CLAIMS

【Claim 1】

A password and signature information-combined identity authentication server comprising:

a variable keypad generating unit configured to generate a variable keypad including encryption keys and a signature input part that receives an input of a signature of a user, wherein a position of each of the encryption keys is changed whenever the variable keypad is generated;

an authentication information storing unit configured to store authentication information of a user of a mobile phone; and

an authentication executing unit configured to provide a mobile terminal at a remote site with information about the generated variable keypad and word or sentence which is input in the signature input part, receive position information of the encryption keys according to an order in which the user inputs the encryption keys and word or sentence input to the signature input part by the user, and perform identity authentication by using the received position information of the encryption keys and the received word or sentence.

【Claim 2】

The server of claim 1, wherein the variable keypad generating unit generates the variable keypad such that a position of the signature input part is changed whenever the variable keypad is generated.

【Claim 3】

The server of claim 1, wherein the authentication executing unit performs authentication by extracting a password input by the user from the received position

information of the encryption keys and comparing the extracted password and the received word or sentence with the authentication information that are previously stored in the authentication information storing unit.

【Claim 4】

The server of claim 1, wherein the authentication executing unit is configured to:

store position information and an input order of encryption keys corresponding to the password whenever the variable keypad is generated; and

upon receiving position information of the encryption keys according to the order in which the user inputs the encryption keys and the word or sentence from the mobile terminal, perform authentication by comparing the position information and the input order of the encryption keys and the signature information with position information and an input order of encryption keys and handwriting that are previously stored in the authentication information storing unit.

【Claim 5】

The server of claim 1, wherein the authentication executing unit is configured to:

store an index corresponding to the variable keypad that is generated whenever the variable keypad is generated, and provide the index to the mobile terminal;

upon receiving an index from the mobile terminal, perform primary authentication by comparing the received index with a previously stored index; and

when a result of the primary authentication is successful, perform authentication by comparing the position information and the input order of the

encryption keys and the word or sentence received from the mobile terminal with position information and input order of encryption keys and handwriting that are previously stored in the authentication information storing unit.

【Claim 6】

An identity authentication mobile terminal comprising:

a display unit including encryption keys and a signature input part and configured to display a variable keypad that is generated such that a position of each of the encryption keys is changed whenever the variable keypad is generated, and display word or sentence that is changed whenever generated in the signature input part; and

a control unit configured to receive information about the variable keypad from an identity authentication server, and transfer position information of the encryption keys, an input order of the encryption keys, and word or sentence that are obtained through the variable keypad to the identity authentication sever.

【Claim 7】

The mobile terminal of claim 6, further comprising a camera configured to capture a facial image of a user,

wherein the control unit controls the camera unit to capture a facial image of a user in front of the camera unit and transfer the captured facial image to the identity authentication server.

【Claim 8】

A password and signature information-combined identity authentication method comprising:

generating a variable keypad including encryption keys and a signature input part, wherein a position of each of the encryption keys is changed whenever the variable keypad is generated, and word or sentence which is input in the signature input part;

providing the generated variable keypad and the word or sentence to a mobile terminal;

receiving position information of the encryption keys according to an order in which the user inputs the encryption keys and the word or sentence input on the signature input part by the user; and

performing identity authentication on the basis of the received position information of the encryption keys and the received the word or sentence.

【Claim 9】

The method of claim 8, wherein the generating of a variable keypad includes generating the variable keypad such that a position of the signature input part is changed whenever the variable keypad is generated.

【Claim 10】

The method of claim 8, wherein the performing of identity authentication includes performing authentication on the basis of position information of some of the encryption keys.

【Claim 11】

The method of claim 8, wherein the performing of identity authentication includes performing authentication by extracting a password input by the user from the position information of the encryption keys according to the order in which the user inputs the encryption keys and comparing the extracted password and the

received signature information with a password and handwriting information that are previously stored in an authentication information storing unit.