CLAIMS

1. A verification code-based verification processing method, the method comprising:

acquiring, by a server, verification code parameters required for generating a verification code;

using, by the server, the verification code parameters as an input to a three-dimensional model to generate a three-dimensional image, wherein a recognizable content corresponding to a specified visual focus position of a user is embedded in the three-dimensional image, by:

generating, by the server, a background picture and a foreground picture according to the verification code parameters; each of the background picture and foreground picture being at different visual focus positions according to a preset depth of field; and

disposing, by the server, the background picture and the foreground picture, to generate the three-dimensional image; and

sending, by the server, the three-dimensional image to a client terminal as the verification code for display.

2. The method of claim 1, wherein the generating the background picture and the foreground picture according to the verification code parameters comprises:

randomly selecting, by the server, one or more verification code parameters from the acquired verification code parameters required for generating the verification code as verification code parameters for generating the background picture and the foreground picture; and

generating the background picture and the foreground picture according to the randomly selected verification code parameters.

3. The method of claim 1, wherein the verification code parameters comprise one or more of the following parameters:

a text;

an image;

a distortion parameter of the text or the image;

a position of the text or the image; and

a color of the text or image.

4. The method of any of claims 1 to 3, wherein when the server sends the three-dimensional image to the client terminal as the verification code, the method further comprises:

sending, by the server, to the client terminal, the specified visual focus position for prompting the user to recognize the recognizable content from the three-dimensional image.

5. The method of claim 4, wherein the sending to the client terminal the prompt to identify the specified visual focus position for the user to recognize the recognizable content from the three-dimensional image comprises:

inserting, by the server, indication information for indicating the specified visual focus position into the three-dimensional image; and

sending, by the server, the indication information to the client terminal.

6. The method of any of claims 1 to 3, wherein before the acquiring the verification code parameters required for generating the verification code, the method further comprises:

receiving, by the server, a verification code acquisition request of the client terminal.

7. The method of any of claims 1 to 6, wherein generating the three-dimensional image comprises:

generating a two-dimensional picture of ~~a~~ the three-dimensional image.

8. The method of any of claims 1 to 7, wherein the background picture and the foreground picture are at different levels.

9. A verification code-based verification processing apparatus, which is applied to a server, comprising:

a processing module configured to acquire verification code parameters required for generating a verification code, and use the verification code parameters as an input to a three-dimensional model to generate a three-dimensional image by:

generating a background picture and a foreground picture according to the verification code parameters, each of the background picture and foreground picture being at different visual focus positions according to a preset depth of field; and

disposing the background picture and the foreground picture to generate the three-dimensional image,

wherein a recognizable content corresponding to a specified visual focus position of a user is embedded in the three-dimensional image; and

a communication module configured to send the three-dimensional image to a client terminal as the verification code for display.

10. The apparatus of claim 9, wherein the processing module is configured for generating a two-dimensional picture of the three-dimensional image.

11. The apparatus of any of claims 9 to 10, wherein the background picture and the foreground picture are at different levels.

12. The apparatus of any of claims 9 to 11, wherein the processing module is further configured to randomly select one or more verification code parameters from the acquired verification code parameters required for generating the verification code to serve as verification code parameters for generating the background picture and the foreground

picture; and generate the background picture and the foreground picture according to the randomly selected verification code parameters.

13. The apparatus of any of claims 9 to 12, wherein the communication module is further configured to send, to the client terminal, the specified visual focus position for prompting the user to recognize the recognizable content from the three-dimensional image.

14. A verification code-based verification processing method, the method comprising:

acquiring, by a client terminal, verification code parameters required for generating a verification code;

using, by the client terminal, the verification code parameters as an input to a three-dimensional model to generate a three-dimensional image by:

generating, by the client terminal, a background picture and a foreground picture according to the verification code parameters; each of the background picture and foreground picture being at different visual focus positions according to a preset depth of field; and

disposing, by the client terminal, the background picture and the foreground picture, to generate the three-dimensional image,

wherein a recognizable content corresponding to a specified visual focus position of a user is embedded in the three-dimensional image; and

displaying, by the client terminal, the three-dimensional image as the verification code.

15. The method of claim 14, wherein the acquiring the verification code parameters required for generating the verification code comprises:

acquiring, by the client terminal, the verification code parameters from the client terminal locally and/or from a server.

16. The method of any of claims 14 to 15, wherein the generating the background picture and the foreground picture according to the verification code parameters comprises:

randomly selecting, by the client terminal, one or more verification code parameters from the acquired verification code parameters required for generating the verification code to serve as verification code parameters for generating the background picture and the foreground picture; and

generating, by the client terminal, the background picture and the foreground picture according to the randomly selected verification code parameters.

17. The method of any of claims 14 to 16, wherein the verification code parameters comprise one or more of the following parameters:

a text;

an image;

a distortion parameter of the text or the image;

a position of the text or the image; and

a color of the text or image.

18. The method of any of claims 14 to 17, wherein when the client terminal displays the three-dimensional image as the verification code, the method further comprises:

displaying, by the client terminal, the specified visual focus position for prompting the user to recognize the recognizable content from the three-dimensional image.

19. The method of claim 18, wherein the displaying the prompt to identify the specified visual focus position for the user to recognize the recognizable content from the three-dimensional image comprises:

inserting indication information for indicating the specified visual focus position into the three-dimensional image; and

displaying the indication information.

20. The method of any of claims 14 to 19, wherein after the displaying the three-dimensional image as the verification code, the method further comprises:

receiving, by the client terminal, a received verification code input by a user according to the three-dimensional image;

verifying the received input verification code; and

passing verification in response to determining that the received input verification code is consistent with the recognizable content in the three-dimensional image.

21. The method of any of claims 14 to 20, wherein generating the three-dimensional image comprises:

generating a two-dimensional picture of ~~a~~ the three-dimensional image.

22. The method of any of claims 14 to 21, wherein the background picture and the foreground picture are at different levels.

23. A verification code-based verification processing apparatus, which is applied to a client terminal, comprising:

a processing module configured to acquire verification code parameters required for generating a verification code, and use the verification code parameters as an input to a three-dimensional model to generate a three-dimensional image by:

generating a background picture and a foreground picture according to the verification code parameters, each of the background picture and foreground picture being at different visual focus positions according to a preset depth of field; and

disposing the background picture and the foreground picture to generate the three-dimensional image;

wherein a recognizable content corresponding to a specified visual focus position of a user is embedded in the three-dimensional

image; and

a display module configured to display the three-dimensional image as a verification code.

24. The apparatus of claim 23, wherein the processing module is configured to acquire the verification code parameters from the client terminal locally and/or from a server.

25. The apparatus of any of claims 23 to 24, wherein the display module is further configured to, when displaying the three-dimensional image as the verification code, display the specified visual focus position for prompting the user to recognize the recognizable content from the three-dimensional image.

26. The method of any of claims 23 to 25, wherein generating the three-dimensional image comprises generating a two-dimensional picture of ~~a~~ the three-dimensional image.

27. The method of any of claims 23 to 26, wherein the background picture and the foreground picture are at different levels.