PRECONFIGURING DEDICATED RESOURCE INFORMATION IN IDLE MODE

TECHNICAL FIELD

This patent document is directed generally to wireless communications.

BACKGROUND

Mobile communication technologies are moving the world toward an increasingly connected and networked society. The rapid growth of mobile communications and advances in technology have led to greater demand for capacity and connectivity. Other aspects, such as energy consumption, device cost, spectral efficiency, and latency are also important to meeting the needs of various communication scenarios. Various techniques, including new ways to provide higher quality of service, are being discussed.

SUMMARY

This document discloses methods, systems, and devices related to digital wireless communication, and more specifically, to techniques related to pre-configuring dedicated resource information.

In a first aspect, the present disclosure provides a method for wireless communication, comprising: receiving, by a terminal, a first message including a pre-configured transmission resource configuration from a communication node; determining, by the terminal, whether a timing advance (TA) is valid based on at least one of a Reference Signal Received Power (RSRP) change threshold or a TA validity timer; and transmitting, by the terminal, a second message using a pre-configured transmission resource associated with the pre-configured transmission resource configuration based on the determining that the TA is valid.

In a second aspect, the present disclosure provides an apparatus for wireless communication comprising a processor that is configured to carry out a method recited in the first aspect.

In one exemplary embodiment, a method for wireless communication includes receiving a pre-configured transmission resource request from a terminal. The method also includes configuring a pre-configured transmission resource based on the pre-configured

transmission resource request.

In another exemplary embodiment, a method for wireless communication includes receiving a pre-configured transmission resource request from a terminal, wherein the pre-configured transmission resource request includes a medium access control (MAC) control element. The method also includes configuring a pre-configured transmission resource based on the pre-configured transmission resource request.

In another exemplary embodiment, a method for wireless communication includes receiving a pre-configured transmission resource release request from a terminal, wherein the pre-configured transmission resource release request includes an MAC control element. The

CLAIMS

1. A method for wireless communication, comprising:

receiving, by a terminal, a first message including a pre-configured transmission resource configuration from a communication node;

determining, by the terminal, whether a timing advance (TA) is valid based on at least one of a Reference Signal Received Power (RSRP) change threshold or a TA validity timer; and

transmitting, by the terminal, a second message using a pre-configured transmission resource associated with the pre-configured transmission resource configuration based on the determining that the TA is valid.

2. The method of claim 1, wherein the determining determines that the TA is valid due to determining that (1) the RSRP change threshold is included within the pre-configured transmission resource configuration message and (2) a reference signal received power (RSRP) change does not exceed the RSRP change threshold.

3. The method of claim 1, wherein the determining determines that the TA is valid due to determining that (1) the TA validity timer is included within the pre-configured transmission resource configuration message and (2) the TA validity timer has not expired.

4. The method of claim 1, wherein the determining determines that the TA is valid due to determining that (1) the RSRP change threshold and the TA validity timer are included within the pre-configured transmission resource configuration message, (2) the TA validity timer has not expired, and (3) a RSRP change does not exceed the RSRP change threshold.

5. The method of claim 1, wherein the second message corresponds to a physical uplink shared channel message on the pre-configured transmission resources and transmitted to the communication node.

6. The method of claim 1, wherein the determining determines that the TA is valid based on another determination that the TA validity timer and the RSRP change threshold are not included

within the pre-configured transmission resource configuration.

7. The method of claim 1, wherein the determining determines that the TA is valid due to determining that (1) the TA validity timer is not included within the pre-configured transmission resource configuration and the RSRP change threshold is included within the pre-configured transmission resource configuration, and (2) a RSRP change does not exceed the RSRP change threshold.

8. The method of claim 1, wherein the determining determines that the TA is invalid due to determining that (1) the TA validity timer is included within the pre-configured transmission resource configuration and that the RSRP change threshold is not included within the pre-configured transmission resource configuration, and (2) the TA validity timer expired.

9. The method of claim 1, wherein the determining determines that the TA is valid due to determining that (1) the TA validity timer is included within the pre-configured transmission resource configuration and the RSRP change threshold is not included within the pre-configured transmission resource configuration, and (2) the TA validity timer has not expired.

10. The method of claim 1, wherein the determining determines that the TA is invalid due to determining that (1) the RSRP change threshold and the TA validity timer are included within the pre-configured transmission resource configuration message and (2) the TA validity timer has expired or (2) a RSRP change exceeds the RSRP change threshold.

11. The method of claim 1, wherein the first message further includes a pre-configured transmission resource release instance; and

wherein the method further includes making, by the terminal, a comparison between a number of continuous inactivity of the pre-configured transmission resource associated with the pre-configured transmission resource configuration and the pre-configured transmission resource release instance.

12. The method of claim 11, wherein the pre-configured transmission resource release instance includes a counter that is configured to count the number of continuous inactivity of the

pre-configured transmission resource.

13. The method of claim 12, wherein the counter is incremented based on an unsuccessful delivery of an uplink data message by the terminal using the pre-configured transmission resource at a pre-configured transmission resource time domain location included within the pre-configured transmission resource configuration.

14. The method of claim 12, further comprising:

resetting, by the terminal, the counter based on successfully transmitting an uplink data message using the pre-configured transmission resource at a pre-configured transmission resource time domain location included within the pre-configured transmission resource configuration.

15. The method of claim 12, further comprising:

releasing, by the terminal, the pre-configured transmission resource based on the counter exceeding a predetermined counter value.

16. The method of claim 1, wherein the determining is based on an RSRP change and the determining comprises:

setting a RSRP of a serving cell as a reference RSRP, in response to receiving at least one of the pre-configured transmission resource configuration and a TA update indication; and determining the RSRP change based on a difference between a measured RSRP value of the serving cell and the reference RSRP.

17. An apparatus for wireless communication comprising a processor that is configured to carry out a method recited in any one of claims above.