CLAIMS

1. A method for detecting tokens on a game table, comprising:

in response to that a game enters a game prop operating stage after a token placement stage, determining a target region where a token is changed in a plurality of regions for token placement on a game table based on at least one frame of image of the game table, the token in each region being configured to perform payout according to an operation result of a game prop in a payout stage of the game, wherein the target region comprises a first-type region which allows the token to be changed and a second-type region in which the token is required to be kept unchanged, a change of the token in the first-type region in the game prop operating stage does not affect payout in the game, the token in the second-type region is required to be kept unchanged after a token placement stage is ended until payout in the game is completed;

in a case where the target region is a preset region that allows the token to be changed, sending a notification message to a management system of the game table, determining token change data of the target region based on the at least one frame of image in the game prop operating stage, and storing the token change data of the target region in a cache of the game, wherein the management system is in communication connection with the edge computing node; the notification message is configured to instruct not to send the alarm information to the target region in response to detecting that the token in the target region is changed; the token change data in the cache is used for payout calculation in a subsequent payout stage; and

in a case where the target region is not the preset region that allows the token to be changed, generating alarm information for the target region.

2. The method of claim 1, applied to a service layer of an edge computing node, the edge computing node further comprising a parsing layer and a cache layer, wherein

determining the target region where the token is changed in the plurality of regions for token placement on the game table based on the at least one frame of image of the game table

comprises:

acquiring, through the parsing layer, a recognition result obtained after each frame of image in an image frame sequence collected in the game prop operating stage is recognized;

acquiring original token information of the each region through a cache layer, the original token information being information, determined by the parsing layer in response to recognizing that a game controller operates a game prop for the first time and stored in the cache layer, of the token placed in the each region; and

determining the target region where the token is changed in the plurality of regions based on the recognition result of the each frame of image and the original token information of the each region.

3. The method of claim 2, wherein the recognition result comprises present token information of the each region in the each frame of image; and determining the target region where the token is changed in the plurality of regions based on the recognition result of the each frame of image and the original token information of the each region comprises:

sequentially comparing the present token information of the each region in a present frame of image with the original token information of the corresponding region according to collection time, and

in a case where the present token information of a first region in a first image frame is inconsistent with the original token information, determining the first region as the target region.

4. The method of claim 3, wherein that the present token information of the first region in the first image frame is inconsistent with the original token information comprises at least one of:

a present token amount of the first region is larger than an original token amount;

a present token value of the first region is higher than an original token value;

the present token amount of the first region is smaller than the original token amount; or

the present token value of the first region is lower than the original token value.

5. The method of claim 3 or 4, further comprising:

reading configuration information of the game table, the configuration information comprising type information of the each region on the game table;

determining a type of the target region based on the configuration information; and

in response to that the type of the target region is inconsistent with a type of the region that allows the token to be changed, determining that the target region is not the preset region that allows the token to be changed.

6. The method of claim 1, before storing the token change data of the target region in the cache of the game, further comprising:

determining identifier information of a token placer correlated with the token change data based on the at least one frame of image in the game prop operating stage, wherein

storing the token change data of the target region in the cache of the game comprises:

correlatively storing the token change data of the target region and the identifier information in the cache of the game to update token information correlated with the identifier information in the cache.

7. The method of any one of claims 3 to 6, wherein generating the alarm information for the target region in a case where the target region is not the preset region that allows the token to be changed comprises:

in a case where the target region is not the preset region that allows the token to be

changed, determining the token change data of the target region based on the at least one frame of image in the game prop operating stage;

in a case where the token change data represents a token increase, outputting a late placement alarm; and

in a case where the token change data represents a token decrease, outputting a token removal alarm.

8. The method of claim 7, further comprising:

in a case where token information of the target region in a second image frame is the same as original token information of the target region, outputting alarm withdrawal information, the second image frame being an image frame of which collection time is later than the first image frame in the image frame sequence.

9. An apparatus for detecting tokens on a game table, applied to an edge computing node, and comprising a first determination module, a sending module, a fourth determination module, a storage module and a generation module, wherein

the first determination module is configured to, in response to that a game enters a game prop operating stage after a token placement stage, determine a target region where a token is changed in multiple regions for token placement on a game table based on at least one frame of image of the game table, the token in each region being configured to perform payout according to an operation result of a game prop in a payout stage of the game, wherein the target region comprises a first-type region which allows the token to be changed and a second-type region in which the token is required to be kept unchanged, a change of the token in the first-type region in the game prop operating stage does not affect payout in the game, the token in the second-type region is required to be kept unchanged after a token placement stage is ended until payout in the game is completed;

the sending module is configured to, in a case where the target region is a preset region that allows the token to be changed, send a notification message to a management

system of the game table, wherein the management system is in communication connection with the edge computing node; and the notification message is configured to instruct not to send the alarm information to the target region in response to detecting that the token in the target region is changed;

the fourth determination module is configured to, in a case where the target region is the preset region that allows the token to be changed, determine token change data of the target region based on the at least one frame of image in the game prop operating stage;

the storage module is configured to store the token change data of the target region in a cache of the game, wherein the token change data in the cache is used for payout calculation in a subsequent payout stage; and

the generation module is configured to, in a case where the target region is not the preset region that allows the token to be changed, generate alarm information for the target region.

10. An electronic device, comprising a memory and a processor, wherein the memory stores a computer program capable of running in the processor, and when executing the program, the processor is configured to:

in response to that a game enters a game prop operating stage after a token placement stage, determine a target region where a token is changed in a plurality of regions for token placement on a game table based on at least one frame of image of the game table, the token in each region being configured to perform payout according to an operation result of a game prop in a payout stage of the game, wherein the target region comprises a first-type region which allows the token to be changed and a second-type region in which the token is required to be kept unchanged, a change of the token in the first-type region in the game prop operating stage does not affect payout in the game, the token in the second-type region is required to be kept unchanged after a token placement stage is ended until payout in the game is completed;

in a case where the target region is a preset region that allows the token to be changed, send a notification message to a management system of the game table, determine token

change data of the target region based on the at least one frame of image in the game prop operating stage, and store the token change data of the target region in a cache of the game, wherein the management system is in communication connection with the edge computing node; the notification message is configured to instruct not to send the alarm information to the target region in response to detecting that the token in the target region is changed; the token change data in the cache is used for payout calculation in a subsequent payout stage; and

in a case where the target region is not the preset region that allows the token to be changed, generate alarm information for the target region.

11. The electronic device of claim 10, configured to implement a service layer of an edge computing node, the edge computing node further comprising a parsing layer and a cache layer,

wherein the processor is configured to:

acquire, through the parsing layer, a recognition result obtained after each frame of image in an image frame sequence collected in the game prop operating stage is recognized;

acquire original token information of the each region through a cache layer, the original token information being information, determined by the parsing layer in response to recognizing that a game controller operates a game prop for the first time and stored in the cache layer, of the token placed in the each region; and

determine the target region where the token is changed in the plurality of regions based on the recognition result of the each frame of image and the original token information of the each region.

12. The electronic device of claim 11, wherein the recognition result comprises present token information of the each region in the each frame of image; and the processor is configured to:

sequentially compare the present token information of the each region in a present frame of image with the original token information of the corresponding region according to

collection time, and

in a case where the present token information of a first region in a first image frame is inconsistent with the original token information, determine the first region as the target region.

13. The electronic device of claim 12, wherein that the present token information of the first region in the first image frame is inconsistent with the original token information comprises at least one of:

a present token amount of the first region is larger than an original token amount;

a present token value of the first region is higher than an original token value;

the present token amount of the first region is smaller than the original token amount; or

the present token value of the first region is lower than the original token value.

14. The electronic device of claims any one of claims 10 to 13, wherein the processor is further configured to:

read configuration information of the game table, the configuration information comprising type information of the each region on the game table;

determine a type of the target region based on the configuration information; and

in response to that the type of the target region is inconsistent with a type of the region that allows the token to be changed, determine that the target region is not the preset region that allows the token to be changed.

15. A computer-readable storage medium, in which a computer program is stored, wherein the computer program is executed by a processor to implement steps of the method of any one of claims 1 to 9.

16. A computer program, stored in a memory; wherein the computer program, when executed by a processor, implements steps in the method of any one of claims 1 to 9.