



# AOC WEAPON SYSTEM UPDATE

This briefing is  
**UNCLASSIFIED**

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AC2ISRC/A3

6 Nov 00



# PURPOSE

- **AOC Weapon System Corona briefing covered DOTMLP**
- **This briefing will provide an update on efforts to improve the AOC Weapon System**
  - **What is the AOC**
  - **CONOPS: As-Is and To-Be**
  - **Ops Architecture: As-Is and To-Be**
  - **ESC produced AOC CONOPS model**
  - **Results of 25 Oct 00 AOC SDIPT**
  - **CAOC-X equipment and manpower**
  - **Manning concepts and training**



# THE AOC: WHAT IS IT?

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# AOC DEFINITION

- **Personnel, equipment, and capabilities through which JFACC commands and controls aerospace forces**
  - Centralized control / decentralized execution
  - Effects based

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- **Characteristics**
  - Professional - trained, dedicated personnel
  - Standardized - equipment, applications, processes
  - Tailorable - flexible, responsive to JFACC needs
  - Inter-dependent / integrated - part of a C2 capability

**The Science of Control  
to Enable the Art of Command**



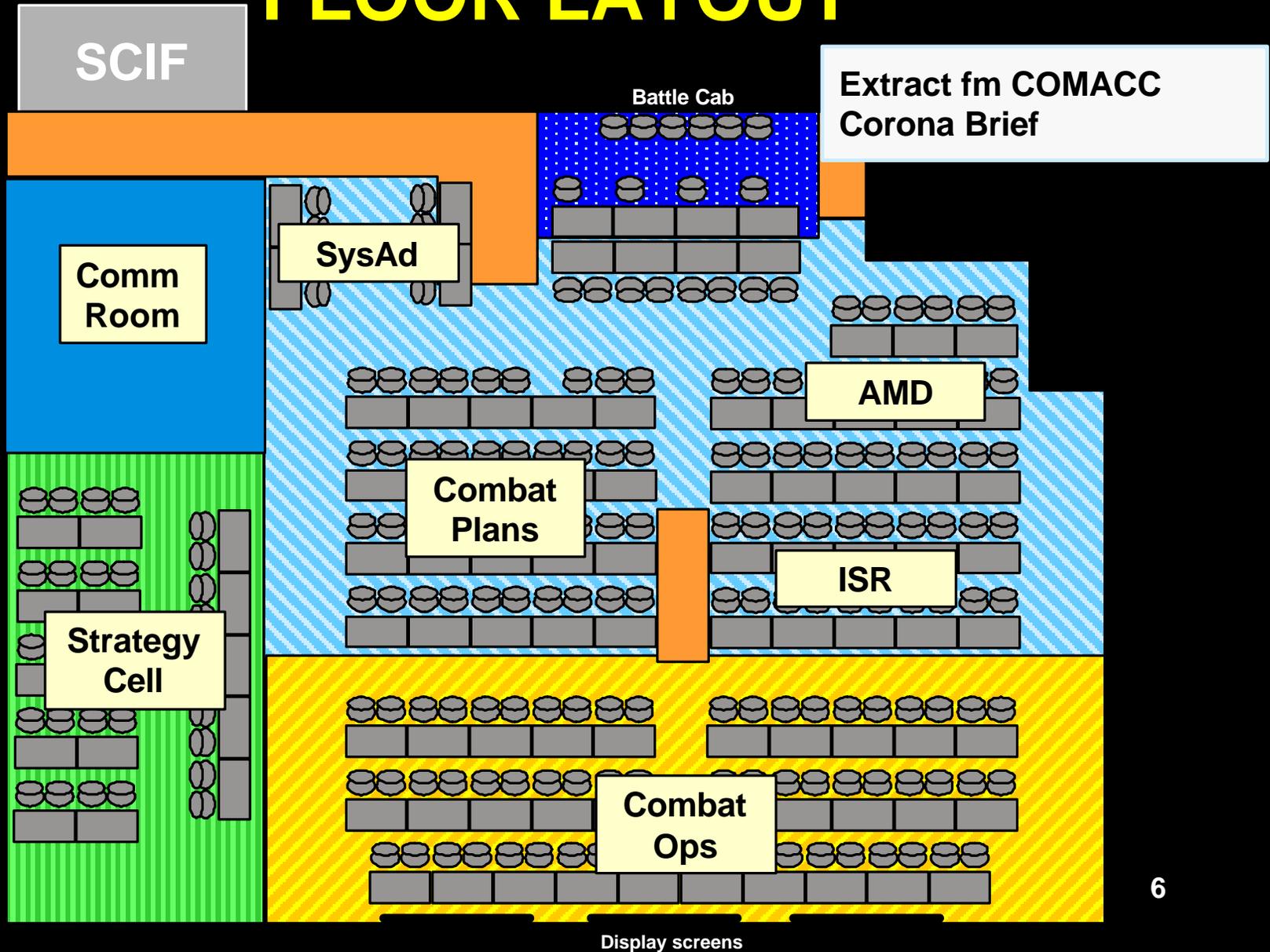
# AOC FUNCTIONS

- Planning, Execution, and Assessment
- Vertically and Horizontally Integrated



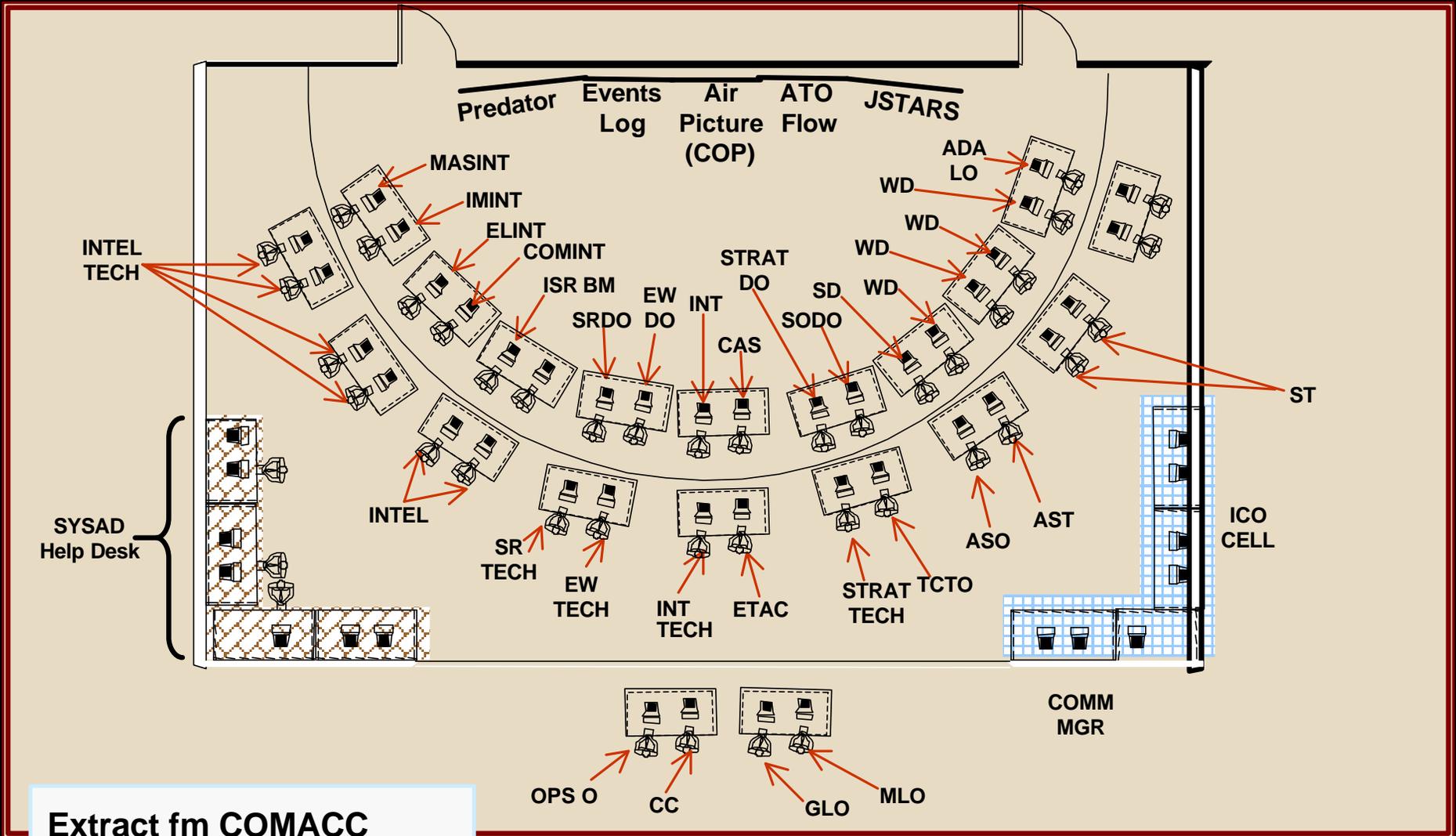


# NOTIONAL AOC FLOOR LAYOUT





# NOTIONAL AOC LAYOUT



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# AOC WPNS SYSTEM OVERVIEW

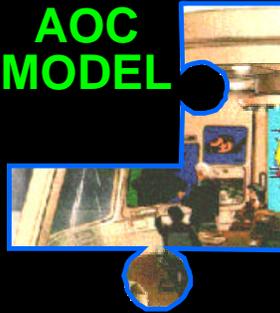
CONOPS



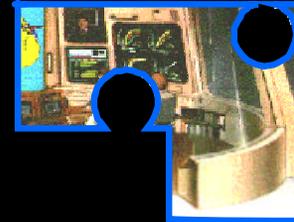
ARCHITECTURES



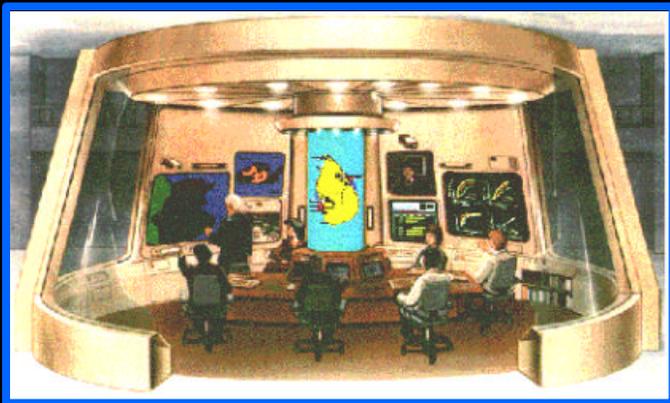
AOC MODEL



SPIRAL DEVELOPMENT IPT



CAOC-X



WARFIGHTING CAPABILITY





# CONOPS EFFORTS

CONOPS



- **AF C2&ISR CONOPS**
  - “As-Is” in MAJCOM two-digit coordination
  - “To-Be” in draft, MAJCOM conference Nov 00
- **Theater Air Control System CONOPS**
  - Final draft due 29 Nov 00
- **AF AOC CONOPS**
  - Out for MAJCOM/CC coordination
- **CAF CONOPS for Integration of C2&ISR**
  - In MAJCOM two-digit coordination
- **CAF CONOPS for C2 Against Time Critical Targets**
  - Approved 97
  - To be updated 1 Qtr CY01



# DEVELOPMENT PROCESS FOUNDATION (AFI 33-124)

## CONOPS

*One Architecture-  
Three Views*



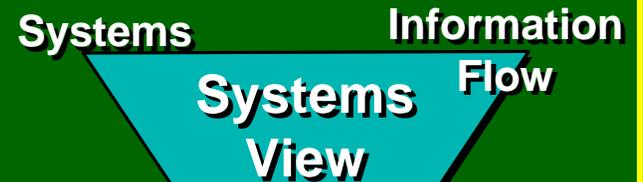
Identifies Operational Requirements  
And Information Needs

Information  
Flow



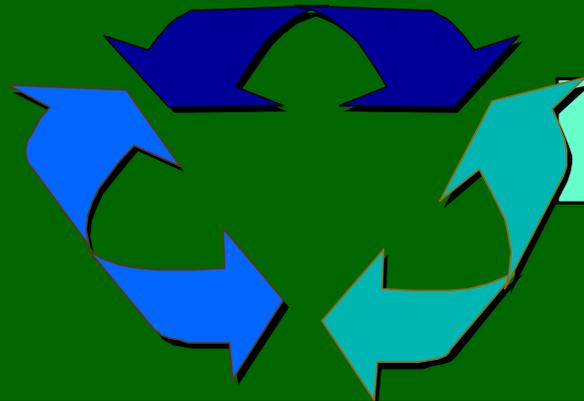
Prescribes Standards  
and Conventions

Conventions



Relates Capabilities to  
Operational Requirements

Communications





# 'AS-IS' OPERATIONAL ARCHITECTURE

ARCHITECTURES



- **Version 1.0 (Theater Focus) – Released Aug 00**
- **AF theater C2&ISR nodes**
  - High-level activities and major information exchanges
  - MTW focus, 2000-2004 timeframe
  - Products: AV-1/2, OV-1/2/3/4 (6-page brochure and CD)
  - Includes AOC Functional Decomposition
  - Defines As-Is AOC Activities in more detail
    - NAF review/validation underway
    - ESC TBMCS architecture office reviewing



# OPS VIEW-1 AF THEATER C2&ISR SYSTEM

Reachback Support

OV-1

- National Nodes
- Multinational Nodes
- Joint Nodes
- AF Global Nodes (DCGS etc.)
- Nodes From Other Theaters

Support Requests





# 'TO-BE' OPERATIONAL ARCHITECTURE

ARCHITECTURES



- **First Increment—Due 8 Dec 00**
- **AF theater C2&ISR capabilities**
  - **High-level activities and major information flows**
  - **MTW focus, 2005-2013 timeframe**
  - **“Evolved” from As-is Activities Using Critical Capabilities as a guide**
  - **Products: AV-1/2, OV-1/2/3**



# AOC EXECUTABLE MODEL

AOC  
MODEL

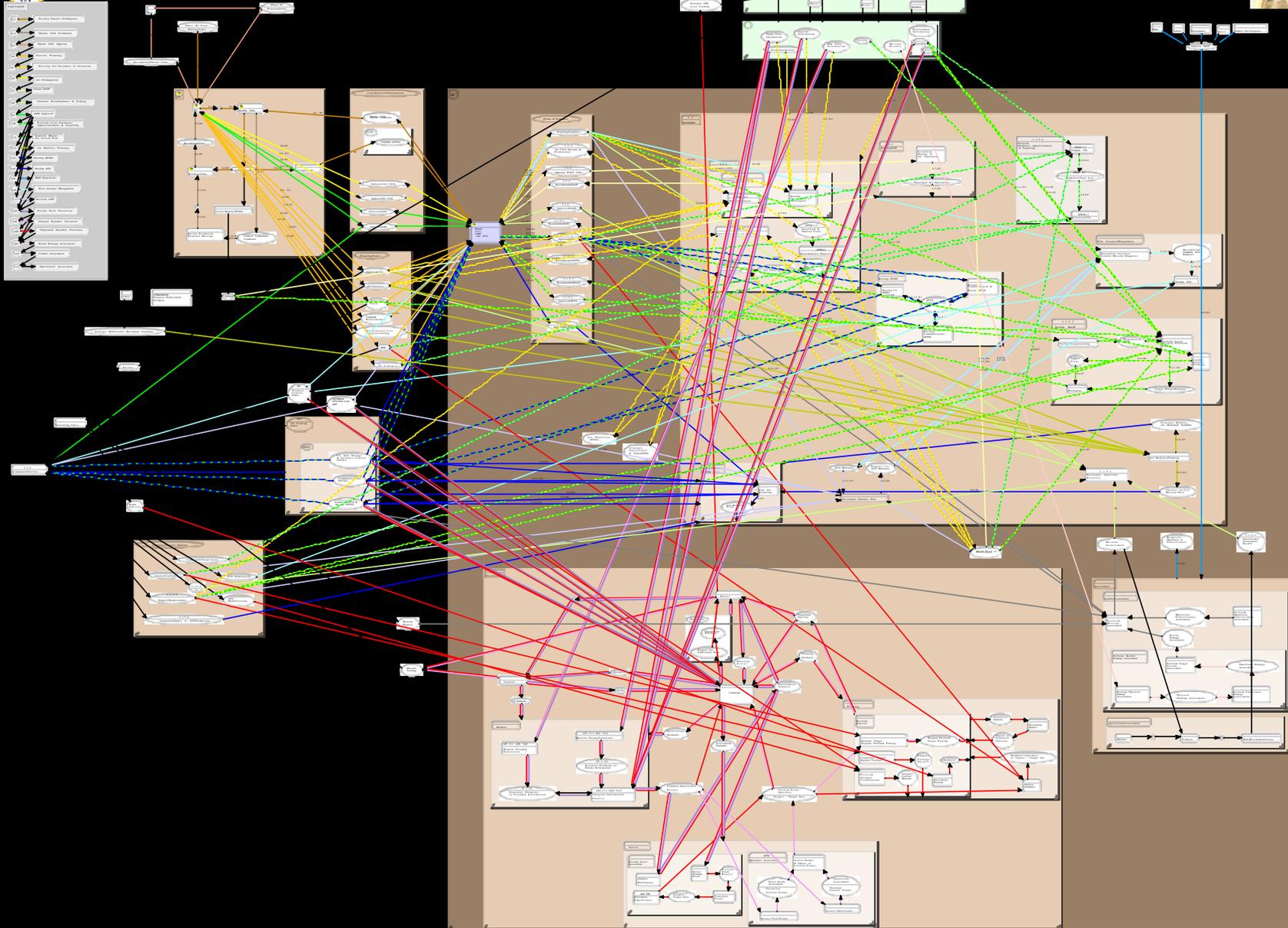


- **ESC built executable model of AOC**
  - **Process based – models AOC CONOPS**
  - **Now matching model to ops architecture**
  - **Next align systems architecture to ops architecture**
  - **Will identify holes, bottlenecks, and redundancies**



# AOC EXECUTABLE MODEL

AOC  
MODEL





# AOC SDIPT

SPIRAL  
DEVELOPMENT  
IPT



- CAOC-X Phase I baseline agreed on
  - Primarily Desert Shift support
- AOC Baseline established
  - Common baseline of equipment with theater specific “extensions”
- Voting membership
  - Users, developers, testers
  - MAJCOM O-6 level



# CAOC-X

CAOC-X



- **Capabilities based, must address an operational need**
  - Collaborative C2 Centers
  - NATO and Coalition interoperability
  - Reduced planning time
  - ISR battle management
  - Reduced forward footprint
  - Predictive Battlespace Awareness
  - Time Critical Targeting

## Contributors

AFMC	ACC	AFSPC	AMC	USAFE	ESC	AFRL
AC2ISRC			497 <sup>th</sup> IG		480 <sup>th</sup> IG	



Assessment  
of current  
toolset

CAOC-X  
systems

	PLAN				EXECUTE			ASSESS		
	STRATEGY	GAT	MAAP	ATO PRODUCTION	FIXED TARGET	PLANNED DYNAMIC	TIME CRITICAL TARGETS	OPERATIONAL ASSESSMENT	COMBAT ASSESSMENT	PROCESS ASSESSMENT
TBMCS				✓	✓	✓				
Master Battle Planner		✓	✓	✓						
Joint Targeting Toolkit	✓						✓	✓	✓	
ISRBM	✓					✓	✓	✓	✓	
XML ATO				✓	✓	✓	✓			
Coal Warfighter	✓				✓	✓	✓	✓	✓	
Broadsword	✓				✓	✓	✓	✓		
JFACC Cockpit	✓						✓	✓		
IWS	✓	✓	✓		✓	✓	✓	✓		✓
ELVIS II					✓	✓	✓	✓		
SBMCS		✓	✓	✓	✓			✓		
NATO ICC	NATO INTEROPERABILITY									

- Current capability adequate
- Current capability limited
- Currently no integrated toolset

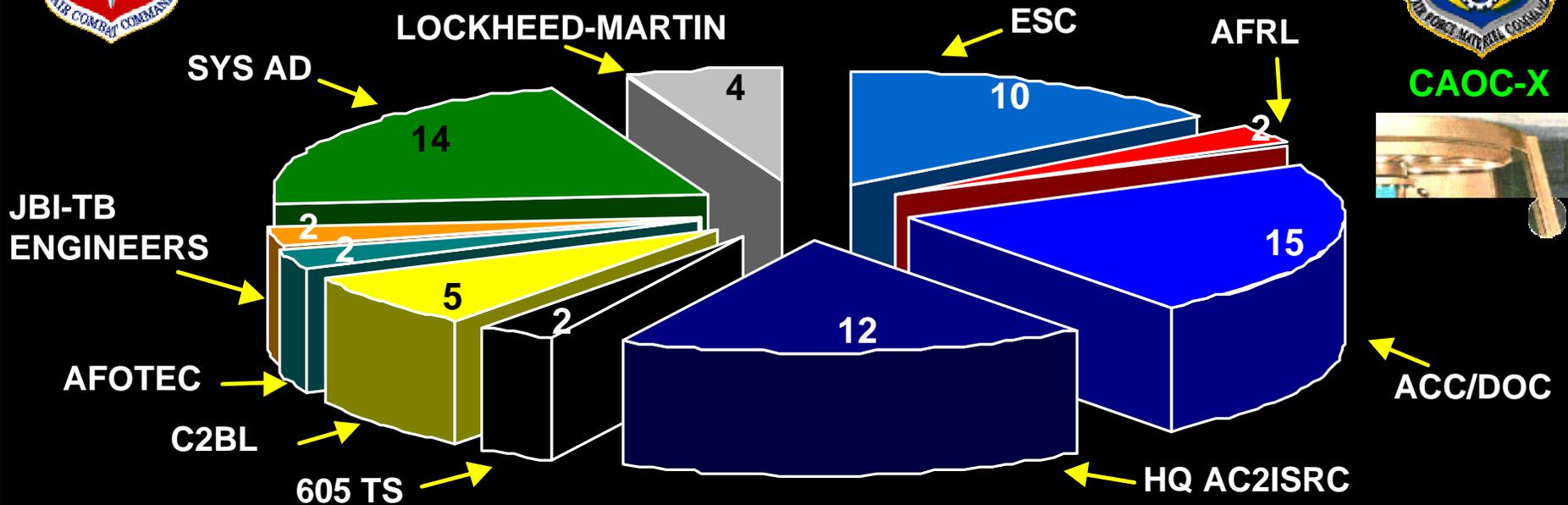
Checkmarks indicate applicability to processes



# CAOC-X MANPOWER



CAOC-X

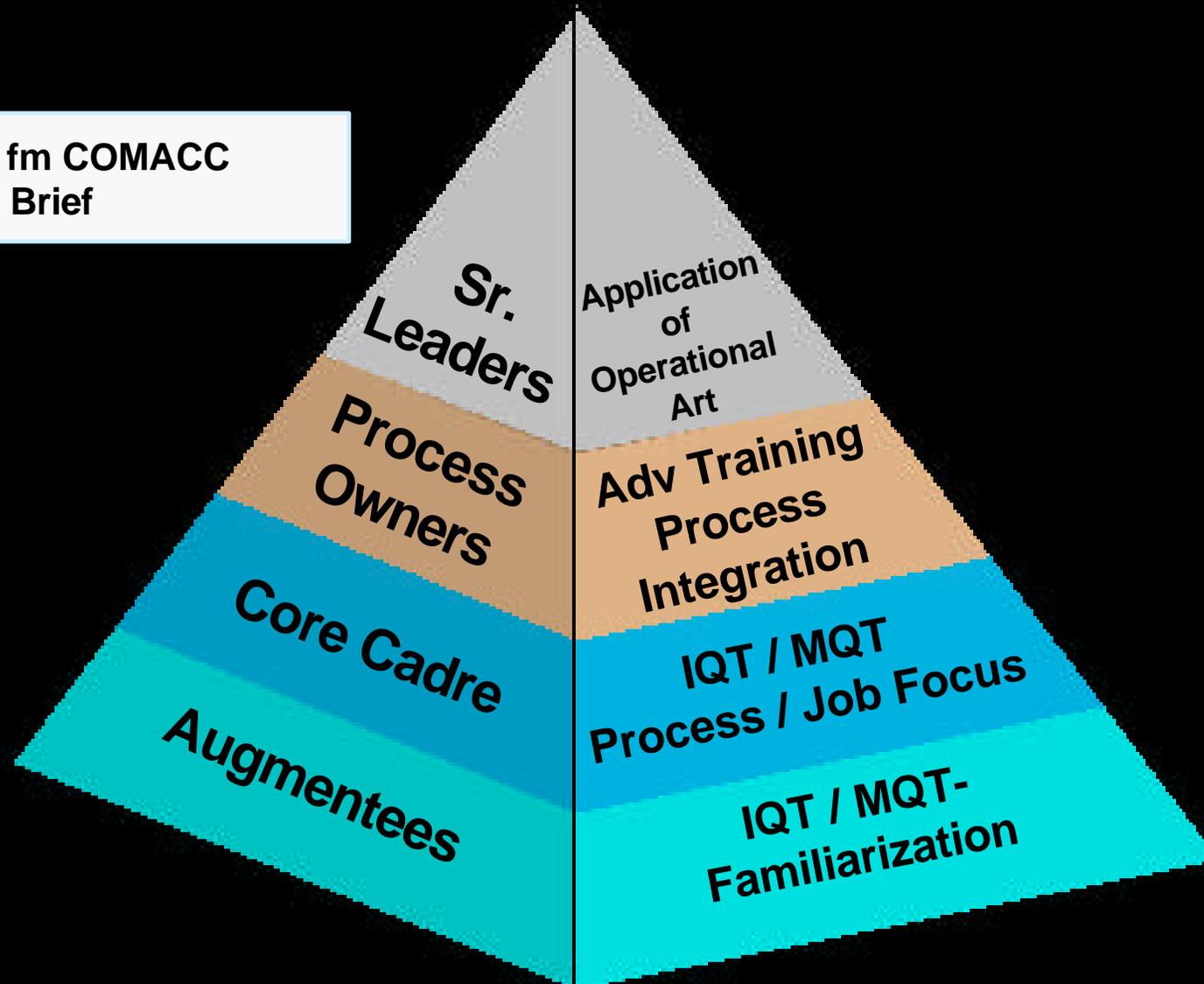


	OFFICER	ENLISTED	CONTRACTOR	TOTAL
ESC	2	0	8	10
AFRL	0	0	2	2
ACC/DOC	2	1	12	15
HQ AC2ISRC	6	1	5	12
605 TS	1	0	1	2
C2BL	5	0	0	5
AFOTEC	1	0	1	2
JBI-TB ENGINEERS	0	0	2	2
SYS AD	0	0	14	14
LOCKHEED-MARTIN	0	0	4	4
<b>TOTAL</b>	<b>17</b>	<b>2</b>	<b>49</b>	<b>68</b>



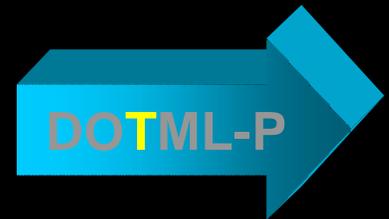
# MANNING CONCEPTS & TRAINING

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# Training C2 Career Path



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MAJCOM  
/ AF Staff

AF / JS

JS/CMD

JSSC

JFACC /  
OCTP

Adv Senior

C2

Weapons  
System

Major  
Weapons  
System

C2WAC  
C2  
Weapons  
System

JAC2C

C2  
Weapons  
System

Major  
Weapons  
System

Advanced  
Prefix

Major  
Weapons  
System

Initial

MQT

IQT

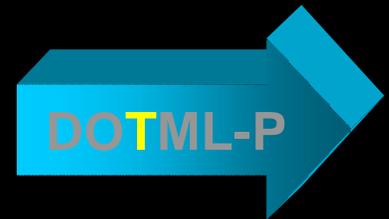
Continuation / Requalificaton Training





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# Training C2 Pipeline



Air Crew Course	AOC Equivalent	Qualification	Status
UPT		AFSC Awarding	N/A
RTU	JAC2C	IQT	
Unit	NAF Positional Check Out	MQT / CT	
Mission Cmdr / IP	C2WAC	Instructor	
	JSSC	Senior Training	
	JFACC/C	Adv Senior Trng	

JAC2C trains 55% of the users on 20% of the IQT requirements.

C2WAC – C2 Warrior Advanced Course

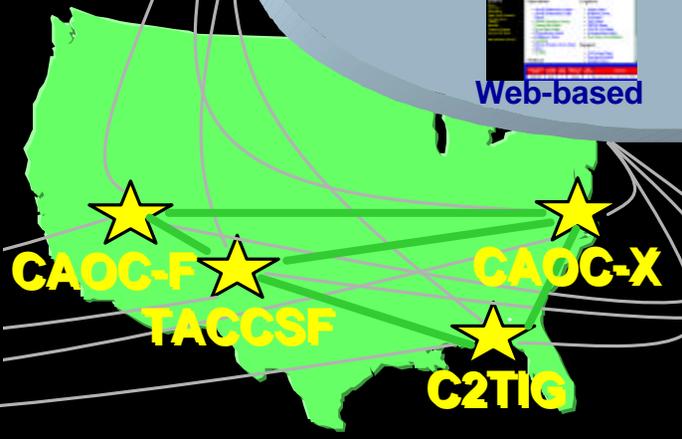
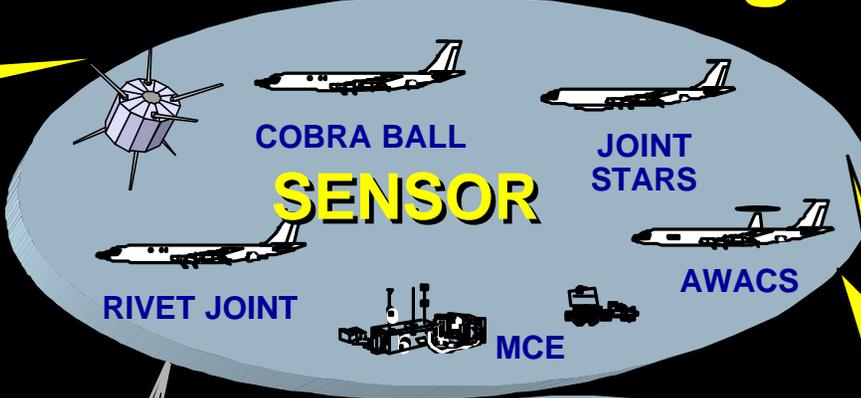
JSSC – Joint Air Operations Senior Staff Course

JFACC/C – Joint Forces Air Component Commander Course

JAC2C – Joint Aerospace C2 Course



# Training Distributed Mission Training



- Contributions**
- Exercises Support (Blue Flag)
  - Experimentation (JEFX)
  - DMT-C2 (Luke AFB F-16 Intercept Trng)
  - Mission rehearsal (AFSOC JCSAR Support)
  - ISR integration testing (CSAF ABCCC Divestiture Study)
  - OT&E (CAOC-X pending)



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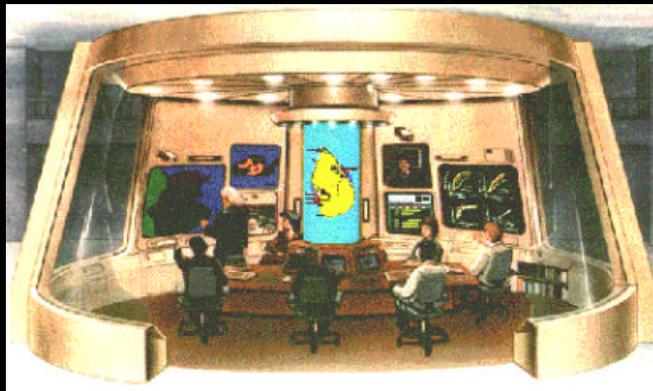
# ISSUES

- **Funding**
- **Manning**
- **Continue to match system architecture to ops architecture and fold into process model**



# SUMMARY

- CAOC-X is the path ahead
- Still working multiple issues



**WARFIGHTING  
CAPABILITY**





# CAOC-X



CAOC-X



- **Capabilities based, must address an operational need**
  - Collaborative C2 Centers
  - NATO and Coalition interoperability
  - Reduced planning time
  - ISR asset management
  - Reduced forward footprint
  - Predictive Battlespace Awareness
  - Time Critical Targeting
- **Manning**
  - Operators: ACC/DOC
  - Developers: ESC, industry, battle labs
- **Equipment: need an improved cooperative effort**