

CLAIMS

1. A method for attestation issuance, comprising:

registering, by an attestation issuer computer program for an attestation issuer executed by an attestation issuer electronic device, an attestation issuer decentralized identifier and an attestation issuer public key for the attestation issuer on a distributed ledger in a distributed ledger network, wherein the decentralized identifier for the attestation issuer is unique to the attestation issuer and is resolved to a standardized document that describes the attestation issuer;

receiving, by the attestation issuer computer program and from a computer program executed by a mobile electronic device associated with a user, a request to issue an attestation, wherein the attestation represents a verifiable claim about the user in relation to the attestation issuer;

receiving, by the attestation issuer computer program, user credentials for the user from the computer program;

authenticating, by the attestation issuer computer program, the user based on the user credentials;

receiving, by the attestation issuer computer program, a decentralized identifier for the user from the distributed ledger;

validating, by the attestation issuer computer program, the decentralized identifier for the user;

retrieving, by the attestation issuer computer program, attestation details for the user from an attestation issuer database;

providing, by the attestation issuer computer program and to the computer program, the attestation details for the attestation;

receiving, by the attestation issuer computer program and from the computer program, acceptance of the attestation;

creating, by the attestation issuer computer program, the attestation comprising the attestation details;

signing, by the attestation issuer computer program, the attestation signed with an attestation issuer private key that corresponds to the attestation issuer public key; and

communicating, by the attestation issuer computer program, the attestation to the computer program.

2. The method of claim 1, wherein the computer program selects the attestation issuer based on a type of the attestation.

3. The method of claim 1, wherein the computer program selects the attestation issuer based on an identification of a relying party.

4. A method of attestation revocation, comprising:
receiving, by an attestation issuer computer program for an attestation issuer executed by an electronic device and from a user or the attestation issuer, a request to revoke an attestation issued by the attestation issuer, wherein the attestation represents a verifiable claim about the user in relation to the attestation issuer;
retrieving, by the attestation issuer computer program, a decentralized identifier for the user from a distributed ledger in a distributed ledger network, wherein the decentralized identifier for the user is unique to the user and is resolved to a standardized document that describes the user; and
removing, by the attestation issuer computer program, the decentralized identifier for the user from a list of valid issued attestations for the attestation issuer, or adding the decentralized identifier to a list of revoked attestations for the attestation issuer.

5. The method of claim 4, wherein the attestation issuer automatically requests revocation in response to a user change in circumstances with regard to the attestation issuer.

6. The method of claim 5, wherein the user change in circumstances is a change in user employment status.

7. The method of claim 5, wherein the user change in circumstances is a change in user account status.

8. The method of claim 5, wherein the user change in circumstances is a change in user location.

9. The method of claim 5, further comprising:
sending, by the attestation issuer computer program, a confirmation of revocation to at least one of the user and the attestation issuer.

10. A method for decentralized digital identity attestation verification, comprising:

- receiving, by an attestation issuer computer program for an attestation issuer executed by an electronic device and from a relying party, an attestation for a user and a request to verify the attestation, wherein the attestation represents a verifiable claim about the user in relation to the attestation issuer;
- retrieving, by the attestation issuer computer program, a user decentralized identifier for the user from a distributed ledger in a distributed ledger network, wherein the user decentralized identifier is unique to the user and is resolved to a standardized document that describes the user;
- retrieving, by the attestation issuer computer program, an attestation issuer decentralized identifier for an attestation issuer from the distributed ledger, wherein the attestation issuer decentralized identifier is unique to the attestation issuer and is resolved to a standardized document that describes the attestation issuer;
- validating, by the attestation issuer computer program, the user decentralized identifier and the attestation issuer decentralized identifier;
- verifying, by the attestation issuer computer program, that the attestation has not been revoked by determining that the user decentralized identifier is on a list of valid attestations for the attestation issuer or that the user decentralized identifier is not on a list of revoked attestations for the attestation issuer; and
- communicating, by the attestation issuer computer program, an indication that the attestation is valid to the relying party.

11. The method of claim 10, further comprising:

- verifying, by the attestation issuer computer program, a signature on the request to issue an attestation.

12. The method of claim 10, wherein the request is received via a mobile application executed by the user.

13. The method of claim 12, wherein the relying party presents the request to the mobile application as a machine-readable code.

14. The method of claim 12, wherein the request is signed with a private key for the user.

15. The method of claim 10, further comprising:
retrieving, by the attestation issuer computer program and from the distributed ledger, a public key for the user;
retrieving, by the attestation issuer computer program and from the distributed ledger, a public key for the attestation issuer;
validating, by the attestation issuer computer program, a user signature on the attestation using the public key for the user; and
validating, by the attestation issuer computer program, an attestation issuer signature on the attestation using the public key for the attestation issuer.