

Developing Expertise at the Operational Level of Warfare

Jun 06



Lt Chad Tossell

C2 Training Research Program Manager

Warfighter Readiness Research Division

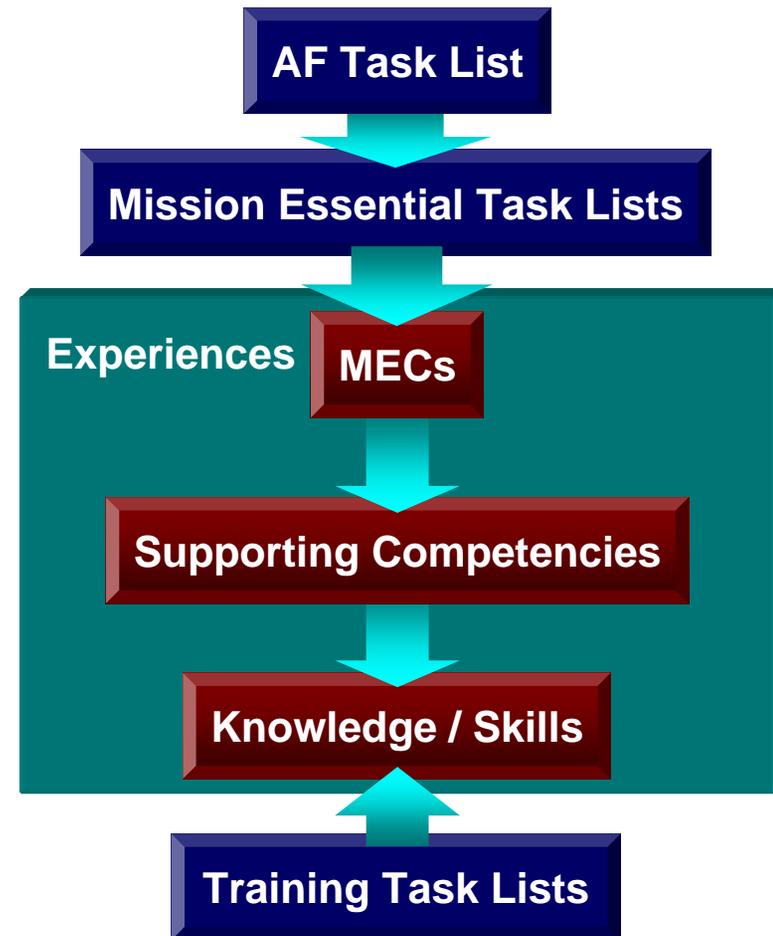
Air Force Research Laboratory



Mission Essential Competencies



- AFTL and METLs describe operational mission-level tasks and objectives
- MECs bridge the gap by describing what you need to “employ” the weapon system to achieve mission-level objectives
- Training Task Lists help teach how to “operate” a weapon system





MEC Definitions



- **MECs**
 - A Mission Essential Competency (**MEC**) is a higher-order individual, team, and inter-team competency that a fully prepared pilot, crew or flight requires for successful mission completion under adverse conditions and in a non-permissive environment.
- **Supporting Competencies**
 - General **aptitudes** that support the **MECs**.
- **Knowledge and Skills**
 - Knowledge: information **or fact that can be accessed** quickly **under stress**.
 - Skill: **a compiled** sequence of actions **that can be carried out** successfully **under stress**.
- **Experiences**
 - **A developmental event in the training and career of a warfighter that is important either for learning a particular knowledge or skill, or for practicing a MEC or SC under operational conditions.**



MEC Status



Platform	Development	Analysis	Recommendation	RAP Implementation
F-15C	X	X	X	X
F-16 AA, SEAD, AG	X	X	X	X
A-10	X	X	X	May 06
F-15E	X	X	X	Jul 06
F-22A	Need SMEs			
B-2	X	May 06	Apr 06	May 07
B-1/B-52	X	Feb 06	Jul 06	May 07
Package Commander	X	Aug 06	Dec 06	Jan 07
Joint Stars	X	Feb 06	Mar 06	Jul 06
Rivet Joint	X	May 06		
AWACS/MCS	X	X	X	X
MQ1/RQ4	Unfunded			
JTAC	X	X	X	
TACP	X	Jun 06	Sep 06	
ASOC	X	X	X	
AOC (4 of 5 Div)	X	X	X	By Div/Team
DCGS	X	X	Feb 06	May 06
Coalition MECs	X	X	X	X
IWAS	X	X	Mar 06	
CFACC	X	X	X	Jan 06



JFACC MEC Development & Integration Process



Field Surveys
(JFACCs and Senior Leaders)

Validity/
Reliability
Checks

Summary
Analysis

2nd Workshop (Senior Mentors)

Review & Revise
MECs

ID Experiences

Final MECs / Survey Info

Data Interpretation (Senior Mentors)

ID Training
Gaps

ID Methods and
Media

Conclusions drive future training

1st Workshop (Senior Mentors)

Msn Review

Knowledge &
Skills

Sup.
Comp.

Draft MECs

Senior Mentors:
Lt Gen Hurd
Lt Gen Santarelli
Lt Gen Croker
Lt Gen Short



Survey Administration/Feedback



Description of these MECs clearly show right intent – that of bettering our joint warfighting competencies

HQ USAF
1670 Air Force Pentagon
Washington DC 20330

General
HQ USAF/CV
1670 Air Force Pentagon
Washington DC 20330

Dear General *[Signature]*

AFRL/HEA, Warfighter Readiness Research Division, has been involved in the process of defining Mission Essential Competencies (MECs) for AOC operations with support from ACC/DOY, AFC2ISRC/DOO, and AWFC/DO for the last 18 months. This AF initiative defines those warfighter competencies used in the AOC. The process specifically targets the mission qualification and continuation training area.

In December 2003, AFRL/HEA initiated a JFACC-level MEC process to provide a "tooth-to-tail" analysis from the top decision maker. This analysis will be used to drive JFACC integrated training in the AOC. I realize this project does not address DMO; however, we are working to develop future DMO support for the AOC.

The initial set of C/JFACC MECs were developed with the help of Senior Mentors. The next step in the process is to gather data from other current and recent C/JFACC to validate the initial results. This is accomplished through questionnaires. In order to ensure a complete analysis, we request your participation in responding to the enclosed survey. When completed, please forward survey materials in the return self-addressed envelope.

If you have any questions please contact the AFRL/HEA POC, Capt Larry Beer, larry.beer@mesa.afmc.af.mil or DSN 474-6251; COM 480-988-6561, x251.

MECs will drive future CFACC Training

General, USAF
Chief of Staff

Attachment:

Pentagon
20330-1670

Sir

Thank you for including me on your project directed at defining mission essential competencies for AOC operations and the broader Joint Force. I think you're right on target with these MECs. I'm sure they're probably not perfect at this point, but you've definitely got the right guys looking at them and as we iterate this over time, we'll add immeasurably to the "warfighters" toolkit. Your selection and description of these MECs clearly shows the right intent - that of bettering our joint warfighting competencies.

I think you've done a dynamite job in defining your MECs, especially the MEC on the joint and coalition team. It underscores the importance of personal relationships that lead to the "trust and confidence" that we've seen reinforced time and again in both OEF and OIF. You've also correctly discerned the importance of horizontal integration. OEF and OIF have proven that horizontal integration is the key to improving agility and flexibility which leads to successful joint warfighting.

I've enclosed my thoughts on your questionnaire. Thanks again for thinking of me.

Sincerely

[Signature]
GEN Ga
Retired,

Dynamite job in defining MECs



JFACC MECs



- 1. Blue Capability Integration:** Develops and maintains understanding of current internal and external joint and coalition resources and capabilities, limitations, Blue CoGs (centers of gravity), and vulnerabilities. Develops plan that integrates, coordinates, and leverages resources to support Joint Force Commander (JFC) guidance and intent supporting the campaign plan.
- 2. Blue Analysis of Red:** Understands Red's current internal and external resources and capabilities, limitations, Red CoGs (Centers of Gravity), and Red's view of Red and Blue CoGs and vulnerabilities. Attempts to model Red plan that integrates, coordinates, and leverages Red resources to achieve Red's assumed strategic and operational objectives.
- 3. Personal Contribution:** Focuses personal contribution to AOC in planning, execution, and assessment by taking a proactive approach towards future strategy and planning. Maintains appropriate theater strategic understanding and operational focus without being preoccupied with current tactical operations. Able to anticipate, articulate, and respond to the changing nature of the campaign as it unfolds/develops.



JFACC – Supporting Competencies



- **Projection:** Ability to conceptualize future actions and events based on relevant factors.
- **Negotiation:** Ability to tactfully resolve difficult situations when internal and external partners disagree due to contrasting opinions, goals, priorities, methods, and/or solutions.
- **Courage:** Ability to do the right thing at the right time in spite of pressure to do otherwise. Includes the ability to talk about doubt, uncertainty, and bad news.
- **Acceptance of Risk:** Ability to make decisions in the absence of total certainty.
- **Objectivity:** Ability to clearly look at your situation and the enemy's situation as they unfold.

14 Supporting Competencies



JFACC – K&S Examples



Workflow	Understands the 51 formal processes (team makeup, inputs, and outputs), the products for the major processes, and the nine which he/she is personally responsible for.
Interrelationships	Understands how AOC operations and timelines are affected by relationships among forces, systems, components, and headquarters and by policy constraints. Particularly important to understand the contributions of the other components to the joint fight.
Process Integration	Able to integrate personal JFACC command responsibilities with staff processes through an iterative commander-centric process.
Phase/Order of Events	Able to phase/order events to achieve JFC's objectives

83 Knowledge and Skills



JFACC – Experience Examples



- **Distributing staff and resources in distributed operations environment**
- **Managing different parts of your team across different time zones and different battle rhythms**
- **Participating in the ATO cycle multiple times (every product and process)**
- **Dealing with friction vertically and horizontally between JFC and components**
- **Dealing w/ competition that occurs in the mobility/deployment process**

61 Experiences



Gap Results



Gap – the difference between what is needed to do the job versus what is currently provided in training

Examples:

Workflow: Understands the 51 formal processes (team makeup, inputs, and outputs), the products for the major processes, and the nine which he/she is personally responsible for

Mentor Recommendation: Address primarily in Formal Training, secondarily in Continuation Training (individual and group)

Dealing with an enemy who is unpredictable, learning, and asymmetric

Mentor Recommendation: Emphasize in OL and CT -- impossible to train in a unilateral exercise, e.g., Blue Flag. Also constraints when dealing with coalition partners. OL exercises currently try to second-guess these problems -- can sensitize the JFACC that these issues are out there and they will have to deal with them.

Knowledge and Skill Gaps: ##

Experience Gaps: ##



Planned Implementation



- **For Senior mentors in their training**
 - Training needs assessment survey prior to JFACC Mentorship for more targeted training
 - Learning mastery post training survey
- **For course development at the AU and the 505th**
- **Incorporated into JFACC handbook**
- **To maintain awareness of training gaps over time**
- **To guide development of JFACC training tools**

MECs as common language for JFACC training



M-PORTAL **(Multi-Player Operational Readiness Trainer for** **Advanced Leadership)**



Dr. Kevin Gildea
Product Manager, Simulation Technologies
Aptima, Inc.



M-PORTAL Goals



- **Training the relationships between Lessons Learned, Knowledge & Skills, and Scenarios and the ability to apply these higher order knowledge and skills to the operational environment.**
 - Apply lessons learned in training context
 - Draw on current training tools to keep user focused on application of lessons learned rather than learning to use a different interface
 - Facilitate USAF training personnel ability to incorporate scenario and tool additions/modifications
- **Training Developed for:**
 - JFACC
 - Chief of Combat Ops
 - Chief of Combat Plans



Examples of Lessons Learned



- **The allied air offensive was sustained and, in fact, expanded because we maintained pressure on their air defense systems, forcing the Serbians to keep their systems hidden under most circumstances and to use defensive tactics that limited the systems' effectiveness.**
- **The conduct of an integrated information operations campaign was delayed by the lack of both advance planning and strategic guidance defining key objectives.**



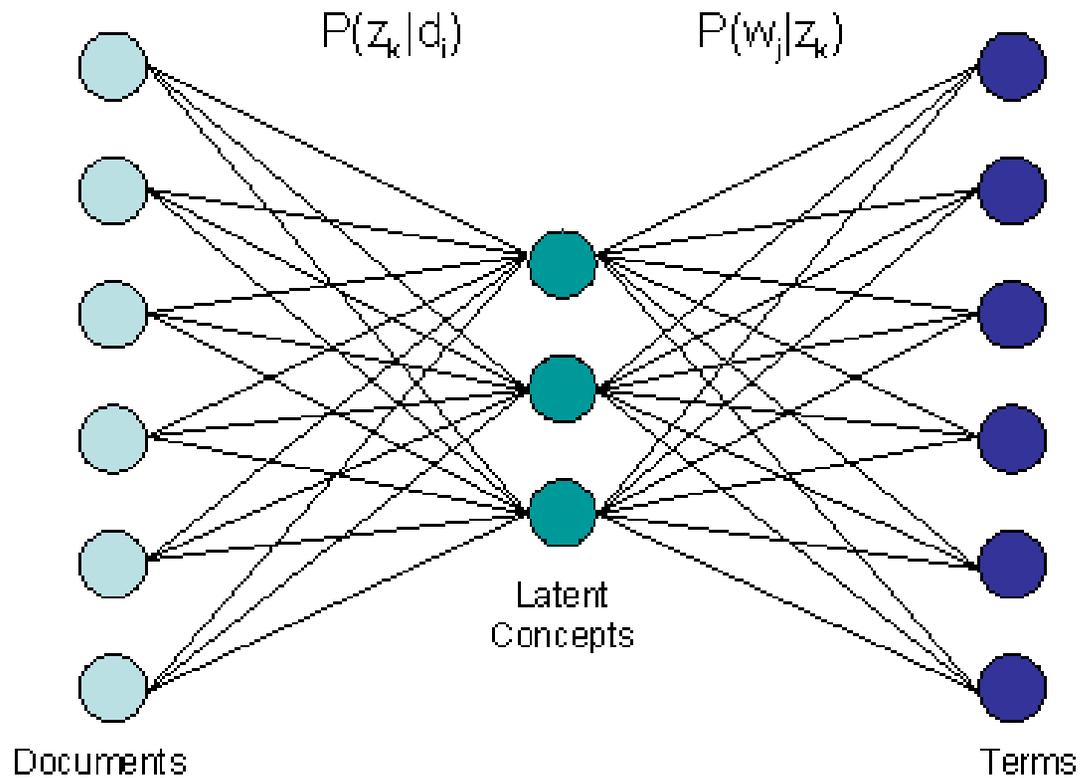
Mapping of Lessons Learned to Knowledge and Skills



Lessons Learned	Knowledge and Skills		
	K&S 1	K&S 2	K&S ...
The allied air offensive was sustained and, in fact, expanded because we maintained pressure on their air defense systems, forcing the Serbians to keep their systems hidden under most circumstances and to use defensive tactics that limited the systems' effectiveness.	1	4	2
The conduct of an integrated information operations campaign was delayed by the lack of both advance planning and strategic guidance defining key objectives.	5	2	3
U.S. needs to work with allies to enhance procedures and conduct exercises strengthening NATO's political-military interfaces	3	2	1

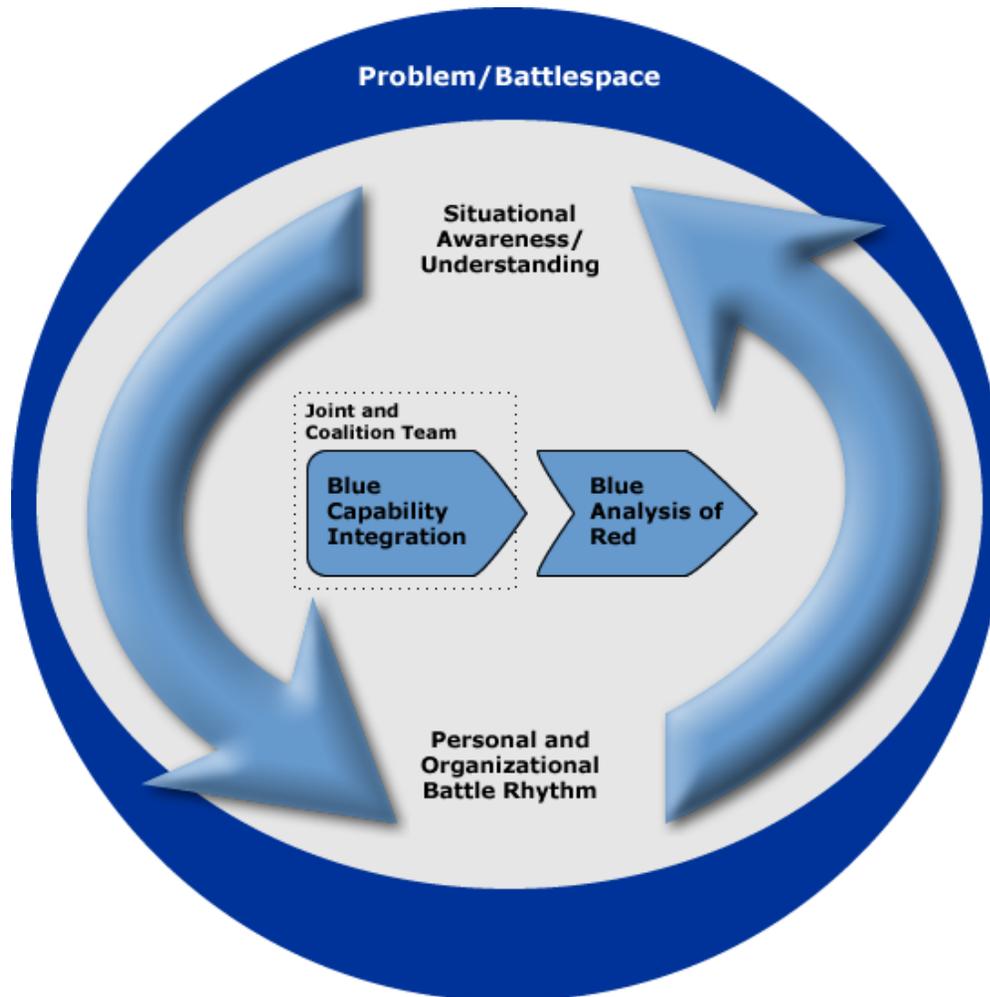


The pLSA Model



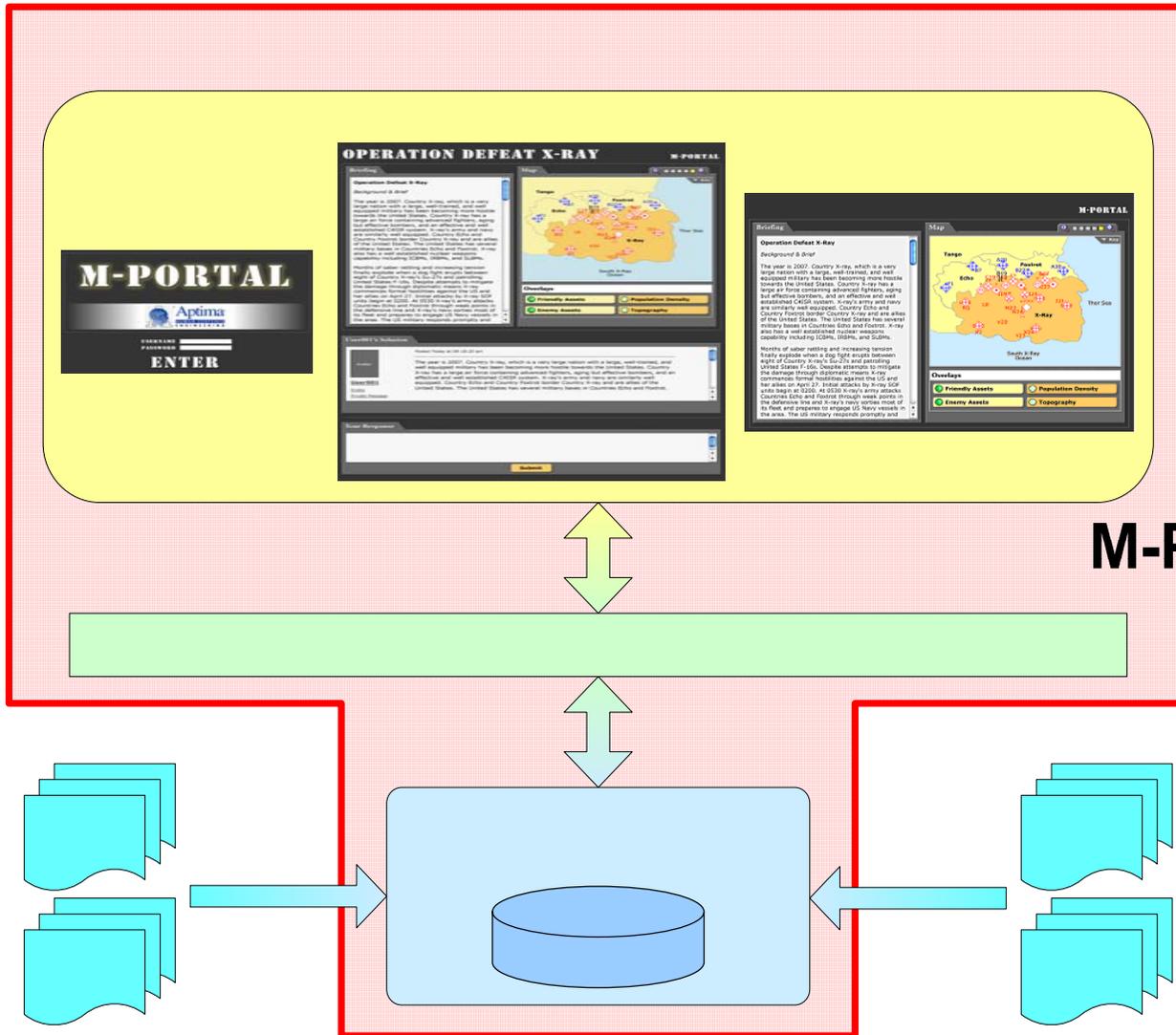


JFACC Organizing Framework for Lessons Learned





M-PORTAL System



M-PORTAL Gr

M-I



Interfaces



M-PORTAL
Welcome, please log in to get access | Logout

M-PORTAL
(Multi-Player Operational Readiness Trainer for Advanced Leadership)

M-PORTAL
Welcome, David

Train for a Position/Skill

Please choose whether you want to start a new training or work on an in-progress/completed training

Start a new training
 Work on an in-progress training

1 Select Position
Your position is: **JFACC**
 Train for a different position

2 Select Training Skill
Your position is: **JFACC**

3 Select Scenario
Skill selected: **COA Development**

Select Scenario
 Pacifica Briefing: Current Situation
 COA
 COA

COA Development Training Process

```

  graph LR
    A[review lessons learned] --> B[go over briefing]
    B --> C[create and name COA's]
    C --> A
  
```

Back | Change Scenario

Pacifica Briefing: Current Situation

- Index
- Orientation
- Historical Background
- Current Situation
- Physical Environment
- Insurgent Groups
- Orders of Battle
- Enemy Capabilities
- Probable Courses of Action
- Enemy Strengths and Weaknesses
- Intelligence Reference Materials

Previous Section | Slide 2 of 9 | Next Section

JFACC / COA Development / Pacifica Sol1

M-PORTAL
Welcome, David Kramer | Logout

Checklist | Briefing | Lessons Learned | COA List | Objectives | Gantt | Maps - Matrix | Maps | Solution

Objectives

Instructions: To add sub-phases to a phase, enter a number (1-4) on the parenthesis next to the phase. You can add, delete, collapse and expand objectives

Obj #	Operational Objectives	Phase I (2)	Phase II (1)	Phase III (1)	Phase IV (1)
	Tactical Objectives	1	2	1	1
- AS	Gain Air Superiority	[Progress bars]			
↳ AS1	Protect forces from air and missile attack	[Progress bars]			
↳ AS2	Neutralize and destroy enemy IADS	[Progress bars]			
- CL	Attrit IZ Army 50%	[Progress bars]			
↳ CL1	Destroy first echelon forces	[Progress bars]			
↳ CL2	Delay and Attrite 2nd echelon forces	[Progress bars]			
↳ CL3	Degrade C2 down to division level	[Progress bars]			
+ GF	Control Media	[Progress bars]			

Back | **Continue**

Change Scenario | Print | ToolTips



Future Capabilities



- Apply M-PORTAL to train:

“...the relationships between Lessons Learned, Knowledge & Skills, and Scenarios and the ability to apply these higher order knowledge and skills to the operational environment”

for other positions in the AOC and other C2 entities.



Questions?



Contact:

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AFRL/HEAS

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Extra Slides





Organizing Framework for Lessons Learned

