

Cross-Medium Composite Signatures

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What It Specifies

Each event class declares its composite signature: expected RF pattern, expected optical pattern, expected acoustic pattern, expected magnetic pattern, expected timing relationships. Ongoing observations match against the signature templates.

Signature matching is governance-credentialed. The signature authority, the matching primitives, and the resulting event classifications all enter lineage.

Why It Matters Structurally

Single-medium event identification faces structural ambiguity. The same single-medium signature could indicate multiple event classes; cross-medium correlation reduces the ambiguity structurally.

Composite-signature matching produces structural specificity. The architecture identifies events with cross-medium agreement; single-medium signatures alone produce lower-confidence classifications.

How It Composes With Mesh Operation

The architecture defines the signature template format, the matching primitives, and the classification recording. Implementations apply the architecture; sensing participants contribute observations and receive classifications within the framework.

Signatures compose with other features. Cross-jurisdictional signature libraries, byzantine-robust signature matching under adversarial signature mimicry, and graduated-response integration all build on the signature primitive.

What This Enables

Defense event-classification operations gain structurally-supported composite identification. Civilian critical-infrastructure event classification gains the same.

The architecture also supports signature evolution. As new event classes emerge or existing event classes evolve, signatures update through governance procedures.