The eNB has a downlink signaling configurations determining the time instants where the UE shall receive the scheduling and paging information. For power saving purposes, an eNB may configure time periods when the UE shall monitor downlink control signals. During other times the UE is allowed to go to power saving mode during which eNB cannot assume that the UE would listen for downlink signals. This relates to a discontinuous reception (DRX) period, which causes the UE to shut off its radio for periods of time to save power.

As coverage of data networks has increased, such as including WiFi networks, the demand for diverse smartphone applications also have increased. The significant amount of mobile applications present challenges to connectivity and power savings operations of the devices in view of the ubiquitous nature of these applications. One such challenge relates to these mobile applications running in the background on a UE which tend to require an always on connection with the network.

SUMMARY:

In an exemplary aspect of the invention, there is a method comprising: starting, by a device of a communications network, a timer in response to a radio resource control message, where a power preference indication message is not sent by the device for at least a duration of the timer, ~~and starting the timer comprises restarting a T340 timer~~where the radio resource control message relates to one of a radio resource connection setup procedure and a radio resource connection re-configuration procedure associated with the device, where the timer is started based on an indication that one of the radio resource connection setup procedure and the radio resource connection re-configuration is completed.

In ~~another exemplary aspect of the invention~~an embodiment, there is an apparatus comprising: at least one processor; and at least one memory including computer program code, where the at least one memory and the computer program code are configured, with the at least one processor, to cause the apparatus to at least: start a timer in response to a radio resource control message, where a power preference indication message is not sent by the device for at least a duration of the timer and a T340 timer is restarted.

In yet another exemplary aspect of the invention, there is an apparatus

comprising: means for starting a timer in response to a radio resource control message, ~~where a power preference indication message is not sent by the device for at least a duration of the timer and a T340 timer is restartedtimer~~where the radio resource control message relates to one of a radio resource connection setup procedure and a radio resource connection re-configuration procedure associated with the device, where the timer is started based on an indication that one of the radio resource connection setup procedure and the radio resource connection re-configuration is completed.

In ~~accordance with the exemplary aspect of the invention as in the paragraph above~~an embodiment, the means for starting comprises a timer, and a computer readable medium including computer program code, the computer program code executed by at least one

CLAIMS

1. A method comprising:

starting, by a device of a communications network, a timer in response to a radio resource control message, where a power preference indication message is not sent by the device for at least a duration of the timer, where the radio resource control message relates to one of a radio resource connection setup procedure and a radio resource connection re-configuration procedure associated with the device, where the timer is started based on an indication that the one of the radio resource connection setup procedure and the radio resource connection re-configuration is completed.

2. The method according to claim 1, where the indication comprises one of a radio resource connection setup completion message and a radio resource connection re-configuration completion message.

3. The method according to claim 1, where the one of the radio resource connection setup procedure and the radio resource connection re-configuration procedure relates to a handover operation.

4. The method according to claim 1, where a duration of the timer is set based on information received from the communication network.

5. The method according to claim 1, further comprising: based on an expiration of the timer, sending a power preference indication message towards the network.

6. The method according to claim 5, where the power preference indication message comprises a powerprefindication value.

7. The method according to claim 6, where the powerprefindication value indicates that the device is in one of a low power consumption mode or a normal power consumption mode.

8. The method according to claim 1, where starting the timer comprises restarting a T340 timer.

9. The method according to claim 8, where a duration of the timer is based on a duration of the T340 timer.

10. The method according to any of claims 1 to 9, wherein the device is configured as a mobile terminal.

11. A computer program comprising program instructions configured to cause an apparatus, when run on a processing means of the apparatus, to perform the method according to any of claims 1 to 10.

12. An apparatus comprising a processing means and a memory means, the memory means storing program instructions configured to cause the apparatus, when run on the processing means, to perform the method according to any of claims 1 to 10.

13. An apparatus comprising:

means for starting a timer in response to a radio resource control message, where a power preference indication message is not sent by the device for at least a duration of the timer, where the radio resource control message relates to one of a radio resource connection setup procedure and a radio resource connection re-configuration procedure associated with the device where the timer is started based on an indication that the one of the radio resource connection setup procedure and the radio resource connection re-configuration is completed.

14. The apparatus according to claim 13, where the indication comprises one of a radio resource connection setup completion message and a radio resource connection re-configuration completion message received by the device.

15. The apparatus according to claim 13, where the one of the radio resource connection setup procedure and the radio resource connection re-configuration procedure relates to a handover operation.

16. The apparatus according to claim 13, where a duration of the timer is set based on information received from the communication network.

17. The apparatus according to claim 13, further comprising: means, based on an expiration of the timer, for sending a power preference indication message towards the network.

18. The apparatus according to claim 17, where the power preference indication message comprises a powerprefindication value.

19. The apparatus according to claim 18, where the powerprefindication value indicates that the device is in one of a low power consumption mode or a normal power consumption mode.

20. The apparatus according to claim 13, where starting the timer comprises restarting a T340 timer.

21. The apparatus according to claim 20, where the duration of the timer is based on a duration of the T340 timer.

22. The apparatus according to any of claims 13 to 21 configured as a mobile terminal.

23. The apparatus according to any of claims 13 to 21, where the means for starting comprises a timer, and a computer readable medium including computer program code, the computer program code executed by at least one processor.

What is claimed is:

1. A method comprising:

starting, by a device of a communications network, a timer in response to a radio resource control message, where a power preference indication message is not sent by the device for at least a duration of the timer and starting the timer comprises restarting a T340 timer.

2. The method according to claim 1, where the radio resource control message relates to one of a radio resource connection setup procedure and a radio resource connection re-configuration procedure associated with the device.

3. The method according to claim 2, where the timer is started based on an indication that the one of the radio resource connection setup procedure and the radio resource connection re-configuration is completed.

4. The method according to claim 3, where the indication comprises one of a radio resource connection setup completion message and a radio resource connection re-configuration completion message.

5. The method according to claim 2, where the one of the radio resource connection setup procedure and the radio resource connection re-configuration procedure relates to a handover operation.

6. The method according to claim 1, where a duration of the timer is set based on information received from the communication network.

7. The method according to claim 1, further comprising: based on an expiration of the timer, sending a power preference indication message towards the network.

8. The method according to claim 7, where the power preference indication message comprises a powerprefindication value.

9. The method according to claim 8, where the powerprefindication value indicates that the device is in one of a low power consumption mode or a normal power consumption mode.

10. The method according to claim 1, where a duration of the timer is based on a duration of the T340 timer.

~~11. The method according to claim 1, wherein the device comprises a mobile~~ terminal.

12. A non-transitory computer-readable storage medium encoded with a computer program code, the computer program code executable by a processor to perform actions comprising:

starting, by a device of a communications network, a timer in response to a radio resource control message, where a power preference indication message is not sent by the device for at least a duration of the timer and starting the timer comprises restarting a T340 timer.

13. The non-transitory computer-readable storage medium according to claim 12, where the radio resource control message relates to one of a radio resource connection setup procedure and a radio resource connection re-configuration procedure associated with the device.

14. The non-transitory computer-readable storage medium according to claim 13, where the timer is started based on an indication that the one of the radio resource connection setup procedure and the radio resource connection re-configuration is completed.

15. The non-transitory computer-readable storage medium according to claim 14, where the indication comprises one of a radio resource connection setup completion message and a radio resource connection re-configuration completion message.

16. The non-transitory computer-readable storage medium according to claim 13, where the one of the radio resource connection setup procedure and the radio resource connection re-configuration procedure relates to a handover operation.

17. The non-transitory computer-readable storage medium according to claim 12, where a duration of the timer is set based on information received from the communication network.

18. The non-transitory computer-readable storage medium according to claim 12, further comprising: based on an expiration of the timer, sending a power preference indication message towards the network.

19. The non-transitory computer-readable storage medium according to claim 18, where the power preference indication message comprises a powerprefindication value.

20. The non-transitory computer-readable storage medium according to claim 19, where the powerprefindication value indicates that the device is in one of a low power consumption mode or a normal power consumption mode.

21. An apparatus comprising:

at least one processor; and

at least one memory including computer program code, where the at least one memory and the computer program code are configured, with the at least one processor, to cause the apparatus to at least:

start a timer in response to a radio resource control message, where a power preference indication message is not sent by the device for at least a duration of the timer and a T340 timer is restarted.

22. The apparatus according to claim 21, where the radio resource control message relates to one of a radio resource connection setup procedure and a radio resource connection re-configuration procedure associated with the device.

23. The apparatus according to claim 22, where the timer is started based on an indication that the one of the radio resource connection setup procedure and the radio resource connection re-configuration is completed.

24. The apparatus according to claim 23, where the indication comprises one of a radio resource connection setup completion message and a radio resource connection re-configuration completion message.

25. The apparatus according to claim 22, where the one of the radio resource connection setup procedure and the radio resource connection re-configuration procedure relates to a handover operation.

26. The apparatus according to claim 21, where a duration of the timer is set based on information received from the communication network.

27. The apparatus according to claim 21, where the at least one memory including the computer program code is configure with the at least one processor to cause the apparatus, based on an expiration of the timer, to send a power preference indication message towards the network.

28. The apparatus according to claim 27, where the power preference indication message comprises a powerprefindication value.

29. The apparatus according to claim 28, where the powerprefindication value indicates that the device is in one of a low power consumption mode or a normal power consumption mode.

30. The apparatus according to claim 21, where a duration of the timer is based on a duration of the T340 timer.

31. The apparatus according to claim 21comprising a mobile terminal.

32. An apparatus comprising:

means for starting a timer in response to a radio resource control message, where a power preference indication message is not sent by the device for at least a duration of the timer and a T340 is restarted.

33. The apparatus according to claim 32, where the radio resource control message relates to one of a radio resource connection setup procedure and a radio resource connection re-configuration procedure associated with the device.

34. The apparatus according to claim 33, where the timer is started based on an indication that the one of the radio resource connection setup procedure and the radio resource connection re-configuration is completed.

35. The apparatus according to claim 34, where the indication comprises one of a radio resource connection setup completion message and a radio resource connection re-configuration completion message received by the device.

36. The apparatus according to claim 33, where the one of the radio resource connection setup procedure and the radio resource connection re-configuration procedure relates to a handover operation.

37. The apparatus according to claim 32, where a duration of the timer is set based on information received from the communication network.

38. The apparatus according to claim 32, further comprising: means, based on an expiration of the timer, for sending a power preference indication message towards the network.

39. The apparatus according to claim 38, where the power preference indication message comprises a powerprefindication value.

40. The apparatus according to claim 39, where the powerprefindication value indicates that the device is in one of a low power consumption mode or a normal power consumption mode.

41. The apparatus according to claim 32, where the duration of the timer is based

~~on a duration of the T340 timer.~~

42. The apparatus according to claim 32 comprising a mobile terminal.

43. The apparatus according to claim 32, where the means for starting comprises a timer, and a computer readable medium including computer program code, the computer program code executed by at least one processor.