

Intermediate conversion for automated exchange between cryptocurrency and national currency

Inventor: Brandon Elliott, US

Assignee: Javvy Technologies Ltd., Cayman Islands

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REFERENCE TO RELATED APPLICATIONS

[0001] This is a first-filed application.

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

10 **[0002]** The present invention relates to the field of systems and methods for conducting exchange between cryptocurrency and national currency using distributed and cryptographic techniques. Particularly, the present invention relates to the field of systems and methods for conducting exchange between cryptocurrency and national currency in an automated manner on a distributed network using an intermediate conversion platform, eliminating the need for holding large
15 amounts of disparate, volatile cryptocurrencies, in reserves, to process buy requests.

MOTIVATION AND DESCRIPTION OF RELATED ART

[0003] A cryptocurrency (or cryptographic currency) is a digital currency in which encryption techniques are used to verify transactions and regulate the generation of currency. Numerous cryptographic currencies have become available since the creation of the first cryptocurrency,
20 Bitcoin, in 2009, such as Ether, Litecoin, Dash, and so on. The transactions of these cryptocurrencies are typically stored on a ledger or software block-chain and validated by a peer-to-peer distributed network of computers. Using such a distributed network removes the need for a third party to validate transactions. The increasing popularity of cryptocurrencies reflects the

25 desire for an alternative to traditional currencies, e. g. National currency, so that fast, low-cost,
universally available transaction of currency is available to online users, operating independently of
a central bank.

30 **[0004]** A virtual cryptographic wallet, (hereinafter termed “crypto wallet” or “wallet”), is a tool for
cryptocurrency users to store cryptographic keys and cryptographic currency, and to facilitate
online transactions including sending and receiving of a cryptocurrency. Currently, however,
cryptocurrencies cannot be conveniently purchased or sold. Exchange between cryptocurrencies
and National currency is usually conducted by using the service of an asset exchange or online
brokerage company. A user needs to first register and verify an account with the exchange or
brokerage company and then add a number of payment options such as credit or debit cards, bank
accounts, or wire transfers of funds. Typically the account verification process requires a copy of
35 the user’s driver’s license and detailed personal information. After the account is verified, further
details from the user may be required to expand the buying limits. This process is both time
consuming (usually taking days or weeks) and costly for the users, and may potentially result in
personal information breaches and identity theft. In addition, the centralized exchange process in
part defeats the purpose of the decentralized, secure nature of cryptocurrencies since the exchange
40 transactions are conducted via traditional means, and are associated with the usual risks of
fraudulent transactions before the settlement. The lack of easy-to-use and secure currency
exchange options have become an important limiting factor holding cryptocurrency back from
reaching the mainstream.

45 **[0005]** Another concern regarding crypto wallets is the need for cryptocurrency reserves used for
exchange purposes. The cryptocurrency held in these reserves is not available to use by the owner
for any other purposes, significantly decreasing the capital efficiency of the funds. In addition,
since many exchange services require the users to store their cryptocurrency on the platform for a
significant period of time, they expose the users to a higher risk of loss of their cryptocurrency due
to potential hacking and theft.

50 [0006] Crypto wallets integrated with currency exchange functions that are secure and automated,
operating on a distributed network, and independent of a third-party exchange or brokerage service
have been proposed. In the meanwhile, it is desirable to develop an exchange platform and
procedure with which crypto currency reserves are not necessary, eliminating the need for holding
large amounts of disparate, volatile cryptocurrency reserves, exposing the exchange operators to
55 potential loss in value and capital efficiency of the cryptocurrency funds.

SUMMARY OF THE INVENTION

[0007] The objective of the present invention to provide a crypto wallet exchange platform on
which crypto currency reserves are not necessary, eliminating the need for holding large amounts
60 of disparate, volatile cryptocurrency reserves, exposing the exchange operators to loss in value and
capital efficiency of the cryptocurrency funds.

[0008] In one aspect of the present invention, the crypto wallet has the technology to generate and
store an intermediate currency, hereinafter termed crypto TOKEN, to facilitate the exchange
between a cryptographic currency and national currency or another asset.

65 [0009] In another aspect of the present invention, the crypto wallet can choose to buy or sell one or
more cryptocurrencies directly from or to the market place. Alternatively, the crypto wallet can use
the crypto TOKEN to fulfill or settle buy and sell orders.

[0010] In another aspect of the present invention, when the crypto wallet chooses to use the crypto
TOKEN to fulfill or settle buy and sell orders, it communicates with the marketplace via a
70 distributed network to perform the exchange between the crypto TOKEN and a national currency
or another type of asset.

[0011] In another aspect of the present invention, the crypto wallet can use a third-party exchange
service to convert crypto TOKEN to or from another cryptocurrency.

75 [0012] The above invention aspects will be made clear in the drawings and detailed description of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Fig. 1 is an overall system layout of an embodiment of the present invention.

80 [0014] Fig. 2 is a flowchart showing the process of handling cryptocurrency or TOKEN settlements for SELL orders.

[0015] Fig. 3 is a flowchart showing the process of handling cryptocurrency or TOKEN fulfillment for BUY orders.

DETAILED DESCRIPTION OF THE INVENTION

85 [0016] The disclosed technology provides an intermediate conversion platform and process for automated exchange between cryptocurrency and national currency or other types of assets.

[0017] The processes described in this disclosure can be implemented by software, by programmable circuitry configured by software and/or firmware, or entirely by special-purpose circuitry, or in a combination of such forms.

90 [0018] In the detailed description, numerous specific details are set forth in order to provide a thorough understanding of the invention. However, it will be understood by those skilled in the art that these are specific embodiments, and that the present invention may be practiced also in different ways that embody the characterizing features of the invention as described herein. Additionally, some well-known structures or functions may not be shown or described in detail, so
95 as to avoid unnecessarily obscuring the relevant description of the various embodiments.

[0019] Fig. 1 is an overall system layout of an embodiment of the present invention. A crypto wallet 100 is in communication with a distributed network 200 with multiple peer nodes 220. The

distributed network 200 can communicate with a third-party crypto exchange 900 or the marketplace 700. The crypto wallet 100 has reserves for a crypto TOKEN 800, and may hold one or more types of cryptocurrencies 110.

[0020] Fig. 2 shows a flowchart showing the process of handling cryptocurrency or CRYPTO TOKEN settlements for SELL orders. First the wallet 100 decides whether a TOKEN settlement method is to be used (150). If yes, it further decides whether it is a SELL or a storage order (160). For a Sell order, the crypto TOKEN is to be sold in the marketplace (162). And once the SELL order succeeds (164), the wallet 100 updates its record (178) and the order is terminated successfully (180). If the SELL order fails, the order transaction is cleared from the mempool and the wallet 100, and reason of failure is provided (179), the wallet 100 updates its record (178) and the order is aborted (180). In step 160, if the wallet 100 decides it is a storage order, the crypto TOKEN is stored in the wallet 100 reserve (166), the wallet 100 updates its record (178) and the order is terminated successfully (180).

[0021] If in step 150, the wallet 100 determines that a TOKEN settlement method is not to be used, it further decides whether it is a SELL order or it is to store the cryptocurrency in its reserve (170). For a SELL order, the wallet 100 initiates selling the cryptocurrency in the marketplace (172). If the system determines that the SELL order goes through successfully (174), the wallet 100 updates its record (178) and the order is terminated successfully (180). If the SELL order fails, the order transaction is cleared from the mempool and the wallet 100, and reason of failure is provided (179), the wallet 100 updates its record (178) and the order is aborted (180). In step 170, if the wallet 100 decides it is a storage order, the cryptocurrency is stored in the corresponding wallet reserve (176), the wallet 100 updates its record (178) and the order is terminated successfully (180).

[0022] Fig. 3 is a flowchart showing the process of handling cryptocurrency or TOKEN fulfillment for BUY orders. First the wallet 100 decides whether a TOKEN fulfillment method is to be used (250). If yes, it further decides whether there are CRYPTO TOKENS in the reserve (260). If the wallet 100 has crypto TOKENS in its reserves, it immediately initiates conversion of crypto TOKEN to the desired cryptocurrency via a third-party exchange 900 (265). If the conversion

125 succeeds, with the user's wallet 100 receiving the desired cryptocurrency from the third-party
exchange (266), the wallet 100 updates its record (278) and the order is terminated successfully
(280). In step 266, if the conversion fails, the wallet 100 clears transaction from mempool, and
provides the reasons for failure (279), the wallet 100 updates its record (278), and the order is
aborted (280). In step 260, if it is determined that the wallet 100 does not have crypto TOKEN in
130 its reserve, it initiates buying crypto TOKEN at the market place (262). When the BUY order is
successfully executed (263), it immediately initiates the conversion of crypto TOKEN to the
desired cryptocurrency via a third-party exchange 900 (265) and performs the steps of 266, 279,
278 and 280, or 278 and 280, as discussed above. If in step 263, the BUY operation is not
successful, the wallet 100 clears transaction from mempool, and provides the reasons for failure
135 (279), the wallet updates its record (278), and the order is aborted (280).

[0023] In step 250, if the wallet 100 determines that the TOKEN fulfillment method is not to be
used, the wallet 100 will determine if it has desired cryptocurrency in its reserve (270). If yes, the
desired cryptocurrency is immediately distributed to the user's wallet (276). If the deposit of the
cryptocurrency is successful (277), the wallet updates its record (278), and the order is terminated
140 successfully (280). If the deposit is unsuccessful in step (277), the transaction is cleared from
mempool, and the reason for failure is provided (279), the wallet 100 updates its record (278), and
the order is aborted (280). If in step (270), it is determined that there is no desired cryptocurrency
in the reserve, a BUY order is initiated for cryptocurrency in the marketplace (272). When the
BUY order is successfully executed (274), the desired cryptocurrency is immediately distributed to
145 the user's wallet (276), the wallet performs steps 277, 278, and 280. If in step 274, the BUY
operation is not successful, the wallet 100 clears transaction from mempool, and provides the
reasons for failure (279), the wallet updates its record (278), and the order is aborted (280).

[0024] The foregoing description and accompanying drawings illustrate the principles, preferred or
example embodiments, and modes of assembly and operation, of the invention; however, the
150 invention is not, and shall not be construed as being exclusive or limited to the specific or particular
embodiments set forth hereinabove.

ABSTRACT

The disclosed technology provides an intermediate conversion platform and process for automated exchange between cryptocurrency and national currency or other types of assets. The crypto wallet
155 has the technology to generate and store an intermediate currency, termed crypto TOKEN, and can
choose to use the crypto TOKEN to fulfill or settle buy and sell orders. The crypto wallet
communicates with marketplace via a distributed network to perform the exchange between the
crypto TOKEN and national currency or other types of assets. The crypto wallet can also
communicate with a third-party exchange service to convert crypto TOKEN to or from another
160 cryptocurrency.

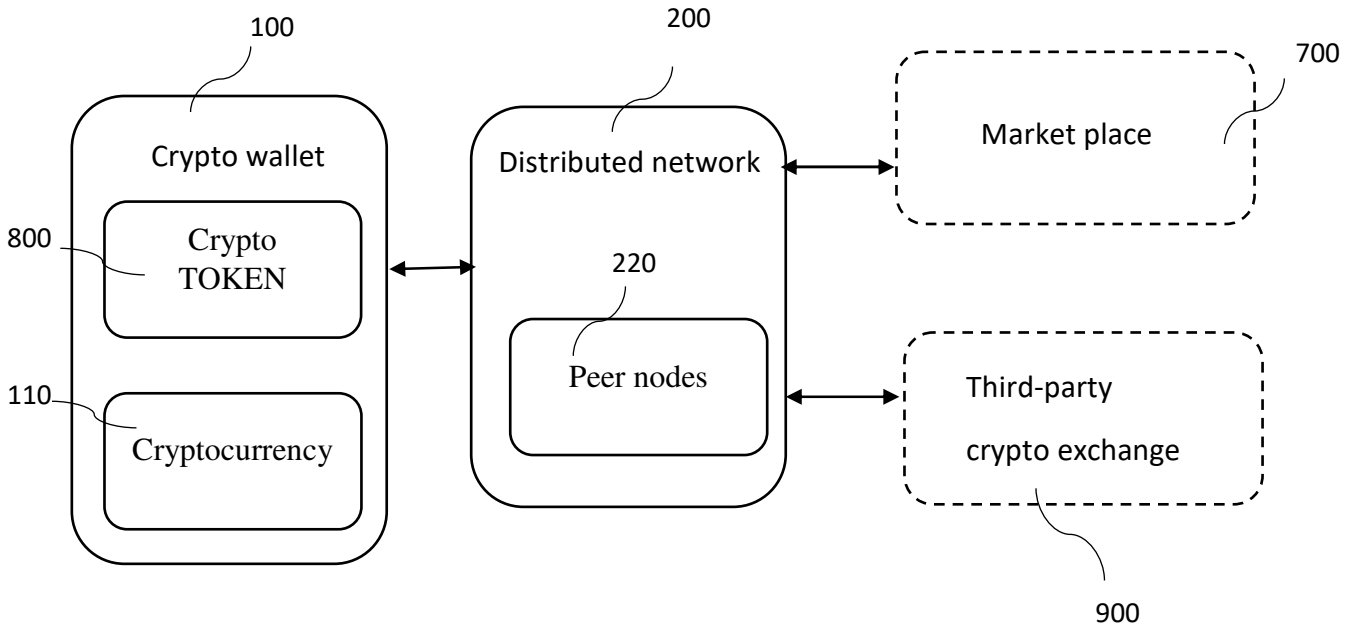


Fig. 1

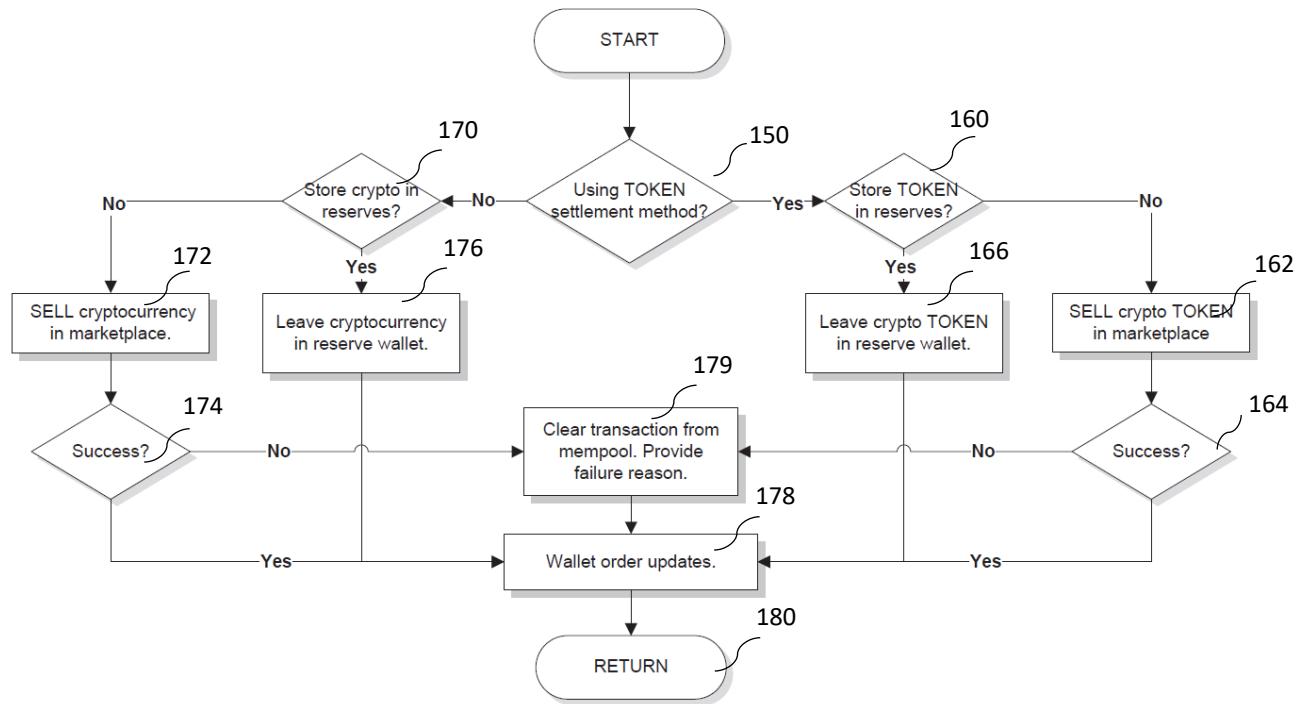


Fig. 2

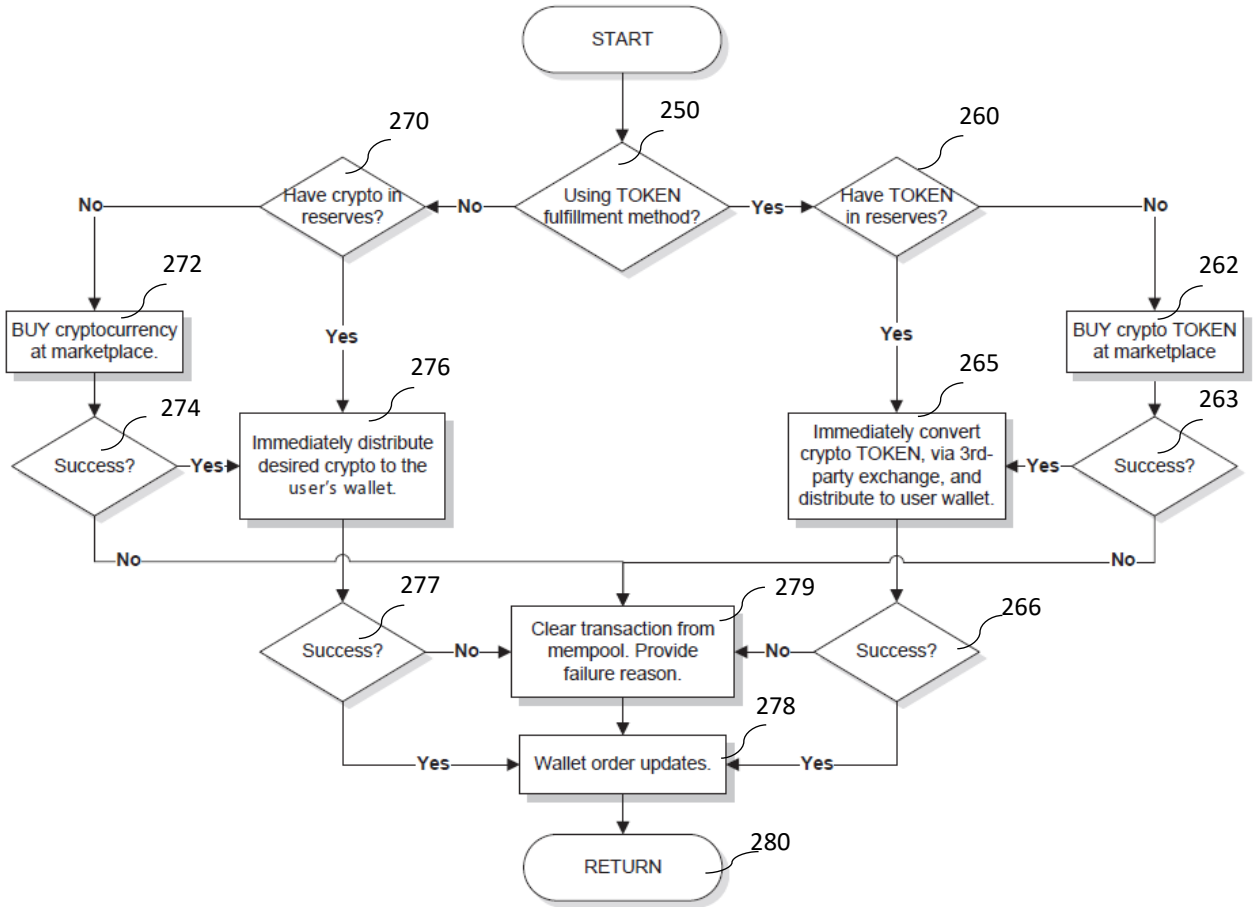


Fig. 3