CLAIMS

1. One or more computer-readable media having instructions that, when executed, cause a user equipment (UE) to:

monitor a high speed downlink packet access (HSDPA) channel, wherein the HSDPA channel includes at least one of a high speed shared control channel (HS-SCCH), or a high speed physical downlink shared channel (HS-PDSCH);

determine a channel quality of the HSDPA channel, wherein the channel quality is determined based at least in part on a ratio of energy per chip to power density;

declare a radio link failure if the determined channel quality of the HSDPA channel remains below a predetermined threshold over a predetermined period of time; and

invoke a procedure to recover the radio link.

2. The one or more computer-readable media of claim 1, wherein the at least one processor is to execute instructions to further determine the channel quality based at least in part on a signal-to-interference ratio (SIR) or a block error ratio (BLER).

3. The one or more computer-readable media of claim 1, wherein the at least one processor is to execute instructions to control transmission of hybrid automatic repeat request (H-ARQ) feedback on the HS-DPCCH in response to receiving a successful transmission on the HS-SCCH or the HS-PDSCH.

4. The one or more computer-readable media of claim 1, wherein declaration of the radio link failure is based on whether a ratio of an acknowledgement (ACK) to negative acknowledgment (NACK), which is obtained from a cyclic redundancy check (CRC) on the HS-PDSCH transmission, falls below a predetermined threshold.

5. The one or more computer-readable media of claim 1, wherein the at least one processor is to execute instructions to further determine the channel quality based at least in part on a common pilot channel (CPICH) reception.

6. The one or more computer-readable media of claim 1, wherein the at least one processor is to execute instructions to control transmission a channel quality indicator (CQI) in response to the determined channel quality.

7. One or more computer-readable media having instructions that, when executed, cause a user equipment (UE) to:

monitor at least a high speed shared control channel (HS-SCCH);

determine a channel quality of the HS-SCCH, wherein the channel quality is determined based at least in part on a ratio of energy per chip to power density;

declare a radio link failure if the determined channel quality of the HS-SCCH remains below a predetermined threshold over a predetermined period of time; and

invoke a procedure to recover the radio link.

8. The one or more computer-readable media of claim 7, wherein the at least one processor is to execute instructions to further determine the channel quality based at least in part on a signal-to-interference ratio (SIR) or a block error ratio (BLER).

9. The one or more computer-readable media of claim 7, wherein the at least one processor is to execute instructions to control transmission of hybrid automatic repeat request (H-ARQ) feedback on the HS-DPCCH in response to receiving a successful transmission on the HS-SCCH or the HS-PDSCH.

10. The one or more computer-readable media of claim 7, wherein declaration of the radio link failure is based on whether a ratio of an acknowledgement (ACK) to negative acknowledgment (NACK) , which is obtained from a cyclic redundancy check (CRC) on the HS-PDSCH transmission, falls below a predetermined threshold.

11. The one or more computer-readable media of claim 7, wherein the at least one processor is to execute instructions to further determine the channel quality based at least in part on a common pilot channel (CPICH) reception.

12. The one or more computer-readable media of claim 7, wherein the at least one processor is to execute instructions to control transmission a channel quality indicator (CQI) in response to the determined channel quality.

13. An apparatus to be employed by a user equipment (UE), the apparatus comprising:

means for monitoring at least a high speed shared control channel (HS-SCCH);

means for determining a channel quality of the HS-SCCH, wherein the channel quality is determined based at least in part on a ratio of energy per chip to power density;

means for declaring a radio link failure if the determined channel quality of the HS-SCCH remains below a predetermined threshold over a predetermined period of time; and

means for invoking a procedure to recover the radio link.

14. The apparatus of claim 13, wherein the means for determining is further for determining the channel quality based at least in part on a signal-to-interference ratio (SIR) or a block error ratio (BLER).

15. The apparatus of claim 13, further comprising:

means for transmitting hybrid automatic repeat request (H-ARQ) feedback on the HS-DPCCH in response to receiving a successful transmission on the HS-SCCH or the HS-PDSCH.

16. The apparatus of claim 13, wherein declaration of the radio link failure is based on whether a ratio of an acknowledgement (ACK) to negative acknowledgment (NACK), which is obtained from a cyclic redundancy check (CRC) on the HS-PDSCH transmission, falls below a predetermined threshold.

17. The apparatus of claim 13, wherein the means for determining is further for determining the channel quality based at least in part on a common pilot channel (CPICH) reception.

18. The apparatus of claim 13, further comprising:

means for transmitting a channel quality indicator (CQI) in response to the determined channel quality.

19. An apparatus to be implemented in a user equipment (UE) capable of detecting a radio link (RL) failure, the apparatus comprising:

a measurement unit to:

monitor a high speed shared control channel (HS-SCCH) or a high speed physical downlink shared channel (HS-PDSCH) of a high speed downlink packet access (HSDPA)

channel, wherein the HSDPA channel is provided by a Node B; and

determine a channel quality of the HSDPA channel; and

a controller coupled with the measurement unit, the controller to:

declare a radio link (RL) failure if the determined channel quality remains below a predetermined threshold over a predetermined period of time; and

invoke a procedure to recover the RL when the RL failure is declared.

20. The apparatus of claim 19, wherein the measurement unit is to determine the channel quality based at least in part on a signal-to-interference ratio (SIR) or a block error ratio (BLER).

21. The apparatus of claim 19, wherein the controller is to control transmission of hybrid automatic repeat request (H-ARQ) feedback on a high speed dedicated physical control channel (HS-DPCCH) in response to receiving a successful transmission on the HS-SCCH or the HS-PDSCH.

22. The apparatus of claim 19, wherein the controller is to declare the RL failure based on whether a ratio of an acknowledgement (ACK) to negative acknowledgment (NACK), which is obtained from a cyclic redundancy check (CRC) on the HS-PDSCH transmission, falls below a predetermined threshold.

23. The apparatus of claim 19, wherein the measurement unit is to determine the channel quality based at least in part on a common pilot channel (CPICH) reception.

24. The apparatus of claim 19, wherein the controller is to control transmission a channel quality indicator (CQI) in response to the determined channel quality.

25. One or more computer-readable media having instructions that, when executed, cause a user equipment (UE) to:

monitor a high speed shared control channel (HS-SCCH) or a high speed physical downlink shared channel (HS-PDSCH) of a high speed downlink packet access (HSDPA) channel, wherein the HSDPA channel is provided by a Node B; and

determine a channel quality of the HSDPA channel;

declare a radio link (RL) failure if the determined channel quality remains below a

predetermined threshold over a predetermined period of time; and

invoke a procedure to recover the RL when the RL failure is declared.

26. The one or more computer-readable media of claim 25, wherein the at least one processor is to execute instructions to further determine the channel quality based at least in part on a signal-to-interference ratio (SIR) or a block error ratio (BLER).

27. The one or more computer-readable media of claim 25, wherein the at least one processor is to execute instructions to control transmission of hybrid automatic repeat request (H-ARQ) feedback on a high speed dedicated physical control channel (HS-DPCCH) in response to receiving a successful transmission on the HS-SCCH or the HS-PDSCH, and the at least one processor is to execute instructions control transmission a channel quality indicator (CQI) in response to the determined channel quality.

28. The one or more computer-readable media of claim 25, wherein declaration of the radio link failure is based on whether a ratio of an acknowledgement (ACK) to negative acknowledgment (NACK), which is obtained from a cyclic redundancy check (CRC) on the HS-PDSCH transmission, falls below a predetermined threshold.

29. The one or more computer-readable media of claim 25, wherein the at least one processor is to execute instructions to further determine the channel quality based at least in part on a common pilot channel (CPICH) reception.