CLAIMS

1. A method of requesting system information, comprising:

sending, by user equipment, a first random access request, wherein the first random access request carries at least one preamble for identifying to-be-requested system information;

monitoring, by the user equipment, a response message corresponding to the first random access request within a preset time period, wherein the response message carries information for responding to the preamble; and

when the response message is detected, based on a preamble identifier comprised in the response message, monitoring and receiving, by the user equipment, to-be-requested system information corresponding to the preamble identifier within a transmission window of the to-be-requested system information corresponding to the preamble identifier;

wherein the response message has a format that only comprises one or more sub-packet headers and not comprises a packet body, and the preamble identifier is carried by a sub-packet header of the response message.

2. The method according to claim 1, further comprising:

determining, by the user equipment, to-be-requested system information that is unsuccessfully requested, based on the preamble identifier comprised in the response message and the at least one preamble carried in the first random access request for identifying the to-be-requested system information; and

sending, by the user equipment, a second random access request, wherein the second random access request carries a preamble of the to-be-requested system information that is unsuccessfully requested.

3. The method according to claim 2, further comprising:

counting, by the user equipment, a number of requests for each piece of the to-be-requested system information; and

when the number of requests for a piece of the to-be-requested system information is greater than a preset threshold, indicating, by the user equipment, to a Radio Resource Control layer that the number of requests for the piece of to-be-requested system information has reached a maximum threshold.

4. The method according to claim 1, further comprising:

when no response message is detected, determining, by the user equipment, that none of the to-be-requested system information is successfully requested.

5. A method of sending system information, comprising:

receiving, by a base station, a random access request sent by user equipment, wherein the random access request carrying a preamble of to-be-requested system information;

generating, by the base station, a response message with a preset format based on a request message, wherein the response message has the preset format that only comprises one or more sub-packet headers and not comprises a packet body, and a preamble identifier is carried by a sub-packet header of the response message; and

sending, by the base station, the response message.

6. The method according to claim 5, wherein generating the response message with the preset format based on the request message comprises:

analyzing, by the base station, the preamble of the to-be-requested system information from the request message; and

obtaining, by the base station, the response message with the preset format by adding a preamble identifier of a preamble of the to-be-requested system information determined for response to the sub-packet header of the response message.

7. The method according to claim 5, further comprising:

sending, by the base station, the to-be-requested system information determined for response within a transmission window of the to-be-requested system information.

8. An apparatus for requesting system information, comprising:

a first sending module, configured to send a first random access request, wherein the first random access request carries at least one preamble for identifying to-be-requested system information;

a first monitoring module, configured to monitor a response message corresponding to the first random access request within a preset time period, wherein the response message carries information for responding to the preamble; and

a second monitoring module, configured to, when the response message is detected, based on a preamble identifier comprised in the response message, monitor and receive to-be-requested system information corresponding to the preamble identifier within a transmission window of the to-be-requested system information corresponding to the preamble identifier;

wherein the response message has a format that only comprises one or more sub-packet headers and not comprises a packet body, and the preamble identifier is carried by a sub-packet header of the response message.

9. The apparatus according to claim 8, further comprising:

a first determining module, configured to determine to-be-requested system information

that is unsuccessfully requested, based on the preamble identifier comprised in the response message and the at least one preamble carried in the first random access request for identifying the to-be-requested system information; and

a second sending module, configured to send a second random access request, wherein the second random access request carries a preamble of the to-be-requested system information that is unsuccessfully requested.

10. The apparatus according to claim 8, further comprising:

a statistics module, configured to count a number of requests for each piece of the to-be-requested system information; and

a problem reporting module, configured to instruct to a Radio Resource Control layer that the number of requests for the piece of to-be-requested system information has reached a maximum threshold when the number of requests for a piece of the to-be-requested system information is greater than a preset threshold.

11. The apparatus according to claim 8, further comprising:

a second determining module, configured to determine that none of the to-be-requested system information is successfully requested when no response message is detected.

12. An apparatus for sending system information, comprising:

a first receiving module, configured to receive a random access request sent by user equipment, wherein the random access request carrying a preamble of to-be-requested system information;

a message generating module, configured to generate a response message with a preset format based on a request message received by the first receiving module, wherein the response

message has the preset format that only comprises one or more sub-packet headers and not comprises a packet body, and a preamble identifier is carried by a sub-packet header of the response message; and

a third sending module, configured to send the response message generated by the message generating module.

13. The apparatus according to claim 12, wherein the message generating module comprises:

a first analyzing sub-module, configured to analyze the preamble of the to-be-requested system information from the request message; and

a first generating sub-module, configured to obtain the response message with the preset format by adding the preamble identifier of a preamble of the to-be-requested system information determined for response to the sub-packet header of the response message.

14. The apparatus according to claim 12, further comprising:

a fourth sending module, configured to send the to-be-requested system information determined for response within a transmission window of the to-be-requested system information.

15. User equipment comprising:

a processor; and

a memory to store instructions executable by the processor;

wherein the processor is configured to:

send a first random access request, wherein the first random access request carries at least one preamble for identifying to-be-requested system information;

monitor a response message corresponding to the first random access request within a preset time period, wherein the response message carries information for responding to the preamble; and

when the response message is detected, based on a preamble identifier comprised in the response message, monitor and receive to-be-requested system information corresponding to the preamble identifier within a transmission window of the to-be-requested system information corresponding to the preamble identifier;

wherein the response message has a format that only comprises one or more sub-packet headers and not comprises a packet body, and the preamble identifier is carried by a sub-packet header of the response message.

16. A base station comprising:

a processor; and

a memory to store instructions executable by the processor;

wherein the processor is configured to:

receive a random access request sent by user equipment, where the random access request carrying a preamble of to-be-requested system information;

generate a response message with a preset format based on a request message, wherein the response message has the preset format that only comprises one or more sub-packet headers and not comprises a packet body, and a preamble identifier is carried by a sub-packet header of the response message; and

send the response message.

17. A non-transitory computer-readable storage medium storing computer instructions, when the computer instructions are executed by a processor to implement the following steps

comprising:

sending a first random access request, wherein the first random access request carries at least one preamble for identifying to-be-requested system information;

monitoring a response message corresponding to the first random access request within a preset time period, wherein the response message carries information for responding to the preamble; and

when the response message is detected, based on a preamble identifier comprised in the response message, monitoring and receiving to-be-requested system information corresponding to the preamble identifier within a transmission window of the to-be-requested system information corresponding to the preamble identifier;

wherein the response message has a format that only comprises one or more sub-packet headers and not comprises a packet body, and the preamble identifier is carried by a sub-packet header of the response message.

18. A non-transitory computer-readable storage medium storing computer instructions, when the computer instructions are executed by a processor to implement the following steps comprising:

receiving a random access request sent by user equipment, wherein the random access request carrying a preamble of to-be-requested system information;

generating a response message with a preset format based on a request message, wherein the response message has the preset format that only comprises one or more sub-packet headers and not comprises a packet body, and a preamble identifier is carried by a sub-packet header of the response message; and

sending the response message.