

CLAIMS

1. A communication method, the method being applied for ultra-wideband sensing and comprising:
receiving, by a responder, at least one first sensing packet from an initiator; and
transmitting, by the responder, at least one first measurement report frame according to the at least one first
5 sensing packet, and a respective first measurement report frame of the at least one first measurement report frame
comprises at least one partial report;

wherein a respective partial report of at least one partial report comprises a segment identifier for identifying a
segment corresponding to the respective partial report, an antenna identifier for identifying an antenna corresponding
to the respective partial report and a channel identifier for identifying a channel corresponding to the respective
10 partial report.

2. The method according to claim 1, wherein the channel is a channel on which the segment is transmitted by
the initiator.

3. The method according to claim 1 or 2, wherein the at least one first sensing packet comprises one or more
segments,
15 wherein the respective partial report of the at least one partial report corresponds to the segment of the at least
one first sensing packet and the antenna of the responder for receiving the segment.

4. The method according to any one of claims 1 to 3, wherein the respective first measurement report frame
further comprises Report Identity Control field, Report Parameters Control field and Receive Report(s) field, wherein
the at least one partial report is carried in the Receive Report(s) field.

20 5. The method according to claim 4, wherein the Report Identity Control field comprises Responder Address
Mode field, Measurement ID field and Responder Address field;

wherein the Responder Address Mode field indicates the presence and size of the Responder Address field;

the Measurement ID field indicates a unique ID that identifies a sensing measurement instance;

the Responder Address field carries an address identifier for identifying the responder.

25 6. The method according to claim 4 or 5, wherein the Report Parameters Control field comprises Number of Rx
Antennas, Bitmap Length, Bitmap Offset, Number of Segments, Compression and CIR Bitmap.

7. The method according to any one of claims 1 to 6, wherein the respective partial report further comprises
Report IDs field, Individual Report Descriptor field and CIR Taps field;

wherein the Report IDs field carries the segment identifier, the antenna identifier and the channel identifier;
the CIR Taps field contains CIR tap values, one CIR tap value for each bit in the CIR Bitmap that is set to one.

8. The method according to claim 7, wherein the Individual Report Descriptor field comprises Timing Offset, Normalization Factor and RSSI;

5 wherein the Timing Offset indicates a time offset between a reference tap and the respective partial report timing grid;

the Normalization Factor indicates a normalization factor applied to the CIR Taps;

the RSSI indicates a received signal strength at the antenna.

9. The method according to any one of claims 1 to 8, wherein the at least one partial report comprises multiple
10 partial reports, and the multiple partial reports are arranged in a preset order.

10. An apparatus, applied for ultra-wideband sensing, comprising:

at least one memory storing program instructions;

and at least one processor coupled to the at least one memory, wherein the program instructions, when executed by the at least one processor, enable the apparatus to:

15 receive at least one first sensing packet from an initiator; and

transmit at least one first measurement report frame according to the at least one first sensing packet, and a respective first measurement report frame of the at least one first measurement report frame comprises at least one partial report;

20 wherein a respective partial report of at least one partial report comprises a segment identifier for identifying a segment corresponding to the respective partial report, an antenna identifier for identifying an antenna corresponding to the respective partial report and a channel identifier for identifying a channel corresponding to the respective partial report.

11. The apparatus according to claim 10, wherein the channel is a channel on which the segment is transmitted by the initiator.

25 12. The apparatus according to claim 10 or 11, wherein the at least one first sensing packet comprises one or more segments,

wherein the respective partial report of the at least one partial report corresponds to the segment of the at least one first sensing packet and the antenna of the apparatus for receiving the segment.

13. The apparatus according to any one of claims 10 to 12, wherein the respective first measurement report

frame further comprises Report Identity Control field, Report Parameters Control field and Receive Report(s) field, wherein the at least one partial report is carried in the Receive Report(s) field.

14. The apparatus according to claim 13, wherein the Report Identity Control field comprises Responder Address Mode field, Measurement ID field and Responder Address field;

5 wherein the Responder Address Mode field indicates the presence and size of the Responder Address field;
the Measurement ID field indicates a unique ID that identifies a sensing measurement instance;
the Responder Address field carries an address identifier for identifying the apparatus.

15. The apparatus according to claim 13 or 14, wherein the Report Parameters Control field comprises Number of Rx Antennas, Bitmap Length, Bitmap Offset, Number of Segments, Compression and CIR Bitmap.

10 16. The apparatus according to any one of claims 10 to 15, wherein the respective partial report further comprises Report IDs field, Individual Report Descriptor field and CIR Taps field;

wherein the Report IDs field carries the segment identifier, the antenna identifier and the channel identifier;
the CIR Taps field contains CIR tap values, one CIR tap value for each bit in the CIR Bitmap that is set to one.

15 17. The apparatus according to claim 16, wherein the Individual Report Descriptor field comprises Timing Offset, Normalization Factor and RSSI;

wherein the Timing Offset indicates a time offset between a reference tap and the respective partial report timing grid;

the Normalization Factor indicates a normalization factor applied to the CIR Taps;

the RSSI indicates a received signal strength at the antenna.

20 18. The apparatus according to any one of claims 10 to 17, wherein the at least one partial report comprises multiple partial reports, and the multiple partial reports are arranged in a preset order.

19. A wireless communication apparatus, comprising various modules configured to execute the wireless communication method according to any one of claims 1 to 9.

25 20. A computer-readable medium storing computer execution instructions which, when executed by a processor, causes the processor to execute the method according to any one according to claims 1 to 9.