

CLAIMS

1. A communication apparatus comprising:
circuitry, which, in operation, generates a first frame for a sounding procedure;
5 and
a transmitter, which, in operation, transmits the first frame to each of one or more peer communication apparatuses, the first frame comprising a first field which indicates an intended usage of the sounding procedure.
- 10 2. The communication apparatus of claim 1, wherein the first frame comprises a second field which indicates an intended type of the sounding procedure.
3. The communication apparatus of claim 1, wherein the first frame comprises a third field which indicates one or more intended communication apparatuses which will
15 be engaged in the sounding procedure.
4. The communication apparatus of claim 1, further comprising:
a receiver, which, in operation, receives a second frame from each of the one or more peer communication apparatuses, the second frame comprising a first field
20 which indicates one or more recommended type of the sounding procedure.
5. The communication apparatus of claim 4, wherein the first field of the second frame indicates that the each of the one or more peer communication apparatuses are to be exempted from the sounding procedure.
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6. The communication apparatus of claim 1, wherein the circuitry, which, in operation, further generates a third frame which starts the sounding procedure.
7. The communication apparatus of claim 6, wherein the third frame comprises a first field which indicates a type of the sounding procedure and a second field which indicates a type of sounding feedback.
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8. The communication apparatus of claim 7, wherein when the type of the sounding procedure refers to an explicit sounding procedure and the type of the sounding feedback refers to calibration feedback, the sounding procedure includes a calibration procedure.
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9. The communication apparatus of claim 1, wherein when the sounding procedure is a hybrid sounding procedure comprising an explicit sounding portion and an implicit sounding portion, at least one communication apparatus among the communication apparatus and the one or more peer communication apparatuses is
5 configured to be engaged in the explicit sounding portion of the sounding procedure, and the remaining communication apparatuses among the communication apparatus and the one or more peer communication apparatuses other than the at least one communication apparatus are configured to be engaged in the implicit sounding portion of the sounding procedure.
10. A peer communication apparatus comprising:
a receiver, which, in operation, receives a first frame for a sounding procedure from a communication apparatus; and
circuitry, which, in operation, processes the first frame, the first frame
15 comprising a first field which indicates an intended usage of the sounding procedure.
11. The peer communication apparatus of claim 10, wherein the first frame comprises a second field which indicates an intended type of the sounding procedure.
- 20 12. The peer communication apparatus of claim 10, wherein the first frame comprises a third field which indicates one or more intended communication apparatuses which will be engaged in the sounding procedure.
13. The peer communication apparatus of claim 10, further comprising:
25 a transmitter, which, in operation, transmits a second frame to the communication apparatus, the second frame comprising a first field which indicates one or more recommended type of the sounding procedure.
14. The peer communication apparatus of claim 10, wherein when the sounding
30 procedure is a hybrid sounding procedure comprising an explicit sounding portion and an implicit sounding portion, at least one communication apparatus among the communication apparatus and the one or more peer communication apparatuses is configured to be engaged in the explicit sounding portion of the sounding procedure, and the remaining communication apparatuses among the communication apparatus
35 and the one or more peer communication apparatuses other than the at least one communication apparatus are configured to be engaged in the implicit sounding portion of the sounding procedure..

15. A communication method comprising:
generating a first frame for a sounding procedure; and
transmitting the first frame to each of one or more peer communication
5 apparatuses, the first frame comprising a first field which indicates an intended usage
of the sounding procedure.