

***2007 National Security Space Policy
and
Architecture Symposium
“Commitment to Space Partnerships”***



**Panel on “Managing the
Space Enterprise”**

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**Deputy Assistant Secretary of the Navy
(C4I/Space)**

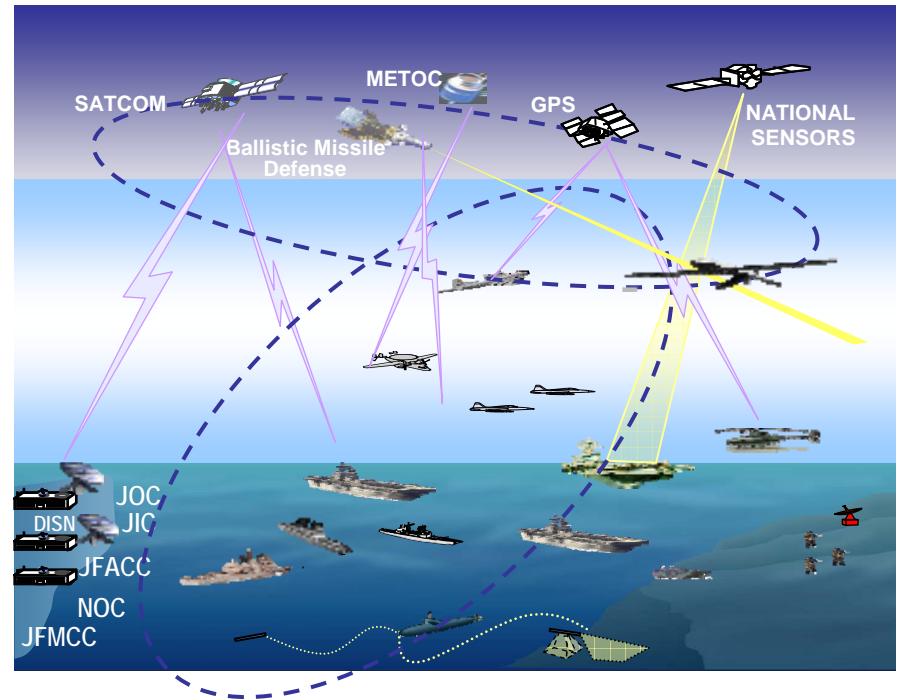
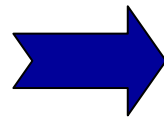
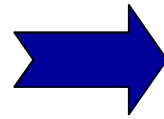
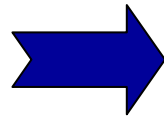
Navy Space Vision

...Integrating space capabilities throughout the naval forces

...Shaping joint deliberations to assure combat effectiveness

Strategic Objectives

- Drive system design
- Tailor processing and distribution architectures
- Integrate into platforms and operations
- Train and educate



Achieving the Vision

Assessment

Evaluate capability needs & priorities

Requirements

Determine, articulate & defend DoN rqmts

S&T/R&D

Develop / transition technology

Acquisition

Acquire / translate & defend rqmts

Operations

Integrate space into fleet / operate systems

Navy Space Team

Assessment

Requirements

S&T/R&D

Acquisition

Operations

N2 NCDP
& IC

N2 Intel Process

ONR:
Space INP

PEO SS:
MUOS

NNWC:

- Space Campaign

N6 NCDP

N6 JCIDS

NRL:
ORS/TacSat
Base S&T

PEO C4I:
User Equip

- NIOSC

- Fleet Needs

N8 NCDP

N8 JCIDS

N6:
TENCAP

SSFA:
Navy NRO
reps

- NAVSOC

DC, PP&O

DC, PP&O

CG, MCWL

Dir, C4
(User Equip)

Operating Forces – users of space based capabilities

DC, P&R

DC, P&R

Dir, Int

Dir, Int

Dir, C4

Dir, C4

User Feedback

N6 is CNO's Space Lead DC, PP&O is CMC Space Lead

Navy Needs Memo



Prioritized List

1. SATCOM – robust architecture
2. PNT – sync space/terrestrial segments
3. Space Control – balanced architecture for assured access
4. ISR – SIBRS for missile warning
5. Data Exfiltration
6. ISR – sensors to detect & classify contacts
7. ISR – SR for MDA
8. ORS – launch, s/c & range/C2
9. Space Situational Awareness
10. Environmental Monitoring
11. Training & Education

**VCNO Memo, *Navy Space Needs*, Feb 13 2006
– update in work**

TacSat Experiments

- **TacSat-1- Navy led**

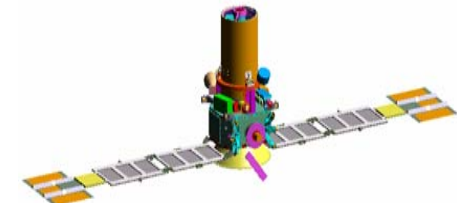
- Tactical RF Payloads & UHF Cross-Platform Link
- Low Res Visible (70m) & IR (850m) Cameras
- Direct Access via SIPRNET & VMOC Web Site
- Spacecraft Completed May 04, within 1 Year
- Launch: Falcon-1 TBD



TacSat-1 at NRL

- **TacSat-2 – AF led**

- Tactical Imaging & RF Payloads
- Tactical CDL & UHF Links
- Navy Target Indicator Experiment secondary payload
- Multiple Science Payloads
- Spiral Development. Launched Dec 06.



TacSat-2 / Roadrunner
Picture from AFRL & MSI

- **TacSat-3 – AF led**

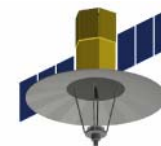
- AF/Army Hyperspectral Primary Payload
- Navy Small Data-X Payload for IP-Based Buoy Comms



TacSat-3 Concept from AFRL
Received Go on 10/04

- **TacSat-4 – Navy led**

- Comms-on-the-move primary payload (HEO)
- Secondary Data-X/BFSA payloads
- Mission Jointly Selected on Oct 13, 2005



TacSat-4 Concept from NRL
Received Go on 10/05

Navy TENCAP: Tactical Exploitation of National Capabilities



- Chartered by Congress in 1977
- MIP (Military Intelligence Program) funded/ oversight
- Navy R&D for exploiting current and future space-based ISR sensors:
 - rapid prototyping (12-24 months)
 - testing under field conditions
 - rigorous, independent assessment of results
- Executed over 110 R&D projects and transitioned over 54% into operational ISR capabilities supporting Fleet and joint forces.

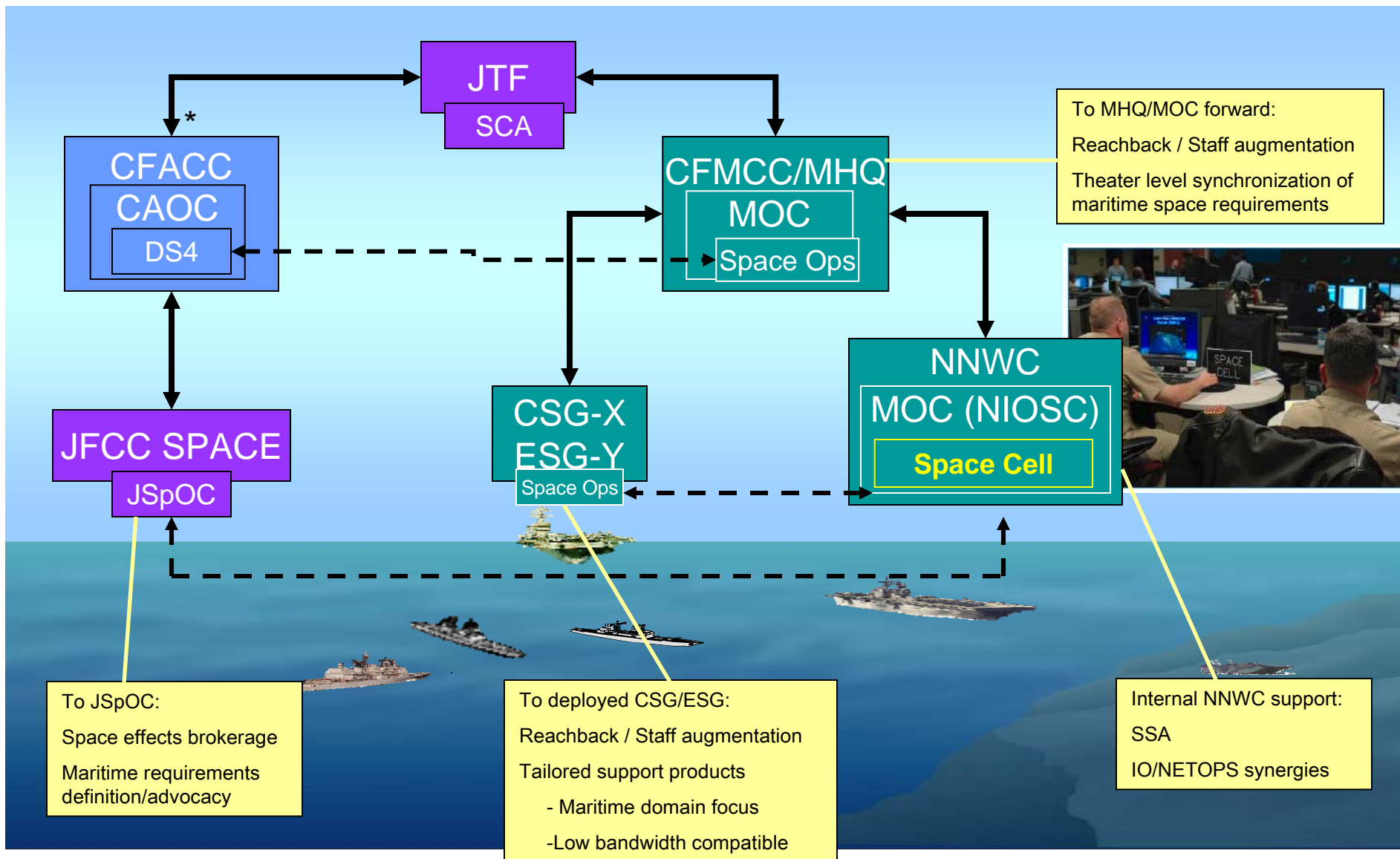
Focus on solving tactical Fleet problems

Mobile User Objective System (MUOS)



- **Four UHF GEOs, plus on-orbit spare**
 - “Bent-pipe” payload
 - 16 spot beams and one earth coverage beam
 - Legacy payload compatible with UHF terminals
- **Integrated ground network**
 - Manages the information network
 - Controls the satellites
 - Provides access to DISN services
- **New 3G CAI SA-WCDMA waveform**
 - New UHF uplink & downlink filings to get contiguous 5 MHz channels
 - Provides “Comms on the Move” for 21st century mobile forces
- **Three pillars for success**
 - Realistic/stable requirements
 - Realistic/stable funding
 - Mature technology

NETOPS, IO & Space Center (NIOOSC) - Tailored Space Products with a Maritime Focus



*Depicts current structure in CENTCOM. JTF CDR can delegate SCA lead to any component.

DoN Space Cadre

- **WHO**

- SECDEF directed Heads of DoD Components, "...to develop and maintain a cadre of space-qualified personnel to support their Component in space planning, programming, acquisition, and operations..."
 - Navy Space Cadre Officers come from multiple URL and RL designators and are identified by AQD, Subspecialty Code, or NOBC based on space-related education and/or experience.
 - Marine Corps believes in taking MAGTF officers and making them "Space-smart"
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- **MANAGEMENT**

- **Navy Space Cadre Advisor:** Actively manages the Total Force. Coordinates with commands, placement officers, and detailers to place qualified personnel in high-vis, technically demanding space billets. Interfaces with the NSSO, NAVPERSCOM, OPNAV N6 (Resource Sponsor), and NNWC (Space TYCOM).
 - **Deputy Commandant, Plans Policies and Operations:** responsible for development and management of the USMC space cadre
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- **CURRENT DATA**

700+ Active Duty Officers	315 space-coded billets
100+ Reserve Officers	17 space-coded billets
100+ Civil Service	From multiple job series and commands
17 Space Operations Officers	8 Space Operations Officer billets
68 Space Operations Staff Officers	46 Space Operations Staff Officer billets

Summary

- Navy perspective
 - Partnerships are key – U.S. and international
 - Pragmatic focus - make space tactically relevant
- Challenges
 - Managing complexity in a fiscally constrained environment
 - Block approach good step but still need to prioritize
 - More experimentation will help reduce technical risk