CLAIMS

1. A wireless communication method implemented by Smart Node (SN) including:

a SN Communication Unit (SN CU) for receiving and decoding side control information from a Base Station (BS) and a SN Forwarding Unit (SN FU) for carrying out amplify-and-forward operation using the side control information received by the SN CU, the method comprising:

in response to the SN CU being in a Radio Link Failure (RLF) state or a beam failure recovery, BFR, state, determining that a status of the SN FU is off,

wherein the off status indicates the SN FU to turn off the forwarding functionality.

2. The wireless communication method of claim 1, wherein the off status indicates the SN FU to disable both the transmitting and receiving operation.

3. The wireless communication method of claim 2, wherein the off status indicates the off status of forwarding links between SN FU and BS and forwarding links between SN FU and UE are off.

4. The wireless communication method of claim 1, wherein the SN is network-controlled repeater.

5. The wireless communication method of claim 1, the method comprises:

receiving, by the SN, status indication information, wherein the status indication information indicates an on status, the on status corresponds to beam index.

6. The wireless communication method of claim 5, wherein the status indication information indicates a duration of the on status.

7. The wireless communication method of claim 5, wherein the on status of the status indication information indicates the SN to amplify and forward received signals.

8. The wireless communication method of claim 1, wherein the SN FU is a Radio Unit (RU) or a Re-configurable Intelligent Surface (RIS).

9. The wireless communication method of claim 1, wherein the SN CU is a Mobile Terminal (MT), part of a User Equipment (UE) or a third-party Internet of Things (IoT) device.

10. A Smart Node (SN) including a processor and comprising:

a SN Communication Unit (SN CU) configured to receive and decode side control information from a Base Station (BS),

a SN Forwarding Unit (SN FU) configured to carry out amplify-and-forward operation using the side control information received by the SN CU,

wherein, in response to the SN CU being in a Radio Link Failure (RLF) state or a beam failure recovery (BFR) state, the processor is configured to determine that a status of the SN FU is off,

wherein the off status indicates the SN FU to turn off the forwarding functionality.

11. The SN of claim 10, wherein the off status indicates the SN FU to disable both the transmitting and receiving operation.

12. The SN of claim 10, wherein the off status indicates the off status of forwarding links between SN FU and BS and forwarding links between SN FU and UE are off.

13. The SN of claim 10, wherein the SN is network-controlled repeater.

14. The SN of claim 10, the SN CU further configured to:

receive, by the SN, status indication information, wherein the status indication information indicates an on status, the on status corresponds to beam index.

15. The SN of claim 14, wherein the status indication information indicates a duration of the on status.

16. The SN of claim 14, wherein the on status of the status indication information indicates the SN to amplify and forward received signals.

17. The SN of claim 10, wherein the SN FU is a Radio Unit (RU) or a Re-configurable Intelligent Surface (RIS).

18. The SN of claim 10, wherein the SN CU is a Mobile Terminal (MT), part of a User Equipment (UE) or a third-party Internet of Things (IoT) device.