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3:00 pm - 3:20 pm

From Intent to Action: A New Model for Military Networks

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Abstract:

Military networks operate at global scale, integrating heterogeneous technologies under dynamic mission demands. Intent-Based Networking (IBN) provides a model for aligning such infrastructures with high-level objectives, but current systems lack mechanisms to encode organizational hierarchy and mission variability. We propose a hierarchical, nested intent model that incorporates organizational constructs—such as location, tenant, mission type, priority, and classification—as reference variables within IBN templates. Global intents define enterprise-wide requirements, while regional, mission, and tactical layers refine or override inherited variables to reflect local constraints. This approach enables scalable configuration, consistent policy propagation, and adaptive mission reconfiguration. Applied to defense networks, it supports coalition interoperability, reduces operator error, and increases policy agility across distributed environments. Remaining challenges include automated conflict detection, scalable verification across heterogeneous devices, and securing intent resolution pipelines. Embedding organizational constructs into hierarchical intent frameworks offers a foundation for deploying IBN in complex, mission-critical military networks.

Attendees can expect to learn:

1. How Intent-Based Networking (IBN) can be adapted to handle the complexity of global, mission-driven defense networks.

2. The role that hierarchical, nested intents can be used to achieve organizational structures (like mission type, priority, security) and enable policies to flow from global to tactical levels.

3. Practical applications of policy inheritance and overrides within regional, mission and tactical layers.

4. Ongoing challenges in applying IBN to DoW enterprises and missions.