

WHAT IS CLAIMED IS:

1. An apparatus, comprising:

means for transmitting, at a terminal device, a random access request in a random access procedure to a network device;

5 means for in response to receiving, during the random access procedure, from the network device an uplink grant for the terminal device, determine whether a size indicated by the uplink grant matches a size of a packet data unit stored in a buffer of the terminal device;

10 means for, after determining that the size indicated by the uplink grant mismatches the size of the packet data unit stored in the buffer, including a sub-packet data unit in a transmission.

2. The apparatus of claim 1, wherein the apparatus is caused to transmit the random access request by transmitting one of the following:

15 a contention-free random access preamble; and
a contention-based random access preamble.

3. The apparatus of claim 1 or claim 2, wherein the packet data unit comprises at least one of the following Medium Access Control, MAC, Control Elements, CEs:

20 a Cell Radio Network Temporary Identifier, C-RNTI;
a Buffer Status Report, BSR; and
a Power Headroom Report, PHR.

4. The apparatus of claim 3, wherein the BSR comprises at least one of the following:

25 a truncated BSR;
a padding BSR;
a regular BSR; and
a periodic BSR.

30 5. The apparatus of any of the claims 1 to 4, wherein the including the sub-packet data unit comprises at least one of the following:

discarding a truncated BSR from the packet data unit;
discarding a padding BSR from the packet data unit;

discarding a regular BSR from the packet data unit;
discarding a periodic BSR from the packet data unit;
discarding a PHR from the packet data unit; and
adjusting a size of the truncated BSR.

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6. The apparatus of any of the claims 1 to 5, wherein the sub-packet data unit of the packet data unit in the transmission comprises:

determining whether the random access procedure is successfully completed by receiving the uplink grant; and

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in response to determining that the random access procedure is considered successfully completed, not taking into consideration a C-RNTI Medium Access Control, MAC, Control Element, CE from the packet data unit in the transmission.

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7. The apparatus of claim 6, wherein the apparatus is caused to determine whether the random access procedure is successfully completed by:

means for determining that the uplink grant is addressed to at least one of the following:

a Cell Radio Network Temporary Identifier, C-RNTI; and

a Random Access Radio Network Temporary Identifier, RA-RNTI.

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8. The apparatus of any of the claims 1 to 7, wherein the transmission comprises at least one of the following:

a transmission associated with the uplink grant; and

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a transmission associated with a further uplink grant, the further uplink grant being different with the uplink grant.

9. The apparatus of any of the claims 1 to 8, wherein the apparatus is further comprises:

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means for transmitting, to the network device, at least portion of the sub-packet data units of the packet data unit in the .

10. An apparatus, comprising:

means for receiving, from a terminal device, a random access request in a random access procedure;

means for in response to receiving the random access request, transmit, to the terminal device, an uplink grant of the terminal device, the uplink grant indicating a size, so that the terminal device determines whether the size indicated by the uplink grant matches a size of a packet data unit stored in a buffer of the terminal device.

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11. The apparatus of claim 10, wherein the apparatus is caused to receive the random access request by receiving one of the following:

a contention-free random access preamble; and

a contention-based random access preamble.

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12. The apparatus of claim 10 or claim 11, wherein the packet data unit comprises at least one of the following Medium Access Control, MAC, Control Elements, CEs:

a Cell Radio Network Temporary Identifier, C-RNTI;

a Buffer Status Report, BSR; and

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a Power Headroom Report, PHR.

13. The apparatus of any of the claims 10 to 12, wherein the BSR comprises at least one of the following:

a truncated BSR;

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a padding BSR;

a regular BSR; and

a periodic BSR.

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14. The apparatus of any of the claims 10 to 13, wherein the apparatus further comprises:

means for receiving, from the terminal device, at least portion of a sub-packet data unit of the packet data unit.

15. A method, comprising:

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transmitting, at a terminal device, a random access request in a random access procedure to a network device;

in response to receiving, during the random access procedure, from the network device an uplink grant for the terminal device, determine whether a size indicated by the

uplink grant matches a size of a packet data unit stored in a buffer of the terminal device;
after determining that the size indicated by the uplink grant mismatches the size
of the packet data unit stored in the buffer, including a sub-packet data unit in a transmission.

5 16. A method implemented at a network device, comprising:
receiving, from a terminal device, a random access request in a random access
procedure;

in response to receiving the random access request, transmit, to the terminal
device, an uplink grant of the terminal device, the uplink grant indicating a size , so that the
10 terminal device determines whether the size indicated by the uplink grant matches a size of
a packet data unit stored in a buffer of the terminal device.

17. A non-transitory computer readable medium comprising program instructions
for causing an apparatus to perform at least:

15 transmitting, at a terminal device, a random access request in a random access
procedure to a network device;

in response to receiving, during the random access procedure, from the network
device an uplink grant for the terminal device, determine whether a size indicated by the
uplink grant matches a size of a packet data unit stored in a buffer of the terminal device;

20 after determining that the size indicated by the uplink grant mismatches the size
of the packet data unit stored in the buffer, including a sub-packet data unit in a transmission.

18. A non-transitory computer readable medium comprising program instructions
for causing an apparatus to perform at least:

25 receiving, from a terminal device, a random access request in a random access
procedure;

in response to receiving the random access request, transmit, to the terminal
device, an uplink grant of the terminal device, the uplink grant indicating a size , so that the
terminal device determines whether the size indicated by the uplink grant matches a size of
30 a packet data unit stored in a buffer of the terminal device.