

CLAIMS

1. A computer-implemented method for digital asset management, comprising:
obtaining a request for creating a digital asset corresponding to a tangible asset,
wherein the request comprises:
 - a proof indicating an authenticity and a condition of the tangible asset
provided by a creator of the digital asset, and
 - one or more characteristics of the digital asset;verifying that the creator of the digital asset satisfies one or more required
permissions for digital asset creation;
 - generating a blockchain contract corresponding to the tangible asset based on the one
or more characteristics of the digital asset, wherein:
 - the blockchain contract identifies a first blockchain account associated with
the creator of the digital asset; and
 - the blockchain contract comprises software instructions automatically
executable by a blockchain network to perform one or more operations associated
with the digital asset, the software instructions comprise an executable function for
issuing the digital asset to one or more blockchain accounts associated with a
blockchain that is associated with the blockchain network;
 - deploying the generated blockchain contract on the blockchain associated with the
blockchain network;
 - generating a blockchain transaction for issuing a quantity of the digital asset to a
second blockchain account associated with the blockchain, wherein the blockchain
transaction invokes the executable function for issuing the digital asset; and
 - sending the blockchain transaction to the blockchain network to cause the blockchain
network to issue the quantity of the digital asset to the second blockchain account by
automatically executing the blockchain contract based on the blockchain transaction.
2. The method of claim 1, wherein the blockchain contract comprises one or more
properties associated with the digital asset, the one or more properties comprising:
 - a total quantity of the digital asset;
 - a type of the digital asset;
 - a quantity of the digital asset kept in the first blockchain account;
 - a date for an initial issuance of the digital asset; or

a quantity of the digital asset for the initial issuance of the digital asset.

3. The method of claim 2, further comprising:

generating a blockchain transaction for modifying one or more of the one or more properties associated with the digital asset; and

sending the blockchain transaction to a blockchain node for adding to the blockchain, wherein the blockchain transaction invokes the deployed blockchain contract.

4. The method of any of the preceding claims, wherein the blockchain contract comprises:

one or more required permissions for one or more blockchain accounts associated with the blockchain; or

one or more required permissions for performing one or more operations with respect to the digital asset.

5. The method of any of the preceding claims, wherein the software instructions further comprise:

a function executable to transfer a quantity of the digital asset between one or more blockchain accounts associated with the blockchain;

a function executable to set one or more restrictions on the digital asset;

a function executable to remove the one or more restrictions on the digital asset; or

a function executable to determine whether a permission associated with the digital asset is provided.

6. The method of any of the preceding claims, wherein the deploying the generated blockchain contract on the blockchain comprises:

generating a blockchain transaction comprising the generated blockchain contract;

and

sending the blockchain transaction to a blockchain node for adding to the blockchain.

7. The method of claim 6, wherein the blockchain transaction comprising the generated blockchain contract further comprises information associated with the tangible asset corresponding to the digital asset, the information comprising:

an identifier of the tangible asset;

a valuation of the tangible asset;
a timeframe associated with creation of the tangible asset;
a characteristic of the tangible asset; or
a quantity of the tangible asset.

8. The method of any of the preceding claims, further comprising:
locally storing information associated with the tangible asset in correspondence with
information associated with the deployed blockchain contract.

9. The method of any of the preceding claims, wherein:
the digital asset represents a value of the tangible asset.

10. The method of claim any of the preceding claims, further comprising:
obtaining one or more blocks of the blockchain;
extracting, from the one or more obtained blocks, one or more blockchain transactions
associated with a third blockchain account of the blockchain; and
determining, based on the one or more extracted blockchain transactions, a quantity of
the digital asset in the third blockchain account.

11. The method of any of the claims 1-10, further comprising:
obtaining one or more blocks of the blockchain;
extracting, from the obtained one or more blocks, one or more blockchain transactions
invoking the blockchain contract; and
determining a transaction history associated with the digital asset based on the one or
more extracted blockchain transactions.

12. The method of any of the preceding claims, wherein the blockchain is maintained
by a plurality of blockchain nodes, wherein one or more of the blockchain nodes correspond
to:

one or more asset exchange institutions; or
one or more asset exchange regulatory agencies.

13. A system for digital asset management, 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 12.

14. An apparatus for digital asset management comprising a plurality of modules for performing the method of any of claims 1 to 12.

15. A non-transitory computer-readable storage medium configured with instructions executable by one or more processors to cause the one or more processors to perform the method of any of claims 1 to 12.