

CLAIMS

What is claimed is:

1. A data monitoring method performed by a data monitoring device, comprising:

5 receiving, from a communications network, data at a frequency range higher than a predetermined frequency threshold;

 determining, in response to receiving the data, whether the data belongs to a current monitoring data interval, ~~wherein frequency of receiving the data is higher than a predetermined frequency threshold;~~

10 in response to determining that the data does not belong to the current monitoring data interval, determining whether there is an abnormal data interval that matches the data by comparing the data with multiple abnormal data intervals;

 in response to determining that the abnormal data interval in the multiple abnormal data intervals matches the data, updating the abnormal data interval based on the data; and

15 in response to determining that the abnormal data interval satisfies a first predetermined condition, determining the abnormal data interval as the current monitoring data interval.

2. The method according to claim 1, wherein the determining, in response to receiving the data, whether the data belongs to the current monitoring data interval comprises the following:

20 determining, in response to receiving the data, whether there is the current monitoring data interval;

 when there is the current monitoring data interval, determining whether the data belongs to the current monitoring data interval; or

 when there is no current monitoring data interval, creating the current monitoring data interval based on the received data.

25 3. The method according to claim 1 or 2, after the determining, in response to receiving data, whether the data belongs to the current monitoring data interval, comprising the following:

 when the data belongs to the current monitoring data interval, updating the current monitoring data interval based on the data.

30 4. The method according to claim 3, wherein the step of updating the current monitoring data interval based on the data when the data belongs to the current monitoring data interval comprises the following:

when the data belongs to the current monitoring data interval, updating the current monitoring data interval based on the data; and deleting the abnormal data interval.

5 The method according to any one of claims 1 to 4, wherein the determining, when the data does not belong to the current monitoring data interval, whether there is the abnormal data interval that matches the data, and the updating, when there is the abnormal data interval that matches the data, the abnormal data interval based on the data comprise the following:

when the data does not belong to the current monitoring data interval, determining whether there is the abnormal data interval that matches the data;

10 when there is the abnormal data interval that matches the data, updating the abnormal data interval based on the data; or

when there is no abnormal data interval that matches the data, creating the abnormal data interval, and adding the abnormal data interval to the multiple abnormal data intervals.

15 6. The method according to claim 5, wherein the creating the abnormal data interval when there is no abnormal data interval that matches the data comprises the following:

when there is no abnormal data interval that matches the data, determining whether a quantity of the multiple abnormal data intervals is greater than a predetermined quantity threshold;

20 when the quantity of the multiple abnormal data intervals is greater than the predetermined quantity threshold, deleting a second abnormal data interval or the abnormal data interval that satisfies a second predetermined condition, and creating the abnormal data interval; or

when the quantity of the multiple abnormal data intervals is not greater than the predetermined quantity threshold, creating the abnormal data interval.

25 7. The method according to any one of claims 1 to 6, wherein the determining, when the abnormal data interval satisfies the first predetermined condition, the abnormal data interval as the current monitoring data interval comprises the following:

when the abnormal data interval satisfies the first predetermined condition, determining the abnormal data interval as the current monitoring data interval; and

deleting the abnormal data interval.

30 8. The method according to any one of claims 2 to 7, wherein updating the current monitoring data interval or the abnormal data interval based on the data comprises one or more of the following update operations:

updating an interval central value of the current monitoring data interval or the abnormal data interval into the data, and updating an interval range of the current monitoring data interval or the abnormal data interval based on a predetermined interval length;

updating a data amount of the current monitoring data interval or the abnormal data interval;

5 and

updating a data update time of the current monitoring data interval or the abnormal data interval.

9. A data monitoring apparatus, comprising:

10 a receiver, configured to receive, from a communications network, data at a frequency range higher than a predetermined frequency threshold;

a first determination module, configured to determine, in response to receiving the data, whether the data belongs to a current monitoring data interval, ~~wherein frequency of receiving the data is higher than a predetermined frequency threshold;~~

15 a second determination module, configured to: in response to determining that the data does not belong to the current monitoring data interval, determining whether there is an abnormal data interval that matches the data by comparing the data with multiple abnormal data intervals, and in response to determining that there is the abnormal data interval among the multiple abnormal data intervals that matches the data, updating the abnormal data interval based on the data; and
20 a third determination module, configured to: in response to determining the abnormal data interval satisfies a first predetermined condition, determine the abnormal data interval as the current monitoring data interval.

10. The apparatus according to claim 9, wherein the first determination module comprises the following:

25 a first determination sub-module, configured to determine, in response to receiving the data, whether there is the current monitoring data interval;

a second determination sub-module, configured to: when there is the current monitoring data interval, determine whether the data belongs to the current monitoring data interval; and

a creation sub-module, configured to: when there is no current monitoring data interval, create the current monitoring data interval based on the received data.

30 11. The apparatus according to claim 9 or 10, wherein the apparatus further comprises the following:

an update module, configured to: when the data belongs to the current monitoring data interval, update the current monitoring data interval based on the data.

12. The apparatus according to claim 11, wherein the update module comprises the following:

- 5 a first update sub-module, configured to: when the data belongs to the current monitoring data interval, update the current monitoring data interval based on the data; and
 a first deletion sub-module, configured to delete the abnormal data interval.

13. The apparatus according to any one of claims 9 to 12, wherein the second determination module comprises the following:

- 10 a third determination sub-module, configured to: when the data does not belong to the current monitoring data interval, determine whether there is the abnormal data interval that matches the data;

 a second update sub-module, configured to: when there is the abnormal data interval that matches the data, update the abnormal data interval based on the data; and

- 15 a first creation sub-module, configured to: when there is no abnormal data interval that matches the data, create the abnormal data interval.

14. The apparatus according to claim 13, wherein the first creation sub-module comprises the following:

- 20 a fourth determination sub-module, configured to: when there is no abnormal data interval that matches the data, determine whether a quantity of the abnormal data intervals is greater than a predetermined quantity threshold;

- a second creation sub-module, configured to: when the quantity of the abnormal data intervals is greater than the predetermined quantity threshold, delete a second abnormal data interval or the abnormal data interval that satisfies a second predetermined condition, and create
25 the abnormal data interval; and

 a third creation sub-module, configured to: when the quantity of the abnormal data intervals is not greater than the predetermined quantity threshold, create the abnormal data interval.

15. The apparatus according to any one of claims 9 to 14, wherein the third determination module comprises the following:

- 30 a fifth determination sub-module, configured to: when the abnormal data interval satisfies the first predetermined condition, determine the abnormal data interval as the current monitoring data interval; and

a second deletion sub-module, configured to delete the abnormal data interval.

16. The apparatus according to any one of claims 10 to 15, wherein the update module or the update sub-module is configured to perform one or more of the following update operations:

5 updating an interval central value of the current monitoring data interval or the abnormal data interval into the data, and updating an interval range of the current monitoring data interval or the abnormal data interval based on a predetermined interval length;

updating a data amount of the current monitoring data interval or the abnormal data interval;
and

10 updating a data update time of the current monitoring data interval or the abnormal data interval.

17. An electronic device, comprising a memory and a processor, wherein

the memory is configured to store one or more computer instructions, wherein the one or more computer instructions are executed by the processor to perform the method steps according to any one of claims 1 to 8.

15 18. A computer readable storage medium, wherein the computer readable storage medium stores a computer instruction, and the computer instruction is executed by a processor to perform the method steps according to any one of claims 1 to 8.