November 2017

Space Cyber Framework

How the Space Community Should

Approach Cyber Security

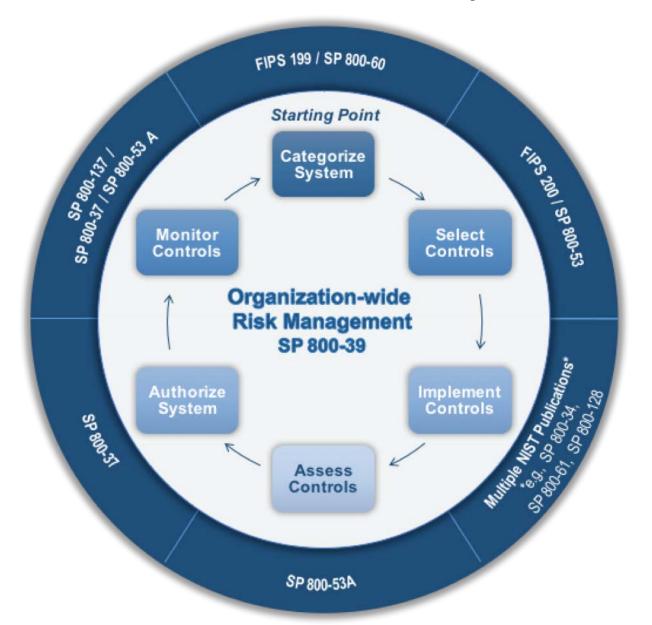


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Space Cyber Framework Disconnection?

- Space is no different than the rest of the cyber world the cyber framework for Space exists already
- The NIST Guidance is a great place to start:
 - Risk Management Framework
 - Cyber Security Framework
- Concept of End point security is necessary
- Concept of Mid point security is necessary
- The Space Community must take the threat seriously and implement

The NIST RMF is the start to Securing Space Systems: Assessment all of its Platforms—Space is Critical



The CSF allows the Space Community to methodically evaluate the entirety of the Space Infrastructure

P Identify

AM: Asset Management BE: Business Environment CV: Governance RA: Risk Assessment RM: Risk Management Strategy

Protect

AC: Access Control AT: Awareness Training DS: Data Security IP: Information Protection Processes and Procedures PT: Protective Technology

Recover RP: Recovery Planning IM: Improvements

CO: Communications

NIST Cyber Security Framework

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∩ Detect

AE: Anomolies and Events CM: Security Continuous Monitoring DP: Detection Processes

© Respond

RP: Response Planning CO: Communications AN: Analysis MI: Mitigation IM: Improvements

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Architectural

- Multi node, Multi mode
- Instrumented for Cyber
- Self-forming & repairing
- Modular & flexible

Satellite

- MultiPath
- Variable Power
- Adaptive Modulation
- Onboard vs Off Board
- Embedded controls and protections

Ground

- Enterprise-wide solutions
- Threat based Isolation
- Common messaging standards
- Encrypted storage

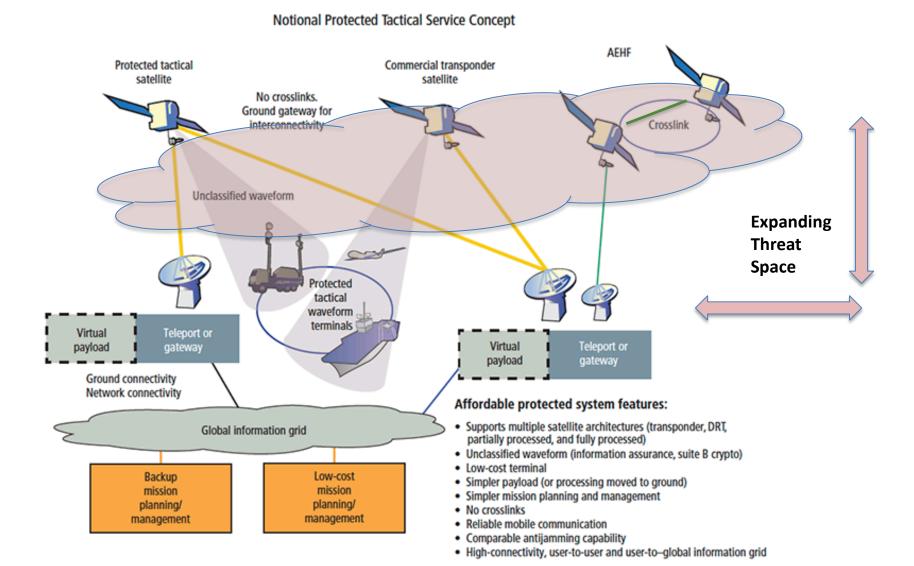
Continuity Of Service Construct

Cyber Resiliency

Almost every major piece end-item hardware should be considered an Endpoint in the Space Community



Midpoint security is a growing threat space that must be considered



Space Cyber Framework Disconnection

- Space Cyber Framework Disconnection = Lack of focus and priority
- The cyber framework for Space exists
- Traditional approaches to Cyber work for Space
- The Space Community must take the threat seriously and implement methodologically
- The USG must make this a priority

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