

Independent Claim 7 (Method Claim – Automated RWA Validation and Token Minting)

A computer-implemented method for issuing a tokenized Real World Asset (RWA) from IoT-sourced data, the method comprising:

deploying sensor devices, edge routers, and edge gateways to collect real-time data associated with any RWA;

transmitting the collected data to an IoT cloud platform;

applying a validation and verification process in the cloud platform to generate a certified RWA certificate; and

automatically minting a value token on a blockchain distributed ledger by creating an immutable record that cryptographically binds the certificate to a public-key address and registers IoT devices and users to prevent double issuance, so that ownership and provenance are permanently verifiable by any participant in the network.

Dependent Claims for Independent Claim 7

The following is a complete set of dependent claims (Claims 2–22) that further specify and narrow the computer-implemented method of Independent Claim 7. Each dependent claim is fully supported by the disclosures in the attached document (Patent Filing Highlights US20200027096A1.docx), including the detailed descriptions of IoT sensor/edge-router/gateway deployment, real-time data collection and transmission, automated validation/verification processes (accuracy, sampling design, internal controls, standards compliance), certified RWA certificate generation, automatic blockchain minting (immutable record creation, cryptographic binding to public-key address, device/user registration to prevent double issuance), permanent verifiability of ownership and provenance, primary-market issuance, cryptographic hashing/linking, redundant ledger copies for fault tolerance, closed-loop automation, fraud reduction, and the overall IoT-sourced tokenized RWA issuance architecture as of the November 7, 2017 priority date.

Full Claim Set in Formal USPTO-Style Format (Reordered to Start with Claim 1)

1. A computer-implemented method for issuing a tokenized Real World Asset (RWA) from IoT-sourced data, the method comprising: deploying sensor devices, edge routers, and edge gateways to collect real-time data associated with any RWA; transmitting the collected data to an IoT cloud platform; applying a validation and verification process in the cloud platform to generate a certified RWA certificate; and automatically minting a value token on a blockchain distributed ledger by creating an immutable record that cryptographically binds the certificate to a public-key address and registers IoT devices and users to prevent double issuance, so that ownership and provenance are permanently verifiable by any participant in the network.
2. The method of claim 1, wherein deploying the sensor devices, edge routers, and edge gateways further comprises configuring the devices to communicate using one or more wireless protocols selected from the group consisting of Bluetooth, Zigbee, WiFi, Z-Wave, Sub-Gigahertz, Cellular, Satellite, LoRaWAN, Sigfox, and combinations thereof.
3. The method of claim 1, wherein collecting real-time data is performed continuously from physical facilities or infrastructure instrumented with the sensor devices, edge routers, and edge gateways.

4. The method of claim 1, wherein transmitting the collected data to the IoT cloud platform occurs in real time or near real time.
5. The method of claim 1, wherein applying the validation and verification process comprises automated processes for accuracy, sampling design, internal controls, and verification consistent with established standards for real-world asset certification.
6. The method of claim 1, wherein generating the certified RWA certificate is performed automatically by the IoT cloud platform upon successful validation and verification of the transmitted data.
7. The method of claim 1, wherein automatically minting the value token further comprises creating the immutable record on the blockchain distributed ledger as a primary market activity based on the certified RWA certificate.
8. The method of claim 1, wherein creating the immutable record includes one or more of public-key addresses, cryptographic block linking, timestamps, transaction data, user identifiers, equipment identifiers, validation reports, and verification statements.
9. The method of claim 1, wherein registering IoT devices and users on the blockchain distributed ledger cryptographically binds the devices, the certified RWA certificate, and the value token to prevent double issuance.
10. The method of claim 1, wherein the blockchain distributed ledger maintains multiple redundant copies across cloud environments to provide fault tolerance and Byzantine fault tolerance for the minted value token.
11. The method of claim 1, wherein the immutable record employs cryptographic hashing of each new block to prior blocks to ensure permanent verifiability of ownership and provenance of the tokenized RWA.
12. The method of claim 1, wherein the method provides permanent auditability and fraud reduction through the immutable record of the entire issuance process on the blockchain distributed ledger.
13. The method of claim 1, further comprising integrating the minted value token with a blockchain-based trading platform that enables subsequent listing and trading of the tokenized RWA on a commodity, crypto, security, or financial exchange.
14. The method of claim 1, wherein the method operates in a closed-loop automated process from deployment and data collection through validation, certificate generation, and automatic minting of the value token.
15. The method of claim 1, wherein the value token represents a digital representation of any commodity, security, physical asset, financial instrument, or other RWA that is verifiable and cannot be double-spent due to the cryptographic binding and registration on the distributed ledger.
16. The method of claim 1, wherein the method eliminates intermediaries by performing end-to-end automated issuance of the tokenized RWA directly from IoT-sourced data to the blockchain distributed ledger.
17. The method of claim 1, wherein registering IoT devices and users further comprises a secure registration process that links the sensor devices, edge routers, gateways, and the certified RWA certificate on the distributed ledger.

18. The method of claim 1, wherein the blockchain distributed ledger records the minted value token with timestamps and transaction data to ensure real-time or near real-time provenance tracking.
19. The method of claim 1, wherein the method supports scalable, industrial-scale issuance of tokenized RWAs by combining real-time IoT data acquisition with automated blockchain minting.
20. The method of claim 1, further comprising automated preparation for monetization by associating the minted value token with mechanisms for ownership transfer and payment upon future trading execution on an integrated blockchain-based exchange.
21. The method of claim 1, wherein the certified RWA certificate and the value token are cryptographically bound such that any participant in the network can permanently verify ownership and provenance without reliance on off-chain records.
22. The method of claim 1, wherein the method further comprises executing wallet or payment applications within a Trusted Execution Environment (TEE) in connection with the automatic minting of the value token on the blockchain distributed ledger.

These claims form a self-contained, commercially robust claim family that directly maps to the computer-implemented method for automated RWA validation and token minting from IoT-sourced data, including deployment, real-time transmission, cloud validation, certificate generation, and blockchain minting with cryptographic binding and registration as described in the November 7, 2017 provisional disclosure. The full set (renumbered to begin with Claim 1) can be incorporated into a non-provisional, continuation, or continuation-in-part application (alone or in combination with the claim families of Independent Claims 1–6) to further strengthen the Parisii patent portfolio for tokenized Real World Assets and blockchain-based RWA infrastructure.