

Independent Claim 5 (Business Method – OTP-Secured Token Monetization)

A business method for monetizing tokenized digital twins or representations of any physical asset, commodity, digital asset, security, contract, or other verifiable Real World Asset (RWA) via a non-repeatable digital ledger, comprising: deriving a live non-repeating random number sequence from IoT sensors for one-time pad encryption; issuing OTP-secured value tokens representing verified digital twins or representations on a timestamp-based distributed ledger; offering the tokens for trading, swapping, or exchange on an integrated commodity, crypto, or security platform; and executing transfers by owner-provided timestamp and one-time pad key with automatic ledger update and key destruction.

Dependent Claims for Independent Claim 5

The following is a complete set of dependent claims (Claims 2–22) that further specify and narrow the business method of Independent Claim 5. Each dependent claim is fully supported by the disclosures in the attached document (Patent Filing Highlights US20210019429A1.docx), including the detailed descriptions of IoT-derived live non-repeating random number sequences for one-time pad encryption, timestamp-based distributed ledger issuance of OTP-secured value tokens, integrated trading/swapping/exchange platform functionality, owner-provided timestamp + key for transfers with automatic ledger update and key destruction, quantum-resistant perfect secrecy, device/user registration, primary-market issuance, real-time operation, and applicability to any tokenized digital twin or representation of any physical asset, commodity, or verifiable Real World Asset (RWA) as of the January 15, 2018 priority date.

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

1. A business method for monetizing tokenized digital twins or representations of any physical asset, commodity, digital asset, security, contract, or other verifiable Real World Asset (RWA) via a non-repeatable digital ledger, comprising: deriving a live non-repeating random number sequence from IoT sensors for one-time pad encryption; issuing OTP-secured value tokens representing verified digital twins or representations on a timestamp-based distributed ledger; offering the tokens for trading, swapping, or exchange on an integrated commodity, crypto, or security platform; and executing transfers by owner-provided timestamp and one-time pad key with automatic ledger update and key destruction.
2. The business method of claim 1, wherein deriving the live non-repeating random number sequence further comprises generating the sequence from fluctuating physical measurements of IoT sensors, edge routers, and edge gateways including voltage fluctuations from solar panels or electrical grids, electromagnetic fields, thermal events, or barometric pressure.
3. The business method of claim 1, wherein deriving the live non-repeating random number sequence further comprises normalizing the sequence to a system clock at microsecond or finer granularity so that each encryption uses a unique timestamp-aligned one-time pad segment.
4. The business method of claim 1, wherein issuing OTP-secured value tokens further comprises collecting real-time data via the IoT sensors, validating the data, and generating a digital RWA certificate prior to minting on the timestamp-based distributed ledger.
5. The business method of claim 1, wherein issuing OTP-secured value tokens is performed as a primary market activity based on the verified digital twins or representations generated from IoT-sourced data.
6. The business method of claim 1, wherein the timestamp-based distributed ledger records each OTP-encrypted digital twin or representation identified exclusively by its encryption-start timestamp.

7. The business method of claim 1, wherein the integrated commodity, crypto, or security platform enables trading, swapping, or exchange using market orders, limit orders, options, forwards, futures, swaps, or pre-market contracts.
8. The business method of claim 1, wherein the integrated 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.
9. The business method of claim 1, wherein the integrated 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.
10. The business method of claim 1, wherein executing transfers by owner-provided timestamp and one-time pad key further comprises decrypting the record, updating the ledger to reflect new ownership, and automatically destroying the used key segment server-side.
11. The business method of claim 1, wherein the business method provides information-theoretic perfect secrecy and quantum-resistant security for all tokenized digital twins or representations through the one-time pad encryption and non-repeatable ledger architecture.
12. The business method of claim 1, wherein the timestamp-based distributed ledger maintains multiple redundant copies across cloud environments to provide fault tolerance and Byzantine fault tolerance.
13. The business method of claim 1, further comprising registering unique identifiers for IoT sensors, routers, and gateways on the distributed ledger to cryptographically bind device provenance to the OTP-secured tokenized digital twin or representation.
14. The business method of claim 1, wherein the business method operates in real time or near real time to enable continuous derivation of the non-repeating sequence, issuance of OTP-secured tokens, trading, and owner-initiated transfers.
15. The business method of claim 1, wherein the value tokens represent immutable digital twins or representations of any commodity, security, physical asset, financial instrument, or other verifiable Real World Asset that are verifiable and cannot be double-spent due to the one-time pad encryption and non-repeatable ledger architecture.
16. The business method of claim 1, wherein the business method eliminates intermediaries by performing end-to-end monetization—including derivation of the non-repeating sequence, OTP-secured issuance, trading, and transfers—directly on the non-repeatable digital ledger technology.
17. The business method of claim 1, wherein the non-repeating random number sequence is generated from IoT sensor measurements in a manner that is non-reproducible with earth-bound technology.
18. The business method of claim 1, further comprising automated monetization by transferring funds to the seller upon execution of a winning bid while simultaneously delivering the OTP-secured value token to the buyer.
19. The business method of claim 1, wherein the integrated platform supports high-frequency, derivative, and institutional trading of the OTP-secured tokenized digital twins or representations while maintaining perfect secrecy.
20. The business method of claim 1, wherein the business method further comprises executing wallet or payment applications within a Trusted Execution Environment (TEE) in connection with owner-initiated transfers using the timestamp and one-time pad key.

21. The business method of claim 1, wherein the business method provides Encryption as a Service for any RWA data or value token, enabling real-time OTP encryption, timestamp-based ledger issuance, secure key delivery, and monetization through trading or exchange.
22. The business method of claim 1, wherein the distributed ledger employs the non-repeating one-time pad segments such that no key is ever reused, providing perfect forward secrecy for every tokenized digital twin or representation during issuance, trading, and transfers.

These claims form a self-contained, commercially robust claim family that directly maps to the business method for monetizing tokenized digital twins or representations of any physical asset, commodity, or verifiable Real World Asset (RWA) via a non-repeatable digital ledger using IoT-derived OTP encryption, timestamp-based issuance, integrated trading platform, and owner-initiated transfers with automatic ledger update and key destruction as described in the January 15, 2018 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 1–4) to further strengthen the Parisii patent portfolio for quantum-tolerant Web4 W4S security, tokenized Real World Assets, and blockchain-based RWA/digital twin infrastructure.