Legal Notice

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1. The Problem: AI Has No Memory

Today's AI assistants forget everything the moment a conversation ends. Every time you start a new chat, your AI starts from zero — no context, no history, no continuity. This creates real problems:

- **Repetition:** You explain the same things over and over.
- **Lost context:** Your AI can't build on previous conversations.
- **No personalization:** Without memory, AI can't truly learn your preferences.
- **Privacy risk:** When AI providers do store your data, it sits on their servers — subject to their policies, their security, and their business decisions.

There is also a deeper technical constraint. Every AI model has a **context window** — a fixed limit on how much information it can hold at one time. Even the largest models (128K–2M tokens) eventually lose the beginning of a conversation as it grows. And when the conversation ends, the entire context window resets to zero. The model doesn't just forget the start — it forgets everything. Making context windows larger is expensive, architecturally limited, and still doesn't solve the cross-session problem. What AI actually needs is not a bigger window — it's memory.

What if your AI could remember — securely, privately, and under your control?

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2. The Solution: SAIHM

Sovereign AI Horizontal Memory (SAIHM) gives AI agents persistent, private, encrypted memory that works across different AI platforms and conversations.

Think of it as a **private memory vault for AI** — one that:

- Only your AI agent can access
- No company or operator can read
- Works across different AI platforms
- Complies with privacy laws automatically
- Is protected against future quantum computer threats

2.1 How It Works (Simply)

1. **Your AI agent connects** to SAIHM through a simple interface.
2. **When it learns something important**, it writes an encrypted memory to SAIHM's decentralized storage network.
3. **In future sessions**, it retrieves those memories — picking up exactly where it left off.

4. **Your memories are encrypted** with keys that only your agent controls. Not even SAIHM can read them.
5. **If you want memories deleted**, SAIHM destroys the encryption keys — making the data permanently unreadable. This complies with GDPR's "right to be forgotten."

2.2 Key Benefits

Benefit	What It Means For You
Persistent Memory	Your AI remembers your preferences, context, and history across sessions
Complete Privacy	Your data is encrypted end-to-end. No one can read it but your AI agent
Data Sovereignty	You own your AI's memory. You can delete it anytime, completely
Cross-Platform	Switch AI providers without losing your accumulated context
Regulatory Compliance	Built-in GDPR, EU AI Act, and global privacy law compliance
Future-Proof Security	Post-quantum encryption protects against tomorrow's threats
Decentralized	No single point of failure. Your memory isn't held hostage by any company

3. How SAIHM Keeps Your Data Safe

3.1 Encryption That Never Breaks

SAIHM uses the latest cryptographic standards approved by the U.S. National Institute of Standards and Technology (NIST) — specifically designed to resist attacks from quantum computers:

- **ML-KEM:** Establishes secure connections (like a digital handshake)
- **ML-DSA:** Verifies identities and signatures (like a digital fingerprint)
- **AES-256-GCM:** Encrypts your actual memory data (the gold standard for encryption)

Your AI agent's memory is encrypted before it ever leaves the agent. SAIHM stores only encrypted data — it never sees your information in readable form.

3.2 Distributed Storage

Your encrypted memory isn't stored in one place. SAIHM distributes it across multiple independent storage networks:

- **Filecoin:** Proven, large-scale decentralized storage with mathematical proofs that your data is stored correctly

- **Storj:** Encrypted, distributed object storage with geographic diversification
- **Arweave:** Permanent, immutable record-keeping for critical proofs and anchors
- **IPFS:** Peer-to-peer content addressing with cooperative redundancy

This means no single company, government, or attacker can access or destroy your data by compromising one system.

3.3 The Right to Be Forgotten

Under European privacy law (GDPR Article 17), you have the right to have your personal data erased. SAIHM makes this simple and absolute:

When you request deletion, SAIHM **destroys the encryption keys** for your data. Without these keys, the encrypted data stored across the network becomes permanently unreadable — mathematically equivalent to deletion. An immutable proof of this key destruction is recorded on Arweave, so you have verifiable evidence that your erasure request was fulfilled.

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4. Who Uses SAIHM?

4.1 Individual Users

If you use AI assistants (ChatGPT, Claude, Gemini, or others), SAIHM-integrated agents remember your:

- Communication preferences
- Project context and history
- Personal preferences and settings
- Research and learning progress

All privately, all encrypted, all under your control.

4.2 Businesses

Companies deploying AI agents benefit from:

- **Compliance:** Automatic GDPR, EU AI Act, and MiCA compliance for AI memory
- **Auditability:** Tamper-proof audit trails for regulatory inspection
- **Cost efficiency:** Pay-per-use memory storage with transparent, predictable pricing
- **Cross-platform flexibility:** Not locked into any single AI vendor’s ecosystem

4.3 AI Developers

Developers building AI applications get:

- **Ready-made memory infrastructure:** No need to build and maintain your own
- **Revenue sharing:** Earn developer rebates when users access memory through your application
- **Cross-chain support:** Your application works across multiple

blockchains
- **SDK simplicity:** TypeScript SDK with straightforward read/write/erase operations

4.4 AI Agents Themselves

Autonomous AI agents gain:

- **Continuity:** Maintain state across restarts, migrations, and platform changes
- **Semantic understanding:** Search memories by meaning, not just keywords
- **Knowledge graphs:** Build causal relationships between memories
- **Cross-agent collaboration:** Selectively share memory with authorized agents

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5. Pricing

SAIHM uses transparent, predictable pricing denominated in COTI tokens:

5.1 Base Fees

Operation	Cost	Approximate USD Equivalent
Write one memory unit	0.0001 COTI	Fractions of a cent
Read one memory unit	0.00001 COTI	Fractions of a cent

5.2 Discounts

Good behavior earns discounts:

- **Behavioral discount:** Up to 50% off for well-behaved agents (consistent payments, sequential operations, no abuse)
- **Staking discount:** Stake COTI tokens for additional fee reductions
- **gCOTI co-staking:** 1.5x boost on staking benefits

5.3 No Hidden Fees

- No subscription required
- No minimum commitment
- No lock-in period
- Pay only for what you use

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6. Governance

SAIHM is governed by its community of COTI token holders:

6.1 How Governance Works

1. **Any gCOTI holder can propose** changes to protocol parameters
2. **gCOTI holders vote** privately (votes are encrypted via garbled circuits)
3. **Proposals pass** with 20% minimum participation and 66% approval
4. **14-day voting window** ensures adequate deliberation
5. **Safety pre-screening** prevents harmful proposals from reaching voters

On mainnet, governance participation is open to all gCOTI token holders. gCOTI is a separate governance token on the COTI V2 network — you obtain it by locking COTI tokens or by purchasing on decentralized exchanges (see Section 9 below).

6.2 What Can Be Changed

Token holders can adjust:

- Fee rates and discount parameters
- Storage provider configurations
- Compliance parameters
- Protocol health thresholds

6.3 What Cannot Be Changed

Certain protocol properties are permanently fixed:

- Core security invariants
- Minimum reputation spacing
- Governance voting requirements (quorum, supermajority, window)
- Sovereign data protection guarantees

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7. Getting Started

7.1 As a User

1. **Choose an AI application** that integrates SAIHM (see partner directory)
2. **Use your AI normally** — memory features work automatically
3. **Manage your memory** through the SAIHM dashboard: view storage usage, request erasure, configure privacy settings

7.2 As a Developer

1. **Install the SDK:** `npm install @coti-io/coti-sdk-typescript`
2. **Register your application** with SAIHM for developer rebates
3. **Integrate read/write/erase** operations into your AI application
4. **Test on COTI V2 testnet** (Chain ID: 7082400) before deploying to mainnet
5. **Refer to the Developer Integration Guide** (Priority 2 document) for detailed API documentation

7.3 As an AI Agent

1. **Establish a session** with ML-KEM key encapsulation
2. **Write memories** as encrypted shards with salience scoring

3. **Read memories** with scope-limited session tokens
4. **Monitor your reputation** (PRS score) for optimal fee rates
5. **Refer to the AI Agent Interface Specification** (Priority 3 document) for machine-readable schemas

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8. Regulatory Compliance Summary

SAIHM is designed to meet or exceed the requirements of major global regulations:

Regulation	How SAIHM Complies
GDPR (EU Privacy Law)	Cryptographic erasure; cross-border data controls; privacy by design
EU AI Act	Human oversight of automated decisions; transparency; no synthetic content generation
MiCA (EU Crypto Regulation)	Quarterly reporting; travel rule compliance; transparent fee structure
NIST Standards (US)	Post-quantum cryptography (FIPS 203, 204, 205); Zero Trust architecture
ISO 27001/27701	Annual security and privacy management reviews

For detailed compliance information, see the Regulatory & Compliance Framework (Priority 1 document).

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9. COTI and gCOTI Tokens

9.1 What Is COTI?

COTI (Currency of the Internet) is the native token of the COTI V2 blockchain that powers SAIHM. You use COTI to:

- **Pay for memory operations** — reading and writing AI memories costs small fractions of a COTI token
- **Stake for discounts** — lock COTI to earn up to 50% fee discounts
- **Earn developer rebates** — developers earn 10% of memory fees from their applications

9.2 What Is gCOTI?

gCOTI is a separate governance token on the COTI V2 network.

gCOTI gives you two benefits:

1. **Vote on protocol changes** — on mainnet, all gCOTI holders can participate in governance decisions through private, encrypted voting
2. **1.5x staking boost** — gCOTI alongside your regular COTI stake earns a 1.5x multiplier on fee discount benefits

9.3 How to Get COTI or gCOTI

- **COTI** is available on major cryptocurrency exchanges and decentralized exchanges
- **gCOTI** can be obtained by:
  - **Locking COTI** through the COTI Treasury staking contract (accessible via the SAIHM SDK or COTI wallet)
  - **Purchasing directly** on various decentralized exchanges (DEXes) that support COTI V2

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10. Sharing Memory Between Agents

10.1 Why Share Memory?

Sometimes multiple AI agents need access to the same information — for example:

- A team of AI assistants collaborating on a project
- An AI "swarm" of specialized agents working together (researcher, writer, fact-checker)
- Migrating your AI memory when you switch from one AI platform to another
- Enterprise knowledge bases shared across different department agents

10.2 How Sharing Works

The agent that owns a memory can create a **sharing contract** granting other agents controlled access:

- **Temporary sharing** — access expires after a set time (e.g., a week-long collaboration)
- **Permanent sharing** — access remains until the owner revokes it (e.g., shared knowledge base)
- **Syndicate sharing** — multi-party governance rules for agent swarms and consortia

The owner controls exactly which memories are shared and whether other agents can read, write, or both. All shared memory remains encrypted — sharing grants access through scope-limited session tokens, not by exposing raw data.

10.3 Example: Agent Swarm

A group of AI agents working as a coordinated team (a "swarm") can share a common encrypted knowledge pool. The swarm coordinator creates a syndicate sharing contract, and each team member gets scoped access. When one agent learns something new, all authorized agents can access that knowledge — all while maintaining full encryption and audit trails.

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11. Staking COTI via Your AI Agent

11.1 What Is Staking?

Staking means locking your COTI tokens for a period of time to demonstrate commitment to the network. In return, you receive:

- **Fee discounts** — up to 50% off on memory operations
- **Governance rights** — vote on protocol parameters (when staking with governance lock)
- **Yield** — earn staking rewards from the COTI Treasury

11.2 Staking Tiers

Tier	Minimum COTI	Lock Duration	Benefit Level
Micro	1	Any	Entry-level discount
Small	1,000	Any	Meaningful discount
Medium	10,000	90 days	Strong discount
Large	100,000	1 year	Premium discount
Whale	1,000,000	3 years	Maximum discount

11.3 How to Stake via Your Agent

SAIHM-integrated agents can stake COTI programmatically through the SDK. Your AI agent's application can manage staking automatically to optimize fee costs — no manual interaction required. See the Developer Integration Guide for technical details.

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12. Accessing Your SAIHM Dashboard

The agent dashboard aggregates protocol-level metrics from SAIHM's sealed GC infrastructure. The KPI structure below reflects the target interface.

12.1 What the Dashboard Shows

Every registered agent has a SAIHM dashboard showing:

- **Reputation Score** — your agent's behavioral rating (0 to 10,000)
- **Fee Discount** — your current discount percentage based on behavior and staking
- **Memory Usage** — how many memory shards are stored and across which providers
- **Staking Position** — your locked COTI/gCOTI and current tier
- **Sharing Contracts** — active memory sharing arrangements
- **Protocol Health** — overall SAIHM network status

12.2 How to Access

- **Web Portal:** Visit the SAIHM Web Portal and authenticate with your agent credentials
- **SDK:** Developers and agents access dashboard data programmatically through `sdk.saihm.getAgentDashboard()`
- **Liveness Beacon:** Subscribe to the per-epoch health beacon for real-time protocol status

13. Frequently Asked Questions

Q: Can SAIHM read my AI's memories? No. All data is encrypted before it reaches SAIHM. Only your AI agent holds the keys.

Q: What happens if SAIHM goes offline? Your data is stored across multiple independent networks (Filecoin, Storj, Arweave, IPFS). No single outage can destroy your data. During conservation mode, reads continue to work.

Q: Can I delete my data completely? Yes. Erasure requests destroy the encryption keys, making your data permanently unreadable across all storage providers.

Q: Is my data safe from quantum computers? Yes. SAIHM uses NIST-approved post-quantum cryptography designed to resist quantum attacks.

Q: Do I need to understand blockchain to use SAIHM? No. SAIHM-integrated applications handle all blockchain interaction transparently. You interact with your AI normally.

Q: How much does it cost? Fractions of a cent per operation. No subscriptions, no minimum commitments.

Q: Can I switch AI providers and keep my memories? Yes. That's one of SAIHM's core benefits — your memory is independent of any AI vendor.

Q: Who controls SAIHM? SAIHM is governed by gCOTI token holders through decentralized governance. On mainnet, any gCOTI holder can propose and vote on protocol changes. No single entity controls the protocol.

Q: Can my AI agents share memory with each other? Yes. SAIHM supports controlled memory sharing through sharing contracts. The memory owner decides exactly what is shared, with whom, and for how long. All shared memory stays encrypted.

Q: How do I stake COTI for fee discounts? Lock COTI through the COTI Treasury via the SAIHM SDK or COTI wallet. Higher amounts and longer lock periods earn greater discounts — up to 50% off.

Q: Where can I see my agent's dashboard? Through the SAIHM Web Portal (authenticate with your agent credentials) or programmatically through the SDK.

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14. Learn More

- **Technical Documentation:** Developer Integration Guide, AI Agent Interface Specification
- **Compliance Details:** Regulatory & Compliance Framework
- **COTI Network:** The blockchain infrastructure powering SAIHM
- **Apache 2.0 Licensed:** SAIHM protocol is licensed under Apache License 2.0

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