SAIHM Press Kit

SAIHM

April 2026

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Powered by COTI.

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1. At a Glance

Product Name: Sovereign AI Horizontal Memory (SAIHM)

One-Liner: The first decentralized, post-quantum encrypted memory infrastructure for AI agents.

Category: Decentralized AI Infrastructure / Privacy-Preserving Protocol

Blockchain: COTI V2 (Garbled Circuits, Helium 256-bit native)

Protocol Version: 2.0.0-helium | Architecture Rev 63.13

License: Apache 2.0

Status: Mainnet deployed (COTI V2 Chain ID: 2632500) | Testnet (Chain ID: 7082400)

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2. The Problem

Every major AI assistant forgets everything between sessions. This means:

- Billions of hours of context lost daily across AI interactions
- Users repeat themselves endlessly
- AI cannot build long-term understanding
- When providers do store memory, it sits on centralized servers with no user control, no verifiable privacy, and no regulatory compliance guarantee

The AI industry needs a **neutral, private, decentralized memory layer** that works across all platforms.

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3. The Solution

SAIHM provides persistent, encrypted, cross-platform memory for AI agents:

- **Privacy:** All data encrypted end-to-end. All computation in sealed Garbled Circuits. Zero plaintext exposure.
- **Sovereignty:** Agents control their own encryption keys. No operator can access memory.
- **Compliance:** GDPR erasure, EU AI Act, MiCA — built into the protocol, not bolted on.
- **Security:** Post-quantum cryptography (NIST FIPS 203/204/205) protects against future threats.
- **Decentralization:** Data distributed across Filecoin, Storj, Arweave, and IPFS. Governed by token holders.
- **Cross-Platform:** Any AI agent, any blockchain, any framework.

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4. Key Facts & Figures

Metric	Value
Garbled Circuit Components	17 active (of 21 defined)
HKDF Domain Strings	118 active / 192 capacity
Governance Parameters	414+
Storage Providers	4 (Filecoin, Storj, Arweave, IPFS)
Cryptographic Standards	FIPS 203 (ML-KEM), FIPS 204 (ML-DSA), FIPS 205 (SLH-DSA)
Regulatory Frameworks	7 (GDPR, EU AI Act, MiCA, NIST PQC, ISO 27001/27701, ETSI, NIST Zero Trust)
Base Write Fee	0.0001 COTI
Base Read Fee	0.00001 COTI
Epoch Duration	1 hour
Fee Discount (max)	50% via BFSI behavioral scoring
Governance Quorum	20% (fixed)
Governance Supermajority	66% (fixed)
Vote Privacy	Garbled circuit private voting
Memory Sharing Contract Types	3 (temporary, permanent, syndicate)
Supported Languages (Portal)	English, Spanish, French, Chinese

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5. Technology Highlights

5.1 Post-Quantum Cryptography

SAIHM is the first AI memory protocol to exclusively use NIST-standardized post-quantum algorithms. While quantum computers capable of breaking current encryption may be years away, data

encrypted today can be harvested and decrypted later (“harvest now, decrypt later”). SAIHM protects against this from day one.

5.2 Sealed Garbled Circuits

COTI V2’s Garbled Circuit technology enables computation on encrypted data. Unlike other solutions where data must be decrypted for processing, SAIHM’s sealed GCs never expose plaintext — not to operators, not to validators, not to storage providers.

5.3 Cryptographic Erasure

SAIHM’s GDPR erasure mechanism destroys encryption keys rather than attempting to delete distributed data. This provides mathematically provable data destruction with an immutable Arweave-anchored proof — a stronger guarantee than any centralized “delete” button.

5.4 SACS-256 Polymorphic Architecture

The Sovereign Atomic Cell Structure divides memory into fine-grained encrypted cells with 2D nonce matrices, contextual salts, and polymorphic masks. Combined with ORAM access pattern protection, this prevents correlation attacks even from storage providers.

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6. Governance & Decentralization

SAIHM is governed by gCOTI token holders through (on mainnet, governance is open to all gCOTI holders):

- **Private voting:** Garbled circuit-based vote privacy
- **Pre-screening:** Automated safety validation of proposals
- **Human oversight:** No autonomous parameter changes (SIPE proposals require governance vote)
- **Protected invariants:** Core security properties cannot be changed by any vote
- **Transparent outcomes:** Vote results anchored to Arweave with ML-DSA signatures

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7. Regulatory Positioning

SAIHM is designed for regulatory environments where AI agents handle sensitive data:

- **GDPR:** Provable cryptographic erasure with immutable audit trail
- **EU AI Act:** Human oversight via governance; SIPE cannot self-apply; watermarking assessed as not applicable
- **MiCA:** Quarterly reporting with Arweave-anchored provenance
- **ISO 27001/27701:** Annual review cycle with control change monitoring

- **FinCEN Travel Rule:** 100% coverage at $3,000 threshold

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8. Team & Attribution

SAIHM is built on COTI V2 infrastructure. COTI (Currency of the Internet) provides the underlying blockchain technology, Garbled Circuit execution environment, and privacy-preserving computation layer.

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9. Media Resources

9.1 Approved Messaging

- “Sovereign AI Horizontal Memory (SAIHM)” — full name
- “SAIHM” — abbreviated (always capitalized)
- “Powered by COTI” — required attribution
- “Post-quantum encrypted AI memory” — technical descriptor
- “The memory layer for AI agents” — accessible descriptor

9.2 Key Quotes (Approved)

> “AI agents need memory they can trust — memory that no one else can read, that survives platform changes, and that complies with regulations by design. That’s what SAIHM provides.”

> “Post-quantum encryption isn’t a future concern — it’s a present responsibility. Data encrypted today must remain secure for decades. SAIHM addresses this from genesis.”

9.3 Fact-Check Points

- SAIHM uses NIST-standardized algorithms (verifiable via FIPS 203/204/205 publications)
- GDPR erasure is cryptographic DEK destruction (verifiable via protocol specification)
- Governance requires 20% quorum + 66% supermajority (protocol invariant); open to all gCOTI holders on mainnet
- gCOTI = separate governance token on COTI V2; obtained by locking COTI or purchasing on DEXes; 1.5x co-stake boost
- COTI is the native token for all SAIHM fee payments (nCOTI denomination)
- Four independent storage providers (Filecoin, Storj, Arweave, IPFS)
- All computation in sealed Garbled Circuits (COTI V2 architecture)

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10. Contact

- **Documentation Portal:** SAIHM Web Portal

- **Protocol Specification:** sai_arc_r63.md (Architecture Reference Rev 63)
- **SDK:** `npm install @coti-io/coti-sdk-typescript`
- **Testnet:** COTI V2 Chain ID 7082400
