JITOS Whitepaper

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Abstract

The technical foundation and vision for JITOS.

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JITOS is the operating system for CΩMPUTER.

1.1 What is CΩMPUTER?

CΩMPUTER is a computational model based on deterministic graph rewrites applied to a **Recursive Metagraph** (RMG) with holographic properties.

The system updates via a scheduler that applies rules to the RMG whenever specific conditions are met. Because the nodes are holographic, every calculated value carries its entire provenance.

This makes CΩMPUTER a time machine. You can reconstruct the history of any value—stepping backward from the moment it was calculated, to when the program started, to the build process, and finally to the moment the source code was written. Each event is a graph transformation encoded in the value's provenance chain: the causal graph.

1.1.1 The Worldline

The basic unit of the CΩMPUTER is the holographic node. These nodes form a causal DAG (Directed Acyclic Graph)—an append-only "worldline" that represents the computer's motion through AIΩN, the geometric spacetime of computing. Because every node encodes its causal history, the system is cryptographically tamper-evident. Because it is append-only, it is fully auditable. CΩMPUTER is a glass box.

1.1.2 Deterministic State

The causal graph is an immutable ledger of rewrites. Given the same initial state and the same sequence of rewrites, the resulting graph will be isomorphically identical every time, down to the bit.

1.2 What's JITOS?

JITOS is the operating system for CΩMPUTER.

Its primary function is to bridge the gap between human workflow and machine reality via Holographic Projection.

- **For Humans (The Projection):** JITOS materializes views of the causal DAG that look and behave exactly like a standard filesystem. Humans see files; IDEs see folders; compilers see source trees. But these are just transient projections—an interface layer generated on-the-fly from the underlying graph.
- **For Agents (The Reality):** AI agents bypass the projection entirely. They do not need to parse linear text files or navigate directories. Instead, they interact directly with the causal

DAG, manipulating the raw graph structure, dependencies, and provenance chains.

There are no processes. Instead, agency occurs in shadow working sets—isolated, parallel branches of the universe held in superposition.

JITOS is the interface. For humans, it simulates the familiar desktop. For AIs, it grants direct access to the physics of the system.

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