supported by the network.

9. The method according to claim 8, wherein before the determining, by the policy control
network element, a second transmission delay based on the network transmission delay
10 information, the method further comprises:

determining, by the policy control network element based on the network transmission delay
information, that the network cannot support the first transmission delay.

10. The method according to claim 8 or 9, wherein the method further comprises:

15 sending, by the policy control network element, the second transmission delay to an
application server; and

receiving, by the policy control network element, an updated first transmission delay from
the application server, wherein the updated first transmission delay is determined based on the
second transmission delay.

11. The method according to any one of claims 5 to 7, wherein the method further comprises:
20 obtaining, by the policy control network element, the network transmission delay information,
wherein the network transmission delay information indicates the uplink transmission delay
supported by the network and/or the downlink transmission delay supported by the network;

determining, by the policy control network element based on the network transmission delay
information, that the network cannot support the first transmission delay;

25 sending, by the policy control network element, the network transmission delay information
to an application server, wherein the network transmission delay information is used to determine
a second transmission delay, and the second transmission delay is a round-trip transmission latency
currently supported by the network; and

receiving, by the policy control network element, an updated first transmission delay from
30 the application server, wherein the updated first transmission delay is determined based on the

second transmission delay.

12. The method according to claim 5, wherein the determining, by the policy control network element based on the first transmission delay, delay budget information for transmitting the service data comprises:

5 determining, by the policy control network element according to the first transmission delay and a delay allocation policy, the delay budget information for transmitting the service data, wherein the delay allocation policy indicates an association relationship between the uplink transmission delay budget and the downlink transmission delay budget.

13. A communication method, wherein the method comprises:

10 sending, by a session management network element, a delay reporting policy to a radio access network element and/or a user plane function network element, wherein the delay reporting policy comprises a sending rule of network transmission delay information, and the network transmission delay information indicates an uplink transmission delay supported by a network and/or a downlink transmission delay supported by the network;

15 receiving, by the session management network element, the network transmission delay information; and

 sending, by the session management network element, the network transmission delay information to a policy control network element, wherein the network transmission delay information is used by the policy control network element to determine delay budget information
20 for transmitting service data.

14. The method according to claim 13, wherein the delay reporting policy comprises one or more of the following: a reporting periodicity, a reporting delay threshold, or a reported event.

15. A communication method, wherein the method comprises:

 determining, by an application server, a first transmission delay, wherein the first transmission
25 delay is used to represent a round-trip transmission latency requirement of service data in a network;

 sending, by the application server, the first transmission delay to a policy control network element;

 obtaining, by the policy control network element, the first transmission delay;

30 determining, by the policy control network element based on the first transmission delay,

delay budget information for transmitting the service data, wherein the delay budget information indicates an uplink transmission delay budget and/or a downlink transmission delay budget; and sending, by the policy control network element, the delay budget information to a session management network element.

5 16. The method according to claim 15, wherein the determining, by the policy control network element based on the first transmission delay, delay budget information for transmitting the service data comprises:

 sending, by the policy control network element, the first transmission delay to a network data analytics network element; and

10 receiving, by the policy control network element, the delay budget information from the data analytics network element, wherein the delay budget information is determined based on the first transmission delay.

 17. The method according to claim 15, wherein the determining, by the policy control network element based on the first transmission delay, delay budget information for transmitting the service data comprises:

 obtaining, by the policy control network element, network transmission delay information, wherein the network transmission delay information indicates an uplink transmission delay supported by the network and/or a downlink transmission delay supported by the network; and

 determining, by the policy control network element based on the first transmission delay and the network transmission delay information, the delay budget information for transmitting the service data.

 18. The method according to any one of claims 15 to 21, wherein the method further comprises:

 obtaining, by the policy control network element, the network transmission delay information, wherein the network transmission delay information indicates the uplink transmission delay supported by the network and/or the downlink transmission delay supported by the network; and

 determining, by the policy control network element, a second transmission delay based on the network transmission delay information, wherein the second transmission delay is a round-trip transmission latency currently supported by the network.

30 19. The method according to claim 18, wherein before the determining, by the policy control

network element, a second transmission delay based on the network transmission delay information, the method further comprises:

determining, by the policy control network element based on the network transmission delay information, that the network cannot support the first transmission delay.

5 20. The method according to claim 18 or 19, wherein the method further comprises:

sending, by the policy control network element, the second transmission delay to the application server;

obtaining, by the application server, the second transmission delay, wherein the second transmission delay is the round-trip transmission latency currently supported by the network;

10 adjusting, by the application server, an application server processing delay based on the second transmission delay;

updating, by the application server, the first transmission delay based on one or more of a service end-to-end delay, a terminal processing delay, and the application server processing delay;

15 sending, by the application server, an updated first transmission delay to the policy control network element; and

receiving, by the policy control network element, the updated first transmission delay from the application server, wherein the updated first transmission delay is determined based on the second transmission delay.

20 21. The method according to claim 20, wherein the obtaining, by the application server, the second transmission delay comprises:

receiving, by the application server, the second transmission delay from the policy control network element, wherein the second transmission delay is determined based on the network transmission delay information; or

25 receiving, by the application server, the network transmission delay information from the policy control network element, and determining, by the application server, the second transmission delay based on the network transmission delay information.

22. The method according to any one of claims 15 to 21, wherein the method further comprises:

30 obtaining, by the policy control network element, the network transmission delay information, wherein the network transmission delay information indicates the uplink transmission delay

supported by the network and/or the downlink transmission delay supported by the network;

determining, by the policy control network element based on the network transmission delay information, that the network cannot support the first transmission delay;

5 sending, by the policy control network element, the network transmission delay information to the application server, wherein the network transmission delay information is used to determine the second transmission delay, and the second transmission delay is the round-trip transmission latency currently supported by the network; and

10 receiving, by the policy control network element, the updated first transmission delay from the application server, wherein the updated first transmission delay is determined based on the second transmission delay.

23. The method according to claim 24, wherein before the obtaining, by the policy control network element, the network transmission delay information, the method further comprises:

15 sending, by the session management network element, a delay reporting policy to a radio access network element and/or a user plane function network element, wherein the delay reporting policy comprises a sending rule of the network transmission delay information, and the network transmission delay information indicates the uplink transmission delay supported by the network and/or the downlink transmission delay supported by the network;

receiving, by the radio access network element, the delay reporting policy from the session management network element;

20 sending, by the radio access network element, the network transmission delay information according to the delay reporting policy;

receiving, by the session management network element, the network transmission delay information; and

25 sending, by the session management network element, the network transmission delay information to the policy control network element, wherein the network transmission delay information is used by the policy control network element to determine the delay budget information for transmitting the service data.

24. The method according to claim 23, wherein the delay reporting policy comprises one or more of the following: a reporting periodicity, a reporting delay threshold, or a reported event.

30 25. A communication apparatus, comprising a module configured to perform the method

according to any one of claims 1 to 14.

26. A communication apparatus, wherein the communication apparatus comprises a processor and a memory, wherein the memory is configured to store computer instructions, and when the processor executes the instructions, the communication apparatus is enabled to perform the communication method according to any one of claims 1 to 14.

27. A communication system, wherein the communication system comprises at least one communication apparatus configured to perform the method according to any one of claims 1 to 14.

28. A computer-readable storage medium, wherein the computer-readable storage medium comprises a computer program or instructions, and when the computer program or the instructions are run on a computer, the computer is enabled to perform the communication method according to any one of claims 1 to 14.

29. A computer program product, wherein the computer program product comprises a computer program or instructions, and when the computer program or the instructions are run on a computer, the computer is enabled to perform the communication method according to any one of claims 1 to 14.

30. A communication method, wherein the method comprises:

sending, by a session management network element, a delay reporting policy to a radio access network element and/or a user plane function network element, wherein the delay reporting policy comprises a sending rule of network transmission delay information, and the network transmission delay information indicates an uplink transmission delay supported by a network and/or a downlink transmission delay supported by the network;

receiving, by the radio access network element and/or the user plane function network element, the network transmission delay information from the session management network element; and

sending, by the session management network element, the network transmission delay information to a policy control network element, wherein the network transmission delay information is used by the policy control network element to determine delay budget information for transmitting service data.