

CLAIMS

What is claimed is:

1. A computer-implemented method for implementing a blockchain-based workflow, the computer-implemented method comprising:

receiving a workflow specification, wherein the workflow specification indicates one or more state transition methods to be performed by a smart contract on a blockchain network, and one or more client service methods to be executed by one or more client devices off the blockchain network participating in a workflow;

generating, according to the workflow specification, the smart contract to be executed on the blockchain network, the smart contract comprising the one or more state transition methods and one or more states, and wherein at least one state of the one or more states automatically triggers at least one of the one or more client service methods to be executed off the blockchain network;

generating, according to the workflow specification and for each client device of the one or more client devices, a configurable client service logic, the configurable client service logic to be executed by the one or more client devices off the blockchain network, the client service logic comprising one or more client service methods, wherein at least one client service method of the one or more client service methods changes the one or more states in the smart contract; and

deploying the smart contract to the blockchain network.

2. The computer-implemented method of claim 1, wherein execution of a state transition method on the blockchain network causes a transition from one state to another state, wherein the one or more states and one or more events are stored on the blockchain network, and wherein each of the one or more events indicates a change of a state of the blockchain network.

3. The computer-implemented method of claim 2, wherein the smart contract further comprises one or more roles, wherein the one or more roles provide access control to the one or more state transition methods, such that a blockchain account associated with one of the

one or more roles is permitted to access one or more of the one or more states transition methods.

4. The computer-implemented method of claim 2, wherein the configurable client service logic comprises one or more application interfaces that access the one or more state transition methods defined in the smart contract.

5. The computer-implemented method of any preceding claim, wherein the configurable client service logic comprises a software development kit (SDK) configurable by the client device off the blockchain network.

6. The computer-implemented method of any preceding claim, wherein the at least one of the one or more client service methods defines a triggering state, a triggering event, and a target state, wherein the at least one of the one or more client service methods generates the target state in response to determining a current state of the blockchain network being the triggering state and detecting the triggering event that causes a change from the triggering state to the target state.

7. The computer-implemented method of claim 6, further comprising:
in response to determining that the target state is generated by the at least one of the client service methods, executing, by the blockchain network, a state transition method to change the current state of the blockchain network to the target state.

8. The computer-implemented method of claim 7, further comprising:
recording, by the blockchain network, the target state as the current state and the triggering event that caused the change from the triggering state to the target state.

9. The computer-implemented method of any preceding claim, wherein the blockchain-based workflow comprises the one or more state transition methods of the smart contract and the one or more client service methods of the client service logic.

10. An apparatus for implementing a blockchain-based workflow, the apparatus comprising a plurality of modules for performing the computer-implemented method of any one of claims 1 to 9.

11. A system for implementing a blockchain-based workflow, comprising:
one or more processors; and
one or more computer-readable memories coupled to the one or more processors and having instructions stored thereon that are executable by the one or more processors to perform the computer-implemented method of any one of claims 1 to 9.