

Baseline Departure Detection

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What It Specifies

Each operating environment carries a declared baseline: expected RF spectrum, expected optical intensity, expected acoustic signature, expected chemical composition. The baseline is a credentialed declaration; sensors compare ongoing observations against the baseline.

Departures from baseline carry the departure-magnitude, departure-direction, and departure-modality. The architecture admits the departure as a credentialed anomaly event.

Why It Matters Structurally

Anomaly detection without baseline grounding faces structural ambiguity. What constitutes an anomaly depends on the baseline; without explicit baseline, the detection is ad-hoc.

Baseline-grounded detection produces structural specificity. The baseline defines the expected; departures are evaluated against the explicit expectation; anomaly events carry structured semantics.

How It Composes With Mesh Operation

The architecture defines the baseline declaration format, the departure-evaluation primitives, and the anomaly-event recording. Implementations apply the architecture; sensing participants evaluate within the framework.

Detection composes with other features. Multi-source corroboration of anomaly, lineage-evidence admissibility, and adversarial-action differentiation all build on the baseline primitive.

What This Enables

Defense environmental-monitoring operations gain structurally-grounded anomaly detection. Civilian critical-infrastructure monitoring gains the same.

The architecture also supports baseline evolution. As operating environments change (seasonal, operational-tempo, infrastructure-update), baselines update through governance procedures.