MMSOC GSA: Standards and Architecture Enabling Multi-Mission Interoperability

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SMC/Space Development & Test Wing/Responsive Space Command & Control
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Introduction

**Mandate:** To fly various one-of-a-kind technology demonstrations and other space-based mission for Research, Development, Test and Evaluation and responsive space operational communities.

**Challenge:** Execute the mandate using limited personnel while lowering development and sustainment costs and reducing schedule without increasing technical risk.

- **RDT&E:** Supports all aspects of the RDT&E mission
- **COCOM:** Facilitates transfer of RDT&E satellites
- **ORS:** Pathfinder; AF’s primary ORS satellite C2 capability
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Approach → Architecture Development

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Approach → Solution Identification
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Approach → Foundational Document Development

Mission Portfolio
Cost Model

Common Services
Standards

Open Systems Management Plan

Designate Key Interfaces
Use Open Standards for Key Interface Certification and Conformance

Employ Modular Concepts
Employ Business and Technical Patterns

Establish Business and Technical Enabling Environments

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Approach → Upgrade/Improvement Cycle

Acquire RSO Capabilities

State Transition Description

- MMSOC GSA Priorities
- Block Requirements
- Block Architecture
- Block Development
- MMSOC GSA Sustainment
- Enterprise Capabilities Needed
- Enterprise Baseline Management
- Enterprise Architecture
- Enterprise Integration & Test
- Capabilities Review & Update
- Wing Mission Involvement
- Mission Manifest
- Mission Architecture
- Mission Development
- Mission Development
- SV SPO Request
- SV Requirements
- SV Architecture
- SV Development
- Launch or Store

Needs
Requirements
Architecture
Development
Sustainment
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Approach → Upgrade/Improvement Cycle

Mission Acceptance → Mission Manifest → Mission Architecture → GSD

Wing Mission Involvement

MMSOC GSA Services Guide & External ICD

SV RFP & AS-IS Architecture

RSO Enterprise

SV Proposal

External ICD Annex

SV SRR

Mission Design Review

SV CDR

Integrated Development

Spacecraft manufacturer and SDTW both use the GSA CMD/TLM system to support the vehicle AI&T and on-orbit operations
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Approach → Upgrade/Improvement Cycle
Exploiting new technologies:
• Using fewer people
• In less time
• With smaller budgets
• While managing risk
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Questions & Discussion
Authors

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