

What Is Claimed Is:

1. A computer-implemented method for managing control of asset on blockchain, the method comprising:

receiving, from a user, a request to invoke an operation on an asset recorded on the blockchain and a token issued to the user;

obtaining token data and a token signature from the token, wherein the token data comprises one or more operations a token owner is authorized to invoke;

determining, based on an issuer of the token, whether the token signature is acceptable;

determining, based on the token data, whether the token authorizes the user to invoke the requested operation by determining whether the requested operation is one of the one or more operations specified in the token data;

determining whether the token is valid; and

in response to determinations that the token signature is acceptable, the token authorizes the user to invoke the requested operation, and the token is valid, allowing the user to invoke the requested operation on the asset recorded on the blockchain.

2. The method of claim 1, wherein the token data comprises: a token identifier, an identifier of athe token owner, an asset type, an asset identifier, ~~one or more operations the token owner is authorized to invoke~~, and a validity of the token.

3. The method of claim 2, further comprising:

identifying the issuer of the token based on the issuer's association with the asset type specified in the token data.

4. The method of any of claims 2 and 3, wherein the user requesting to invoke the operation is associated with an identifier, and determining whether the token authorizes the user to invoke the requested operation further comprises:

determining that the identifier of the token owner specified in the token data matches the identifier of the user requesting to invoke the operation.

5. The method of any of claims 2 through 4, wherein the received request includes an asset type the user is attempting to operate on, and determining whether the token authorizes the user to invoke the requested operation further comprises:

determining that the asset type specified in the token data matches the asset type the user is attempting to operate on.

6. The method of any of claims 2 through 5, wherein the received request includes an asset identifier the user is attempting to operate on, and determining whether the token authorizes the user to invoke the requested operation further comprises:

determining that the asset identifier specified in the token data matches the asset identifier the user is attempting to operate on.

~~7. The method of any of claims 2 through 6, wherein determining whether the token authorizes the user to invoke the requested operation further comprises:~~

~~determining that the requested operation is one of the one or more operations specified in the token data.~~

87. The method of any of claims 2 through 76, wherein determining whether the token is valid further comprises:

determining that the token has not been spent already.

98. The method of any of claims 2 through 76, wherein determining whether the token is valid further comprises:

determining that a termination condition associated with the token has not occurred.

409. A device for managing control of asset on blockchain, 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 method of any of claims 1 to 98.

4110. An apparatus for managing control of asset on blockchain, the apparatus comprising a plurality of modules for performing the method of any of claims 1 to 98.

4211. A non-transitory computer-readable medium having stored therein instructions that, when executed by a processor of a device, cause the device to perform the method of any of claims 1 to 98.