CLAIMS:

1. A communication method, applied to a user equipment, comprising:

determining execution time information of a certain operation, wherein the certain operation is an operation of disabling a cell search; and

executing the certain operation based on the execution time information,

wherein determining the execution time information of the certain operation comprises:

determining the execution time information of the certain operation based on time information of a coverage hole and power saving time information of an Extended Discontinuous Reception (eDRX) mechanism,

wherein in a case where the user equipment is configured with the eDRX mechanism, determining the execution time information of the certain operation based on the power saving time information of the eDRX mechanism and the time information of the coverage hole comprises one of:

in a case where an overlap exists between a duration of the coverage hole and an out-of-paging-transmission-window (PTW) duration, determining a union of the out-of-PTW duration and the duration of the coverage hole to be a duration of the certain operation; or

in a case where an overlap exists between a duration of the coverage hole and a duration of a PTW, determining a union of an out-of-PTW duration and the duration of the coverage hole to be a duration of the certain operation, wherein the duration of the certain operation comprises at least two discontinuous time periods.

2. The method of claim 1, wherein the certain operation comprises one of deactivating an access stratum (AS); stopping a measurement operation; stopping a cell selection or reselection operation; stopping a public land mobile network (PLMN) selection operation; stopping a radio resource control (RRC) procedure initiation operation; or stopping listening to a paging message.

3. The method of claim 1 or 2, wherein the execution time information comprises at least one of:

a start time of the certain operation and an end time of the certain operation, a start time of the certain operation and a duration of the certain operation, or a time interval of the certain operation,

wherein a left end point of the time interval and a right end point of the time interval of the certain operation are a start time of the certain operation and an end time of the certain operation respectively.

4. The method of claim 1, 2, or 3, wherein determining the execution time information of the certain operation comprises at least one of:

determining the execution time information of the certain operation based on time information of a coverage hole associated with a history camping cell;

determining the execution time information of the certain operation based on time information of coverage holes associated with at least two cells with strongest signal-receiving strength; or

determining the execution time information of the certain operation based on time information of coverage holes associated with at least two cells that are top ranked in terms of cell reselection priority and signal-receiving strength.

5. The method of claim 4, wherein in a case where an overlap exists among the time information of the coverage holes associated with the at least two cells, the execution time information of the certain operation is determined based on a minimum value of start time of time information of coverage holes associated with the at least two cells and a maximum value of end time of the time information of the coverage holes associated with the at least two cells; or

in a case where no overlap exists among the time information of the coverage holes associated with the at least two cells, a union of time information of coverage holes associated with the at least two cells is determined as the execution time information of the certain operation.

6. The method of claim 1, further comprising:

reporting, through an RRC layer of the user equipment, the execution time information of the certain operation to a non-access stratum (NAS) of the user equipment, a base station, or a core network.

7. The method of claim 1, further comprising:

reporting a certain-operation start indication, a data transmission pause indication, or an access forbidden indication to a NAS of the user equipment in a case where an RRC layer of the user equipment detects that the user equipment is about to enter or has entered a coverage hole; or

reporting a certain-operation end indication, a data transmission resume indication, or an access admitted indication to a NAS of the user equipment in a case where an RRC layer of the user equipment detects that the user equipment is about to leave or has left a coverage hole.

8. The method of claim 1, wherein determining the execution time information of the certain operation comprises:

determining the execution time information of the certain operation based on time information of a coverage hole and power saving time information of a Power Saving Mode (PSM) mechanism,

wherein in a case where the user equipment is configured with the PSM mechanism, determining the execution time information of the certain operation based on the power saving time information of the PSM mechanism and the time information of the coverage hole comprises one of:

in a case where an overlap exists between a duration of the coverage hole and a duration in which the PSM mechanism is in a sleep state, determining a union of the duration of the coverage hole and the duration in which the PSM mechanism is in the sleep state to be a duration of the certain operation; or

in a case where an overlap exists between a duration of the coverage hole and a duration of an idle state, determining a union of the duration of the coverage hole and the duration in which the PSM mechanism is in the sleep state to be a duration of the certain operation, wherein the duration of the certain operation comprises at least two discontinuous time periods.

9. The method of claim 1, further comprising:

receiving an RRC message carrying the execution time information or system information carrying the execution time information indicated by a base station; or

receiving a NAS message carrying the execution time information indicated by a core network.

10. The method of claim 1, further comprising:

reporting the execution time information of the certain operation to a base station or a core network; or

reporting the execution time information of the certain operation acquired by the user equipment

to a base station or a core network.

11. The method of claim 1, further comprising:

determining a discontinuous-listening cycle parameter, wherein the discontinuous-listening cycle parameter comprises at least one of a discontinuous-listening start time, a discontinuous-listening start time offset value, a discontinuous-listening duration, a length of a discontinuous-listening cycle, or PTW parameters, wherein

each PTW parameter of the PTW parameters comprises at least one of:

a PTW start time and a PTW duration; or

a PTW start time and a PTW end time.

12. The method of claim 11, wherein determining the discontinuous-listening cycle parameter comprises at least one of:

negotiating with a core network about the discontinuous-listening cycle parameter, wherein a cycle corresponding to the discontinuous-listening cycle parameter contains at least two PTWs;

negotiating with a core network about at least two discontinuous-listening cycle parameters and listening cyclically based on a cycle corresponding to each discontinuous-listening cycle parameter of the at least two discontinuous-listening cycle parameters, wherein each discontinuous-listening cycle contains one PTW;

negotiating with a core network about at least two discontinuous-listening cycle parameters and listening cyclically based on a cycle corresponding to each discontinuous-listening cycle parameter of the at least two discontinuous-listening cycle parameters, wherein each discontinuous-listening cycle contains one PTW, and each discontinuous listening cycle corresponds to one time period; or

negotiating with a core network about at least two discontinuous-listening cycle parameters and listening cyclically based on a cycle corresponding to each discontinuous-listening cycle parameter of the at least two discontinuous-listening cycle parameters, wherein each discontinuous-listening cycle contains one PTW, and each discontinuous-listening cycle parameter is associated with one area.

13. The method of claim 1, further comprising:

configuring a relaxed-measurement cycle or a spaced-detection cycle and configuring a detection time period in each relaxed-measurement cycle or each spaced-detection cycle, wherein the detection time period is a time period in which the user equipment performs the cell search.

14. The method of claim 1, further comprising:

switching a current state of the user equipment based on the execution time information of the certain operation.

15. The method of claim 14, wherein in a case where the user equipment is in an inactive state, switching the current state of the user equipment based on the execution time information of the certain operation comprises at least one of:

in a case where a current time is greater than or equal to a difference between a start time of the certain operation and a first preset threshold, switching the inactive state of the user equipment to an idle state of the user equipment;

in a case where the user equipment is in a cell selection state or in a case where a duration of the cell search reaches a preset duration, switching the inactive state of the user equipment to an idle state of the user equipment;

in a case where a duration in which the user equipment executes the certain operation reaches a second preset threshold, switching the inactive state of the user equipment to an idle state of the user equipment; or

instructing the user equipment to switch from the inactive state to an idle state based on configuration information of a base station in system information or an RRC message.

16. The method of claim 14, wherein in a case where the user equipment is in a connected state, switching the current state of the user equipment based on the execution time information of the certain operation comprises at least one of:

in a case where a current time is greater than or equal to a start time of the certain operation, executing, by an RRC layer of the user equipment, an operation of exiting the connected state and returning to an idle state;

in a case where a current time is greater than or equal to a start time of the certain operation, initiating, by an RRC layer of the user equipment, an RRC release procedure, executing, by the RRC layer of the user equipment, an operation of exiting the connected state, and returning to an idle state; or

in a case where a current time is greater than or equal to a start time of the certain operation, executing, by an RRC layer of the user equipment, an operation of exiting the connected state, returning to an idle state, and executing, by the RRC layer of the user equipment, the certain operation.

17. The method of claim 1, in a case where the user equipment is in an inactive state, further comprising at least one of:

at a start time of the certain operation, executing, by an RRC layer of the user equipment, an operation of deactivating an AS;

at a start time of the certain operation, instructing, by a NAS of the user equipment, an RRC layer of the user equipment to execute an operation of deactivating an AS; or

at a start time of the certain operation, executing, by an RRC layer of the user equipment, a reply operation of a NAS failure.

18. A communication method, the method being applied to a base station and comprising:

determining execution time information of a certain operation, wherein the certain operation is an operation of disabling a cell search; and

sending the execution time information to a user equipment,

wherein determining the execution time information of the certain operation comprises:

determining the execution time information of the certain operation based on time information of a coverage hole and power saving time information of an Extended Discontinuous Reception (eDRX) mechanism,

wherein in a case where the user equipment is configured with the eDRX mechanism, determining the execution time information of the certain operation based on the power saving time information of the eDRX mechanism and the time information of the coverage hole comprises

one of:

in a case where an overlap exists between a duration of the coverage hole and an out-of-paging-transmission-window (PTW) duration, determining a union of the out-of-PTW duration and the duration of the coverage hole to be a duration of the certain operation; or

in a case where an overlap exists between a duration of the coverage hole and a duration of a PTW, determining a union of an out-of-PTW duration and the duration of the coverage hole to be a duration of the certain operation, wherein the duration of the certain operation comprises at least two discontinuous time periods.

19. A communication device, comprising a communication module, a memory, and at least one processor, wherein

the communication module is configured to perform communication interaction between a user equipment, a base station, and a core network;

the memory is configured to store at least one program; and

the at least one processor is configured to perform the method of any one of claims 1 to 17 or the method of claim 18 when executing the at least one program.

20. A storage medium storing a computer program which, when executed by a processor, causes the processor to perform the method of any one of claims 1 to 17 or the method of claim 18.