

SOLANA · UTILITY TOKEN

ELEVEN DIAMOND

EDC · POWERING THE TRUECHAIN PROTOCOL

WHITEPAPER V2.1

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Built by: a Solana developer with 17 years of institutional experience (banking, pharmaceutical, energy)

Live Product: **truechain.elevendiamond.com**

Utility Token: **\$EDC** — 55umox3iqudABgAcgRCeZn2CHivYzR8Q5VMxfzXQveuE

Network: **Solana**

1. Executive Summary

"You will never lose your document again."

Document and physical-asset fraud is a persistent, global problem. Counterfeit certificates, forged diplomas, and fraudulent luxury-goods documentation are widely reported to cost individuals, institutions, and markets billions of dollars annually. Traditional paper-based and even most "digital" certification systems remain vulnerable to duplication, tampering, and loss.

TrueChain is a Solana-based verification protocol that creates tamper-resistant, cryptographically verifiable on-chain proof of a document or physical-asset record's existence and ownership. Unlike earlier-stage concepts, TrueChain is not a roadmap promise — it is a **live, running product**, publicly accessible at **truechain.elevendiamond.com**, secured with SSL, and operating on real Solana infrastructure.

The protocol's native utility token, **\$EDC (Eleven Diamond Coin)**, is a fixed-supply asset (1,111 tokens, no mint authority, no freeze authority) live on Solana Mainnet, designed to serve as the primary medium through which TrueChain's paid services are accessed.

Where We Are Today

✓ COMPLETED & LIVE

- TrueChain protocol deployed and publicly accessible
- Real-time NFT/GBT minting on Solana (devnet)
- IPFS-based metadata storage
- SHA-256 document hash verification
- Drag-and-drop automatic document matching
- Wallet ownership verification layer
- Public/Private visibility toggle for sensitive documents
- QR-code based verification flow
- \$EDC live on Solana Mainnet, verifiable on Solscan
- SSL-secured custom domain, 24/7 uptime via process management

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- Multi-wallet support (Phantom, Solflare, OKX) via Wallet Adapter
- \$EDC/SOL payment integration (Pyth price feed)
- Rate limiting and bot-abuse protections
- Verified Issuer whitelist — design & spec
- Mainnet migration of the minting engine
- First real pilot user test (screen-recorded)

2. The Problem

Published estimates from global anti-counterfeiting and fraud-prevention organizations place annual losses from document and asset fraud in the billions of dollars. Two categories stand out:

OFFICIAL DOCUMENTS

Diplomas, licenses, permits, and other official records are widely reported to be forged or duplicated at scale. Employers, institutions, and authorities have no fast, reliable, cross-border way to confirm that a specific document has not been altered since it was issued.

SELLERS VERIFYING PRODUCT AUTHENTICITY

Sellers of high-value or original goods — jewelry, watches, collectibles, limited editions, and other branded products — lack an open, low-cost way to prove a specific item's certificate has not been tampered with or duplicated. This applies to any seller seeking to verify product originality, not only jewelry-specific businesses.

3. The Solution

TrueChain addresses this through a Solana-based dual-verification architecture: every document or product record is converted into a Soulbound Token (non-transferable) or standard NFT (transferable), depending on use case, with its cryptographic fingerprint (SHA-256 hash) recorded immutably on-chain.

Step	Action
1. Issued	Document or product metadata is captured and hashed to create a tamper-evident fingerprint.
2. Minted	Securely minted as an SBT or NFT on Solana, permanently linked to the original record's hash.
3. Verified	Instant integrity check via mint address, QR code, or direct document drag-and-drop — no need to contact the issuer.

Critically, TrueChain supports a **Private visibility mode**: for sensitive documents, the image is never uploaded to IPFS or any public server — only its cryptographic hash is stored on-chain. Verification later occurs by the holder presenting the original file, which is hashed client-side and matched against the on-chain record. This resolves the core tension between public verifiability and personal privacy that most blockchain-certification designs fail to address.

TWO TIERS OF TRUST — WHAT TRUECHAIN VERIFIES, AND WHAT IT DOES NOT, YET

TrueChain's current live system operates on an open **Self-Registered** tier: it proves **integrity and ownership** — that a specific file has not changed since it was registered, and which wallet registered it. It does **not**, on its own, confirm that the content of a document is truthful or that its issuer is who they claim to be — anyone can register any file today under this tier.

Confirming institutional authenticity (e.g., that a university genuinely issued a specific diploma, or that a boutique is an authorized dealer) requires a **Verified Issuer** tier, where only vetted, whitelisted institutions and brands can mint on behalf of their name. This is an explicit, near-term roadmap item (Section 8) and not yet live. We state this plainly because overstating current capability would undermine the trust the protocol is built to create.

4. Technical Architecture

4.1 Soulbound vs. Transferable Tokens

Issuers choose, at mint time, whether a record is Soulbound (mint authority is revoked immediately after minting; the token can never be transferred — ideal for official documents and identity-bound credentials) or Transferable (a standard SPL token/NFT that can change hands — ideal for redeemable coupons, resalable certificates of authenticity).

4.2 Ownership Verification Layer

Beyond simple integrity checks, TrueChain's verification endpoint can cross-reference a presented wallet address against the document's registered owner, returning a clear match/mismatch signal. This is designed for physical checkpoints — e.g., an event door, a retail counter — where a staff member needs to confirm not only that a document is unaltered, but that the person presenting it is its registered holder.

4.3 Metadata & Storage

Public documents' metadata (name, description, image, attributes) is stored on IPFS via Pinata and referenced on-chain through the token's metadata URI. Private documents omit the image entirely; only the SHA-256 hash is embedded in the on-chain metadata and internal registry, ensuring zero public exposure of sensitive content while preserving full verifiability.

4.4 Verified Issuer Whitelist (Roadmap — Section 8)

The Verified Issuer layer will be implemented as a maintained registry mapping approved wallet addresses to checked institution or brand identities. Mint transactions from a whitelisted wallet carry a "Verified Issuer" flag in their on-chain metadata; all other mints default to "Self-Registered." Onboarding involves a documentation check (e.g., trade registry record, official institutional contact) rather than a full KYC process, and is designed to be revocable if an issuer's status changes.

4.5 Infrastructure

Component	Technology
Blockchain	Solana (SPL Token Program)
RPC Provider	Helius
Decentralized Storage	IPFS via Pinata
Application Server	Node.js / Express, process-managed via PM2
Hosting	Dedicated VPS, Nginx reverse proxy, Let's Encrypt SSL
Domain	truechain.elevendiamond.com

5. \$EDC — The Native Utility Token

\$EDC (Eleven Diamond Coin) is designed to serve as the primary utility token of the TrueChain ecosystem, intended to create structural demand between fixed digital scarcity and real-world document and product verification.

Metric	Value
Total Supply	1,111 — Fixed, Immutable, Forever
Network	Solana (SPL)
Decimals	2
Mint Authority	Revoked — 0% inflation, verifiable on-chain
Freeze Authority	Revoked — no wallet can be blacklisted
Transfer Fees	None
Contract Address	55umox3iquidABgAcgRCeZn2CHivYzR8Q5VMxfzXQveuE

Planned Utility (Roadmap)

- \$EDC or SOL as the medium of exchange for TrueChain minting and verification services, priced at a fixed USD-equivalent via Pyth Network price feeds
- Discounted issuance fees (planned: 15–20%) for issuers and sellers paying in \$EDC
- Priority access to new TrueChain modules as they are released

These utility features are in active development and not all are live at time of writing. This document does not constitute an offer to sell securities. See Section 9 for full legal disclosures.

"1,111 tokens. No more. Ever."

6. Market Opportunity & Positioning

Market Size (Published Estimates)

Segment	Size / Scale
Global Luxury Goods (reference market for verification-seeking sellers)	\$380B+ annually
Diamond & Jewelry	\$89B annually
Official Document / Credentialing (MENA)	Large university and licensing-body population — one long-term addressable segment

Figures represent independently published third-party market estimates for the broader industry, not revenue or projections specific to TrueChain.

Design Positioning

The credential- and asset-verification space includes a range of approaches — Ethereum-based luxury certificate systems, proprietary provenance platforms operated by large incumbents, and academic credential-anchoring standards, among others. Rather than compare against any single named product, TrueChain's design choices are positioned as follows:

TrueChain's Design Goal	Common in the Category
Built on Solana — sub-second settlement, near-zero fees	Varies widely by platform; some incur higher gas costs
Open, permissionless verification for the Self-Registered tier	Often proprietary or centralized verification
Explicit two-tier trust model (Self-Registered + Verified Issuer)	Rarely made explicit; trust level is often implied rather than labeled
Physical-binding (NFC) + privacy-preserving hash verification	Less commonly combined in a single protocol
Multiple document & physical-asset categories in one protocol	Often single-purpose (credentials only, or luxury only)

This reflects our own design positioning and general industry observation, not a claim about any specific named company or product.

Why MENA First

MENA serves as a natural gateway between European and Gulf markets, with high crypto adoption rates and an established jewelry and luxury-goods sector. Given that everyday familiarity with Solana wallets (Phantom, Solflare) remains low among the general public in the region, TrueChain's initial adopters are expected to be global, existing Solana-native users, with institutional adoption in MENA treated as a parallel, longer-term track.

7. Business Model

TrueChain generates revenue through document and asset verification services, including issuance, platform licensing, and API access. \$EDC holders benefit from a planned 15-20% discount when paying for these services in \$EDC, giving the token a direct, non-speculative utility within the protocol.

8. Roadmap

Phase	Milestones
Completed (2026)	Protocol design, live devnet deployment, \$EDC mainnet launch, custom domain with SSL, hash & ownership verification systems
Q3 2026	Wallet Adapter multi-wallet support, Pyth price feed + \$EDC/SOL payment integration, rate limiting & bot protection, Verified Issuer whitelist (Phase 1) — design & spec , first real pilot user test
Q4 2026	Mainnet migration of the minting engine, Verified Issuer Program live — first institution onboarded
Q1 2027	Luxury/product verification module + NFC integration, first boutique pilot partner, \$EDC utility (payment discount) live
Q2 2027	MENA expansion, API marketplace launch

Milestones stated in this document are targets, not guarantees.

9. Legal Framework & Risk Disclosures

This document is presented for technical, infrastructural, and system-architectural discussion purposes only. It does not constitute a solicitation of funds, financial advice, or an investment product offer.

Non-Financial Advice (NFA): Nothing in this whitepaper constitutes financial, investment, legal, or tax advice.

Do Your Own Research (DYOR): Cryptographic digital assets carry inherent volatility and capital risk, including possible total loss of value.

No Guarantee of Value: Fixed supply does not guarantee appreciation or preservation of value. Past performance of comparable assets is not indicative of future results.

No Confirmed Third-Party Affiliations: References to third-party organizations, brands, or institutions describe target categories or aspirational goals only and do not imply existing partnerships unless explicitly stated.

Forward-Looking Statements: Roadmap items, planned features, and milestone dates are targets based on current plans and are subject to change. They are not guarantees of future performance or delivery.

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