CLAIMS

What is claimed is:

1. A method for transmitting information, applied to a base station, the method comprising:

determining whether an in-device interference is to occur in a user equipment, wherein the in-device interference involves an operating frequency range of a new radio (NR) radio frequency transceiver unit in the user equipment, and occurs during long term evolution (LTE)-NR interworking, and the in-device interference comprises intermodulation interference;

determining a target frequency range involved in the in-device interference in the user equipment when the in-device interference is to occur, wherein the target frequency range comprises a target downlink frequency range and at least one target uplink frequency range;

adjusting a transmission resource configuration within the target frequency range; and

transmitting information using a transmission resource after adjustment of the transmission resource configuration within the target frequency range, to avoid occurrence of the in-device interference,

wherein determining whether the in-device interference is to occur in the user equipment comprises:

determining, after the user equipment accesses a network, whether the in-device interference is to occur in the user equipment based on an acquired radio frequency support capability of the user equipment.

2. The method according to claim 1, wherein the determining whether the in-device interference is to occur in the user equipment comprises:

acquiring radio frequency support capability information of the user equipment, wherein the radio frequency support capability information at least comprises an uplink operating frequency range and a downlink operating frequency range; and

determining, based on the uplink operating frequency range and the downlink operating frequency range, whether the in-device interference is to occur in the user equipment.

3. The method according to claim 1, wherein the determining whether the in-device interference is to occur in the user equipment comprises:

acquiring an uplink scheduling request sent by the user equipment;

determining a current uplink operating frequency range of the user equipment based on the uplink scheduling request;

determining downlink schedule information for the user equipment, wherein the downlink schedule information at least comprises a downlink operating frequency range; and

determining, based on the current uplink operating frequency range and the downlink operating frequency range, whether the in-device interference is to occur.

4. The method according to claim 1, wherein the determining whether the in-device interference is to occur in the user equipment comprises:

determining that no predefined interference avoidance setting is configured in the user equipment, the interference avoidance setting being: when the in-device interference occurs, triggering a predefined operation to stop information transmission within at least one target operating frequency range involved in the in-device interference.

5. The method according to claim 1, wherein the adjusting the transmission resource configuration within the target frequency range comprises at least one of:

adjusting a downlink transmission resource configuration for the target downlink frequency range; and

adjusting an uplink transmission resource configuration for the target uplink frequency range.

6. The method according to claim 5, wherein the adjusting the downlink transmission resource configuration within the target downlink frequency range comprises at least one of:

canceling the downlink transmission resource configuration currently within the target downlink frequency range;

configuring a downlink transmission resource, originally configured for the target downlink frequency range, within an interference-free downlink frequency range; and

narrowing the target downlink frequency range, and configuring the downlink transmission resource within a narrowed downlink frequency range.

7. The method according to claim 5, wherein the adjusting the uplink transmission resource configuration for the target uplink frequency range comprises:

upon acquiring an uplink scheduling request, rejecting configuring an uplink transmission resource within the target uplink frequency range.

8. The method according to claim 5, wherein the adjusting the uplink transmission resource configuration for the target uplink frequency range comprises:

narrowing the target uplink frequency range, and determining a new uplink frequency range;

generating uplink transmission configuration information based on the new uplink frequency range, wherein the uplink transmission configuration information comprises start frequency information and end frequency information of the new uplink frequency range;

sending the uplink transmission configuration information to the user equipment; and

configuring the uplink transmission resource within the new uplink frequency range.

9. The method according to claim 5, wherein the adjusting the uplink transmission resource configuration for the target uplink frequency range comprises:

narrowing, based on the target uplink frequency range, an uplink schedule frequency range for transmitting uplink data;

configuring, within the narrowed uplink schedule frequency range, an uplink transmission resource for transmitting the uplink data; and

configuring, within the target uplink frequency range, an uplink transmission resource for transmitting uplink control information on a designated frequency.

10. The method according to claim 5, wherein the adjusting an uplink or downlink transmission resource configuration comprises at least one of:

when the target frequency range comprises component carriers in a predetermined quantity, reducing the quantity of component carriers;

when the target frequency range comprises one component carrier, reducing a bandwidth configuration of the component carrier;

when the target frequency range comprises bandwidth parts in a predetermined quantity, reducing the quantity of bandwidth parts; or

when the target frequency range comprises bandwidth parts in a predetermined quantity, reducing a frequency range of at least one of the bandwidth parts.

11. An apparatus for transmitting information, applied to a base station, the apparatus comprising:

a processor; and

a memory storing instructions executable by the processor;

wherein the processor is configured to:

determine whether an in-device interference is to occur in a user equipment, wherein the in-device interference involves an operating frequency range of a new radio (NR) radio frequency transceiver unit in the user equipment, and occurs during long term evolution (LTE)-NR interworking, and the in-device interference comprises intermodulation interference;

determine a target frequency range involved in the in-device interference in the user equipment when the in-device interference is to occur in the user equipment, wherein the target frequency range comprises a target downlink frequency range and at least one target uplink frequency range;

adjust a transmission resource configuration within the target frequency range; and

transmit information using a transmission resource after adjustment of the transmission resource configuration within the target frequency range, to avoid occurrence of the in-device interference,

wherein determine whether the in-device interference is to occur in the user equipment comprises:

determine, after the user equipment accesses a network, whether the in-device interference is to occur in the user equipment based on an acquired radio frequency support capability of the user equipment.

12. The apparatus according to claim 11, wherein the processor is further configured to:

acquire radio frequency support capability information of the user equipment, wherein the radio frequency support capability information at least comprises an uplink operating frequency range and a downlink operating frequency range; and

determine, based on the uplink operating frequency range and the downlink operating frequency range, whether the in-device interference is to occur in the user equipment.

13. The apparatus according to claim 11, wherein the processor is further configured to:

acquire an uplink scheduling request sent by the user equipment;

determine a current uplink operating frequency range of the user equipment based on the uplink scheduling request;

determine downlink schedule information for the user equipment, wherein the downlink schedule information at least comprises a downlink operating frequency range; and

determine, based on the current uplink operating frequency range and the downlink operating frequency range, whether the in-device interference is to occur.

14. The apparatus according to claim 11, wherein the processor is further configured to:

determine that no predefined interference avoidance setting is configured in the user equipment, the interference avoidance setting being: when the in-device interference occurs, triggering a predefined operation to stop information transmission within at least one target operating frequency range involved in the in-device interference.

15. The apparatus according to claim 11, wherein the processor is further configured to perform at least one of:

adjusting a downlink transmission resource configuration for the target downlink frequency range; and

adjusting an uplink transmission resource configuration for the target uplink frequency range.

16. The apparatus according to claim 15, wherein the processor is further configured to perform at least one of:

cancelling the downlink transmission resource configuration currently within the target downlink frequency range;

configuring a downlink transmission resource originally configured for the target downlink frequency range, within an interference-free downlink frequency range; and

narrowing the target downlink frequency range, and configure the downlink transmission resource within a narrowed downlink frequency range.

17. The apparatus according to claim 15, wherein the processor is further configured to, upon acquiring an uplink scheduling request, reject configuring an uplink transmission resource within the target uplink frequency range.

18. The apparatus according to claim 15, wherein the processor is further configured to:

narrow the target uplink frequency range, and determine a new uplink frequency range;

generate uplink transmission configuration information based on the new uplink frequency range, wherein the uplink transmission configuration information comprises start frequency information and end frequency information of the new uplink frequency range;

send the uplink transmission configuration information to the user equipment; and

configure the uplink transmission resource within the new uplink frequency range.

19. The apparatus according to claim 15, wherein the processor is further configured to:

narrow, based on the target uplink frequency range, an uplink schedule frequency range for transmitting uplink data; configure, within the narrowed uplink schedule frequency range, an uplink transmission resource for transmitting the uplink data; and

configure, within the target uplink frequency range, an uplink transmission resource for transmitting uplink control information on a designated frequency.

20. The apparatus according to claim 15, wherein the processor is further configured to perform at least one of:

when the target frequency range comprises component carriers in a predetermined quantity, reduce the quantity of component carriers;

when the target frequency range comprises one component carrier, reduce a bandwidth configuration of the component carrier;

when the target frequency range comprises bandwidth parts in a predetermined quantity, reduce the quantity of bandwidth parts; or

when the target frequency range comprises bandwidth parts in a predetermined quantity, reduce a frequency range of at least one of the bandwidth parts.