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United States Patent [19]

Maes et al.

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[54] **PORTABLE INFORMATION AND TRANSACTION PROCESSING SYSTEM AND METHOD UTILIZING BIOMETRIC AUTHORIZATION AND DIGITAL CERTIFICATE SECURITY**

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[22] Filed: **Jan. 16, 1998**

Related U.S. Application Data

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[51] **Int. Cl.**[7] **H04L 9/32**; G06F 157/00

[52] **U.S. Cl.** **705/1**; 705/26; 705/42; 705/44; 380/23; 380/25

[58] **Field of Search** 704/270, 275; 705/26, 35–38; 710/11; 713/200; 380/21, 25, 30, 24, 9, 23

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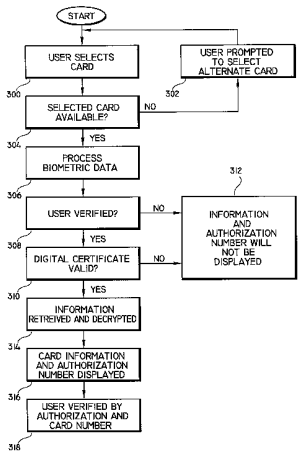
[57] **ABSTRACT**

The present invention is a portable client PDA with a touch screen or other equivalent user interface and having a microphone and local central processing unit (CPU) for processing voice commands and for processing biometric data to provide user verification. The PDA also includes a memory for storing financial and personal information of the user and I/O capability for reading and writing information to various cards such as smartcards, magnetic cards, optical cards or EAROM cards. The PDA includes a Universal Card, which is common generic smartcard with a unique imprint provided by a service provider, on which selected financial or personal information stored in the PDA can be downloaded to perform certain consumer transactions. The PDA includes a modem, a serial port and/or a parallel port so as to provide direct communication capability with peripheral devices (such as POS and ATM terminals) and is capable of transmitting or receiving information through wireless communications such as radio frequency (RF) and infrared (IR) communication. The present invention is preferably operated in two modes, i.e., a client/server mode and a local mode. The client/server mode is periodically performed to download a temporary digital certificate (which is necessary to access selected information stored in the PDA and to write such information to the Universal Card) from a central server of the service provider of the PDA and Universal Card. Next, the local mode of operation is performed by providing the PDA with biometric data and selecting one of the pre-enrolled credit cards that are stored in the PDA. Upon biometric verification, the Universal Card is written with the selected card information, which is then used to initiate a consumer transaction. In the absence of an unexpired digital certificate, however, the selected card information will not be written to the Universal Card, notwithstanding that the user may have passed local biometric verification.

20 Claims, 5 Drawing Sheets



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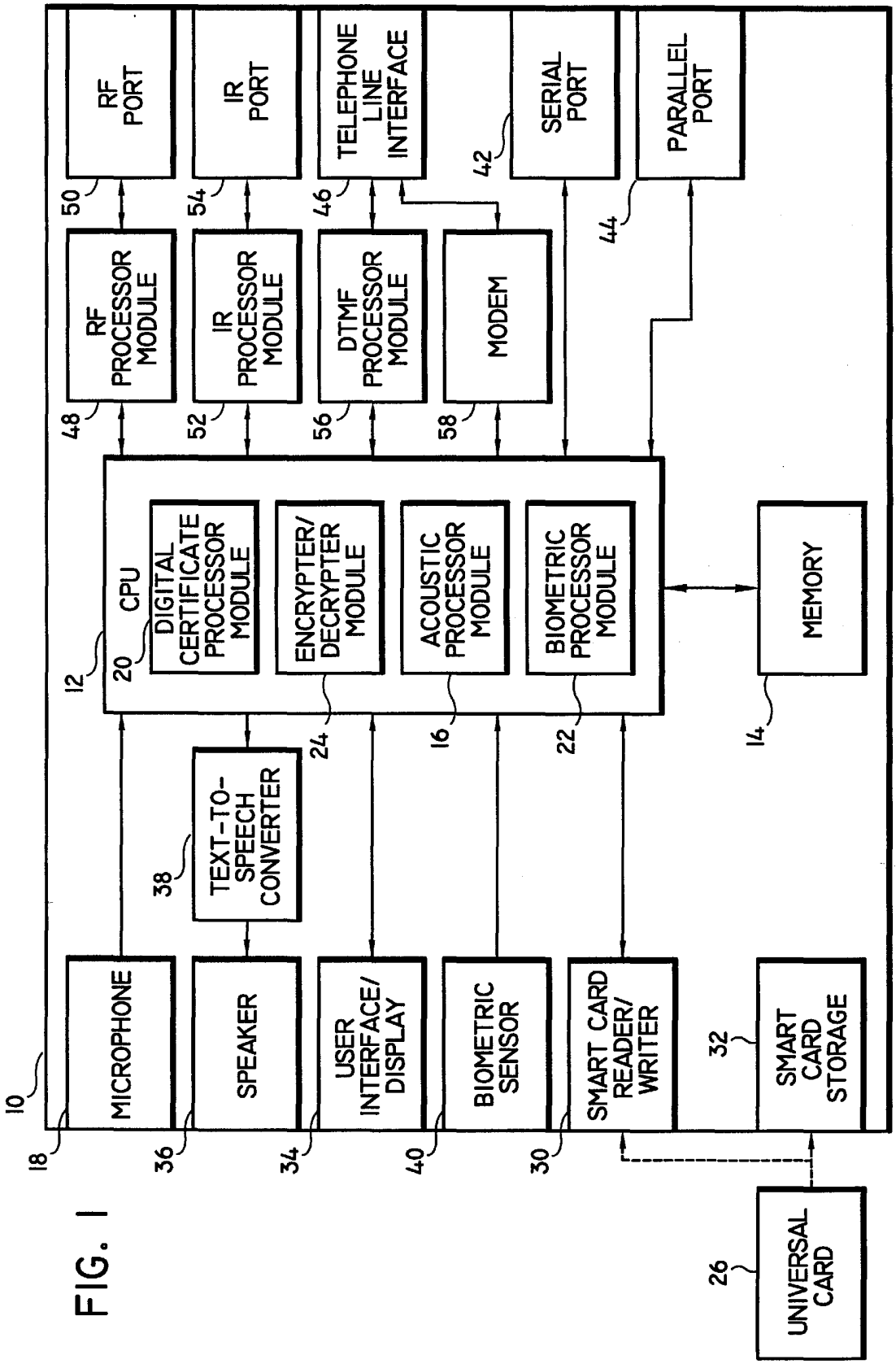

FIG. 1

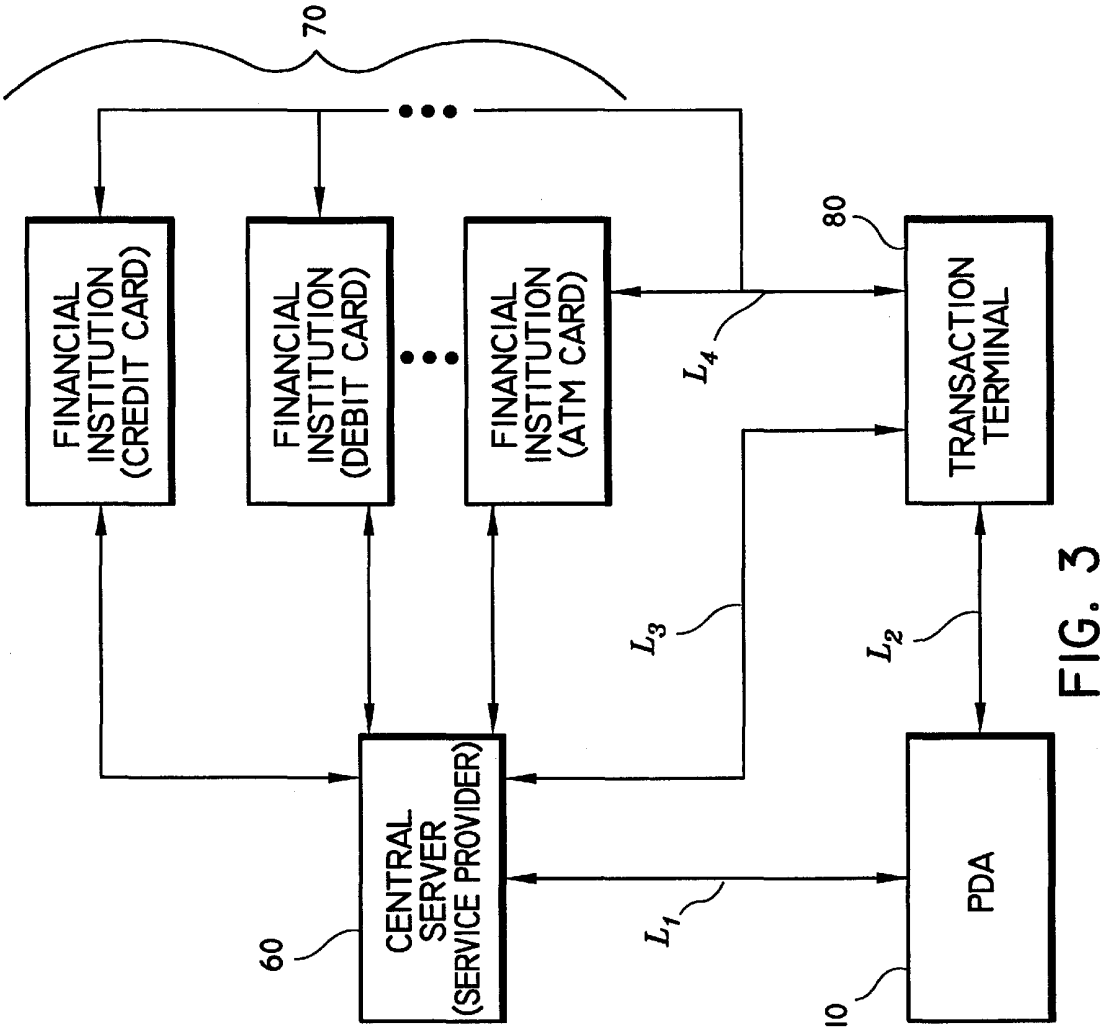

FIG. 3

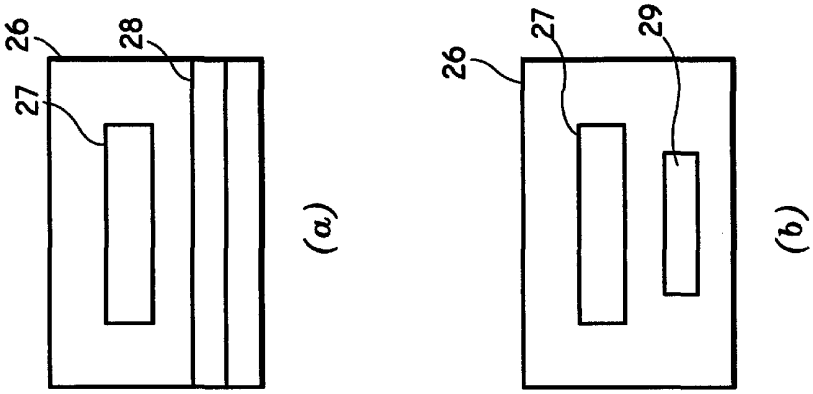

FIG. 2

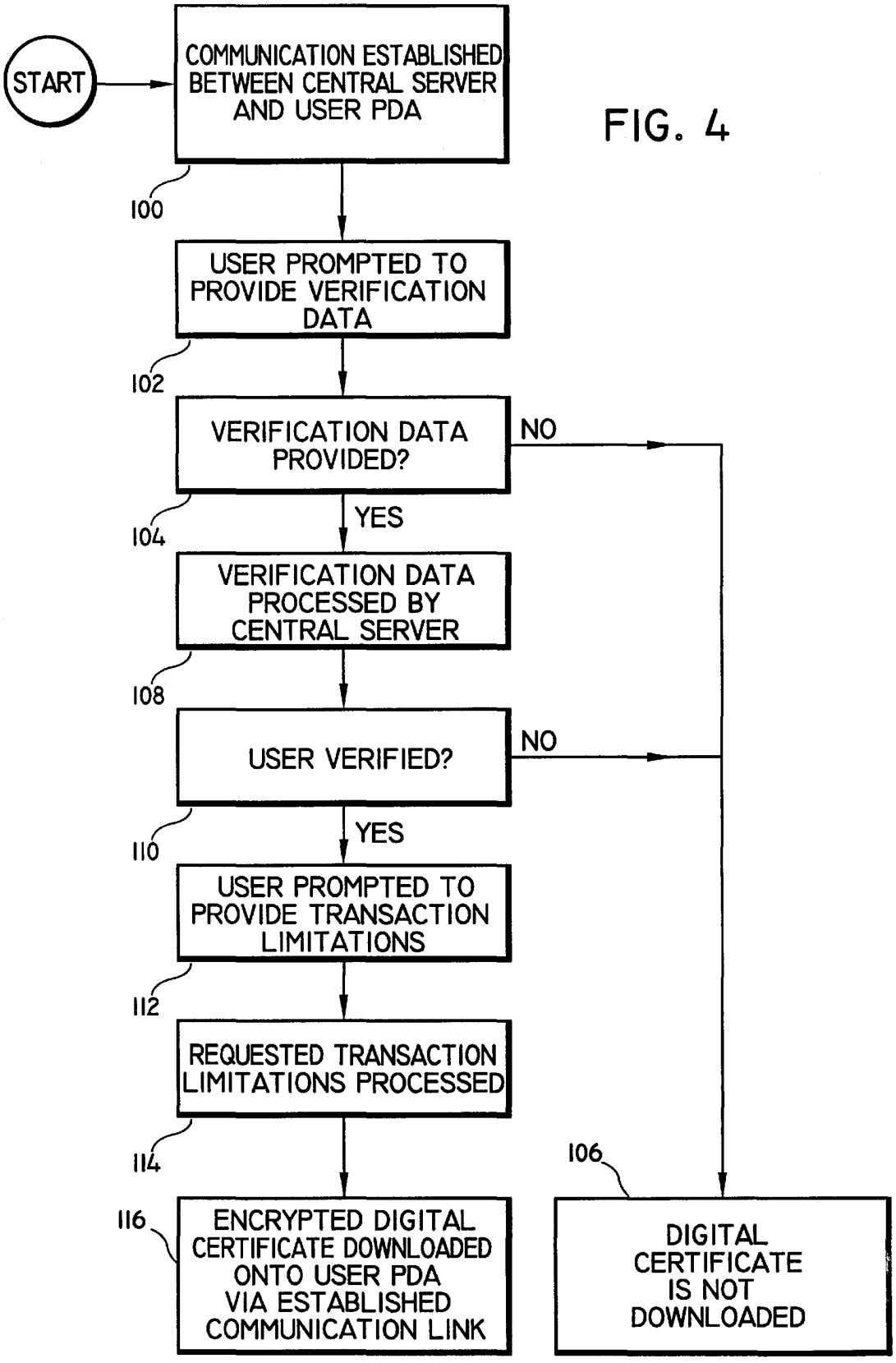

FIG. 4

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