CLAIMS

1. A method for radio link synchronization and power control in CELL_FACH state, the method comprising:

transmitting a random access channel (RACH) preamble utilizing a randomly selected signature;

receiving an acquisition indicator in response to the RACH preamble;

receiving a fractional dedicated physical channel (F-DPCH) according to a F-DPCH reception starting time, wherein the F-DPCH reception starting time is based on an F-DPCH timing offset parameter, relative to acquisition indicator channel (AICH) reception, and timing of an AICH access slot including the acquisition indicator; and

transmitting a dedicated physical control channel (DPCCH) according to a DPCCH transmission starting time, wherein the DPCCH transmission starting time and the F-DPCH reception starting time are offset by a predetermined offset.

2. The method of claim 1 wherein a wireless transmit/receive unit (WTRU) acquires the F-DPCH timing offset parameter prior to transmitting the RACH preamble.

3. The method of claim 1 wherein the F-DPCH reception starting time is calculated by calculating a first offset calculated by adding the F-DPCH timing offset parameter multiplied by 256 chips to a predetermined number of chips, and adding the first offset to a beginning of the AICH access slot including the acquisition indicator, and the DPCCH transmission starting time is calculated by adding the predetermined offset to the F-DPCH reception starting time.

4. The method of claim 1 wherein the F-DPCH timing offset parameter is received via a system information block (SIB).

5. The method of claim 1 wherein the transmission of the DPCCH begins with a power control preamble, and wherein the power control preamble transmission starts after crossing at least one F-DPCH frame boundary after E-DCH resource is assigned.

6. The method of claim 1, further comprising:
transmitting a RACH message via an E-DCH.

7. The method of claim 6 wherein the start of an E-DCH frame occurs at a slot that minimizes a delay between the RACH preamble transmission and the RACH message transmission.

8. A wireless transmit/receive unit (WTRU) for radio link synchronization and power control in CELL_FACH state, the WTRU comprising:

a transmit/receive unit configured to transmit a random access channel (RACH) preamble utilizing a randomly selected signature, receive an acquisition indicator in response to the RACH preamble, receive a fractional dedicated physical channel (F-DPCH), and transmit a dedicated physical control channel (DPCCH); and

a controller configured to control the reception of the F-DPCH according to an F-DPCH reception starting time and the transmission of the DPCCH according to a DPCCH transmission starting time, wherein the F-DPCH reception starting time is based on an F-DPCH timing offset parameter relative to acquisition indicator channel (AICH) reception, and timing of an AICH access slot including the acquisition indicator, and wherein the DPCCH transmission starting time and the F-DPCH reception starting time are offset by a predetermined offset.

9. The WTRU of claim 8 wherein the controller receives the F-DPCH timing offset parameter prior to transmitting the RACH preamble.

10. The WTRU of claim 8 wherein the controller is configured to calculate the F-DPCH reception starting time by calculating a first offset calculated by adding the F-DPCH timing offset parameter multiplied by 256 chips to a predetermined number of chips, and adding the first offset to the beginning of the AICH access slot including the acquisition indicator, and calculate the DPCCH transmission starting time by adding the predetermined offset to the F-DPCH reception starting time.

11. The WTRU of claim 8 wherein the relative F-DPCH timing offset parameter is received via a system information block (SIB).

12. The WTRU of claim 8 wherein the transmission of the DPCCH begins with a power control preamble, and wherein the power control preamble transmission starts after crossing at least one F-DPCH frame boundary after E-DCH resource is assigned.

13. The WTRU of claim 8 wherein the predetermined offset is 1024 chips.

14. The WTRU of claim 8 wherein the transmit/receive unit is configured to transmit a RACH message via an E-DCH.

15. The WTRU of claim 14 wherein the start of an E-DCH frame occurs at a slot that minimizes a delay between the RACH preamble transmission and the RACH message transmission.

CLAIMS

1. A method for radio link synchronization and power control in CELL_FACH state, the method comprising:

receiving a system information block (SIB) including an offset value, wherein the SIB includes an indicator of a subset of access slots for transmitting a random access channel (RACH) preamble associated with an enhanced dedicated channel (E-DCH);

transmitting RACH the preamble, wherein the RACH preamble is transmitted in at least one of the subset of indicated access slots;

receiving an acquisition indicator in response to the RACH preamble;

receiving a fractional dedicated physical channel (F-DPCH) according to a F-DPCH reception starting time, the F-DPCH reception starting time beginning a relative F-DPCH timing offset parameter after a start of an acquisition indicator channel (AICH) access slot including the acquisition indicator, wherein the relative F-DPCH timing offset parameter is 256 chips multiplied by the offset value; and

transmitting a dedicated physical control channel (DPCCH) and an enhanced dedicated channel (E-DCH) after reception of the F-DPCH, wherein the DPCCH is transmitted according to a DPCCH transmission starting time, wherein the DPCCH transmission starting time and the F-DPCH reception starting time are offset by a predetermined offset.

2. The method of claim 1 wherein the offset value is acquired prior to transmitting the RACH preamble.

3. The method of claim 1 wherein the DPCCH transmission starting time is calculated by adding the predetermined offset to the F-DPCH reception starting time.

4. The method of claim 1 wherein the DPCCH transmission starting time is calculated by adding the relative F-DPCH timing offset parameter to a beginning of the AICH access slot including the acquisition indicator, and the F-DPCH reception starting time is calculated by subtracting the predetermined offset from the DPCCH transmission starting time.

5. The method of claim 1 wherein the transmission of the DPCCH begins with a power control preamble.

6. The method of claim 1 wherein the acquisition indicator indicates an index to an E-DCH resource.

7. The method of claim 1, further comprising:
transmitting a RACH message via the E-DCH.

8. The method of claim 7 wherein the start of an E-DCH frame occurs at a slot that minimizes a delay between the RACH preamble transmission and the RACH message transmission.

9. The method of claim 1 wherein the RACH preamble is transmitted utilizing a randomly selected signature.

10. The method of claim 9 wherein the signature is randomly selected from a set of up to 16 signatures.

11. The method of claim 1 wherein the RACH preamble is transmitted in a randomly selected access slot.

12. The method of claim 1 wherein the predetermined offset is 1024 chips.

13. The method of claim 1 wherein the acquisition indicator indicates an acknowledgement.

14. The method of claim 1 wherein the offset value has ten potential values.

15. The method of claim 1 wherein an initial transmission power of the DPCCH is derived from a power offset received in the SIB.

16. A wireless transmit/receive unit (WTRU) for radio link synchronization and power control in CELL_FACH state, the WTRU comprising:

a transmit/receive unit configured to receive a system information block (SIB) including an offset value, wherein the SIB includes an indicator of a subset of access slots for transmitting a random access channel (RACH) preamble associated with an enhanced dedicated channel (E-DCH), transmit RACH the preamble, wherein the RACH preamble is transmitted in at least one of the subset of indicated access slots, receive an acquisition indicator in response to the RACH preamble, receive a fractional dedicated physical channel (F-DPCH) according to a F-DPCH reception starting time, the F-DPCH reception starting time beginning relative F-DPCH timing offset parameter after a start of an acquisition indicator channel (AICH) access slot including the acquisition indicator and transmit a dedicated physical control channel (DPCCH) and an enhanced dedicated channel (E-DCH) after reception of the F-DPCH, wherein the DPCCH is transmitted according to a DPCCH transmission starting time, and wherein the DPCCH transmission starting time and the F-DPCH reception starting time are offset by a predetermined offset.

17. The WTRU of claim 16 the offset value is acquired prior to transmitting the RACH preamble.

18. The WTRU of claim 16 wherein the DPCCH transmission starting time is calculated by adding the predetermined offset to the F-DPCH reception starting time.

19. The WTRU of claim 16 wherein the DPCCH transmission starting time is calculated by adding the relative F-DPCH timing offset parameter to the beginning of the AICH access slot including the acquisition indicator, and the F-DPCH reception starting time is calculated by subtracting the predetermined offset from the DPCCH transmission starting time.

20. The WTRU of claim 16 wherein the transmission of the DPCCH begins with a power control preamble.

21. The WTRU of claim 16 wherein the acquisition indicator indicates an index to an E-DCH resource.

22. The WTRU of claim 21 wherein the start of an E-DCH frame occurs at a slot that minimizes a delay between the RACH preamble transmission and the RACH message transmission.

23. The WTRU of claim 16 wherein the transmit/receive unit is further configured to transmit a RACH message via the E-DCH.

24. The WTRU of claim 16 wherein the RACH preamble is transmitted utilizing a randomly selected signature.

25. The WTRU of claim 24 wherein the signature is randomly selected from a set of up to 16 signatures.

26. The WTRU of claim 16 wherein the RACH preamble is transmitted in a randomly selected access slot.

27. The WTRU of claim 16 wherein the predetermined offset is 1024 chips.

28. The WTRU of claim 16 wherein the acquisition indicator indicates an acknowledgement.

29. The WTRU of claim 16 wherein the offset value has ten potential values.

30. The WTRU of claim 16 wherein an initial transmission power of the DPCCH is derived from a power offset received in the SIB.