

Building a Future- Ready Community of Interest

**13th International Command and Control
Research and Technology Symposium**

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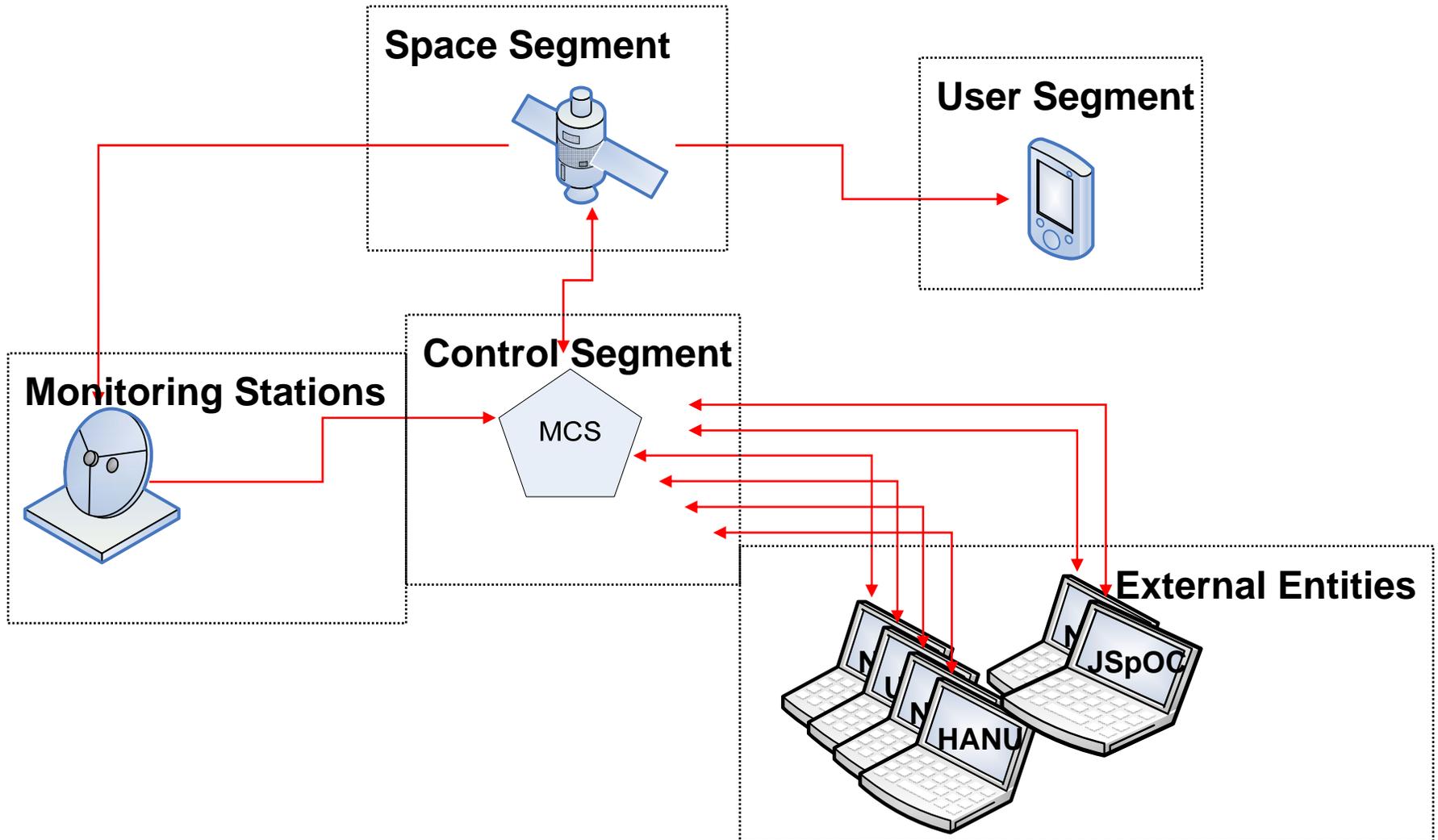
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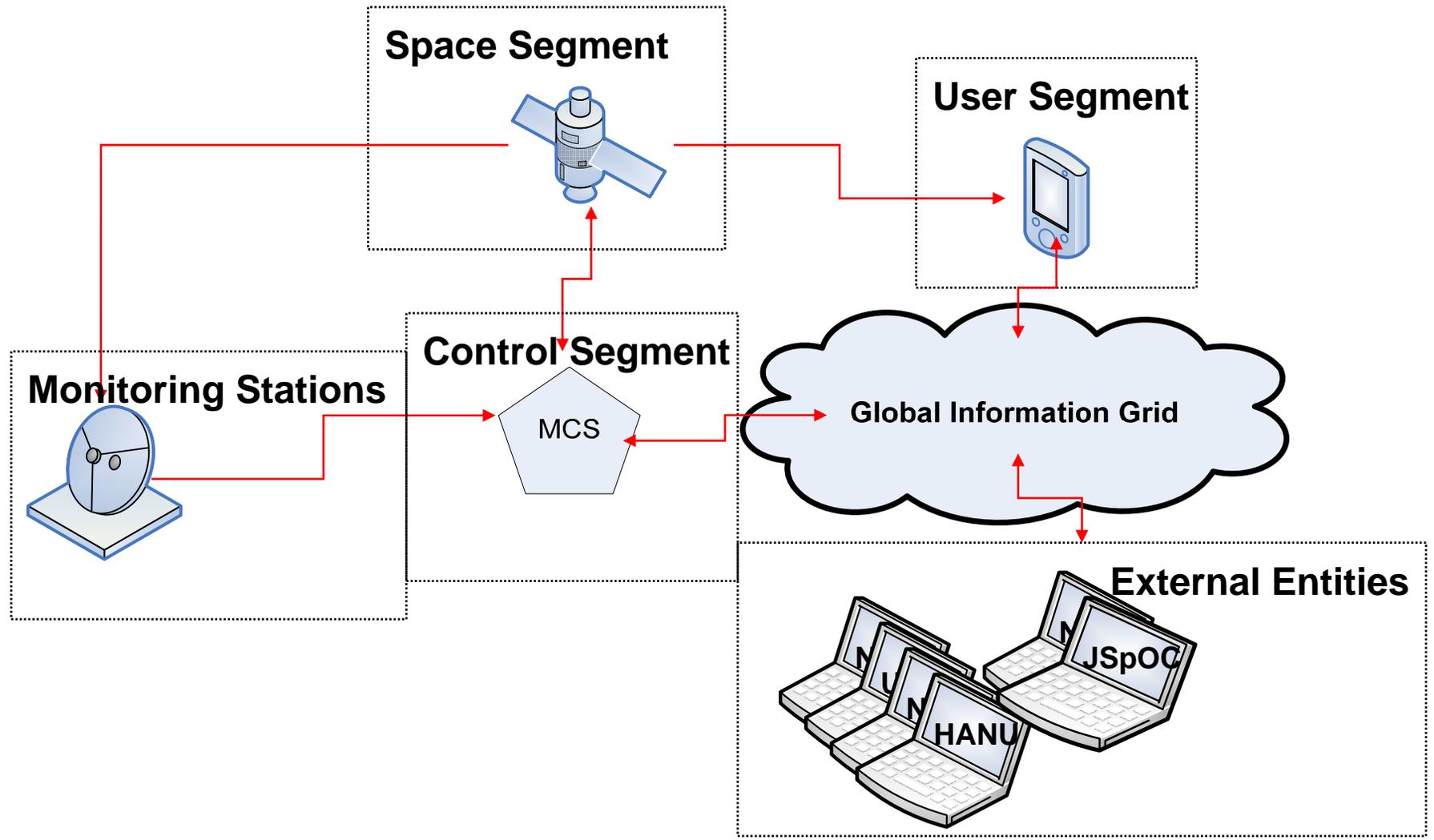
Overview

- **Background**
 - **GPS**
 - **Net-centricity**
 - **Community of Interest**
- **Lessons Learned**
 - “Future Proof” explanation
 - Future-Proof the Community of Interest
 - Non-technical Solutions
 - Agile Service Development
- **Conclusions**

NAVSTAR: The Global Positioning System (GPS)



GPS Transition to Net-centric Environment



Community of Interest

- **How to facilitate this complex transformation, given the needs of various stakeholders, in separate security enclaves, with dynamically changing mission needs?**
 - **Use Community of Interest (COI), a common forum / organization established to solve the common information sharing problem of a group of stakeholders**
 - **Funding is in the hands of the stakeholders, not the COI**
- **A COI works in the best interest of the DoD enterprise, while a program is concerned primarily with the acquisitions/operations of their program**
 - **Expressed as a “system-centric” mindset vs. an enterprise mindset**
 - **Necessary to reconcile differences and align program goals with those of the enterprise to fund the enterprise-interoperable development activities of the COI**

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Future Proof

- **“Future Proof” describes the process of anticipating future events so that action can be taken to minimize the negative consequences**
 - **Applies to technology – build support in to current technology to take advantage of future standards, upgrades**
 - **Applies to acquisitions – develop contracts that lean forward to take advantage of technology that does not yet exist, in order to ensure it will not be obsolete before production**
 - **Applies to organizations – develop organizational structure and processes that will persist despite changes to focus, membership, technology, and acquisitions**

- **Anticipation is not fool-proof, so future proof is actually “future ready”**

Future-Proof the Community of Interest

- **Can build a COI from a single program of record (POR)**
 - **Expediency**
 - **Focus**
 - **Budget control**
- **However, must anticipate the larger mission area**
 - **POR needs to make decisions that are best for the enterprise**
 - **Determine related COIs & build a management structure that represents the mission area**
- **Create a set of mission threads to provide enterprise-level context to services**
 - **Business process modeling for IT/business convergence**
 - **Trace activity from warfighter to information systems, based on effects or capability**
 - **Determines issues/interactions with related COIs**

Non-technical Solutions

- **Socialization is vital and should be accomplished early**
 - **Should align POR and enterprise goals, and engage both leadership and working groups**
 - **Information Assurance in the Net-centric environment requires a shift in mindset**
- **COIs suffer from a lack of easily available and effective collaboration tools**
 - **Collaboration is currently performed ad-hoc**
 - **Tools need to support multi-level security & data separation**
 - **Need at least chat, secure web conferencing, file sharing, and “people discovery” services**
 - **Current Defense Knowledge Online accounts are difficult to acquire and have limited membership**

Agile Service Development

- **Agile software development methods can correlate POR “needs” with COI “wants”**
 - **Rational Unified Process-style iterative development**
 - **Early prototyping with feedback**
 - **POR develops expertise to build more complex services**
 - **COI ensures that the services developed meet enterprise needs**
- **Expose data first, build capability incrementally**
 - **Mission threads activity identifies data needs and dependency**
 - **Data can be aggregated to meet warfighter needs**
 - **Services can be composed to provide additional capability**
 - **Leverage a common service infrastructure**

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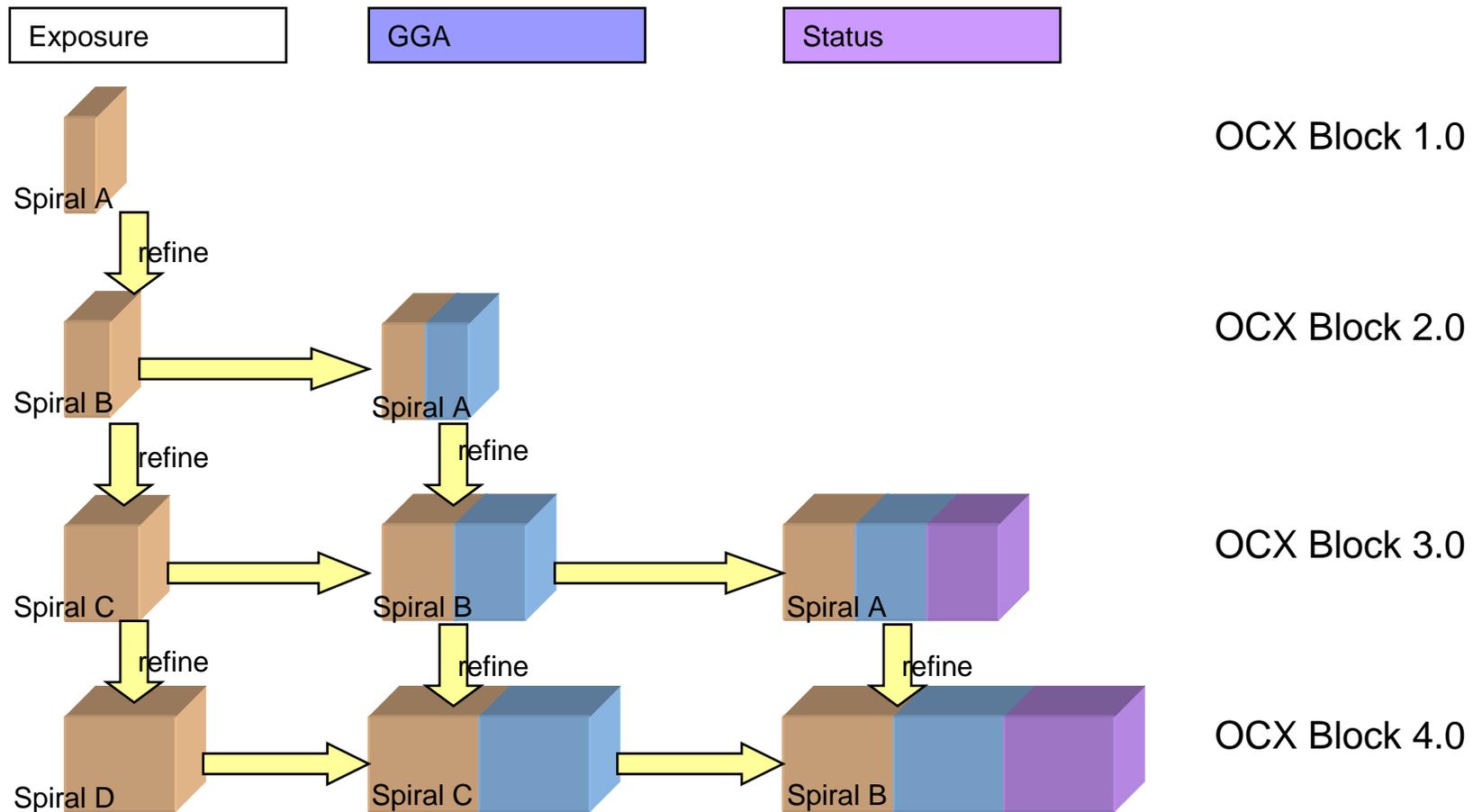
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Conclusions

- **The transition to a net-centric environment in the DoD is a highly complex transformation that hinges upon participation and interaction in Communities of Interest**
- **Build a COI so that it can scale larger without impact to the underlying organization or structure. Anticipate the future changes and prepare accordingly**
- **Sometimes the solution to a technical problem (like net-centricity) are non-technical in nature, like socialization. Identify the source of the problem and respond to it**
- **COIs are based on mass collaboration. Agile development works well in this environment. Programs should adjust their acquisition strategy to align with agile development principles, such as iterative, incremental development**

Backup

Iterative, Incremental Development



Service Identification

OCX Service Categories

Automated Information Service (AIS)
(*Net-centric Services*)

GPS GIG AIS (GGA)
(*AIS exposed to the GIG*)

GGA Publish

GGA Subscribe

GGA Pub/Sub

GGA Notify

GGA Tasking

Other attributes:
Classification
Stateful
Stateless
Synchronous
Asynchronous
Real-time
H2H, H2M, M2M

OCX Services

Table 3-III legacy data
producer/consumers

Table 3-III data
consumers

Table 3-III data
producers

Table 3-III data
notification services

Table 3-III Tasking
services

Data Exposure

GPS Status

Spot Beam Mission Data
Service

Civil Performance
Parameter Notification

Mission Threads Activity

Slide courtesy of ESC NCMS

