

bank (ODFI) **12** that maintains an EXN pooled account **60'** into the merchant's account **45** at the merchant's bank (RDFI) **10**.

[0077] FIGS. **6a** and **6b** provide an overview of the primary functional features of the EXN Server **100**. A user can use any of a number of available tools to control the making and settling of commercial remittance transactions over the internet or over a telephone network. Tools available to Extranet users include the vATM **120**, an electronic Demand Deposit Account (e-Demand Deposit Account, or e-DDA) **140**, an electronic Register (e-Register) **150**, and an electronic Wallet (e-Wallet) **130**. These tools are used to implement conveyance functions and transfer functions. Conveyance functions support customer-to-business transactions and peer-to-peer transactions, while transfer functions support electronic bill payment and presentation transactions and remote funds transfer transactions. Conveyance functions use e-cache, that is, animated tokens that appear in the form of a national currency, such as U.S. dollars and coins, that are stored in an eWallet, an eRegister, or an eDDA. Transfer functions use a virtual tender that appears in the form of a virtual wire stored in an eDDA.

[0078] The vATM **120**, whose operation is depicted in FIGS. **2a** and **3a**, allows a user to withdraw e-cache from the user's bank account **35** and place the e-cache into the user's eWallet **130** for use in future transactions. The vATM tool facilitates the transposing of available funds in a user's account at his bank into e-cache, and facilitates the reverse transaction of decomposition of e-cache into available funds for withdrawal from the user's bank account. These tools are highly intuitive, acting through a series of commands that appear to mimic actual withdrawals and deposits at a bricks-and-mortar ATM.

[0079] The eWallet **130** is the on-line storage point for e-cache that the user intends to use for settlement of commercial remittance transactions for customer-to-business or peer-to-peer transactions. The eDDA **140** is an on-line storage point for virtual tender that the user intends to use for commercial remittance transactions involving electronic bill payment and presentation or for electronic funds (wire) transfer transactions.

[0080] In one embodiment, the eRegister **150** is a publicly disclosed universal repository that accepts e-cache from any source to settle commercial or private transactions on-line. Although anyone can deposit e-cache into an eRegister, only the merchant or other authorized owner of the account can withdraw available funds from an eRegister, or can remove e-cache from an eRegister for further use on the internet.

[0081] E-cache is not "timed out" nor destroyed after a certain period of time, but remains available to a user until it is transferred or reconverted into available funds and deposited into the user's account. E-cache can be conveyed or transferred by the user at any time the user wishes to make a commercial remittance transaction or wishes to transfer the e-cache to another Extranet user.

[0082] As shown in FIGS. **2a** and **3a**, e-cache tokens **110** are animated to allow the user to control the transaction by moving tokens on the computer's screen. Similarly, on a visual computer display, other icons are used to represent other entities or available functions. The selection of a particular icon to represent a given entity is a matter of personal choice, and it may be possible for users of the invention to select icons of their own choosing to represent entities and functions. Commercial remittance transactions

are executed when a user "drags and drops" e-cache tokens upon an appropriate icon on the computer screen. As provided in operating agreements between the EXN Operator and registered users of the invention, this action constitutes legal authorization for the EXN Operator to perform the transaction indicated by the action.

[0083] In addition to converting available funds into e-cache for on-line purchases using an eWallet **130**, e-cache can also be stored in an eDDA **140**, and can thereafter be transferred to third party eBillers, or to another Extranet user. E-cache in the e-DDA **140** is also available for setting up and initiating bank-like wires transfers to other banks.

[0084] Another embodiment of this invention shown in FIG. **7** permits transactions to be authorized or confirmed through a mobile device at a time and place of the user's choosing. This embodiment adds an additional layer of security to the authentication and settlement of commercial remittance transactions over the internet. As shown in FIG. **7**, the Extranet user has the option of requiring that his or her mobile device **80** (cell phone, PDA, etc) be used as a personal real time authentication tool to authenticate commercial remittance transactions made over the internet or over a phone network. According to this embodiment, a short message service (SMS) text message **250** from the EXN Server **100** to the mobile device **80** will be used to confirm that the user is aware of and agrees to the commercial remittance transaction. This method also includes a requirement that the Extranet user must receive the SMS text message from the EXN Server **100**, and then text message a response to the message that acts as a final release of the commercial remittance transaction. This method reduces the risk of fraud in transactions not initiated by the user or in transactions that the user may want to review before final acceptance.

[0085] Each member bank can make the EXN System available to its customers. Some embodiments of this invention can be made extraordinarily secure through the incorporation of a number of features. In one embodiment, using a confidential registration process between the bank and the bank's DDA customers (described below), the bank may issue a unique arbitrary number (having no similarities to the customer's personal account number at the bank) to identify a customer's account. All communications between the EXN Server and the bank related to the customer's account will use that number, which will otherwise be unknown to third parties, including the user.

[0086] The result is that actual bank routing numbers, personal bank account numbers, or other identifying information such as social security numbers, etc., need not be communicated to or from the EXN Server during financial transactions. A secure registration process, described below, ensures that arbitrary codes are generated and used to identify users and user's accounts involved in financial transactions. Because the user's personal alphanumeric code ("PAC") is an arbitrary word used only in communications originating or terminating at the EXN Server, an eavesdropper or hacker learning it would not have sufficient information to identify a user or a user's bank account at the user's bank. The PAC is known to the EXN Server and, in some embodiments, may also be known to the bank hosting the user's account, and may be cross referenced to identify both the user and the user's bank account.

[0087] In addition, a further embodiment of this invention requires both the physical and the virtual credentials of the