

Independent Claim 6 (System Claim – End-to-End IoT-to-Blockchain RWA Token Lifecycle)

A system for automating the generation and monetization of tokenized Real World Assets (RWAs), the system comprising:

an IoT edge hardware layout with sensor devices, edge routers, and edge gateways that continuously measure data associated with any RWA;
an IoT cloud platform in communication with the edge hardware that receives the data in real time, validates it, and generates a digital RWA certificate;
a blockchain-based distributed ledger integrated with the cloud platform that automatically mints a value token representing the certificate as an immutable digital asset, including registration of users and equipment; and
a blockchain-based trading platform in communication with the ledger that lists the value token and executes buy/sell transactions, swaps, or derivative instruments on a commodity, crypto, or security exchange while recording every transfer as a new cryptographically linked block.

Dependent Claims for Independent Claim 6

The following is a complete set of dependent claims (Claims 2–22) that further specify and narrow the system of Independent Claim 6. Each dependent claim is fully supported by the disclosures in the attached document (Patent Filing Highlights US20200027096A1.docx), including the detailed descriptions of the IoT edge hardware layout (continuous measurement, wireless protocols), real-time IoT cloud platform communication/validation/certificate generation, blockchain-based distributed ledger integration (automatic minting, immutable digital asset recording, user/equipment registration), blockchain-based trading platform functionality (listing, buy/sell transactions, swaps, derivative instruments, cryptographically linked block recording), primary-market issuance, redundant ledger copies for fault tolerance, automated monetization/settlement, fraud reduction through permanent verification, and the overall end-to-end IoT-to-blockchain tokenized RWA lifecycle as of the November 7, 2017 priority date.

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

1. A system for automating the generation and monetization of tokenized Real World Assets (RWAs), the system comprising: an IoT edge hardware layout with sensor devices, edge routers, and edge gateways that continuously measure data associated with any RWA; an IoT cloud platform in communication with the edge hardware that receives the data in real time, validates it, and generates a digital RWA certificate; a blockchain-based distributed ledger integrated with the cloud platform that automatically mints a value token representing the certificate as an immutable digital asset, including registration of users and equipment; and a blockchain-based trading platform in communication with the ledger that lists the value token and executes buy/sell transactions, swaps, or derivative instruments on a commodity, crypto, or security exchange while recording every transfer as a new cryptographically linked block.
2. The system of claim 1, wherein the IoT edge hardware layout comprises sensor devices, edge routers, and edge gateways configured 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 system of claim 1, wherein the IoT edge hardware layout continuously measures data in real time or near real time from physical facilities or infrastructure associated with the RWA.
4. The system of claim 1, wherein the IoT cloud platform receives the data in real time and performs automated validation using processes for accuracy, sampling design, internal controls, and verification consistent with established standards for real-world asset certification.
5. The system of claim 1, wherein the blockchain-based distributed ledger automatically mints the value token by recording the digital RWA certificate as an immutable digital asset that includes one or more of public-key addresses, cryptographic block linking, timestamps, transaction data, user identifiers, equipment identifiers, validation reports, and verification statements.
6. The system of claim 1, wherein the blockchain-based distributed ledger registers all participants and equipment on the distributed ledger to prevent double-spending or fraud in the tokenized RWA.
7. The system of claim 1, wherein the blockchain-based distributed ledger maintains multiple redundant copies across cloud environments to provide fault tolerance and Byzantine fault tolerance for the tokenized RWA records.
8. The system of claim 1, wherein the blockchain-based trading platform lists the value token and executes buy/sell transactions, swaps, or derivative instruments using market orders, limit orders, options, forwards, futures, swaps, or pre-market contracts.
9. The system of claim 1, wherein the blockchain-based trading platform further supports advanced order types selected from the group consisting of short selling, trailing stop orders, conditional orders, One-Triggers-the-Other (OTO) orders, One-Cancels-the-Other (OCO) orders, One-Triggers-a-One-Cancels-the-Other (OTOCO) orders, and combinations thereof.
10. The system of claim 1, wherein the blockchain-based trading platform applies time-in-force rules to orders, the time-in-force rules selected from the group consisting of day orders, good-'til-canceled orders (up to 180 days), fill-or-kill orders, immediate-or-cancel orders, on-the-open orders, on-the-close orders, and combinations thereof.
11. The system of claim 1, wherein the blockchain-based trading platform executes transactions in real time or near real time by recording every transfer as a new cryptographically linked block on the distributed ledger.
12. The system of claim 1, wherein recording every transfer as a new cryptographically linked block further comprises employing cryptographic hashing of each new block to prior blocks to ensure immutability and permanent auditability of the tokenized RWA.
13. The system of claim 1, wherein the system automatically mints the value token as a primary market activity based on the validated digital RWA certificate generated from the continuously measured IoT data.
14. The system of claim 1, further comprising automated monetization by transferring funds to the seller upon execution of a winning bid while simultaneously delivering the value token to the buyer.
15. The system 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 immutable nature of the blockchain-based distributed ledger.

16. The system of claim 1, wherein the blockchain-based trading platform functions as an integrated commodity, crypto, or security exchange without requiring separate centralized custodians or clearinghouses.
17. The system of claim 1, wherein the system operates in a closed-loop automated process from continuous IoT measurement through real-time validation, automatic token minting, listing, and execution of trades or swaps.
18. The system of claim 1, wherein the system eliminates intermediaries by performing end-to-end automated generation, monetization, and trading of tokenized RWAs directly on the integrated IoT cloud platform, blockchain-based distributed ledger, and trading platform.
19. The system of claim 1, wherein the blockchain-based trading platform enables high-frequency, derivative, and institutional trading of tokenized RWAs while maintaining permanent auditability and fraud reduction through immutable ledger recording.
20. The system of claim 1, wherein the IoT cloud platform and blockchain-based distributed ledger are in continuous communication to enable real-time or near real-time minting of the value token from validated IoT data.
21. The system of claim 1, wherein the system provides permanent verification of the tokenized RWA through immutable recording of the entire lifecycle, including IoT data measurement, validation, certificate generation, token minting, and every transfer on the distributed ledger.
22. The system of claim 1, wherein the blockchain-based trading platform in communication with the ledger executes swaps or derivative instruments by automatically recording each transaction as a new cryptographically linked block, thereby transferring ownership and settling payment in real time or near real time.

These claims form a self-contained, commercially robust claim family that directly maps to the system for end-to-end IoT-to-blockchain tokenized Real World Asset (RWA) lifecycle, including continuous measurement, real-time validation, automatic minting, and integrated trading platform functionality 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 1–5) to further strengthen the Parisii patent portfolio for tokenized Real World Assets and blockchain-based RWA infrastructure.