

SUMMARY

[6] Non-limiting examples on communication apparatuses and communication methods for channel sounding in context of EHT WLAN are provided in this disclosure.

[7] In one aspect, the present disclosure provides a communication apparatus comprising: circuitry, which, in operation, generates a first frame for a sounding procedure; 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 scheme of a transmission which utilizes results of the sounding procedure, and the intended scheme being selected from a plurality of candidates.

[8] In another aspect, the present disclosure provides 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 comprising a first field which indicates an intended scheme of a transmission which utilizes results of the sounding procedure, and the intended scheme being selected from a plurality of candidates.

[9] In another aspect, the present disclosure provides 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 apparatuses, the first frame comprising a first field which indicates an intended scheme of a transmission which utilizes results of the sounding procedure, and the intended scheme being selected from a plurality of candidates.

[9a] In another aspect, the present disclosure provides a communication method comprising: receiving a first frame for a sounding procedure from a communication apparatus; and processing the first frame, the first frame comprising a first field which indicates an intended scheme of a transmission which utilizes results of the sounding procedure, and the intended scheme being selected from a plurality of candidates.

[9b] In another aspect, the present disclosure provides an integrated circuit comprising: at least one input, which, in operation, inputs an electronic signal; and control circuitry coupled to the at least one input, which, in operation, controls: generating a first frame for a sounding procedure; and transmitting the first frame to
5 each of one or more peer communication apparatuses, the first frame comprising a first field which indicates an intended scheme of a transmission which utilizes results of the sounding procedure, and the intended scheme being selected from a plurality of candidates.

10 [9c] In another aspect, the present disclosure provides an integrated circuit comprising: at least one input, which, in operation, inputs an electronic signal; and control circuitry coupled to the at least one input, which, in operation, controls: receiving a first frame for a sounding procedure from a communication apparatus; and processing the first frame, the first frame comprising a first field which indicates
15 an intended scheme of a transmission which utilizes results of the sounding procedure, and the intended scheme being selected from a plurality of candidates.

[10] It should be noted that general or specific examples may be implemented as a system, a method, an integrated circuit, a computer program, a storage
20 medium, or any selective combination thereof.

[11] Additional benefits and advantages of the examples in this disclosure will become apparent from the specification and drawings. The benefits and/or advantages may be individually obtained by the various examples and features
25 of the specification and drawings, which need not all be provided in order to obtain one or more of such benefits and/or advantages.

CLAIMS

1. A communication apparatus comprising:
circuitry, which, in operation, generates a first frame for a sounding
5 procedure; 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 scheme of a transmission which utilizes results of the sounding
procedure, and the intended scheme being selected from a plurality of candidates.
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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
15 third field which indicates one or more intended communication apparatuses which
will 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
20 or more peer communication apparatuses, the second frame comprising a first field
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 at least one peer communication apparatus among the one or
25 more peer communication apparatuses is to be exempted from the sounding
procedure.
6. The communication apparatus of claim 1, wherein the circuitry, which, in
operation, further generates a third frame which starts the sounding procedure.
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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.
- 35 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.

9. The communication apparatus of claim 1, wherein when the sounding
5 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
10 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:
15 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 comprising a first field which indicates an intended scheme of a transmission which utilizes results of the sounding procedure, and the intended scheme being selected
20 from a plurality of candidates.

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.
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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.

30 13. The peer communication apparatus of claim 10, further comprising:
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.

35 14. The peer communication apparatus of claim 10, 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 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
 5 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
 10 transmitting the first frame to each of one or more peer communication apparatuses, the first frame comprising a first field which indicates an intended scheme of a transmission which utilizes results of the sounding procedure, and the intended scheme being selected from a plurality of candidates.

15 16. A communication method comprising:
 receiving a first frame for a sounding procedure from a communication apparatus; and
 processing the first frame, the first frame comprising a first field which indicates an intended scheme of a transmission which utilizes results of the sounding
 20 procedure, and the intended scheme being selected from a plurality of candidates.

17. An integrated circuit comprising:
 at least one input, which, in operation, inputs an electronic signal; and
 control circuitry coupled to the at least one input, which, in operation, controls:
 25 generating a first frame for a sounding procedure; and
 transmitting the first frame to each of one or more peer communication apparatuses,
 the first frame comprising a first field which indicates an intended scheme of a transmission which utilizes results of the sounding procedure, and the intended
 30 scheme being selected from a plurality of candidates.

18. An integrated circuit comprising:
 at least one input, which, in operation, inputs an electronic signal; and
 control circuitry coupled to the at least one input, which, in operation, controls:
 35 receiving a first frame for a sounding procedure from a communication apparatus; and

processing the first frame, the first frame comprising a first field which indicates an intended scheme of a transmission which utilizes results of the sounding procedure, and the intended scheme being selected from a plurality of candidates.