

What Is Claimed Is:

1. A method to report link quality measurements for downlink dual carrier operation, the method comprising:

determining whether all valid per slot link quality measurements can be included in a reporting message; and

dependent on at least in part that all the valid per slot link quality measurements cannot be included in the reporting message, including in the reporting message a subset of the valid per slot link quality measurements and of overall link quality measurements in accordance with a prioritization scheme.

2. A method as defined in claim 1 wherein including in the reporting message the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:

including in the reporting message the valid per slot link quality measurements; and

dependent on at least in part that the overall link quality measurements for a carrier include a plurality of overall bit error probabilities corresponding respectively to a plurality of different modulation types, including in the reporting message the overall bit error probability for only one of the plurality of different modulation types.

3. A method as defined in claim 1 wherein including in the reporting message the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:

including in the reporting message the valid per slot link quality measurements; and

dependent on at least in part that the overall link quality measurements for a carrier include one or more overall bit error probabilities corresponding respectively to different modulation types, omitting all of the one or more overall bit error probabilities for the carrier from the reporting message.

4. A method as defined in claim 1 wherein including in the reporting message the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:

including in the reporting message the valid per slot link quality measurements; and

5 alternating over consecutive reporting messages each carrier for which overall bit error probabilities are to be included, the overall bit error probabilities for a particular carrier corresponding to different modulation types used on the particular carrier.

5. A method as defined in claim 1 wherein including in the reporting message the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:

including in the reporting message the valid per slot link quality measurements; and

10 alternating over consecutive reporting messages inclusion of overall bit error probabilities for each of a plurality of modulation types used on a particular carrier.

6. A method as defined in claim 1 wherein including in the reporting message the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:

15 including in the reporting message all overall bit error probabilities for a first carrier and a carrier, the overall bit error probabilities for a particular carrier corresponding to different modulation types used on the particular carrier; and

20 including in the reporting message a subset of the valid per slot link quality measurements.

7. A method as defined in any one of claims 1 to 6 wherein the reporting message is a packet downlink ack/nack message.

8. A method to report link quality measurements for downlink dual carrier operation, the method comprising:

determining whether link quality measurements to be reported for downlink dual carrier operation include valid per slot bit error probability measurements and valid per slot interference measurements; and

dependent on at least in part that the link quality measurements to be reported include valid per slot bit error probability measurements and valid per slot interference measurements, including in a reporting message a combination of the valid per slot bit error probability measurements and the valid per slot interference measurements in accordance with a prioritization scheme.

9. A method as defined in claim 8 wherein including in the reporting message the combination of the valid per slot bit error probability measurements and the valid per slot interference measurements in accordance with a prioritization scheme comprises:

including the valid per slot bit error probability measurements in the reporting message;

dependent on at least in part that available space remains in the reporting message, including one or more valid per slot interference measurements able to fit in the available space; and

dependent on at least in part that available space does not remain in the reporting message, omitting reporting of one or more valid interference measurements.

10. A method as defined in claim 8 wherein including in the reporting message the combination of the valid per slot bit error probability measurements and the valid per slot interference measurements in accordance with a prioritization scheme comprises:

including the valid per slot bit error probability measurements in the reporting message; and

dependent on at least in part that all valid per slot interference measurements for a particular carrier supporting dual carrier operation do not fit in available space of the reporting message, omitting reporting of the valid per slot interference measurements for the particular carrier.

11. A method as defined in claim 8 wherein including in the reporting message the combination of the valid per slot bit error probability measurements and the valid per slot interference measurements in accordance with a prioritization scheme comprises alternating between including the per slot bit error probability measurements and including the valid per slot interference measurements in consecutive reporting messages.

12. A method as defined in claim 8 wherein including in the reporting message the combination of the valid per slot bit error probability measurements and the valid per slot interference measurements in accordance with a prioritization scheme comprises alternating over consecutive reporting messages inclusion of the per slot bit error probability measurements and per slot interference measurements for different carriers.

13. A method as defined in any one of claims 8 to 12 wherein the reporting message is a packet downlink ack/nack message.

14. An article of manufacture storing machine readable instructions which, when executed, cause a machine to perform the method defined in any one of claims 1 to 13.

15. An apparatus comprising a processor configured to perform the method defined in any one of claims 1 to 13.

What Is Claimed Is:

1. A method to report link quality measurements for downlink dual carrier operation, the method comprising:

determining whether all valid per slot link quality measurements can be included in a reporting message (300, 400); and

dependent on at least in part that all the valid per slot link quality measurements cannot be included in the reporting message (300, 400), including in the reporting message (300, 400) a subset of the valid per slot link quality measurements characterized in that the reporting message includes overall link quality measurements in accordance with a prioritization scheme.

2. A method as defined in claim 1 wherein including in the reporting message (300, 400) the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:

including in the reporting message (300, 400) the valid per slot link quality measurements; and

dependent on at least in part that the overall link quality measurements for a carrier (205, 210) include a plurality of overall bit error probability measurements corresponding respectively to a plurality of different modulation types, including in the reporting message (300, 400) the overall bit error probability measurement for only one of the plurality of different modulation types.

3. A method as defined in claim 1 wherein including in the reporting message (300, 400) the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:

including in the reporting message (300, 400) the valid per slot link quality measurements; and

dependent on at least in part that the overall link quality measurements for a carrier (205, 210) include one or more overall bit error probability measurements corresponding respectively to different modulation types, omitting all of the one or more overall bit error probability measurements for the carrier (205, 210) from the reporting message (300, 400).

4. A method as defined in claim 1 wherein including in the reporting message (300, 400) the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:

including in the reporting message (300, 400) the valid per slot link quality measurements; and

alternating, over consecutive reporting messages (300, 400), reporting of overall bit error probability measurements for one of a plurality of carriers (205, 210), the overall bit error probability measurements for a particular carrier (205, 210) corresponding to different modulation types used on the particular carrier (205, 210).

5. A method as defined in claim 1 wherein including in the reporting message (300, 400) the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:

including in the reporting message (300, 400) the valid per slot link quality measurements; and

alternating over consecutive reporting messages (300, 400) inclusion of overall bit error probability measurements for each of a plurality of modulation types used on a particular carrier (205, 210).

6. A method as defined in claim 1 wherein including in the reporting message (300, 400) the subset of the valid per slot link quality measurements and of the overall link quality measurements in accordance with the prioritization scheme comprises:
including in the reporting message (300, 400) one or more overall bit error probability measurements for a first carrier (205, 210) and a second carrier (205, 210), the one or more overall bit error probability measurements for a particular carrier (205, 210) corresponding to different modulation types used on the particular carrier (205, 210); and
including in the reporting message (300, 400) a subset of the valid per slot link quality measurements.
7. A method as defined in any one of claims 1 to 6 wherein the reporting message (300, 400) is a packet downlink ack/nack message.
8. A method as defined in claim 2 wherein the one of the plurality of different modulations types corresponds to a modulation type for which at least one of a highest number of blocks or a highest weighted number of blocks has been received during a reporting period.
9. A method as defined in claim 4 or claim 5 further comprising increasing a measurement interval for determining the valid per slot link quality measurements.
10. A method as defined in any one of claims 1 to 9 wherein the valid per slot link quality measurements include valid per slot mean bit error probability measurements.
11. A method as defined in any one of claims 1 to 9 wherein the valid per slot link quality measurements include valid per slot interference measurements.

12. A method as defined in claim 1 wherein the reporting message (300, 400) is at least one of an EGPRS packet downlink ack/nack type 2 message or an EGPRS packet downlink ack/nack type 3 message, and further comprising:

including the subset of the valid per slot link quality measurements and of the overall link quality measurements in the at least one of the EGPRS packet downlink ack/nack type 2 message or the EGPRS packet downlink ack/nack type 3 message; and

omitting an information element of the at least one of the EGPRS packet downlink ack/nack type 2 message or the EGPRS packet downlink ack/nack type 3 message that is specified to contain ack/nack information.

13. A method as defined in 1 wherein the reporting message (300, 400) is at least one of an EGPRS packet downlink ack/nack type 2 message or an EGPRS packet downlink ack/nack type 3 message, and further comprising including a first subset of the valid per slot link quality measurements and of the overall link quality measurements to report for a secondary carrier in a channel report information element not located in an extension information element of the at least one of the EGPRS packet downlink ack/nack type 2 message or the EGPRS packet downlink ack/nack type 3 message.

14. An article of manufacture storing machine readable instructions which, when executed, cause a machine to perform the method defined in any one of claims 1 to 13.

15. An apparatus comprising a processor configured to perform the method defined in any one of claims 1 to 13.