[0005] According to an aspect of the present invention, there is provided a method of communicating with a transaction card having a card data processor, a communication interface, and a card memory having a unique card identifier stored therein, the method comprising: transmitting, by an application executing on a communication device to the transaction card, a write command including session-specific challenge information; transmitting, by the application to the transaction card, read command; receiving, by the application from the transaction card, card-specific challenge response information; and authenticating the transaction card using the challenge response information.

[0006] According to another aspect, there is provided a communication device, comprising: a communication device data processor; a communication interface in communication with the data processor and configured for communication with one or more transaction cards; and a communication device memory accessible by the data processor and containing a communication device application comprising instructions to be carried out by the data processor, wherein, upon execution by the communication device data processor, the communication device application: transmits, to the transaction card, write command including session-specific challenge information, transmits, to the transaction card, read command, receives, from the transaction card, card-specific challenge response information, and authenticates the transaction card.

[0007] According to another aspect, there is provided a transaction card, comprising: a card microprocessor; a communication interface; and a card memory storing one or more applets including instructions for execution by the card microprocessor, wherein, upon execution by the card microprocessor, the one or more applets: receive, from a communication device via the communication interface, a write command including challenge information, generate a digital signature using the challenge information, receive, from the communication device via the communication interface, a read command, and transmit, to the communication device, the digital signature.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Figure 1 is a flow chart of actions in a method of communicating with a transaction card according to an embodiment of the invention;

[0009] Figure 2 is a flow chart of actions in a method of authenticating a communication between a transaction card and a user communication device according to an embodiment of the invention;

[0010] Figure 3 is a schematic representation of a transaction card authentication system according to an embodiment of the invention; and

[0011] Figure 4 is a block diagram of a transaction card microprocessor chip according to an embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0012] The following description of embodiments provides non-limiting representative examples referencing numerals to particularly describe features and teachings of different aspects of the invention. While the invention will be described in connection with particular embodiments and environments, it will be understood that the invention is not limited to