Claims

1. A method, for use in a wireless device, for controlling one or more transmissions between the wireless device (100) and a base station (110), the one or more transmissions including at least an initial transmission on a radio uplink from the wireless device (100) to the base station (110), the method comprising:
   - determining the quality of the radio uplink between the wireless device (100) and the base station (110), the quality being based on at least one parameter used for a previous transmission on the radio uplink from the wireless device (100) to the base station (110);
   - setting a control parameter for controlling the transmission between the wireless device (100) and the base station (110) based on the determined quality of the radio uplink; and
   - transmitting the initial transmission.

2. The method of claim 1, wherein the control parameter is a power level; and wherein the method further comprises:
   - subsequent to not receiving an acknowledgment to one of the one or more transmissions, increasing the power level for a succeeding transmission.

3. The method of any previous claim, wherein the control parameter is a number of allowed retries.

4. The method of any previous claim, wherein setting the control parameter comprises:
   - setting a backoff time interval; and
   - selecting a backoff time as a random value from the backoff time interval.

5. The method of any previous claim, wherein the at least one parameter used for determining the quality of the radio uplink is one or more of: a power level, a modulation and coding scheme, or a timing advance.

6. The method of any previous claim, wherein determining the quality comprises

- providing a plurality of previous power levels used for a plurality of previous transmissions on the radio uplink;
- applying a filter to the plurality of previous power levels; and
- determining the quality based on the filtered plurality of previous power levels.

7. The method of claim 6, wherein the filter is one of:

- an averaging filter with or without a forgetting factor;
- a median filter; and
- a maximum filter.

8. The method of any of any previous claim, wherein determining the quality comprises

- providing a plurality of previous modulation and coding schemes used for a plurality of previous transmissions on the radio uplink;
- determining a plurality of bit-rates associated with the plurality of previous modulation and coding schemes;
- applying a filter to the plurality of bit-rates; and
- determining the quality based on the filtered plurality of bit-rates.

9. The method of any previous claim, wherein determining the quality comprises

- providing a plurality of timing advances used for a plurality of previous transmissions on the radio uplink;
- applying a filter to the plurality of timing advances; and
- determining the quality based on the filtered plurality of bit-rates.

10. The method of any previous claims, wherein determining the quality comprises
- providing a receive signal level of a transmission from the base station (110) to the wireless device (100);
- providing a minimum of the receive signal level which is required at the wireless device (110) for accessing the base station (110); and
- determining the quality based on a difference of the receive signal level and the minimum of the receive signal level.

11. The method of claim 10, wherein determining the quality comprises
- providing a maximum of the receive signal level which the wireless device (100) is configured to measure;
- normalize the difference of the receive signal level and the minimum of the receive signal level by a difference of the maximum of the receive signal level and the minimum of the receive signal level; and
- determining the quality based on the normalized difference of the receive signal level and the minimum of the receive signal level.

12. The method of any previous claim, wherein the previous transmission comprises the previous transmission of one or more normal bursts.

13. The method of any of claims 6 to 7, wherein the plurality of previous power levels corresponds to the power levels used for a predetermined number of previously transmitted bursts and/or the power levels used during a predetermined time interval.

14. The method of any of claims 6 to 7 and 13, wherein the plurality of previous power levels is limited to the power levels used for successful transmissions.

15. A wireless device (100) configured to communicate with a base station (110), wherein the wireless device (100) is configured to perform any of the methods according to claims 1 to 14.

CLAIMS

1. A method, for use in a wireless device, for controlling one or more transmissions between the wireless device and a base station, the one or more transmissions including at least an initial transmission on a radio uplink from the wireless device to the base station, the method comprising:

- determining a quality of the radio uplink between the wireless device and the base station, the quality being based on at least one parameter used for a previous transmission on the radio uplink from the wireless device to the base station;
- setting a control parameter for controlling the initial transmission between the wireless device and the base station based on the determined quality of the radio uplink; and
- transmitting the initial transmission, wherein determining the quality comprises:
- providing a plurality of previous modulation and coding schemes used for a plurality of previous transmissions on the radio uplink;
- determining a plurality of bit-rates associated with the plurality of previous modulation and coding schemes;
- applying a filter to the plurality of bit-rates; and
- determining the quality based on the filtered plurality of bit-rates.

2. A method, for use in a wireless device, for controlling one or more transmissions between the wireless device and a base station, the one or more transmissions including at least an initial transmission on a radio uplink from the wireless device to the base station, the method comprising:

- determining a quality of the radio uplink between the wireless device and the base station, the quality being based on at least one parameter used for a previous transmission on the radio uplink from the wireless device to the base station;
- setting a control parameter for controlling the initial transmission between the wireless device and the base station based on the determined quality of the radio uplink; and

- transmitting the initial transmission, wherein determining the quality comprises:
- providing a plurality of timing advances used for a plurality of previous transmissions on the radio uplink;
- applying a filter to the plurality of timing advances; and
- determining the quality based on the filtered plurality of timing advances.

3. A method, for use in a wireless device, for controlling one or more transmissions between the wireless device and a base station, the one or more transmissions including at least an initial transmission on a radio uplink from the wireless device to the base station, the method comprising:
   - determining a quality of the radio uplink between the wireless device and the base station, the quality being based on at least one parameter used for a previous transmission on the radio uplink from the wireless device to the base station;
   - setting a control parameter for controlling the initial transmission between the wireless device and the base station based on the determined quality of the radio uplink; and
   - transmitting the initial transmission, wherein determining the quality comprises:
   - providing a receive signal level of a transmission from the base station to the wireless device;
   - providing a minimum of the receive signal level which is required at the wireless device for accessing the base station; and
   - determining the quality based on a difference of the receive signal level and the minimum of the receive signal level.

4. The method of claim 3, wherein the control parameter comprises a power level; and wherein the method further comprises:
   - subsequent to not receiving an acknowledgment to one of the one or more transmissions, increasing the power level for a succeeding transmission.

5. The method of claim 4, wherein the control parameter comprises a number of allowed retries.

6. The method of claim 3, wherein setting the control parameter comprises:
   - setting a backoff time interval; and
   - selecting a backoff time as a random value from the backoff time interval.

7. The method of claim 3, wherein the at least one parameter used for determining the quality of the radio uplink comprises one or more of: a power level, a modulation and coding scheme, or a timing advance.

8. The method of claim 3, wherein determining the quality further comprises:
   - providing a maximum of the receive signal level which the wireless device is configured to measure;
   - normalizing the difference of the receive signal level and the minimum of the receive signal level by a difference of the maximum of the receive signal level and the minimum of the receive signal level; and
   - determining the quality based on the normalized difference of the receive signal level and the minimum of the receive signal level.

9. The method of claim 3, wherein the previous transmission comprises the previous transmission of one or more normal bursts.

10. A method, for use in a wireless device, for controlling one or more transmissions between the wireless device and a base station, the one or more transmissions including at least an initial transmission on a radio uplink from the wireless device to the base station, the method comprising:
   - determining a quality of the radio uplink between the wireless device and the base station, the quality being based on at least one parameter used for a previous transmission on the radio uplink from the wireless device to the base station;

- setting a control parameter for controlling the initial transmission between the wireless device and the base station based on the determined quality of the radio uplink; and
- transmitting the initial transmission, wherein determining the quality comprises:
- providing a plurality of previous power levels used for a plurality of previous transmissions on the radio uplink;
- applying a filter to the plurality of previous power levels; and
- determining the quality based on the filtered plurality of previous power levels, wherein the plurality of previous power levels is limited to the power levels used for successful transmissions.

11. The method of claim 10, wherein the filter is one of:

- an averaging filter with or without a forgetting factor;
- a median filter; and
- a maximum filter.

12. The method of claim 10, wherein the plurality of previous power levels correspond to the power levels used for a predetermined number of previously transmitted bursts and/or the power levels used during a predetermined time interval.

13. A wireless device to control one or more transmissions between the wireless device and a base station, the one or more transmissions including at least an initial transmission on a radio uplink from the wireless device to the base station, the device comprising:

a processor; and

a memory comprising computer readable instructions which, when executed, cause the processor to at least:

- determine the quality of the radio uplink between the wireless device and the base station, the quality being based on at least one parameter used for a previous transmission on the radio uplink from the wireless device to the base station;

- set a control parameter for controlling the initial transmission between the wireless device and the base station based on the determined quality of the radio uplink; and
- transmit the initial transmission, wherein determining the quality comprises:
- providing a plurality of previous power levels used for a plurality of previous transmissions on the radio uplink;
- applying a filter to the plurality of previous power levels; and
- determining the quality based on the filtered plurality of previous power levels, wherein the plurality of previous power levels is limited to the power levels used for successful transmissions.

14. The wireless device of claim 13, wherein the filter is one of:
    - an averaging filter with or without a forgetting factor;
    - a median filter; and
    - a maximum filter.

15. The wireless device of claim 13, wherein the plurality of previous power levels correspond to the power levels used for a predetermined number of previously transmitted bursts and/or the power levels used during a predetermined time interval.

16. A wireless device to control one or more transmissions between the wireless device and a base station, the one or more transmissions including at least an initial transmission on a radio uplink from the wireless device to the base station, the device comprising:

a processor; and

a memory comprising computer readable instructions which, when executed, cause the processor to at least:

- determine the quality of the radio uplink between the wireless device and the base station, the quality being based on at least one parameter used for a previous transmission on the radio uplink from the wireless device to the base station;

- set a control parameter for controlling the initial transmission between the wireless device and the base station based on the determined quality of the radio uplink; and
- transmit the initial transmission, wherein the instructions cause the processor to determine the quality by:
- providing a plurality of previous modulation and coding schemes used for a plurality of previous transmissions on the radio uplink;
- determining a plurality of bit-rates associated with the plurality of previous modulation and coding schemes;
- applying a filter to the plurality of bit-rates; and
- determining the quality based on the filtered plurality of bit-rates.

17. A wireless device to control one or more transmissions between the wireless device and a base station, the one or more transmissions including at least an initial transmission on a radio uplink from the wireless device to the base station, the device comprising:

a processor; and

a memory comprising computer readable instructions which, when executed, cause the processor to at least:

- determine the quality of the radio uplink between the wireless device and the base station, the quality being based on at least one parameter used for a previous transmission on the radio uplink from the wireless device to the base station;
- set a control parameter for controlling the initial transmission between the wireless device and the base station based on the determined quality of the radio uplink; and
- transmit the initial transmission, wherein the instructions cause the processor to determine the quality by:
- providing a plurality of timing advances used for a plurality of previous transmissions on the radio uplink;
- applying a filter to the plurality of timing advances; and
- determining the quality based on the filtered plurality of timing advances.

18. A wireless device to control one or more transmissions between the wireless device and a base station, the one or more transmissions including at least an initial transmission on a radio uplink from the wireless device to the base station, the device comprising:

a processor; and

a memory comprising computer readable instructions which, when executed, cause the processor to at least:

- determine a quality of the radio uplink between the wireless device and the base station, the quality being based on at least one parameter used for a previous transmission on the radio uplink from the wireless device to the base station;
- set a control parameter for controlling the initial transmission between the wireless device and the base station based on the determined quality of the radio uplink; and
- transmit the initial transmission, wherein the instructions cause the processor to determine the quality by:
- providing a receive signal level of a transmission from the base station to the wireless device;
- providing a minimum of the receive signal level which is required at the wireless device for accessing the base station; and
- determining the quality based on a difference of the receive signal level and the minimum of the receive signal level.

19. The wireless device of claim 18, wherein the control parameter is a power level; and wherein the instructions further cause the processor to:

- subsequent to not receiving an acknowledgment to one of the one or more transmissions, increase the power level for a succeeding transmission.

20. The wireless device of claim 19, wherein the control parameter comprises a number of allowed retries.

21. The wireless device of claim 18, wherein setting the control parameter comprises:

- setting a backoff time interval; and
- selecting a backoff time as a random value from the backoff time interval.

22. The wireless device of claim 18, wherein the at least one parameter used for determining the quality of the radio uplink comprises one or more of: a power level, a modulation and coding scheme, or a timing advance.

23. The wireless device of claim 18, wherein determining the quality further comprises:
- providing a maximum of the receive signal level which the wireless device is configured to measure;
- normalizing the difference of the receive signal level and the minimum of the receive signal level by a difference of the maximum of the receive signal level and the minimum of the receive signal level; and
- determining the quality based on the normalized difference of the receive signal level and the minimum of the receive signal level.

24. The wireless device of claim 18, wherein the previous transmission comprises the previous transmission of one or more normal bursts.