PATENT BY 3SD SOLUTIONS AND SERVICES PRIVATE LIMITED

1. **PATENT NUMBER:** 01

2. **PROVISIONAL PATENT NO:** TEMP/E-1/86524/2025-KOL

3. **APPLICATION NUMBER:** 202531078105

4. **PATENT REMARKS:**

BLOCKCHAIN-BASED SMART INVOICE TOKENIZATION ENGINE WITH EMBEDDED METADATA, SMART CONTRACT AUTOMATION, AND AI-DRIVEN RISK SCORING

5. **FIELD OF INVENTION:**

The present invention relates to the field of financial technology (fintech) and, more particularly, to systems and methods for converting invoices into blockchain-based tokenized assets, such as non-fungible tokens (NFTs), with embedded compliance and risk assessment data. The invention integrates blockchain technology, artificial intelligence–driven financial risk scoring, and programmable escrow mechanisms to enable secure, transparent, and automated invoice settlement, trading, and liquidity management.

6. **DESCRIPTION OF PATENT:**

a) Smart Invoice Tokenization – Converts real-world invoices into unique, traceable, and fractionable blockchain-based assets (NFTs) enriched with compliance data and AI-driven risk assessment.

b) Embedded Metadata & Smart Contracts – Stores core invoice details (buyer, seller, amount, due date) in the token and automatically assigns smart contracts to manage lifecycle and settlement.

c) Efficiency in Trade Finance – Combines decentralized ledger technology, AI-powered financial validation, and programmable escrow workflows to improve financing, settlement, and trading of invoices.

d) Risk-Scored NFTs – Generates NFTs containing invoice status, payment history, KYB verification, and AI-derived risk scores, with hybrid chain–external call backs for real-time updates from off-chain AI oracles.

e) Milestone-Based Escrow – Locks and releases funds only on predefined triggers such as payment confirmation or project milestone completion, reducing default risk and enhancing trust.

f) Liquidity & DeFi Integration – Supports automated liquidity governance, enabling invoice token trading or pooling in DeFi marketplaces, with on-chain ROI pay outs via smart contracts.

g) Patent Focus – Covers logic for tokenizing invoice metadata (buyer, seller, amount, due date), automatic assignment of smart contracts per token, and embedding of AI-driven risk scoring directly in token metadata
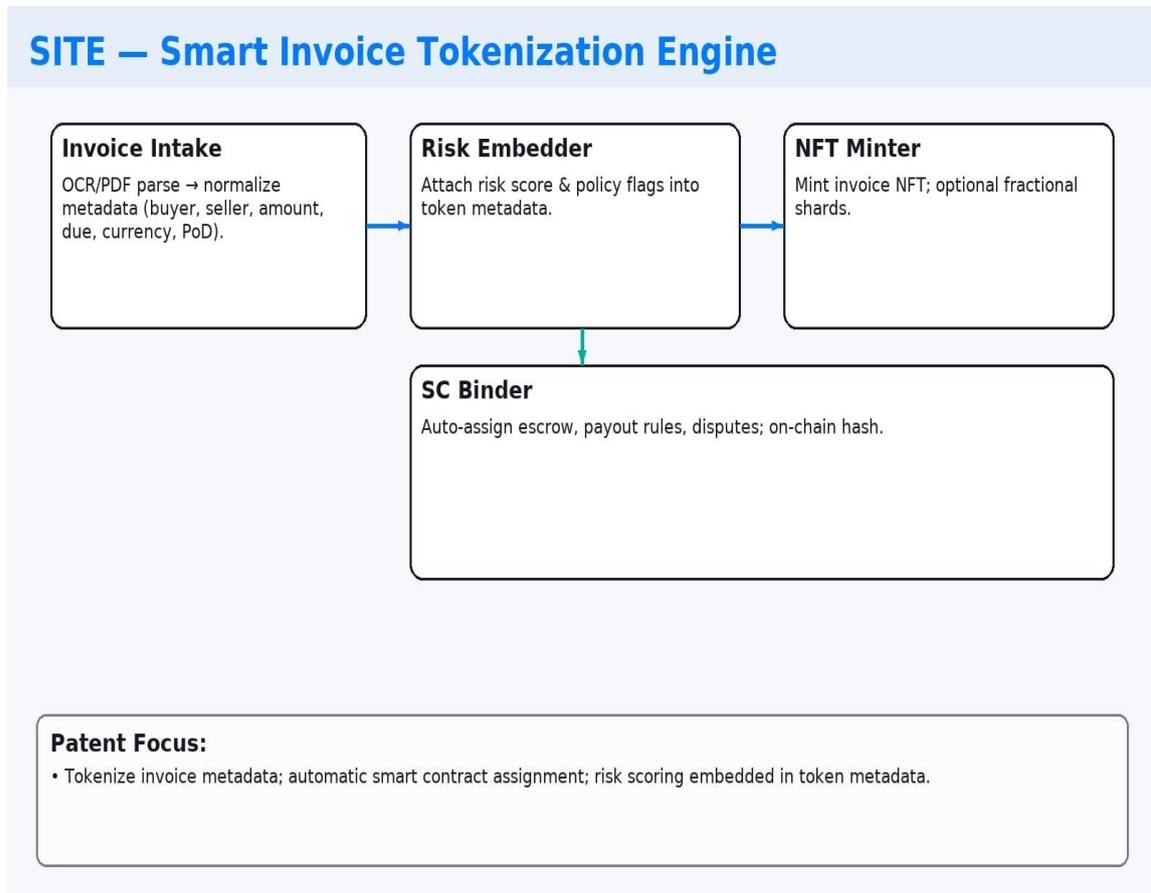
7. **PATENT DIAGRAMS:**

Diagram 1:

SITE — Smart Invoice Tokenization Engine

Invoice Intake
OCR/PDF parse → normalize metadata (buyer, seller, amount, due, currency, PoD).

Risk Embedder
Attach risk score & policy flags into token metadata.

NFT Minter
Mint invoice NFT; optional fractional shards.

SC Binder
Auto-assign escrow, payout rules, disputes; on-chain hash.

Patent Focus:
• Tokenize invoice metadata; automatic smart contract assignment; risk scoring embedded in token metadata.

Diagram 2:

Smart Invoice Tokenization Engine (SITE)