Persistent Systems Wave Relay Hardens Mesh Without Authority Semantics

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What Wave Relay Provides

Wave Relay is Persistent Systems' Mobile Ad-hoc Network (MANET) radio family deployed across U.S. military operations, allied forces, and increasingly homeland-security contexts. The radio handles dynamic mesh routing, mobility, contested-spectrum operation, and physical ruggedization for tactical use. The deployment scale is significant; the engineering for the operating profile is mature.

What Wave Relay does not provide above the link layer: an authority taxonomy that ties messages to credentialed roles, a continuity-based revocation mechanism that operates without backhaul, a cross-coalition recognition framework for joint operations with allied forces. These are deliberately out of scope — Wave Relay is the radio; the trust layer above is the customer's responsibility.

Why Per-Customer Trust Reconstruction Has Limits

Each Wave Relay customer reconstructs the trust layer in their own architecture. SOCOM integrates with their command-authority hierarchy. Conventional U.S. forces integrate with their tactical command structure. Allied forces integrate with their

national command authorities. Coalition operations require multiple customer integrations to interoperate.

The reconstruction has structural gaps. Coalition operations under bespoke integrations produce inconsistent authority handling, ad-hoc credentialing, and cross-coalition recognition that depends on per-operation negotiation. The cumulative cost across the customer base is substantial; the structural risk is that critical operations rely on integration that has not been independently verified.

How the Architectural Primitive Sits Above Wave Relay

The governed-mesh wire format and admissibility framework consume Wave Relay's link-layer transport. Authority credentials, dynamic-device-hash continuity, hop-history relay, and store-and-forward become protocol properties above the radio. Wave Relay continues to provide its link-layer hardening unmodified.

Customer integration shifts from reconstructing trust infrastructure to admitting the architectural primitive into the customer's authority hierarchy. The customer's command authority becomes a credentialing authority within the primitive's framework. Cross-coalition operations operate through credentialed cross-recognition rather than per-coalition integration.

What This Enables for Persistent Systems' Market

Persistent Systems' competitive position benefits from supplying radios that integrate with a unified trust layer rather than requiring customer-specific trust reconstruction. The radio's hardware engineering remains the core differentiator; the integration work the customer must do shrinks substantially.

Coalition deployments using Wave Relay across allied forces gain structural cross-coalition operability. The patent positions the primitive at the layer that defense mesh-radio customers have been individually reconstructing, providing structural unity to the integration work that has been per-customer ad-hoc.