CLAIMS

1. A method for detecting a game currency state, comprising:

acquiring an original image frame and acquiring an image frame sequence of a scene of a game table in a halt state, wherein a plurality of regions for placing game currency are provided on the game table, and the original image frame is acquired when placement of the game currency is completed;

in response to determining, based on the image frame sequence and the original image frame, that game currency information of a first region among the plurality of regions is changed, outputting game currency alert information;

in response to recognizing, based on the image frame sequence, that a game currency operating object associated with a game controller appears in the first region, outputting process alert information and switching a game state from the halt state to a payout state, wherein the process alert information is sequence error ignore alert information.

2. The method of claim 1, wherein the game currency information comprises at least one of:

a game currency amount, or

a game currency value.

3. The method of claim 2, wherein in response to determining, based on the image frame sequence and the original image frame, that the game currency information of the first region among the plurality of regions is changed, outputting the game currency alert information comprises:

recognizing game currency information in an ith frame in the image frame sequence to obtain i^{th} piece of game currency information, i being a positive integer greater than 1;

in response to that original game currency information in the original image frame is

different from the ith piece of game currency information, recognizing a region among the plurality of multiple regions corresponding to a difference between the original game currency information and the ith piece of game currency information as a first target region; and

in response to determining, based on the first target region and the first region, that the game currency information of the first region is changed, outputting the game currency alert information.

4. The method of claim 3, wherein in response to determining, based on the first target region and the first region, that the game currency information of the first region is changed, outputting the game currency alert information comprises:

in response to that the first target region is the first region, acquiring $(i-1)^{th}$ piece of game currency information in an $(i-1)^{th}$ frame and an $(i-1)^{th}$ change value, wherein the $(i-1)^{th}$ change value is configured to represent a number of continuous frames, corresponding to the $(i-1)^{th}$ frame, in which the game currency information of the first region is changed relative to the original image frame;

in response to that the ith piece of game currency information is the same as the $(i-1)^{th}$ piece of game currency information, increasing the $(i-1)^{th}$ change value by a first preset value to obtain an ith change value; and

in response to that the ith change value is more than or equal to a first change threshold, determining that the game currency information of the first region is changed, and outputting the game currency alert information.

5. The method of claim 4, further comprising:

in response to that the ith piece of game currency information is different from the $(i-1)^{th}$ piece of game currency information, recognizing a region among the plurality of multiple regions corresponding to a difference between the ith piece of game currency information and the $(i-1)^{th}$ piece of game currency information as a second target region; and

in response to that the second target region is not the first region, increasing the $(i-1)^{th}$ change value by the first preset value to obtain the ith change value.

6. The method of claim 5, further comprising:

in response to that the second target region is the first region, determining an initial change value as the ith change value.

7. The method of claim 3, wherein

an event that the original game currency information in the original image frame is different from the ith piece of game currency information in the ith frame comprises at least one of the following:

an original game currency amount in the original image frame is larger than an ith game currency amount in the ith frame, or

an original game currency value in the original image frame is higher than an ith game currency value in the ith frame; and

outputting the game currency alert information comprises:

outputting first game currency alert information, wherein the first game currency alert information is configured to represent at least one of a game currency amount decrease or game currency value decrease of the first region.

8. The method of claim 3, wherein:

an event that the original game currency information in the original image frame is different from the ith piece of game currency information in the ith frame comprises at least one of the following:

an original game currency amount in the original image frame is smaller than

an ith game currency amount in the ith frame, or

an original game currency value in the original image frame is lower than an ith game currency value in the ith frame; and

outputting the game currency alert information comprises:

outputting second game currency alert information, wherein the second game currency alert information is configured to represent at least one of a game currency amount increase or game currency value increase of the first region.

9. The method of any one of claims 3-8, wherein in response to that the original game currency information in the original image frame is different from the ith piece of game currency information, recognizing the region among the plurality of regions corresponding to the difference between the original game currency information and the ith piece of game currency information as the first target region comprises:

recognizing an original game currency amount from the original image frame, and recognizing an ith game currency amount from the ith frame;

in response to that the original game currency amount is different from the ith game currency amount, determining that the original game currency information is different from the ith piece of game currency information; and

determining the region among the plurality of regions corresponding to the difference between the original game currency information and the ith piece of game currency information as the first target region based on the original image frame and the ith frame.

10. The method of claim 9, further comprising:

in response to that the original game currency amount is the same as the ith game currency amount, recognizing an original game currency value from the original image frame, and recognizing an ith game currency value from the ith frame; and

in response to that the original game currency value is different from the ith game currency value, determining that the original game currency information is different from the ith piece of game currency information.

11. The method of any one of claims 3-10, wherein in response to recognizing, based on the image frame sequence, that the game currency operating object associated with the preset object appears in the first region, outputting the process alert information comprises:

in response to detecting that the game currency operating object appears in the first region in m continuous image frames before the ith frame of the image frame sequence, recognizing an operation direction of the game currency operating object, m being a positive integer greater than the first change threshold; and

in response to that the operation direction is a preset direction, determining that the game currency operating object associated with the preset object appears in the first region, and outputting the process alert information.

12. The method of any one of claims 3-10, further comprising:

in response to determining, based on the image frame sequence and the original image frame, that the game currency information of the first region among the plurality of regions is unchanged, outputting game currency alert cancellation information, wherein the game currency alert cancellation information is configured to instruct the game table to cancel the game currency alert.

13. The method of claim 12, wherein in response to determining, based on the image frame sequence and the original image frame, that the game currency information of the first region among the plurality of regions is unchanged, outputting the game currency alert cancellation information comprises:

acquiring a pth frame and a $(p-1)^{th}$ keep value from the image frame sequence, p being a positive integer greater than i+1;

in response to that game currency information of the first region in the original image frame is the same as game currency information of the first region in the pth frame, increasing the $(p-1)^{th}$ keep value by a second preset value to obtain a pth keep value, wherein the pth keep value is configured to represent a number of continuous frames, corresponding to the pth frame, in which the game currency information is the same as that in the original image frame; and

in response to that the pth keep value is more than or equal to a second change threshold, determining that the game currency information of the first region is unchanged, and outputting the game currency alert cancellation information.

14. The method of any one of claims 1 to 10, wherein acquiring the image frame sequence of the scene of the game table in the halt state comprises:

acquiring at least two video frame sequences in the halt state, wherein the at least two video frame sequences are acquired by at least two cameras respectively arranged on the game table; and

synthesizing the at least two video frame sequences according to a temporal order to obtain the image frame sequence.

15. An apparatus for detecting a game currency state, comprising:

an acquisition module, configured to acquire an original image frame and acquire an image frame sequence of a scene of a game table in a halt state, wherein a plurality of regions for placing game currency are provided on the game table, and the original image frame is acquired when placement of the game currency is completed;

a first output module, configured to: in response to determining, based on the image frame sequence and the original image frame, that game currency information of a first region among the plurality of regions is changed, output game currency alert information; and

a second output module, configured to: in response to recognizing a game currency operating object associated with a game controller in the first region based on the image frame

sequence, output process alert information and switch a game state from the halt state to a payout state, wherein the process alert information is sequence error ignore alert information.

16. An electronic device, comprising:

a memory, configured to store a computer program; and

a processor, configured to execute the computer program stored in the memory to implement the method of any one of claims 1-14.

17. A computer-readable storage medium having stored thereon a computer program that, when being executed by a processor, causes the processor to implement the method of any one of claims 1-14.