CLAIMS

What is claimed is:

1. A method for acquiring a time adjustment, comprising:

entering a sleep mode;

waking from the sleep mode after a predetermined period of time passes;

determining whether a timing adjustment command issues;

adjusting uplink timing based at least in part on the issued timing adjustment command; and

reentering the sleep mode.

2. The method of claim 1, further comprising selecting the predetermined period of time.

3. The method of claim 1, further comprising signaling uplink information.

4. The method of claim 3, signaling uplink information occurs upon waking from the sleep mode.

5. The method of claim 3, signaling uplink information occurs prior to entering the sleep mode.

6. The method of claim 3, signaling uplink information occurs while in the sleep mode.

7. The method of claim 3, the uplink information provides an uplink timing.

8. The method of claim 1, determining whether a timing adjustment command issues comprises reading a downlink physical channel.

9. A wireless communications apparatus, comprising:

a memory that retains instructions related to sleeping until a timer expires, waking after the timer expires, assessing if a timing adjustment command issues and adjusting uplink timing based at least in part on the issued command; and

a processor coupled to the memory configured to execute the instructions retained in the memory.

10. The wireless communications apparatus of claim 9, the memory further retains instructions related to selecting the predetermined period of time.

11. The wireless communications apparatus of claim 9, the memory further retains instructions related to signaling uplink information.

12. The wireless communications apparatus of claim 11, the uplink information provides uplink timing.

13. The wireless communications apparatus of claim 9, instructions related to determining whether a timing adjustment command issues comprise instructions related to reading a downlink physical channel.

14. A wireless communications apparatus that facilitates conserving power when acquiring a time adjustment, comprising:

means for entering a sleep mode;

means for waking from the sleep mode after a predetermined period of time passes;

means for determining whether a timing adjustment command issues;

means for adjusting uplink timing based at least in part on the issued timing adjustment command; and

means for reentering the sleep mode.

15. The wireless communications apparatus of claim 14, further comprising means for selecting the predetermined period of time.

16. The wireless communications apparatus of claim 14, further comprising means for signaling uplink information.

17. The wireless communications apparatus of claim 16, the signaling uplink information occurs upon waking from the sleep mode.

18. The wireless communications apparatus of claim 16, signaling uplink information occurs prior to entering the sleep mode.

19. The wireless communications apparatus of claim 16, signaling uplink information occurs while in the sleep mode.

20. The wireless communications apparatus of claim 16, the uplink information provides an uplink timing.

21. The wireless communications apparatus of claim 14, means for determining whether a timing adjustment command issues comprises means for reading a downlink physical channel.

22. A computer program product, comprising:

a computer-readable medium comprising:

code for entering a sleep mode;

code for waking from the sleep mode after a predetermined period of time passes;

code for determining whether a timing adjustment command issues;

code for adjusting uplink timing based at least in part on the issued timing adjustment command; and

code for reentering the sleep mode.

23. The computer program product of claim 22, further comprising code for selecting the predetermined period of time.

24. The computer program product of claim 22, further comprising code for signaling uplink information.

25. The computer program product of claim 24, code for signaling uplink information occurs upon waking from the sleep mode.

26. The computer program product of claim 24, code for signaling uplink information occurs prior to entering the sleep mode.

27. The computer program product of claim 24, code for signaling uplink information occurs while in the sleep mode.

28. The computer program product of claim 24, wherein the uplink information provides an uplink timing.

29. The computer program product of claim 22, code for determining whether a timing adjustment command issues comprise instruction for reading a fast physical access channel.

30. In a wireless communication system, an apparatus comprising:

an integrated circuit configured to:

place the apparatus in a sleep mode;

wake the apparatus from the sleep mode after a predetermined period of time passes;

determine whether a timing adjustment command issues; and

adjust uplink timing based at least in part on the issued timing adjustment command.

31. A method for updating timing, comprising:

receiving a transmission from at least one waking mobile device that provides uplink information;

determining whether at least one waking mobile device requires a timing update based upon the received transmission;

evaluating a timing adjustment for the at least one waking mobile device; and

issuing a timing adjustment command to the at least one waking mobile device.

32. The method of claim 31, further comprising comparing local reference timing with timing of the received transmission to ascertain a difference in timing.

33. The method of claim 32, evaluating a timing adjustment comprises generating at timing adjustment command that accounts for the difference in timing.

34. A wireless communications apparatus, comprising:

a memory that retains instructions related to receiving a transmission from at least one waking mobile device that provides uplink information, determining whether at least one waking mobile device requires a timing update based upon the received transmission, evaluating a timing adjustment for the at least one waking mobile device; and issuing a timing adjustment command to the at least one waking mobile device; and

a processor coupled to the memory configured to execute the instructions retained in the memory.

35. The wireless communications apparatus of claim 34, the memory further instructions related to comparing local reference timing with timing of the received transmission to ascertain a difference in timing.

36. The wireless communications apparatus of claim 35, the instructions related to evaluating a timing adjustment comprise instructions related to generating at timing adjustment command that accounts for the difference in timing.

37. A wireless communications apparatus that facilitates updating timing with reduced overhead, comprising:

means for receiving a transmission from at least one waking mobile device that provides uplink information;

means for determining whether at least one waking mobile device requires a timing update based upon the received transmission;

means for evaluating a timing adjustment for the at least one waking mobile device; and

means for issuing a timing adjustment command to the at least one waking mobile device.

38. The wireless communications apparatus of claim 37, further comprising means for comparing local reference timing with timing of the received transmission to ascertain a difference in timing.

39. The method of claim 38, means for evaluating a timing adjustment comprises means for generating at timing adjustment command that accounts for the difference in timing.

40. A computer program product, comprising:

a computer-readable medium comprising:

code for receiving a transmission from at least one waking mobile device that provides uplink information;

code for determining whether at least one waking mobile device requires a timing update based upon the received transmission;

code for evaluating a timing adjustment for the at least one waking mobile device; and

code for issuing a timing adjustment command to the at least one waking mobile device.

41. The computer program product of claim 40, further comprising code for comparing local reference timing with timing of the received transmission to ascertain a difference in timing.

42. The computer program product of claim 41, code for evaluating a timing adjustment comprise instructions for generating at timing adjustment command that accounts for the difference in timing.

43. In a wireless communication system, an apparatus comprising:

an integrated circuit configured to:

receive a transmission from at least one waking mobile device that provides uplink information;

determine whether at least one waking mobile device requires a timing update based upon the received transmission;

evaluate a timing adjustment for the at least one waking mobile device; and

issue a timing adjustment command to the at least one waking mobile device.

CLAIMS

1. A method for acquiring a time adjustment at a user equipment (UE), comprising:

entering a sleep mode;

waking from the sleep mode after a predetermined period of time passes;

signaling uplink information at the UE, the uplink information providing an uplink timing of the UE;

determining whether a timing adjustment command has issued, wherein the issuance of the timing adjustment command is based on properties of the UE;

adjusting the uplink timing at the UE based on the issued timing adjustment command when a timing adjustment command is determined to have issued; and

reentering the sleep mode without the adjusting when no timing adjustment command is determined to have issued;

wherein the properties of the UE comprise at least one of a velocity of the UE and a current synchronization timing of the UE.

2. The method of claim **1**, further comprising selecting the predetermined period of time.

3. The method of claim **1**, further comprising signaling the uplink information upon waking from the sleep mode.

4. The method of claim **1**, further comprising signaling the uplink information prior to entering the sleep mode.

5. The method of claim **1**, further comprising signaling the uplink information while in the sleep mode.

6. The method of claim 1, wherein the determining of whether the timing adjustment command issued comprises receiving a downlink physical channel.

7. A wireless communications apparatus, comprising: a memory that retains instructions for:

entering a sleep mode;

waking from the sleep mode after a predetermined period of time passes;

signaling uplink information, the uplink information providing an uplink timing of the wireless communications apparatus;

determining whether a timing adjustment command has issued, wherein the issuance of the timing adjustment command is based on properties of the wireless communications apparatus;

adjusting the uplink timing based on the issued timing adjustment command when a timing adjustment command is determined to have issued; and reentering the sleep mode without the adjusting when no timing adjustment command is determined to have issued;

wherein the properties of the wireless communications apparatus comprise at least one of a velocity of the wireless communications apparatus and a current synchronization timing of the wireless communications apparatus; and a processor coupled to the memory configured to execute the instructions retained in the memory.

8. The wireless communications apparatus of claim 7, wherein the memory further retains instructions for selecting the predetermined period of time.

9. The wireless communications apparatus of claim 7, wherein the instructions for determining whether the timing adjustment command issued comprises instructions for receiving a downlink physical channel.

10. A wireless communications apparatus that facilitates conserving power when acquiring a time adjustment, comprising:

means for entering a sleep mode; means for waking from the sleep mode after a predetermined period of time passes;

means for signaling uplink information, the uplink information providing an uplink timing of the wireless communications apparatus;

means for determining whether a timing adjustment command has issued, wherein the issuance of the timing adjustment command is based on properties of the wireless communications apparatus;

means for adjusting the uplink timing based on the issued timing adjustment command when a timing adjustment command is determined to have issued; and

means for reentering the sleep mode without the adjusting when no timing adjustment command is determined to have issued;

wherein the properties of the wireless communications apparatus comprise at least one of a velocity of the wireless communications apparatus and a current synchronization timing of the wireless communications apparatus.

11. The wireless communications apparatus of claim **10**, further comprising means for selecting the predetermined period of time.

12. The wireless communications apparatus of claim **10**, wherein the signaling of the uplink information occurs upon waking from the sleep mode.

13. The wireless communications apparatus of claim **10**, wherein the signaling of the uplink information occurs prior to entering the sleep mode.

14. The wireless communications apparatus of claim **10**, wherein the signaling of the uplink information occurs while in the sleep mode.

15. The wireless communications apparatus of claim **10**, wherein the means for determining whether a timing adjustment command has issued comprises means for receiving a downlink physical channel.

16. A computer program product stored on a non-transitory computer-readable medium, comprising code for:

entering a sleep mode; waking from the sleep mode after a predetermined period of time passes;

signaling uplink information, the uplink information providing an uplink timing of a user equipment (UE);

determining whether a timing adjustment command has issued, wherein the issuance of the timing adjustment command is based on properties of the wireless communications apparatus;

adjusting the uplink timing based on the issued timing adjustment command when a timing adjustment command is determined to have issued; and

reentering the sleep mode without the adjusting when no timing adjustment command is determined to have issued;

wherein the properties of the wireless communications apparatus comprise at least one of a velocity of the wireless communications apparatus and a current synchronization timing of the wireless communications apparatus.

17. The computer program product of claim **16**, further comprising code for selecting the predetermined period of time.

18. The computer program product of claim **16**, wherein the signaling of the uplink information occurs upon waking from the sleep mode.

19. The computer program product of claim **16**, wherein the signaling of the uplink information occurs prior to entering the sleep mode.

20. The computer program product of claim **16**, wherein the signaling of the uplink information occurs while in the sleep mode.

21. In a wireless communication system, an apparatus comprising an integrated circuit configured to:

place the apparatus in a sleep mode; wake the apparatus from the sleep mode after a predetermined period of time passes;

signal uplink information at the apparatus, the uplink information providing an uplink timing of the apparatus;

determine whether a timing adjustment command has issued, wherein the issuance of the timing adjustment command is based on properties of the wireless communication system;

adjust the uplink timing at the apparatus based on the issued timing adjustment command when a timing adjustment command is determined to have issued; and

reenter the sleep mode without the adjusting when no timing adjustment command is determined to have issued;

wherein the properties of the UE comprise at least one of a velocity of the UE and a current synchronization timing of the UE.

22. A method for updating timing, comprising:

receiving, at a base station, a transmission from a waking user equipment (UE), the transmission including uplink information, the uplink information including an uplink timing of the UE;

determining, at the base station, that the waking UE requires a timing update based upon the uplink information;

calculating a timing adjustment, at the base station, for the waking UE when it is determined that waking UE requires a timing update; and

issuing a timing adjustment command, from the base station, to the waking UE, on a per need basis, when it is determined that the waking UE requires a timing update, wherein the issuance of the timing adjustment command is based on properties of the UE;

wherein the properties of the UE comprise at least one of a velocity of the UE and a current synchronization timing of the UE.

23. The method of claim **22**, further comprising comparing local reference timing with the uplink timing of the waking UE to determine a timing difference.

24. The method of claim **23**, wherein calculating the timing adjustment comprises generating a timing adjustment command based on the timing difference.

25. A wireless communications apparatus, comprising:

a memory that retains instructions for:

receiving a transmission from a waking user equipment (UE), the transmission including uplink information, the uplink information including an uplink timing of the UE;

determining that the waking UE requires a timing update based upon the uplink information; calculating a timing adjustment for the waking UE when it is determined that the waking UE requires a timing update; and

issuing a timing adjustment command to the waking UE, on a per need basis, when it is determined that the waking UE requires a timing update, wherein the issuance of the timing adjustment command is based on properties of the UE;

wherein the properties of the UE comprise at least one of a velocity of the UE and a current synchronization timing of the UE; and a processor coupled to the memory configured to execute the instructions retained in the memory.

26. The wireless communications apparatus of claim **25**, wherein the memory further retains instructions for comparing local reference timing with the uplink timing of the waking UE to determine a timing difference.

27. The wireless communications apparatus of claim **26**, wherein the instructions for calculating the timing adjustment comprises instructions for generating a timing adjustment command based on the timing difference.

28. A wireless communications apparatus that facilitates updating timing with reduced overhead, comprising:

means for receiving a transmission from a waking user equipment (UE), the transmission including uplink information, the uplink information including an uplink timing of the UE;

means for determining that the waking UE requires a timing update based upon the uplink information;

means for calculating a timing adjustment for the waking UE when it is determined that the waking UE requires a timing update; and

means for issuing a timing adjustment command to the waking UE, on a per-need basis, when it is determined that the waking UE requires a timing update, wherein the issuance of the timing adjustment command is based on properties of the UE;

wherein the properties of the UE comprise at least one of a velocity of the UE and a current synchronization timing of the UE.

29. The wireless communications apparatus of claim **28**, further comprising means for comparing local reference timing with the uplink timing of the waking UE to determine a timing difference.

30. The method of claim **29**, wherein the means for calculating the timing adjustment comprises means for generating a timing adjustment command based on the timing difference.

31. A computer program product stored on a non-transitory computer-readable medium, comprising code for:

receiving a transmission from a waking user equipment (UE), the transmission including uplink information, the uplink information including an uplink timing of the UE;

determining that the waking UE requires a timing update based upon the uplink information;

calculating a timing adjustment for the waking UE when it is determined that the waking UE requires a timing update; and

issuing a timing adjustment command to the waking UE, on a per need basis, when it is determined that the waking UE requires a timing update, wherein the issuance of the timing adjustment command is based on properties of the UE;

wherein the properties of the UE comprise at least one of a velocity of the UE and a current synchronization timing of the UE.

32. The computer program product of claim **31**, further comprising code for comparing local reference timing with the uplink timing of the waking UE to determine a timing difference.

33. In a wireless communication system, an apparatus comprising an integrated circuit configured to:

receive a transmission from a waking user equipment (UE), the transmission including uplink information, the uplink information including an uplink timing of the UE;

determine that the waking UE requires a timing update based upon the uplink information;

calculate the timing adjustment for the waking UE when it is determined the waking UE requires a timing update; and

issue a timing adjustment command to the waking UE, on a per-need basis, when it is determined that waking UE requires a timing update, wherein the issuance of the timing adjustment command is based on properties of the UE;

wherein the properties of the UE comprise at least one of a velocity of the UE and a current synchronization timing of the UE.