



# 17<sup>th</sup> Annual ICCRTS

A Structured, Yet Agile Approach to Designing C2 Operating Environments

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Command and Operations Center Sub-Portfolio

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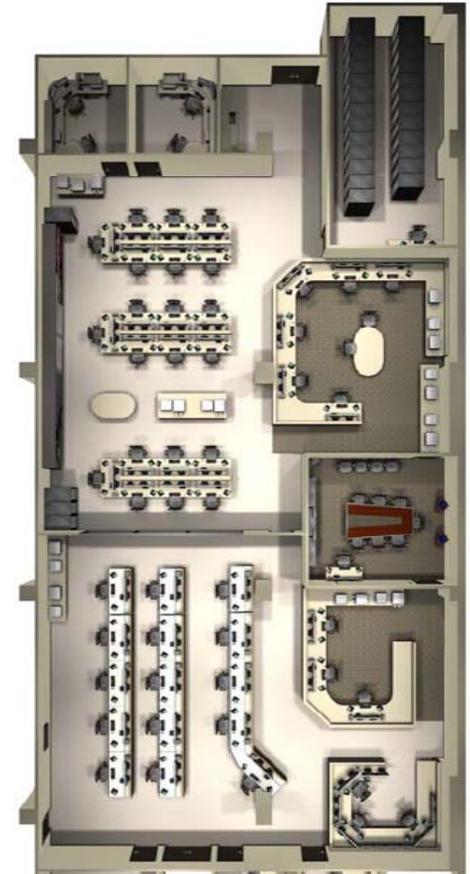
# Introductions

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- ▼ About SPAWAR
- ▼ About the Presenter
- ▼ Past Performance

# Background – COMOPS Centers Defined

- ▼ Attributes of Command and Operations (COMOPS) Centers:
  - ▼ Planned, designed, and built around Mission
  - ▼ Nerve Center for Command and Control:
    - ▼ Direct operations, control forces, coordinate operational activities
    - ▼ Gather, process, analyze, dispatch, and disseminate planning and operational data
  - ▼ Complex, technologically advanced, and costly investments
  - ▼ Convergence of Operations, Technology, and Facility
  - ▼ Includes: Ops Centers, Coordination Centers, Emergency Ops Centers, Public Safety Ops Centers, Security Ops Centers, Intelligence Ops Centers, Network Ops Centers, Info Fusion Centers, etc..

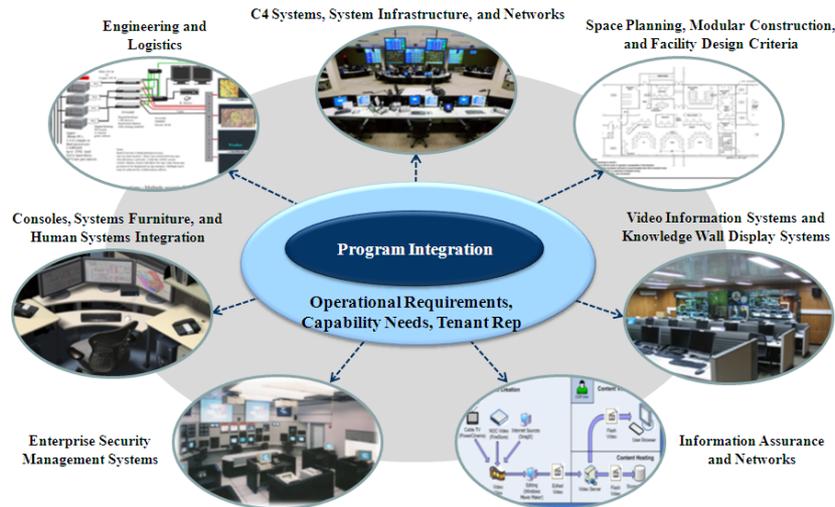


"I need to be prepared to run operations in any condition from using the latest technology all the way to a radio, flashlight, and a map board" - Senior Watch Officer; USCG Seventh District Command Center

# Background – System of Systems

## ▼ COMOPS Centers as System of Systems:

- ▼ Social Architecture – people, processes, context/communications/collaboration
- ▼ Knowledge Architecture – data and information
- ▼ Technical Architecture – systems and services
- ▼ Physical Architecture – facility and physical infrastructure



*For all complex problems, the level of thinking required to solve a problem is inversely proportional to the budget allocated for its solution. -Dr. John D. Burrow, Executive Director, Marine Corps Systems Command*

# Challenge

- ▼ Dynamics of mission change, technology advancement, and fiscal realities
- ▼ Traditional Delivery through long, rigorous acquisition cycles
- ▼ Inability to identify and baseline operationally based, multi-discipline requirements early in capability acquisition lifecycle
- ▼ Failure to forecast future needs
- ▼ Lack of full context considerations in planning
- ▼ Lack of standardization in the definition, design, and delivery of capabilities
- ▼ Failure to plan for flexibility and adaptability in environments
- ▼ Fragmented delivery models

*"...the joint force will operate in an uncertain, complex, and changing future characterized by persistent conflict."* Capstone Concept for Joint Operations; Joint Chiefs of Staff; 15 January 2009

# Response

- ▼ Agility in designing COMOPS Center Operating Environments leads to the imperative need for an innovative, standardized methodology that:
  - ▼ Forecasts future COMOPS needs
  - ▼ Accounts for the full COMOPS Center context in planning
  - ▼ Develops “accurate” requirements as early in the acquisition planning lifecycle as possible
  - ▼ Compresses the define/design/build lifecycle thereby reducing acquisition costs and leveraging a highly rapid deployment to meet dynamic needs and mission changes with a high degree of flexibility

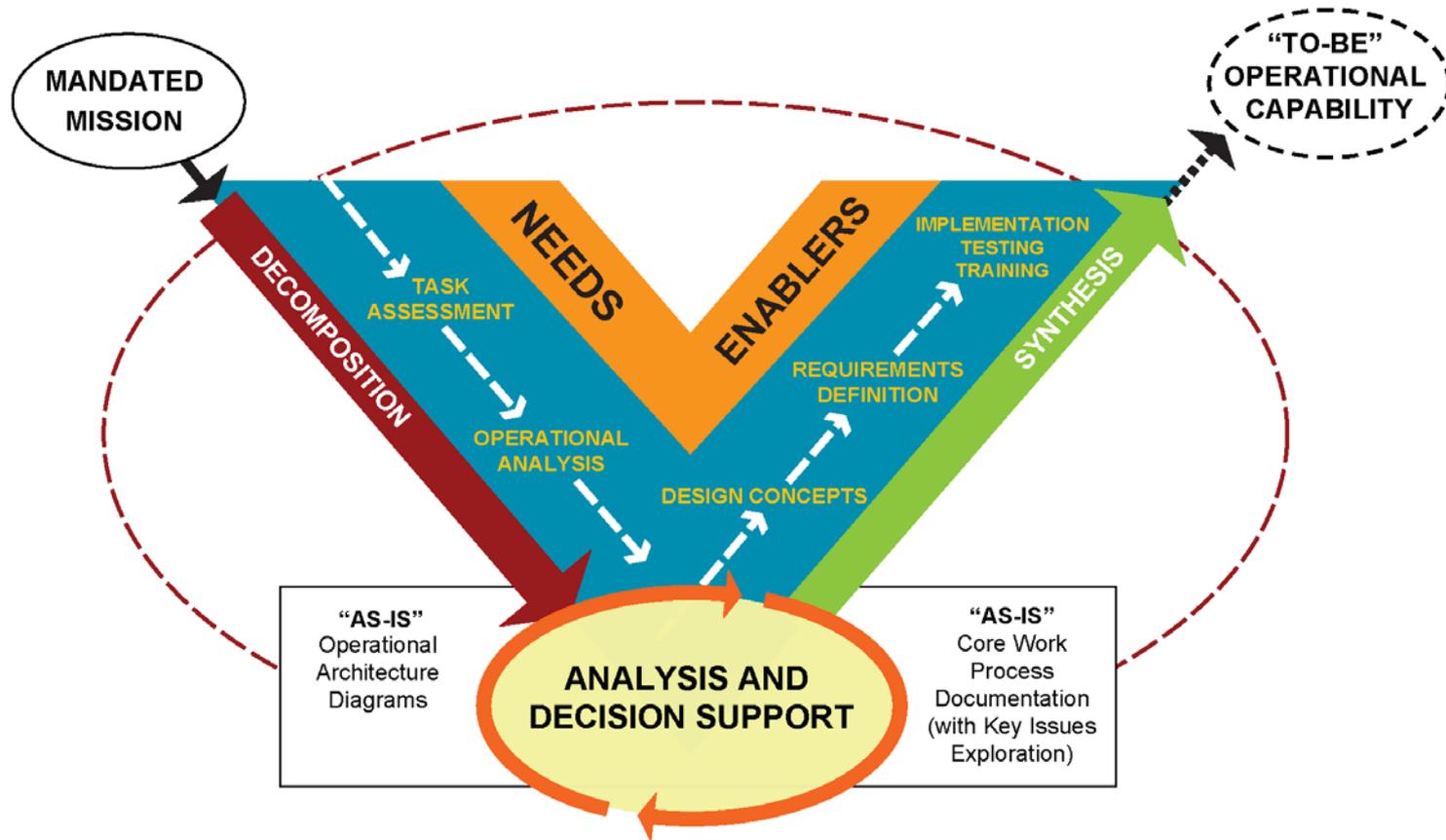
# Advent of Change - Requirements

## ▼ Speed and Quality of Requirements

- Most value can be gained in Acquisition Lifecycle
- Based on all anticipated missions ("As-Is" and "To-Be")
- Integrated with all disciplines
- Build consensus amongst multiple project stakeholders
- Iteratively developed
- Lead to reduced schedule/cost and increase performance and service life



# Advent of Change: Structured, yet Agile Analysis and Planning



## ▼ Approach done in a "DODAF-Lite" fashion

- Focus on mission and operations as the basis and address capability across all COMOPS Center Layers

# Advent of Change: Standardization

**VTC Conference Room - Classified SECRET**  
The VTC Conference Room provides working space for the performance of unclassified and classified VTC and conferencing functions by general and executive staff.

**Room Name/Function:** Standard VTC Conference

**Overall Room Requirement:** 400-450 sq. ft.

**Adaptability Requirement:** Adaptability is not desirable

**Audio/Video/IT Use Case:** Temporary, as-needed

**Systems Color Legend**

- Furniture
- Desktop A/D
- Audio/Video
- Audio/Visual
- Passive Infrastructure
- Electrical Infrastructure

**Keynotes Legend**

Keynote	Keynote Text
1	Hardware to support standard conference meeting
2	Hardware to support VTC conference room functions
3	Hardware to support conference room control station functions
4	Hardware to support office mobile storage
5	Hardware to support AV equipment storage
6	Common Access Card (CAC) Reader
7	Ability to accommodate Unclassified computing and high processing applications with heavy graphics (GIS, CAD, video, etc.)
8	Standard Wired Keyboard and Mouse
9	Ability to accommodate high processing applications with heavy graphics (GIS, CAD, video, etc.)
10	Ability to accommodate Unclassified and Classified SECRET voice communications
11	Ability to conduct an system power, PDU/system select, trouble dial, volume, etc.)
12	Ability to support reference web-based capabilities
13	Ability to prevent visual information from a Classified SECRET computer in the room
14	Ability to display up to ten (10) images simultaneously
15	Ability to display prior presentations
16	Ability to display briefing presentations (PowerPoint type tool)
17	Ability to display Video (International presentation)
18	Ability to conduct Unclassified and Classified SECRET VTC sessions
19	Ability to conduct VTC sessions with multiple simultaneous outside video feed(s) from CPU in room
<b>VTC Camera</b>	
20	Ability to display eight (8) live zones
21	Ability to display security enclosure for the room
22	Power for environmental floor drops
23	Four (4) electrical outlets per outlet floorplate
<b>VTC Console</b>	
24	Ability to display CATV
25	Ability to accommodate Classified SECRET computing with high processing applications with heavy graphics (GIS, CAD, video, etc.)
26	Three (3) Classified SECRET data drops
27	Two (2) Unclassified voice drops
28	Two (2) Classified SECRET voice drops

**NOTE:** Rendering is schematic in nature & shows generic products only. Actual typology may vary.

**VTC Conference Room - Classified SECRET**  
315' x 170'

**Axonometric - VTC Conference Room**  
SECRET

**VTC Conference Room - Classified SECRET**  
VTC TYPE-B

COMOPS Center Standards quick and accurate development of requirements, architectures, and budgets

# Advent of Change: Integrating Define/Design/Delivery Cycle

## OE Approaches

- *Standard Approach*

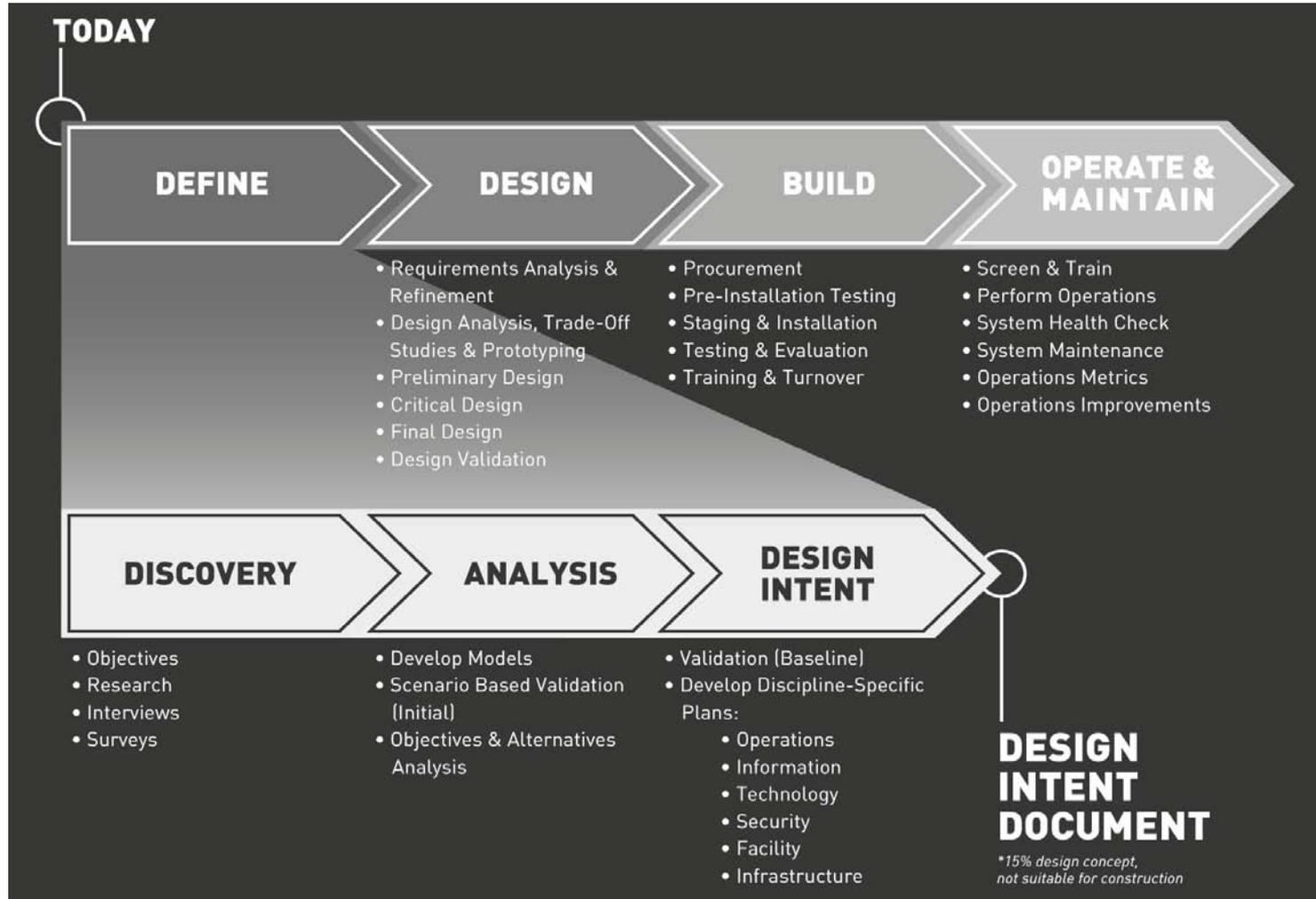


- *Integrated CCE/MCD Approach*

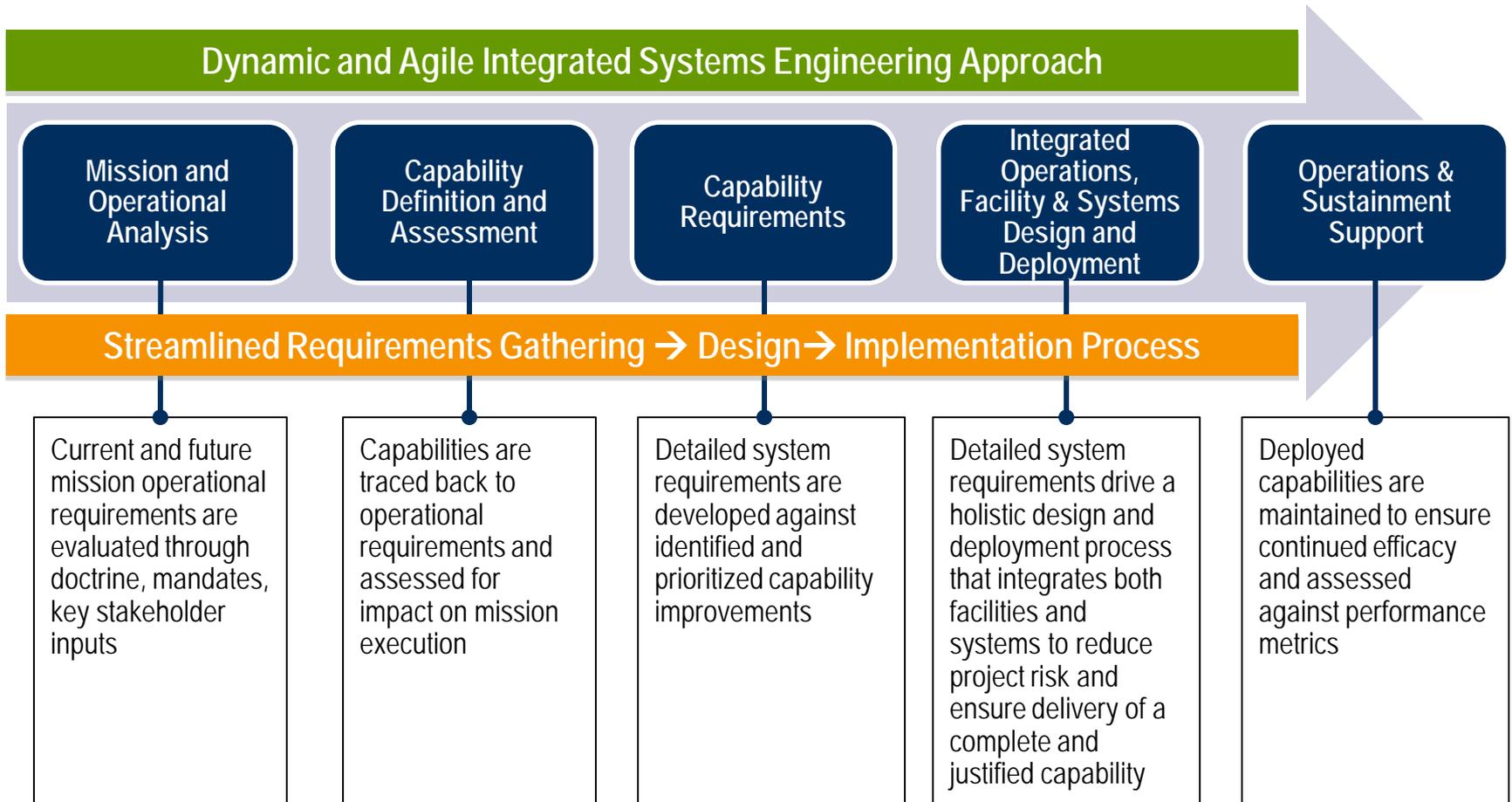


- ▼ Fragmenting of Operations, Systems, and Facilities leads to cost over runs, project delays, and decreased capabilities

# Capability Definition and Delivery



# Approach to Define

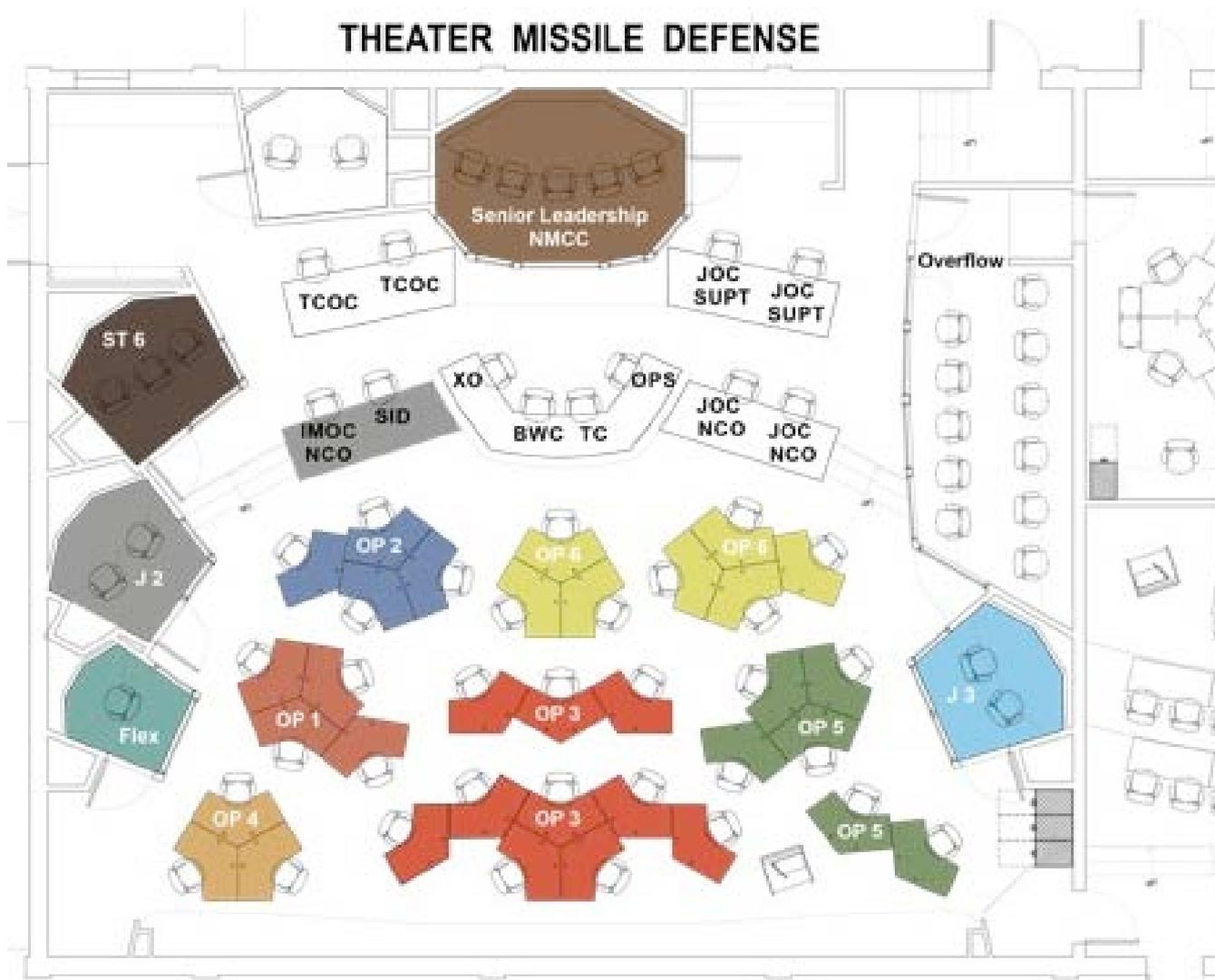


# Operationalizing the COMOPS Center

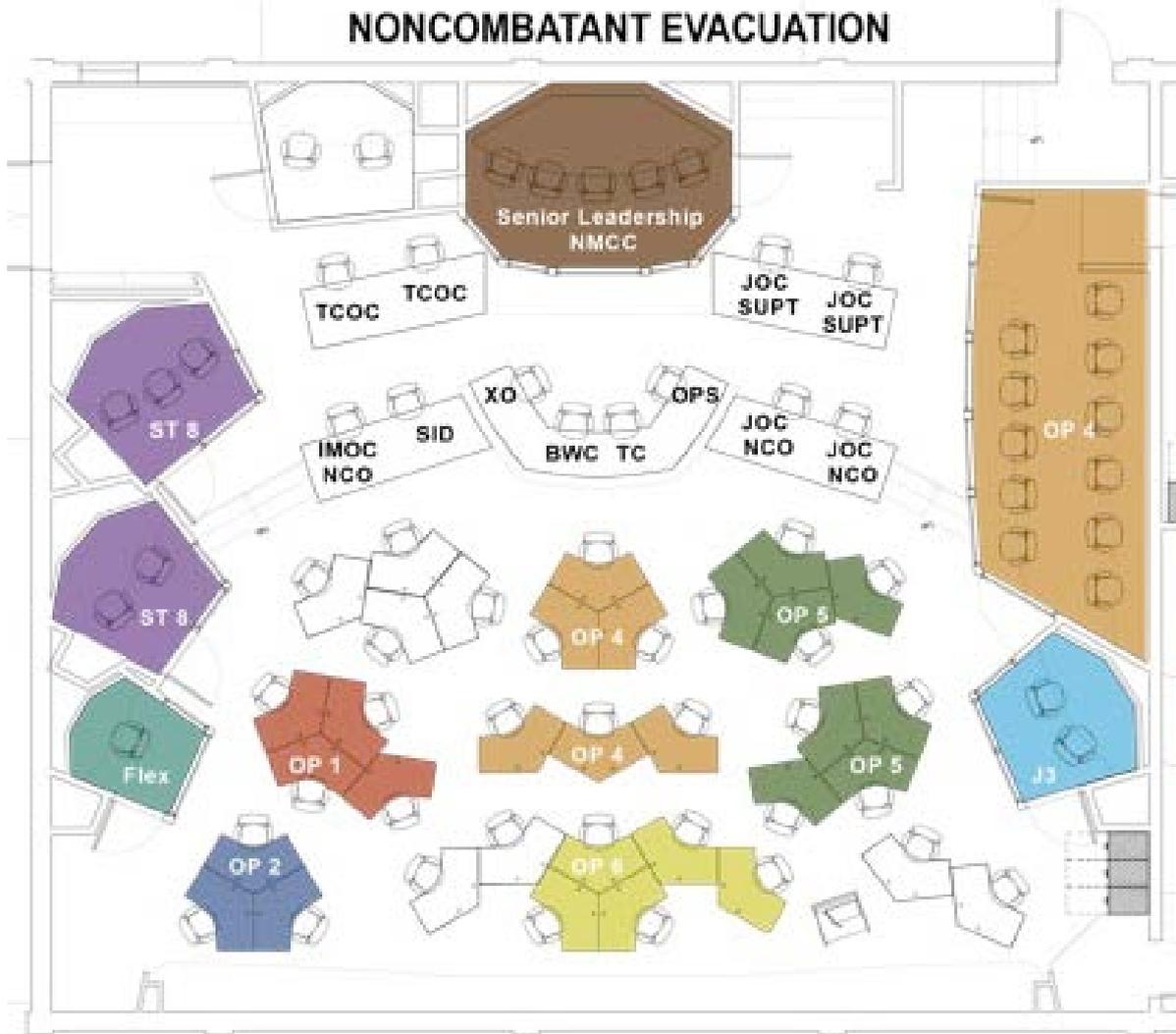
- ▼ Need to move COMOPS Centers from “Watch” Centers and back to Operations and C2
  - Integrate principles and techniques of “Knowledge Management” by doing Operational Analysis
  - Develop Concepts of Employments (CONEMPS) that support CONOPS
    - Integrate Technology Priorities with Operational Priorities
  - Design COMOPS Centers that are truly flexible to meet Operational needs
    - Deploy technology that enables/enhances Operations and Decision Superiority
- ▼ End Goal is to develop COMOPS Center that is able to flex to an Operation or several simultaneously

*“We will attain increased capability and decision superiority for our commanders and operating forces. The goal is assuring the warfighter get the right information at the right time to effectively perceive, understand, reason, decide, and command.” The US Navy’s Vision for Information Dominance; May 2010*

# COMOPS Center Example: Theater Missile Defense



# COMOPS Center Example: Non Combatant Evacuation



# COMOPS Center Example: Combined NEO and TMD



# Conclusion

- ▼ Agility through an Improved SoS Design Process
- ▼ Speed to Project Justification and Speed to COMOPS Center Capability
- ▼ Effective and Efficient Delivery of the Right COMOPS Center
- ▼ COMOPS Centers that Enable the Mission through the Life
- ▼ Ability to Absorb Unforeseen Mission Dynamics

# Backup

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# Operations Center/Command Center

## Recent (4 Years) and Ongoing Projects

### ➤ Naval Ashore Command Center Major Projects

- NAVCENT OPCON Center (P-927)
- MARFORRES HQ (IV MEF)
- MOC-Training (Naval War College)
- MOC-Experimental (Norfolk)
- HQMC RSAC (3)
- 2nd Fleet MOC
- 4th Fleet MOC \*\*
- 5th Fleet MOC
- 6th Fleet MOC \*\*
- 10th Fleet MOC \*\*
- Cyber Team Relocation (L-Creek to Suffolk) \*\*
- 2nd Fleet/USFFC Consolidation (Norfolk) \*\*
- AEGIS Training Center (Earle, NJ – P-237 MILCON)

### ➤ Joint & other Component Command Centers Major Projects

- USCENTCOM Forward Headquarters – Qatar
- USCENTCOM Rear Headquarters – Tampa \*\*
- ISAF HQ SAR (Afghanistan)
- SCC-J – Jacksonville
- SETAF JOC (Italy)
- AFRICOM HQ (Germany)\*\* - TCI
- SOCAFRICA HQ (Germany) - TCI
- JNCC-A (Afghanistan) \*\*
- EUCOM JOC (Germany) \*\*

### ➤ State Department Projects

- Iraq/Afghan TOC and TTOC \*\*



## Other “Last 4 Year” Projects Include:

- ▼ All USN Aircraft Carrier based classified A/V systems\*\*
- ▼ All USN Large Deck Surface based classified A/V systems\*\*
- ▼ All USN VIXS/JWICS VTC \*\*
- ▼ CNO Conference Room (Pentagon)
- ▼ FBI Enterprise Operations Center, J. Edger Hoover Bldg DC
- ▼ SW Regional Operations Center, San Diego, CA
- ▼ Mid Atlantic Regional Operations Center Norfolk, VA
- ▼ SE Regional Operations Center, Jacksonville FL
- ▼ USAFE AOC (Germany) - TCI
- ▼ Chief Naval Installation Command, Washington DC
- ▼ USAF 27th Intell Squadron DPOC-East, Langley AFB
- ▼ Navy METOC-LANT Watchfloor, Norfolk, VA\*\*
- ▼ Navy METOC-PAC Watchfloor, San Diego, CA
- ▼ Joint Strike Fighter Program Office (6 FTEs)\*\*
- ▼ National Police Coord Ctr – CSTC-A (Afghanistan)
- ▼ CSTC-A -JOC (Afghanistan)\*\*
- ▼ COMSPAWAR, WIP Facility Relocations, San Diego, CA\*\*
- ▼ All TEAM SPAWAR VTC support\*\*
- ▼ SSC-PAC E2C Conference Center, San Diego, CA\*\*
- ▼ BRAC support, Pensacola, Tidewater, National Capital Region \*\*
- ▼ 2<sup>nd</sup> Marine Aircraft Wing, MCAS Cherry Point, NC
- ▼ US Sixth Fleet, USS Mount Whitney LCC-20, Joint Operations Center
- ▼ US Seventh Fleet, USS Blue Ridge LCC-19, Joint Operations Center
- ▼ Spruance Auditorium – Naval War College



March 2011, General Patraeus thanks SPAWAR ISAF HQ SAR PM (Gerald Cruz) for efforts on ISAF SAR project