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Hiding in Plain Sight

Achieving Secure and Resilient Space to Ground Communications

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The Challenge

Providing the needed resilient capacity

Legacy ground infrastructure capabilities are now becoming overwhelmed and do not provide the resiliency to ensure the needed data is available.

- Traditional GEO missions now in LEO
- Slow upgrades to legacy capabilities
- Limited ground footprint
- Gaps in tactical edge capabilities
- Not architected for mesh -networking
- Data bottlenecks

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The Solution

A distributed architecture of government and commercial ground stations

Modern routing technology and network visualization combined with encryption and active monitoring capabilities would allow the government to mitigate the risks and reroute data based on vulnerabilities or malicious activities. In such a large, distributed architecture with a mix of government and commercial connectivity it would be harder for adversaries to identify specific government data flows or target specific ground stations. The loss of a single antenna or ground station would no longer have a significant mission impact.

- Provides resiliency

- On demand capacity

- Expanded ground footprint

- Agility to support operations

- Architected for mesh-networking

- Ability to manage the security environment

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A Mesh-Network Architecture

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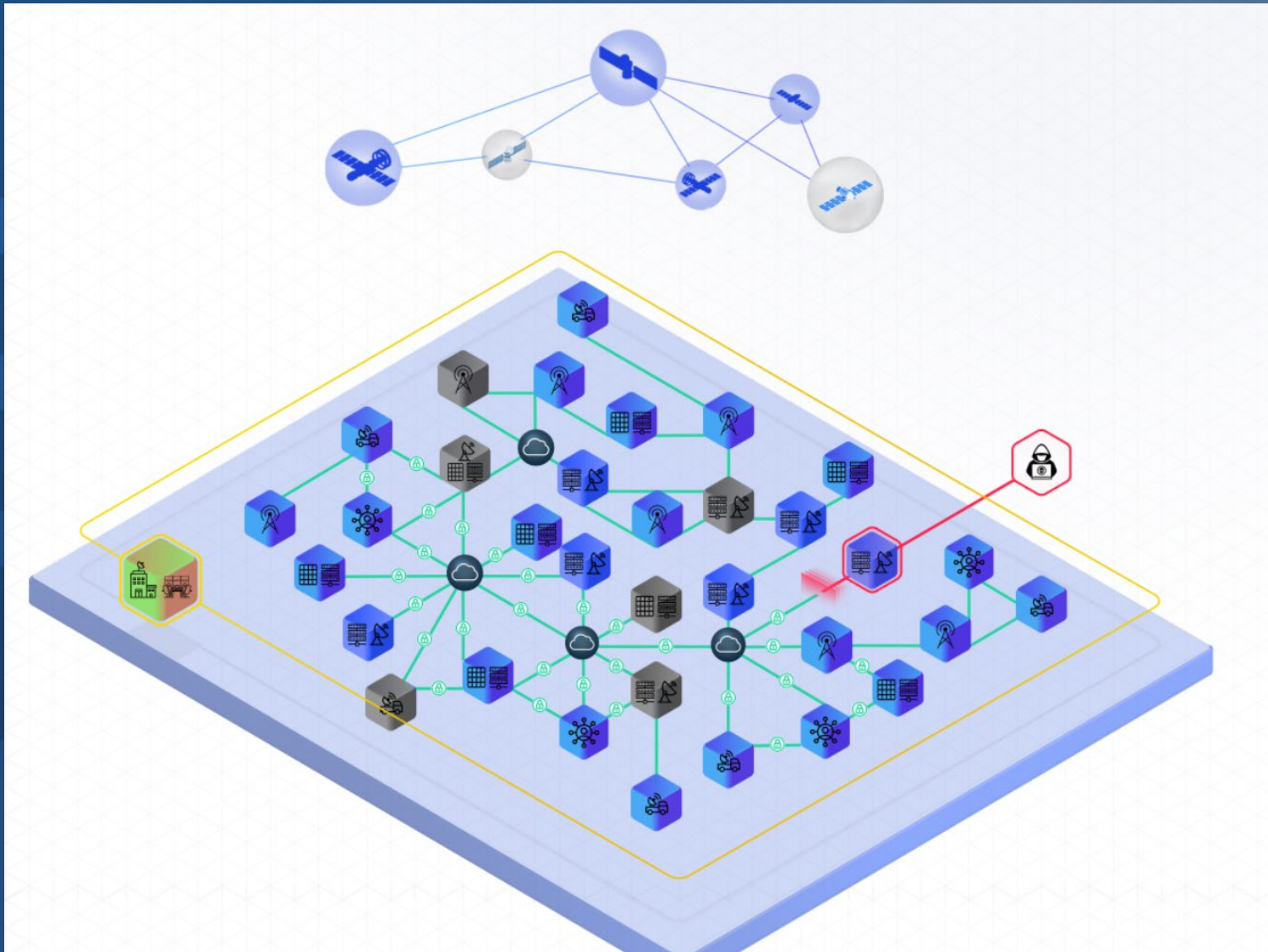
Providing the Needed Security

Elements of the Architecture

- Centrally Orchestrated zero trust to ensure every interaction/transaction is challenged

- Multiple layer encryption to ensure data is secure in transit and at rest

- Security monitoring of entire mesh network to provide total awareness and ability to respond

Providing the Ability to Manage

Elements of the Architecture

- Provides comprehensive network management and automated dynamic routing

- Provides end device hardware monitoring to detect tampering and health status

- Provides ability to truncate or expand network as needed to support scaling

Providing the Resiliency

Elements of the Architecture

- Large distributed mesh network for resiliency

- Provides increased number of ground antenna of both RF and optical capabilities

- Provides capability to self heal and reroute without impact to mission

- Provides the connectivity and agility of the future cross connected satellite constellations the government envisions.

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