

Topology Learning From Operations

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What It Specifies

Topology-learning events carry: observed pattern, learning algorithm, proposed topology update, learning authority. The architecture admits the learning event against the topology authority; admitted updates propagate through the topology.

Learning is governance-credentialed. The learning authority, the supporting evidence, and the resulting topology updates all enter lineage; downstream audit can verify topology evolution structurally.

Why It Matters Structurally

Static topology produces architectural blindness to operational reality. Real dependencies evolve; the architecture must support topology evolution from operational experience.

Topology learning produces structural evolution. The architecture admits learning events; topology updates propagate; the resulting topology improves with operational experience.

How It Composes With Mesh Operation

The architecture defines the learning-event format, the learning-authority declaration, and the topology-update propagation. Implementations apply the architecture; learning operations proceed within the framework.

Learning composes with other features. Cross-mesh topology learning federation, byzantine-robust learning under disputed observations, and dispute mechanism for learning disputes all build on the learning primitive.

What This Enables

Defense mesh resilience gains structurally-supported topology evolution. Civilian critical-infrastructure resilience gains the same.

The architecture also supports learning-method evolution. As topology-learning methods mature, learning protocols update through governance procedures.