

WHAT IS CLAIMED IS:

1. A method comprising:

receiving, at a first device and from a second device, information indicating one or more occasions configured for detection of physical downlink control channel (PDCCH) transmission carrying a wake-up indication;

determining, based on transmission information available at a first time point, whether a predetermined number of the one or more occasions overlap with active time of the first device, wherein the predetermined number of the one or more occasions are after the first time point;

generating a configuration for transmitting uplink information based on the determination; and

transmitting the uplink information to the second device based on the configuration.

2. The method of claim 1, wherein the transmission information available at the first time point comprises at least one of the following: a grant, an assignment, a discontinuous reception (DRX) command medium access control (MAC) control element (CE), a long DRX command MAC CE, and a scheduling request.

3. The method of claim 1, wherein the PDCCH transmission is addressed to a power saving radio network temporary identifier.

4. The method of claim 1, further comprising:

determining at the first time point whether the first device is/will be in active time at the time of the predetermined number of the one or more occasions;

in accordance with a determination that the first device is/will be in active time, determining to skip monitoring the predetermined number of the one or more occasions; or

in accordance with a determination that the first device will not be/is not in active time, determining to monitor the predetermined number of the one or more occasions.

5. The method of claim 1, wherein transmitting the uplink information to the second device comprises:

in accordance with the determination that the predetermined number of the one or more occasions overlap with the active time of the first device,

transmitting the uplink information based on a first configuration associated with a discontinuous reception on duration timer being running.

5 6. The method of claim 1, wherein transmitting the uplink information to the second device comprises:

in accordance with the determination that the predetermined number of the one or more occasions are not overlapping with the active time of the first device, transmitting the uplink information based on a second configuration associated with a discontinuous reception on duration timer not being running.

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7. The method of claim 1, wherein transmitting the uplink information to the second device comprises:

in accordance with the determination that the predetermined number of the one or more occasions are not overlapping with the active time of the first device,

15 monitoring the PDCCH transmission during the predetermined number of the one or more occasions;

in accordance with a determination that the first device does not detect the PDCCH transmission, transmitting the uplink information based on a second configuration associated with a discontinuous reception on duration timer not being running; and

20 in accordance with a determination that the first device detects the PDCCH transmission, transmitting the uplink information based on the detected PDCCH transmission.

25 8. The method of claim 1, wherein transmitting the uplink information to the second device comprises:

in accordance with the determination that the predetermined number of the one or more occasions are not overlapping with the active time of the first device,

monitoring the PDCCH transmission during the predetermined number of the one or more occasions;

30 in accordance with a determination that the first device does not detect the PDCCH transmission,

determining to start a discontinuous reception on duration timer;

transmitting the uplink information based on a first configuration associated with a discontinuous reception on duration timer being running; and

in accordance with a determination that the first device detects the PDCCH transmission, transmitting the uplink information based on the detected PDCCH transmission.

5 9. The method of claim 1, wherein transmitting the uplink information to the second device comprises:

in accordance with a determination that information transmitted in the one or more occasions is the same and that at least one of the one or more occasions does not overlap with the active time of the first device,

10 detecting at least one PDCCH transmission during the at least one non-overlapping occasion; and

transmitting the uplink information to the second device based on the detected at least one PDCCH transmission.

15 10. The method of claim 1, wherein transmitting the uplink information to the second device comprises:

in accordance with a determination that the information transmitted in the one or more occasions is allowed to be different and that the predetermined number of the one or more occasions overlap with the active time of the first device, transmitting the uplink
20 information based on a first configuration associated with a discontinuous reception on duration timer being running.

11. The method of claim 1, wherein the predetermined number of the one or more occasions is based on at least one of the following: a configuration from the network
25 second, whether the information in the one or more occasions is the same, whether it is allowed to be different, or a pre-determined value.

12. The method of claim 1, wherein the active time comprises at least one of: Active Time associated a discontinuous reception (DRX) cycle, a bandwidth part switch gap, or a
30 measurement gap.

13. The method of any one of claims 1-12, wherein the first device comprises a terminal device and the second device comprises a network device.

14. A method comprising:

determining, at a second device, one or more occasions configured for detection of physical downlink control channel (PDCCH) transmission carrying a wake-up indication;

transmitting to a first device information indicating the one or more occasions;

5 determining whether the first device is expected to monitor a predetermined number of the one or more occasions based on transmission information available at the first device at a first time point, wherein the predetermined number of the one or more occasions are after the first time point; and

receiving uplink information from the first device based on a configuration which is
10 determined based on whether the first device is expected to monitor the predetermined number of the at least one occasion.

15 15. The method of claim 14, wherein receiving the uplink information from the first device comprises:

in accordance with a determination that the predetermined number of the one or more occasions overlap with the active time of the first device, receiving the uplink information based on a first configuration associated with a discontinuous reception on duration timer being running.

20 16. The method of claim 14, wherein receiving the uplink information from the first device comprises:

in accordance with a determination that the predetermined number of the one or more occasions are not overlapping with the active time of the first device, receiving the uplink information from the first device based on the non-overlapping occasions.

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17. The method of claim 14, wherein receiving the uplink information from the first device comprises:

in accordance with a determination that information transmitted in the one or more occasions is the same and that at least one of the one or more occasions are not overlapping
30 with the active time of the first device, receiving the uplink information from the first device based on the non-overlapping at least one occasion.

18. The method of claim 14, wherein receiving the uplink information from the first device comprises:

in accordance with a determination that information transmitted in the one or more occasions is allowed to be different and that the predetermined number of the one or more occasions overlap with the active time of the first device, receiving the uplink information based on a first configuration associated with a discontinuous reception on duration timer
5 being running.

19. The method of claim 14, wherein receiving the uplink information comprises:
in accordance with the determination that the predetermined number of the one or more occasions are not overlapping with the active time of the first device, receiving the
10 uplink information based on a second configuration associated with a discontinuous reception on duration timer not being running.

20. The method of claim 14, wherein receiving the uplink information comprises:
in accordance with the determination that the predetermined number of the one or
15 more occasions are not overlapping with the active time of the first device and a determination that the first device does not detect the PDCCH transmission on the non-overlapping occasions, receiving the uplink information based on a second configuration associated with a discontinuous reception on duration timer not being running;
and
20 in accordance with a determination that the first device detects at least one PDCCH transmission on the non-overlapping occasions, receiving the uplink information based on the detected at least one PDCCH transmission.

21. The method of any one of claims 14-20, wherein the active time comprises at
25 least one of: Active Time associated a discontinuous reception (DRX) cycle, a bandwidth part switch gap, or a measurement gap.

22. The method of any one of claims 14-20, wherein the first device comprises a terminal device and the second device comprises a network device.

30 23. A first device comprising:
at least one processor; and
at least one memory including computer program codes;
the at least one memory and the computer program codes are configured to, with the

at least one processor, cause the first device to perform the method of any one of claims 1-13.

24. A second device comprising:
5 at least one processor; and
at least one memory including computer program codes;
the at least one memory and the computer program codes are configured to, with the
at least one processor, cause the second device to perform the method of any one of claims
14-22.

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25. An apparatus comprising means for performing a method according to any of
claims 1-13.

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26. An apparatus comprising means for performing a method according to any of
claims 14-22.

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27. A computer program product that is stored on a computer readable medium and
includes machine-executable instructions, wherein the machine-executable instructions,
when being executed, cause the machine to perform the method of any one of claims 1-13.

28. A computer program product that is stored on a computer readable medium and
includes machine-executable instructions, wherein the machine-executable instructions,
when being executed, cause the machine to perform the method of any one of claims 14-22.

25 29 A computer readable storage medium comprising program instructions stored
thereon, the instructions, when executed by an apparatus, causing the apparatus to perform
the method of any one of claims 1-13.

30 30 A computer readable storage medium comprising program instructions stored
thereon the instructions, when executed by an apparatus, causing the apparatus to perform
the method of any one of claims 14-22.