Texas USD Settlement and Attestation Layer

State-Administered Digital Settlement, Audit, and Resilience Substrate

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Status: Concept Whitepaper (Discussion Draft) **Audience:** Texas state agencies, Comptroller of Public Accounts, legislators, procurement and audit offices **Purpose:** Describe a legally compliant, USD-denominated settlement and attestation layer that modernizes how Texas administers funds within state jurisdiction—without issuing a new currency or altering federal monetary authority.

Contents

1 Executive Summary

Texas administers billions of dollars annually across procurement, grants, disaster relief, benefits, and vendor payments. These flows rely on fragmented, slow, and fraud-prone systems designed for a pre-digital era. This paper proposes a *Texas USD Settlement and Attestation Layer* (TSAL): a state-operated digital substrate that cryptographically attests to custody, transfer, and settlement events for USD administered by Texas agencies.

TSAL does *not* issue a new currency, does *not* change the unit of account (USD), and does *not* conduct monetary policy. It provides a modern administrative layer—time-ordered, auditable, offline-capable—tailored to Texas priorities and jurisdiction.

Key outcomes include:

- Faster settlement for state vendors and programs
- Reduced fraud and leakage via tamper-evident logs
- Real-time auditability for Comptroller and agencies
- Disaster resilience and offline operation
- Lower operating cost through deterministic infrastructure

2 Problem Statement: Administrative Friction in State Money Flows

Texas agencies manage complex money flows using siloed systems: legacy databases, batch settlement, manual reconciliation, and delayed audits. Common issues include:

- Days-to-weeks settlement latency
- Limited real-time visibility for budget control
- High fraud risk in benefits and grants
- Dependence on third-party processors with opaque internals
- Poor disaster resilience when connectivity fails

These are *administrative* problems, not monetary ones. They persist regardless of the underlying currency and can be addressed without altering USD itself.

3 Design Principles

TSAL is guided by five principles:

1. **USD-Preserving**: USD remains the sole unit of account and legal tender.
2. **Jurisdictional**: Applies only to funds administered by Texas agencies or opt-in participants.
3. **Deterministic**: Time-ordered, append-only records with cryptographic integrity.
4. **Offline-First**: Operable during outages and disasters.
5. **Modular**: Incremental adoption without wholesale system replacement.

4 What TSAL Is and Is Not

4.1 What TSAL Is

- A state-administered settlement and attestation layer
- A cryptographic audit trail for USD custody and transfer events
- An optional, opt-in infrastructure for state programs

4.2 What TSAL Is Not

- A new currency or legal tender
- A central bank or monetary authority
- A replacement for private banking
- A mandate on private citizens or merchants

5 System Overview

At a high level, TSAL records *attestations*—not balances—of USD events:

- Custody (agency receives or controls funds)
- Transfer (payment authorization and settlement)
- Disbursement (vendor, grantee, beneficiary)
- Reconciliation (audit checkpoints)

Each event is time-ordered, cryptographically signed, and linked into an append-only ledger. The underlying USD remains in existing accounts or physical form.

6 Technical Architecture (Non-Promotional)

6.1 Core Components

- **Deterministic Time Engine**: Monotonic, high-integrity timestamps for event ordering.
- **Attestation Ledger**: Append-only, hash-linked records (tamper-evident).
- **Hardware Root of Trust**: Secure boot and signing for state-operated nodes.
- **Edge Nodes**: POS, terminals, or agency systems capable of offline operation.
- **Gateway Services**: Periodic synchronization and reporting.

The architecture favors low power consumption, verifiability, and minimal attack surface.

7 Legal and Constitutional Compliance

TSAL is designed to remain fully compliant with federal and Texas law:

- USD remains the unit of account and legal tender
- No issuance, redemption, or interest-setting authority
- No compulsion of private adoption
- Participation limited to state-administered programs and opt-in pilots

The system functions as an *administrative ledger*, analogous to modernized accounting and audit infrastructure.

8 Priority Use Cases for Texas

8.1 State Vendor Payments

- Faster settlement
- Reduced disputes
- Real-time audit trails

8.2 Disaster Relief

- Offline-capable disbursement
- Rapid deployment
- Reduced fraud under emergency conditions

8.3 Grants and Benefits

- Program-level transparency
- Deterministic eligibility and disbursement logs

9 Governance and Oversight

TSAL governance would reside with existing Texas institutions:

- Comptroller of Public Accounts (financial oversight)
- Participating agencies (program execution)
- Independent audit bodies (verification)

Governance emphasizes transparency, auditability, and incremental expansion.

10 Implementation Path (Incremental)

1. Technical evaluation and legal review
2. Narrow pilot (single agency or use case)
3. Independent audit and cost-benefit analysis
4. Optional expansion to additional programs

This minimizes risk while delivering early value.

11 Risk Management

Identified risks and mitigations include:

- **Perception Risk**: Clear messaging that TSAL is not a currency
- **Integration Risk**: Modular adapters to existing systems
- **Security Risk**: Hardware roots of trust and continuous audit

12 Conclusion

Texas has an opportunity to modernize how it administers USD within its jurisdiction—improving speed, resilience, and accountability—without altering federal monetary authority. TSAL offers a pragmatic, legally sound path forward that aligns with Texas values of sovereignty, efficiency, and fiscal responsibility.

Disclosure: The author operates a Texas-incorporated company developing infrastructure relevant to the concepts discussed. This document is informational and does not request funding or policy action.

Further Reading and Technical Resources
This whitepaper is accompanied by supporting patents, technical specifications, and implementation examples. All materials are freely available at:

`https://github.com/taguniversal/digital_blockchain_patents`