

CLAIMS

1. A computer-implemented method comprising:

at a service platform, receiving a first document related to an order, wherein the first document is for requesting custom clearance for merchandize included in the order, and wherein the first document comprises mutable data and immutable data;

at the service platform, adding index data to the first document to link the mutable data with the immutable data, wherein the index data includes a transaction hash associated with a transaction related to the first document, wherein the transaction hash is a hash value of the immutable data;

at the service platform, encrypting the immutable data to generate encrypted first data for storing in a blockchain database on a blockchain;

sending the encrypted first data and the index data to the blockchain to store the encrypted first data and the index data on the blockchain in the blockchain database as managed by a blockchain network, wherein the encrypted first data ~~isare~~ stored on the blockchain through consensus of blockchain nodes of the blockchain network; ~~and~~

storing the mutable data and the index data in a smart contract cache storage of the blockchain, wherein the cache storage is for storage of mutable data managed by smart contracts, wherein the smart contract cache storage is a storage medium with a faster read and write speed compared to a read and write speed of the blockchain database, wherein the index data stored at the smart contract cache storage is for associating the mutable data stored at the smart contract cache storage and the immutable data at the blockchain database as associated with the same transaction;-

~~2. —The method of claim 1, comprising~~ at the service platform, receiving second information related to the order, wherein the second information is for requesting clearance for the merchandize included in the order;

at the service platform, encrypting at least a portion of the second information to generate encrypted second data;

sending the encrypted second data to the blockchain network to store the encrypted second data on the blockchain, wherein the encrypted second data ~~isare~~ stored on the blockchain through consensus of blockchain nodes of the blockchain network; and

linking the first data with the second data;

~~3. The method of claim 2,~~ wherein the first data comprises order data, the order data comprises an order identifier of an order document associated with the order, the second data comprises logistics data, the logistics data comprises a logistics transaction identifier of a logistics document associated with the order, ~~and~~ linking the first data with the second data comprises invoking a smart contract on the blockchain to store the order identifier and the logistics transaction identifier in a data structure corresponding to the order, and linking the order identifier with the logistics transaction identifier, ~~and~~.

~~4. The method of claim 3,~~ wherein linking the first data with the second data further comprises enabling a user to search for the logistics document by searching for the order identifier in the data structure corresponding to the order, and searching for the logistics transaction identifier linked to the order identifier.

25. The method ~~of any of claims 13 to 4,~~ wherein the first data comprises order data, the method comprises at the service platform, receiving payment data related to the order, wherein the payment data ~~is~~ provided to a service authority for requesting clearance of the merchandise included in the order;

at the service platform, encrypting at least a portion of the payment data to generate encrypted payment data;

sending the encrypted payment data to the blockchain network to store the encrypted payment data on the blockchain, wherein the encrypted payment data ~~is~~ stored on the blockchain through consensus of blockchain nodes of the blockchain network;

wherein the payment data comprises a payment transaction identifier of a payment document associated with the order, and

the method comprises linking the order data with the payment data, including invoking the smart contract on the blockchain to store the order identifier and the payment transaction identifier in the data structure corresponding to the order, and linking the order identifier with the payment transaction identifier.

~~6. — The method of claim 2, wherein the first data comprises order data,
the order data comprises an order identifier of an order document associated with the order, the second data comprises payment data,
the payment data comprises a payment transaction identifier of a payment document associated with the order, and
linking the first data with the second data comprises invoking a smart contract on the blockchain to store the order identifier and the payment transaction identifier in a data structure corresponding to the order, and linking the order identifier with the payment transaction identifier.~~

~~7. — The method of claim 2, comprising at the service platform, providing an application programming interface to enable a service authority to search for the first data, and search for the second data linked to the first data.~~

38. The method of claim 1, wherein the first document comprises order data, and the order data includes information about at least one of (i) an identifier of an importer associated with the order, (ii) a name of the importer, (iii) contact information of the importer, (iv) merchandise to be imported according to the order, (v) number of items ordered, (vi) a price of the merchandise to be imported, (vii) a currency type, or (viii) a merchant that sells the merchandise.

49. The method of claim 1, wherein the first document comprises logistics data including information about at least one of (i) an overseas segment delivery tracking number, (ii) an overseas segment delivery service company name, (iii) a domestic segment delivery tracking number, (iv) a domestic segment delivery service company name, (v) a company name for custom declaration, (vi) a waybill number, (vii) a package weight, (viii) a delivery address, (ix) an identifier of recipient, (x) a company name of sender, or (xi) an address of sender.

540. The method of claim 1, wherein the first document comprises payment data including information about at least one of (i) a payment transaction identifier, (ii) an order number, (iii) an identifier of payee, (iv) a name of payee, (v) a total actual payment, (vi) a payment method,

(vii) time of payment, (viii) payment currency, (ix) an identifier of payor, (x) a name of payor, or (xi) contact information of payor.

~~641~~. The method of any of claims 1 to ~~540~~, comprising at the service platform, receiving updated first information related to the order,

encrypting the updated first information to generate encrypted updated first information, and

sending the encrypted updated first information to the blockchain network to store the encrypted updated first information on the blockchain.

~~742~~. The method of any of claims 1 to ~~641~~, comprising at the service platform, receiving updated second information related to the order,

encrypting the updated second information to generate encrypted updated second information, and

sending the encrypted updated second information to the blockchain network to store the encrypted updated second information on the blockchain,

wherein the updated second information includes at least one of (i) updated logistics data, or (ii) updated payment data.

~~843~~. The method of any of claims 1 to ~~742~~, wherein encrypting at least a portion of the first document comprises encrypting at least a portion of the first document using an encryption key, the method comprises sharing the encryption key with a service authority, and after the encrypted first data is stored on the blockchain, notifying the service authority that the encrypted first data ~~isare~~ stored on the blockchain.

~~944~~. The method of any of claims 1 to ~~843~~, comprising generating a digital signature of the service platform, and

adding the digital signature of the service platform to the encrypted first data to generate digitally signed encrypted first data,

wherein sending the encrypted first data to the blockchain network comprises sending the digitally signed encrypted first data to the blockchain network to store the digitally signed encrypted first data on the blockchain.

105. An apparatus for providing clearance services, the apparatus comprising a plurality of modules for performing the method of any of claims 1 to 944.