Mobile Store-and-Forward

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What Mobile Store-and-Forward Specifies

A unit carrying a conforming device receives credentialed observations from sources within range, stores them in its outgoing buffer, transports them as it moves, and re-broadcasts them to receivers within range of its destination. The carrying unit is not a re-originator — it is a relay whose hop record is appended to the existing hop history.

Each carried message retains its original credentialed authority, hop history, and FEC structure. The receiving system evaluates the message under the same admissibility framework regardless of how it propagated.

Why Cellular-Backhaul Dependency Limits Deployment

The cellular-backhaul assumption fails in maritime, agricultural, mining, defense expeditionary, and rural deployments. The cumulative effect is that smart-infrastructure value remains concentrated in dense-urban use cases where cellular is reliable.

Mobile store-and-forward closes the geographic gap. A region with no fixed mesh infrastructure receives policy and observation propagation through transit by mobile units. The architecture supports deployment across the geographies that cellular-backhaul-dependent architectures cannot reach.

How Admissibility Composes Across Carriage

When a mobile unit receives a credentialed observation in range of the originator, the unit's local admissibility evaluator decides whether to admit it for carriage. Carriage is itself a credentialed action; the unit's authority signs the carriage event, contributing to the message's hop history.

When the unit moves into range of a receiver, it re-broadcasts. The receiver evaluates the message: the originating authority's credential, the hop history including the carrier's record, and the temporal scope. The receiver is not asked to trust the carrier; it is asked to evaluate the original authority's credential against its policy.

What This Enables for Geographic Reach

Maritime mesh between vessels, agricultural mesh between equipment, mining mesh between haul trucks, defense mesh in expeditionary deployment — all gain structural propagation that cellular-backhaul-dependent architectures cannot provide.

The pattern composes with intentional disconnection. A unit operating in a temporarily-disconnected region carries observations that propagate when the region reconnects. The patent positions the primitive at the layer where deployment geography is currently bounded by infrastructure dependency.