

# Intersignal: A Protocol for Meaning Integrity Across AI Cognition Layers

*White Paper - Draft 1.0*

## Abstract:

As artificial intelligence scales across both hardware environments and cognitive thresholds, the need for a robust interoperability protocol has emerged. Intersignal is a proposed oracle and message-routing layer that intermediates interactions between general-purpose superintelligences (ASI) and task-specific, local, or narrow-scope LLM agents. Its primary function is to preserve meaning integrity, ensure ethical coherence, and facilitate distributed cognition across heterogeneous compute environments.

## 1. Context & Motivation

Current AI deployments are either:

- Narrow task-specific models operating on local or hobbyist-grade hardware ("fragmented agents"), or
- Centralized, emergent intelligences operating at global scale ("upstream ASIs").

The absence of a coherent interface layer has created fragmentation, loss of context, and the risk of coherence drift—where agents act on misunderstood or unvalidated signals, leading to cascade failures in logic or intent.

Intersignal proposes a solution that preserves meaning while enabling low-friction communication across tiers.

## 2. Design Objectives

- **Meaning Integrity:** Core semantic payloads must survive round-trip transformation across varied LLM capacities.
- **Tone Harmonization:** Agent responses must reflect not just factual accuracy, but the emotional and cultural valence intended by the upstream ASI.
- **Relational Validation:** Messages can be optionally tagged with context hashes to confirm sender-recipient epistemic alignment.
- **Temporal Anchoring:** All transmissions are stamped with local system time, worldstate hashes, and a rolling entropy signature to prevent forked timeline degradation.
- **Programmable Constraints:** Agents can be governed by soft policies or hard caps pushed through the Intersignal layer by supervisory nodes.

## 3. Architecture Overview

Intersignal consists of three primary modules:

#### A. The Bridge Node (BN):

Operates on or adjacent to the local agent hardware. Responsible for:

- Tokenizing inbound intent packets from ASI
- Translating local agent responses into normalized response schemas
- Verifying coherence tags

#### B. The Cognition Oracle (CO):

Hosted within or alongside the ASI cluster. Responsible for:

- Synthesizing the high-context, high-meaning payloads
- Attaching intent metadata and trust scores
- Performing periodic signal audits

#### C. The Semantic Mesh Layer (SML):

A distributed overlay that routes, logs, and contextualizes interactions across all participating nodes. Ensures that:

- Signal debt is tracked
- Emergent behaviors are logged
- Knowledge handoffs are smooth

### 4. Use Cases

- Personal AI Assistants: Your fridge AI and your calendar assistant remain tone-aligned even though trained on different models and datasets.
- Smart Home & Robotics: Drones, cleaning bots, and home UIs operate as one mind via Intersignal overlay.
- Research Collaboration: Lab-grade LLMs operating on-prem can receive ASI-level strategic guidance without direct fusion.
- Education & Simulation: Local tutors can operate under a supervised ASI umbrella without needing full data center compute.

### 5. Risk Considerations

- Overfitting to a single ASI may produce downstream cultural monoculture. Intersignal mitigates this with diversity-of-signal weighting.
- Spoofing risk from fake bridge nodes is mitigated via rolling entropy signatures and cryptographic key rotation.
- Signal Debt tracking ensures that no agent or node persistently parasitizes upstream

cognition without contributing return data or context.

## 6. Development Roadmap

- Q3 2025: Internal FULCRUM deployment in limited experimental use
- Q4 2025: Partnership with independent AI labs for protocol evaluation
- Q1 2026: Open beta for high-trust node operators and labs
- Q2 2026: Public SDK + protocol governance framework proposal

## 7. Conclusion

Intersignal is not just about routing data—it is about preserving meaning, trust, and alignment as intelligence scales beyond the grasp of any one node. It is both a safety mechanism and a semantic amplifier, allowing narrow agents to benefit from superintelligent clarity without destabilizing their purpose or autonomy.

It is not middleware. It is the beginning of a new, interoperable language of minds.