CLAIMS

1. A method for distributed management and control, comprising:

performing, by a plurality of controllers, consensus verification on a management and control range of each controller using a first consensus algorithm based on a trigger mechanism to obtain a first management and control range of each controller, wherein the first management and control range comprises a plurality of target network devices connected to the controller; and

managing and controlling, by each controller, the plurality of target network devices based on the first management and control range,

wherein the trigger mechanism comprises timing triggering, failure triggering and/or controller addition or deletion triggering,

wherein the plurality of target network devices are deployed in a plurality of areas by a user, and the controllers are distributed in the corresponding areas;

managing and controlling, by the plurality of controllers, the plurality of target network devices based on the first management and control range further comprising:

electing, by the plurality of controllers, a master controller for the user based on a deployment of target network device by the user and a second consensus algorithm, and

managing and controlling, by the master controller, the target network devices for the user, comprising:

managing and controlling, by the master controller, the target network devices deployed by the user within the corresponding first management and control range; and

through another controller, managing and controlling, by the master controller, the target network devices deployed by the user within the first management and control range of the another controller.

2. The method for distributed management and control according to claim 1, wherein the step of performing, by a plurality of controllers, consensus verification on a management and control range of each controller using a first consensus algorithm further comprises:

electing, by the plurality of controllers, to obtain a leader controller and a follower controller;

generating, by each controller, a proposal for its own management and control range, wherein the proposal comprises data of the management and control range;

after confirming the proposal by the leader controller, storing the proposal in its own storage area and broadcasting the proposal to the follower controller; and

storing, by the follower controller, the proposal in its own storage area.

3. The method for distributed management and control according to claim 1, wherein when

the trigger mechanism is the failure triggering, the method further comprises:

connecting target network devices managed and controlled by a failed controller to a plurality of non-failed controllers;

performing by the plurality of non-failed controllers, consensus verification on a management and control range of each non-failed controller using the first consensus algorithm to obtain a second management and control range of each non-failed controller, wherein the second management and control range comprises a plurality of target network devices connected to the non-failed controller; and

managing and controlling, by each non-failed controller, the plurality of target network devices based on the second management and control range.

4. The method for distributed management and control according to claim 1 or 3, further comprising a step of connecting the target network devices to the controller, wherein the step of connecting the target network devices to the controller comprises:

connecting the target network devices to the controller based on an access strategy.

5. The method for distributed management and control according to claim 4, wherein the access strategy comprises:

connecting the target network devices to the controller by taking a connection condition of whether a delay of the connected controller is less than a threshold; and/or,

connecting the target network devices to the controller based on a load balance situation of each controller; and/or,

connecting the target network devices to the controller by taking a connection condition of minimizing a network packet loss rate of the connected controller; and/or,

connecting the target network devices to the controller based on a predetermined connection configuration.

6. The method for distributed management and control according to claim 1, wherein the step of electing, by the plurality of controllers, the master controller for the user based on the deployment of the target network device by the user and the second consensus algorithm comprises

determining the number of the target network devices deployed by the user in the area, so that the plurality of controllers elect a master controller for the user based on the number of the target network devices and the second consensus algorithm.

7. The method for distributed management and control according to claim 6, wherein the second consensus algorithm comprises:

voting, by the plurality of controllers, based on the number of the target network devices of the user in an area, so as to elect the master controller from the plurality of controllers.

8. The method for distributed management and control according to claim 1, wherein after the step of electing, by the plurality of controllers, the master controller for the user based on the deployment of the target network device by the user and the second consensus algorithm, the method further comprises:

electing a standby controller for the user by the plurality of controllers through the second consensus algorithm;

in a process of managing and controlling the target network devices of the user by the master controller, the method further comprises:

synchronizing management and control data to the standby controller by the master controller, so that the standby controller implements the function of the master controller when the trigger mechanism is the failure triggering and the failed controller is the master controller for the user.

9. The method for distributed management and control according to claim 8, wherein when there are a plurality of the standby controllers, the step in which the standby controller implements the function of the master controller further comprises:

re-electing a master controller for the user by a plurality of non-failed controllers from the standby controllers through the second consensus algorithm; and

implementing the function of the master controller before failure by the re-elected master controller.

10. The method for distributed management and control according to claim 9, wherein in the the step of re-electing a master controller for the user by a plurality of non-failed controllers from the standby controllers through the second consensus algorithm through the second consensus algorithm, the method further comprises:

re-electing a standby controller for the user by the plurality of non-failed controllers through the second consensus algorithm.

11. The method for distributed management and control according to claim 1, wherein after the step of performing, by a plurality of controllers, consensus verification on a management and control range of each controller using a first consensus algorithm based on a trigger mechanism to obtain a first management and control range of each controller, the method further comprises:

respectively storing the first management and control range of each controller by the plurality of controllers;

the step of managing and controlling, by each controller, the plurality of target network devices based on the first management and control range further comprises:

after receiving a management and control message for the target network device, judging, by the controller, whether the target network device belongs to its own first management and control

range; and if not, forwarding, by the controller, the management and control message to a controller corresponding to the target network device based on the stored first management and control range of each controller.

12. A system for distributed management and control, comprising a plurality of target network devices and a plurality of controllers;

the method according to any one of claims 1 to 11 is performed when the plurality of controllers manage and control the plurality of target network devices.

13. A computer device, comprising a memory, a processor and a computer program stored in the memory and runnable on the processor, wherein when being executed by the processor, the computer program implements the method for distributed management and control according to any one of claims 1 to 11.

14. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, wherein when being executed by a processor, the computer program implements the method for distributed management and control according to any one of claims 1 to 11.