CLAIMS

1. A link monitoring method, wherein the method comprises:

receiving outer-code encoded data;

performing inner-code encoding on the outer-code encoded data, and outputting inner-code encoded data;

performing outer-code decoding on the outer-code encoded data; and

determining, based on a status of performing outer-code decoding on the outer-code encoded data, quality of a link for transmission of the outer-code encoded data.

2. The method according to claim 1, wherein the determining, based on a status of performing outer-code decoding on the outer-code encoded data, quality of a link for transmission of the outer-code encoded data comprises:

determining a quantity of erroneous symbols in each of P1 codeword sequences based on a status of performing outer-code decoding on the P1 codeword sequences of the outer-code encoded data, wherein P1 is a positive integer; and

determining the quality of the link based on a quantity of erroneous symbols in the P1 codeword sequences.

3. The method according to claim 1, wherein the determining, based on a status of performing outer-code decoding on the outer-code encoded data, quality of a link for transmission of the outer-code encoded data comprises:

determining, based on a status of performing outer-code decoding on a codeword sequence of the outer-code encoded data, an indication parameter corresponding to the codeword sequence; and

determining the quality of the link based on indication parameters corresponding to P2 codeword sequences of the outer-code encoded data, wherein P2 is a positive integer.

4. The method according to any one of claims 1 to 3, wherein outer-code decoded data is data on which outer-code encoding and de-skewing are performed.

5. The method according to any one of claims 1 to 4, wherein the outer-code decoded data is data on which outer-code encoding, lane reordering, and first de-interleaving are performed.

6. The method according to any one of claims 1 to 5, wherein the outer-code decoded data is data on which outer-code encoding and data extraction are performed.

7. The method according to any one of claims 1 to 6, wherein the inner-code encoded data is data on which outer-code encoding is performed.

8. The method according to any one of claims 1 to 6, wherein the inner-code encoded data is

data on which outer-code encoding and de-skewing are performed.

9. The method according to any one of claims 1 to 6, wherein the inner-code encoded data is data on which outer-code encoding, de-skewing, and lane reordering are performed.

10. The method according to any one of claims 1 to 6, wherein the inner-code encoded data is data on which outer-code encoding, de-skewing, lane reordering, and first de-interleaving are performed.

11. The method according to any one of claims 1 to 10, wherein the inner-code encoded data is data on which outer-code encoding and data processing are performed, and the data processing comprises first interleaving.

12. A link monitoring method, wherein the method comprises:

receiving outer-code encoded and inner-code encoded data;

performing inner-code decoding on the outer-code encoded and inner-code encoded data, and outputting inner-code decoded data;

performing outer-code decoding on the inner-code decoded data; and

determining, based on a status of performing outer-code decoding on the inner-code decoded data, quality of a link for transmission of the outer-code encoded and inner-code encoded data.

13. The method according to claim 12, wherein the determining, based on a status of performing outer-code decoding on the inner-code decoded data, quality of a link for transmission of the outer-code encoded and inner-code encoded data comprises:

determining a quantity of erroneous symbols in each of P3 codeword sequences based on a status of performing outer-code decoding on the P3 codeword sequences of the inner-code decoded data, wherein P3 is a positive integer; and

determining the quality of the link based on a quantity of erroneous symbols in the P3 codeword sequences.

14. The method according to claim 12, wherein the determining, based on a status of performing outer-code decoding on the inner-code decoded data, quality of a link for transmission of the outer-code encoded and inner-code encoded data comprises:

determining, based on a status of performing outer-code decoding on a codeword sequence of the inner-code decoded data, an indication parameter corresponding to the codeword sequence; and

determining the quality of the link based on indication parameters corresponding to P4 codeword sequences of the inner-code decoded data, wherein P4 is a positive integer.

15. The method according to any one of claims 12 to 14, wherein outer-code decoded data is data on which inner-code decoding and de-skewing are performed.

16. The method according to any one of claims 12 to 15, wherein the outer-code decoded data

is data on which inner-code decoding and first de-interleaving are performed.

17. The method according to any one of claims 12 to 16, wherein the outer-code decoded data is data on which inner-code decoding, lane reordering, and first de-interleaving are performed.

18. The method according to any one of claims 12 to 17, wherein the outer-code decoded data is data on which inner-code decoding and data extraction are performed.

19. The method according to any one of claims 12 to 18, wherein outer-code encoded and inner-code encoded data is data on which data processing is performed after the outer-code coding and before the inner-code coding, wherein the data processing comprises first interleaving; and

after the inner-code decoding and before the outer-code decoding, the method further comprises:

performing inverse processing of the data processing on the inner-code decoded data, wherein the inverse processing comprises second de-interleaving.

20. The method according to any one of claims 12 to 19, wherein the output data is data on which inner-code decoding is performed.

21. The method according to any one of claims 12 to 19, wherein the outer-code encoded and inner-code encoded data is data on which data processing is performed after the outer-code coding and before the inner-code coding, wherein the data processing comprises first interleaving; and

after the inner-code decoding and before the outer-code decoding, the method further comprises:

performing inverse processing of the data processing on the inner-code decoded data, wherein the inverse processing comprises second de-interleaving; and

outputting the inner-code decoded and inverse processed data.

22. A link monitoring apparatus, configured to implement the method according to any one of claims 1 to 21.

23. A communication system, comprised a first device and a second device, wherein the first device is configured to implement the method according to any one of claims 1 to 11, and the second device is configured to implement the method according to any one of claims 12 to 21.