Integrated Relativistic Correction

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What Integrated Relativistic Correction Specifies

Each unit declares its operating regime: ground-fixed, ground-mobile, low-altitude air, high-altitude air, low-Earth orbit, geostationary. The architecture applies the appropriate relativistic correction model to the unit's clock contributions.

Correction parameters are governance-credentialed. The correction model, the parameter values, and the operating-regime classification are declared structurally. Other units can evaluate the correction provenance.

Why It Matters Structurally

GNSS satellites apply relativistic corrections internally; ground-only operations can ignore relativistic effects; mixed operations across multiple regimes face structural complexity.

Mesh time architectures spanning multiple operating regimes need integrated correction. The architecture provides it structurally rather than as an implementation overhead.

How It Composes With Mesh Operation

Each unit's local clock contributions enter the consensus with the regime-appropriate correction applied. The consensus operates against the relativistic-corrected clock estimates.

Cross-regime operations (a ground unit coordinating with a satellite unit) integrate observations across the correction boundary. The architecture supports the boundary structurally.

What This Enables for Resilient Timekeeping

Satellite-integrated mesh operations (low-Earth-orbit smallsats contributing to ground operations) gain coherent time. Defense space-coordinated operations gain the same.

The architecture also supports emerging regimes. Cislunar and deep-space operations require regime-specific corrections; the architecture admits new correction models as the operating envelopes expand.