Public Guide for Independent Reproducibility Verification — Ordinal 06

Immutable Verification of Infrastructure Audit Log Ordinal 05 (Sentinel Protocol v3.1)

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IP Rights:
US Provisional: #63/826,381
AU Provisional: #2025902482
AU Trade Mark: #2535745 & #2549093
IP Priority Date: 17 June 2025 (Global Anchor)

Bitcoin Ordinal TXID:
https://mempool.space/tx/e11022c0ae5b6d603a815e17eeb3af2573cf3cf0ca4f5372da7b63b04dc7ebe3

This white paper was immutably published on the Bitcoin blockchain via Ordinal inscription on 30 July 2025.

🧾 Abstract: Public Guide for Independent Reproducibility Verification — Ordinal 06

🎯 Objective

Ordinal 06 provides a **public, independently verifiable method** to confirm that the audit log known as `Ordinal 05` is authentic, immutable, and timestamped on Bitcoin.
It enables any researcher, regulator, or auditor to reproduce the RIPEMD160(SHA256) fingerprint of the file and match it to the payload inscribed on-chain — without requiring access to private keys, validators, or CDA AI infrastructure.

This Ordinal is an open cryptographic gateway into the **reproducibility economy** under Sentinel Protocol v3.1, and marks the publication-grade verification layer for `Ordinal 05`.

🧪 Methodology

Target Audit File:

- `Ordinal_05_july.30.25_SENTINFRA-SESS1_Sentinel Protocol v3.1 Infrastructure Pre-Public Deployment Audit Log_FINAL_METADATA___20250729T212151.538870Z.pdf`
- Verification walkthrough and canonical tools: github.com/TELAISYN

Dual-Hash Verification:

Step	Function	Toolchain Required
1️⃣	Compute SHA256 of PDF	`openssl` or Python `hashlib`
2️⃣	Pipe into RIPEMD160 (`.2ha`)	`openssl` or `pycryptodome`
3️⃣	Compare with inscribed payload	Ordinal 06 text or explorer
4️⃣	Verify OP_RETURN TXID & block	mempool.space or node API

Cryptographic Anchoring:

- **RIPEMD160(SHA256):** `f6fb3b90e2721ea7554bb0c7ed65aa24c466d414`
- **Bitcoin TXID (OP_RETURN):**
  `2fc3200bde4757a679336d64058cc72d163f87f3b7d9afcea8e632984cc4077b`

- **OP_RETURN Payload:** `SENTINEL|ORDINAL05|f6fb3b90e2721ea7554bb0c7ed65aa24c466d414`
- **Block Height:** `907760`

⍰ Significance

- ✅ **Proves timestamped originality of infrastructure audit (`Ordinal 05`)**
- ✅ **Fully reproducible using public tools only**
- ❌ **No user content or CDA data required**
- 🔐 **Immutable due to Bitcoin anchoring**

This Ordinal is compliant with Sentinel's **C9.5 Zero Custody**, **C9.8 Zero Trust**, and **C9.9 AMPLIFY_LEDGER** standards.

Any mismatch in the `.2ha` hash indicates tampering, corruption, or non-canonical replication of `Ordinal 05`.

Ordinal 06 – Public Verification Guide

Version: v2025-07-30 I SIASE Optimized
Protocol: Sentinel Protocol v3.1 – Zero-Custody Reproducibility (C9.5)
Purpose:
This Ordinal inscription enables anyone to independently verify the authenticity of the Sentinel Protocol infrastructure audit log (`Ordinal 05`) using cryptographic hash functions and Bitcoin-anchored timestamps.
This process requires no trust in CDA AI or Sentinel Protocol — only open tools and blockchain proof.

🔍 Key Cryptographic Details

- **Target File:**
  `Ordinal_05_july.30.25_SENTINFRA-SESS1_Sentinel Protocol v3.1 Infrastructure Pre-Public Deployment Audit Log_FINAL_METADATA___20250729T212151.538870Z.pdf`
- **RIPEMD160(SHA256) =** `f6fb3b90e2721ea7554bb0c7ed65aa24c466d414`
- **OP_RETURN TXID:**
  `2fc3200bde4757a679336d64058cc72d163f87f3b7d9afcea8e632984cc4077b`
- **OP_RETURN Payload:** `SENTINEL|ORDINAL05|f6fb3b90e2721ea7554bb0c7ed65aa24c466d414`
- **Ordinal_05 TXID:**
  `ae198274a00abbb8296a3b9412e6fd3a62360bcf062e000fa2908d8f3b90e803`

🧬 Why This Matters — Zero-Custody Reproducibility in Regulated Domains

Sentinel Protocol is designed for **high-trust, high-stakes environments**:
- Medicine
- Law
- Scientific publishing
- Engineering
- Regulatory finance

These domains demand **tamper-evident**, **timestamped**, and **auditable** records without revealing sensitive content. Sentinel Protocol v3.1 accomplishes this via:

✔ **Zero-custody**: No files are stored on-chain — only hashes
✔ **Audit without disclosure**: Anyone can verify integrity without seeing the data
✔ **RIPEMD160(SHA256)**: A canonical fingerprint proving originality and timestamp
✔ **Immutable anchor**: Anchored on Bitcoin — the world's most secure public ledger

Whether you're a journal editor, forensic expert, legal reviewer, or scientific replicator — this Ordinal lets you **prove what was published, when, and by whom**, cryptographically.

✅ How to Verify (Cross-Platform)

Prerequisites:
- Download the PDF from a public repository (e.g., ResearchGate DOI: [insert DOI link], Zenodo: [insert link]).
- Install OpenSSL (built-in on macOS/Linux; download for Windows via Git Bash or similar).
- Access a Bitcoin explorer (e.g., mempool.space) for on-chain checks.

Step 1: Download the PDF

1. Navigate to the public source (e.g., ResearchGate or Zenodo).
2. Download the exact file named above. Save it locally (e.g., `ordinal_05.pdf`).
3. Do not modify the file—any change will invalidate the hash.

Step 2: Compute SHA256 Hash Locally

Run this command in your terminal (macOS/Linux) or Command Prompt/Git Bash (Windows):

```
openssl sha256 ordinal_05.pdf
```

Expected output format:

```
SHA256(ordinal_05.pdf)= <64-character hex string>
```

Copy the hex string (e.g., `abcdef...`).

Step 3: Compute RIPEMD160 of the SHA256 Hash

Pipe the SHA256 output into RIPEMD160:

```
echo -n "<SHA256 hex from Step 2>" | xxd -r -p | openssl ripemd160
```

Expected output:

```
(stdin)= <40-character hex string>
```

This is the `.2ha` hash.

Step 4: Compare to Inscribed Hash in Ordinal 06 (This Document)

1. View Ordinal 06 on a Bitcoin Ordinal explorer (e.g., ordinals.com or unisat.io). Search by inscription ID or Bitcoin transaction.
2. Extract the inscribed RIPEMD160 hash from Ordinal 06's content.
3. Compare your computed hash from Step 3.
    - Match? The PDF is authentic and untampered.
    - No match? The file has been altered or is not the canonical version.

Step 5: Verify Timestamp Integrity On-Chain

1. Search the OP*RETURN payload on mempool.space using Ordinal*05 TXID: `SENTINEL|ORDINAL05|<RIPEMD160 hash from Step 3>`.
2. Confirm the transaction's block height and timestamp (e.g., via block explorer).
3. This proves the hash existed on Bitcoin by that date—immutable and independently verifiable.

Troubleshooting:
- Hash mismatch? Redownload the PDF from source.
- Tool issues? Use alternatives like Python: `hashlib.sha256()` then `hashlib.new('ripemd160')`.
- No explorer access? Use any public Bitcoin node API.

This process relies solely on open-source tools and public blockchain data. For questions, refer to Sentinel Protocol docs (C5.7, C8.3)—but verification is fully decentralized.

📁 Where to Access and Download Ordinal_05 File

- 🌐 aihumansynergy.org
- 💾 GitHub (TELAISYN)

- 🧪 ResearchGate
- 🔗 LinkedIn
- 📇 ORCID

⍰ Optional Python Tool (For Air-Gapped Validation)

1. Download the file and save as `Ordinal_05.pdf`

2. Install Python + Crypto

```
pip install pycryptodome
```

3. Save this as verify_dualhash.py

```
import hashlib
from Crypto.Hash import RIPEMD

FILENAME = "Ordinal_05.pdf"

with open(FILENAME, "rb") as f:
    data = f.read()

sha256 = hashlib.sha256(data).digest()
sha256_hex = hashlib.sha256(data).hexdigest()
ripemd = RIPEMD.new()
ripemd.update(sha256)
ripemd_hex = ripemd.hexdigest()

print("SHA256     :", sha256_hex)
print("RIPEMD160  :", ripemd_hex)
```

4. Run the Script

```
python verify_dualhash.py
```

For time. For reproducibility. For truth.

TELAISYN

References

1. **Sentinel Protocol v3.0**
   Telles, Fernando. *Sentinel Protocol v3.0 – AI–Human Synergy™ Infrastructure Technical Summary for Intellectual Property & Strategic Briefing.* CDA AI Pty Ltd, June

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DOI: 10.13140/RG.2.2.20488.12803
Zenodo: 10.5281/zenodo.15795252

2. **Sentinel Protocol v3.1**
Telles, Fernando. *Sentinel Protocol v3.1 – Infrastructure Reproducibility and Public Verification Log.* CDA AI Pty Ltd, July 2025.
DOI: 10.13140/RG.2.2.29180.65924
Zenodo: 10.5281/zenodo.16607606

Contact & Custodian

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