Trellisware TSM Optimizes Routing, Not Authority Resolution

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What Trellisware TSM Provides

TSM is Trellisware's scalable mesh-routing protocol family deployed across U.S. defense and allied tactical communications. The protocol handles routing decisions, congestion management, link-quality adaptation, and mesh-topology optimization across hundreds of nodes under contested-spectrum and high-mobility conditions. The integration with hardware platforms (Trellisware's own and partner radios) supports widespread deployment.

The protocol's value comes from routing-optimization quality at scale. Tactical mesh deployments routinely involve mesh sizes that would defeat simpler routing protocols; TSM's algorithmic engineering produces working mesh operation where alternatives degrade.

Why Routing and Authority Are Orthogonal Concerns

Routing answers 'how does this message get from sender to receiver' — a question of network topology, link quality, congestion, and path optimization. Authority answers 'should the receiver act on this message' — a question of credentialing, trust

hierarchy, and admissibility evaluation. The two questions operate on different inputs and produce different outputs.

Conflating them produces architectural complexity. Routing protocols that try to incorporate authority weighting often produce routing decisions that are technically correct from a path-quality perspective but operationally wrong from a trust-flow perspective. Authority systems that try to incorporate routing concerns often produce admissibility decisions that don't compose well across path variation. The clean separation — TSM handles routing, the architectural primitive handles authority — produces better behavior on both axes.

How TSM Composes With the Architectural Primitive

TSM's routing-optimized link layer transports governed-mesh wire-format messages. The architectural primitive treats TSM's routing as a transport property — messages reach receivers via TSM's path optimization, with TSM-specific properties (path quality, congestion adaptation) influencing how quickly and reliably the messages arrive.

Authority evaluation runs at the receiver's admissibility evaluator, independent of TSM's routing decisions. A message that traveled through TSM-optimized paths is evaluated for authority admissibility through the same logic as a message that traveled through any other transport. The clean separation supports both protocols' design strengths.

What This Enables for Trellisware's Customers

Trellisware customers gain the architectural primitive above the routing layer they already license. The customer-built trust reconstruction work shrinks; the routing-optimization advantage TSM provides remains.

Multi-vendor tactical deployments — common in coalition operations and procurement where TSM-licensed and non-TSM radios operate together — gain structural interoperability above the routing layer. The patent positions the primitive at the layer where multi-vendor tactical mesh has been the chronically-difficult problem that current per-deployment customer integration only partially solves.