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(54) Title: PORTABLE, SECURE TRANSACTION SYSTEM FOR PROGRAMMABLE, INTELLIGENT DEVICES

(57) Abstract

The present invention provides a transaction management system for executing transactions between a first device (1) and a second device, said first and second devices being adapted for communication with each other and at least one of said first and second devices being an integrated circuit card, said system comprising: at least one input/output device (25); a portable virtual machine (20) for interpreting a computer program on said first device, said virtual machine comprising a virtual microprocessor and a driver for said at least one input/output device (25); and execution means responsive to said interpreted program for executing said program. The general linking technical concept behind the present invention is portability combined with security of data and run-time guarantees in a transaction system which are independent of the target implementation provided compile time checks are passed successfully. This concept is achieved by: using a virtual machine as an interpreter, including a driver for the I/O devices in the virtual machine so that application programs have a common interface with I/O devices and are therefore portable across widely differing environments, allocating and deallocating memory and including an indication of the amount of memory in the application program which means that the program will only run successfully or it will not run at all and security management functions are reduced to a minimum which improves operating speed, and providing a secure way of importing and exporting data in and out of application programs and databases.

