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# **Fires Center of Excellence (FCoE)**

## **Capabilities Development & Integration Cell**

### **Fort Bliss, TX**

## **Capabilities Overview**

to

## **International Test & Evaluation Association (ITEA)**

### **System-of-Systems: An NIE Experience**

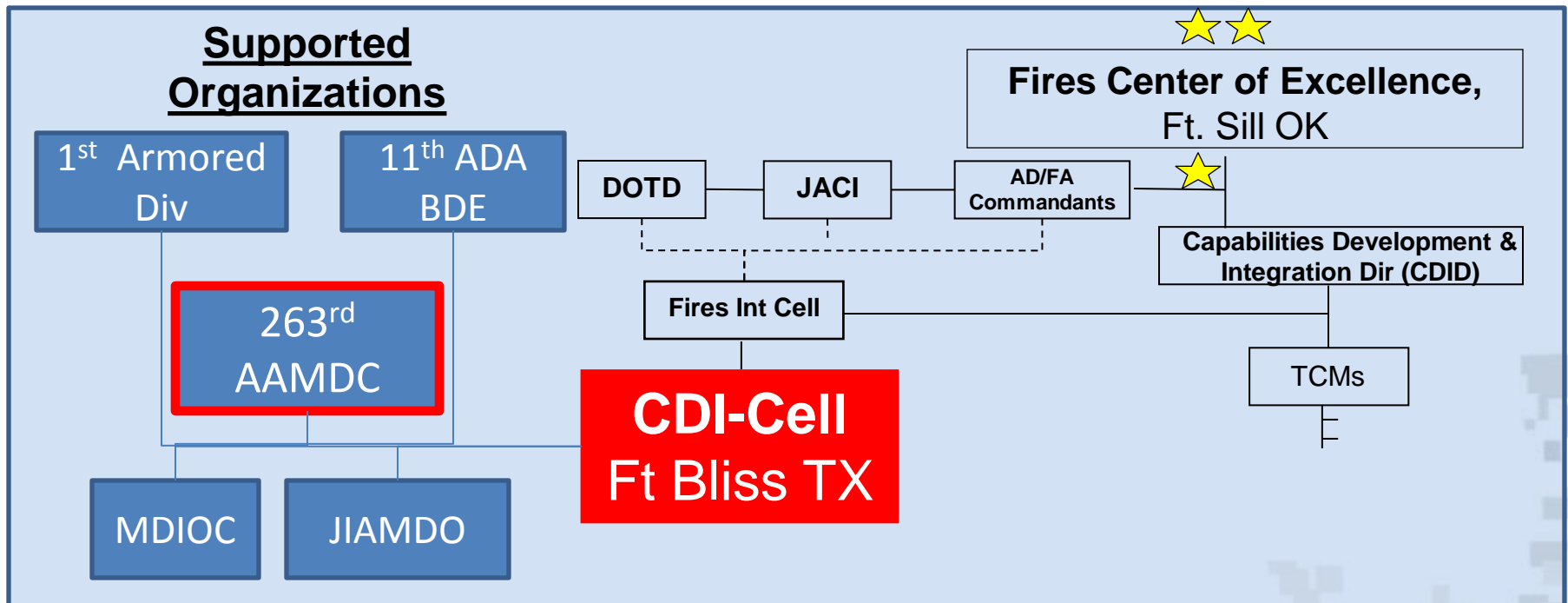
**Gary Anaya, Chief, CDI-Cell**

**17 July 2013**



- **Organization & Mission**
- **Areas/Organizations – Providing Fires Support to**
  - ✓ **Homeland Defense Mission**
  - ✓ **Joint Common Operating Picture (JCOP)**
  - ✓ **32<sup>nd</sup> AAMDC / 11<sup>th</sup> BDE**
  - ✓ **Joint Community (JIAMDO, JFCC-IMD, ACC/A3F)**
  - ✓ **Brigade Modernization Command / NIE**
  - ✓ **1<sup>st</sup> AD / Fires Integrated Digital Training Capability**
- **Airspace Management Environment (AME)  
Integrated ADAM/BAE/Fires Collective Training**

Responsible to train, test, and evaluate Fires concepts, systems, soldiers, and capabilities and facilitate the integration of Fires with Brigade Modernization



- ✓ Able to exploit unique capability development aspects of Fort Bliss/White Sands Missile Range
- ✓ Maintain a FCoE presence with reach back capability of Fires Subject Matter Experts and facilities



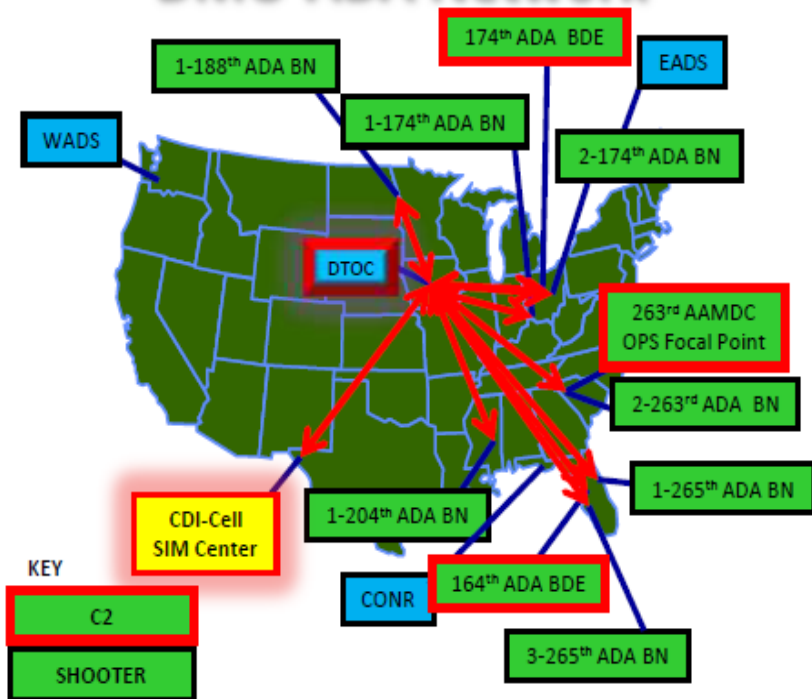
# Major Focus Areas of Effort



- **Area I: Support to the ADA Homeland Defense Mission**
  - 5<sup>th</sup> Year on this project. DMO-ADA is the major effort of the CDI-Detachment
- **Area II: Joint Common Operating Picture (JCOP)**
  - 2<sup>nd</sup> Year on this project. Leverages DMO Efforts to bring in CONR Feed and FAA Radars. **Primary** Focus is to support the DOC and CAB HQ. **Secondary** focus is to a Network Node at Davis Dome (also DTAC). Supports a common Link 16 air picture for all Bliss users. Support Voice Radios throughout the range. Customers include 1. Range AC2 2. 7<sup>th</sup> ASOS CDR 3. Div Aviation officer. Coordination points are all ADAM/32<sup>nd</sup> 140As, WSMR and Holloman.
- **Area III: Support to Patriot Training**
  - 5<sup>th</sup> Year on this project. Support in following areas
    - Support commander's intent for AMD crew sustainment.
    - Provide an experienced and proven SME's to the Brigade
    - Mentor battery trainers via RT3, RAL support, classroom environment and on-site tactical/technical expertise.
- **Area IV: NIE Developed Solutions and Support**
  - Supported BMC/MCC with Stimulated Air Picture → Tactical Systems
    - NIE 13.1 with JAGIC Demo
    - Plan to bring in Airspace Management Environment (AME) into 14.1
- **Area V: Exercise Support**
  - Use our unique capabilities to continue to support JIAMDO-Black Dart, JFCC-IMD-Global Defender and AFRL-Advanced Concept Event (ACE)

“Train as you Fight”

## DMO-ADA Network



### Provide a Training Environment to:

- Practice and become proficient in TTPs & SPINS
- Perfect Verbiage and Switchology
- Develop Situational Awareness, Battle Rhythm, Tactical Decision Making
- Discuss and develop clear understanding of SPINS, TTPs, CONOPS

### Targeted 3 Specific Training Audiences:

#### **AAMDC/BDE C2 Element (3 pax)**

- ✓ TD, BC, SC
- ✓ Positions available for BN C2 Element Participation

#### **Train the BN C2 Element (5 pax)**

- ✓ TCO, TCA, 14G, 14G, ADAFCO

#### **Avenger Teams (3 pax each)**

- ✓ Avenger Sites with NCOIC, Team Chief, Gunner

Also Support J-DIAMD, D-IADS & POTUS

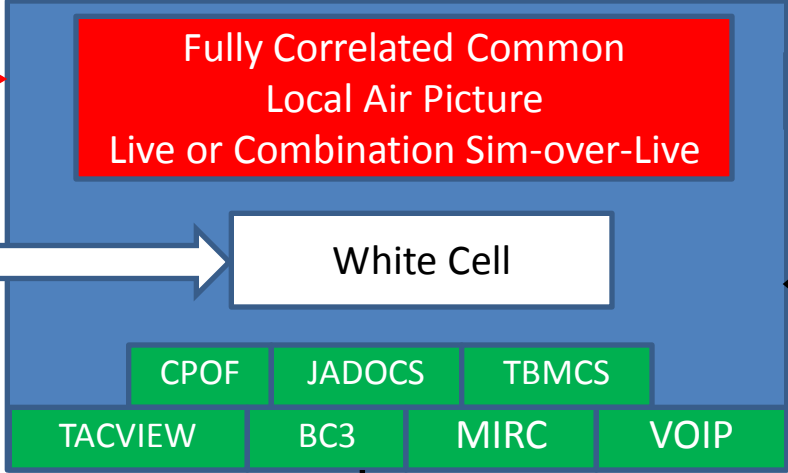


# FCoE FBTX Current Fires Training Support Capabilities



DIV (JAGIC) CRC/AOC

**LIVE AIR PICTURE**  
FAA Local Radars  
Elephant Mtn (WSMR)  
Add any Local Sensor

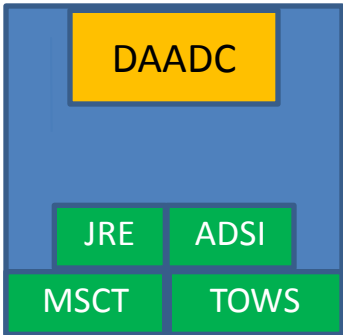


**1AD DIV TBOC**

**HAFB**

**AME:** Sensors/Local/Joint Air Picture  
**ExcIS:** Emulate Guns & Sub AFATDS  
**MCST:** CPOF BFT Icons & SIGACTS

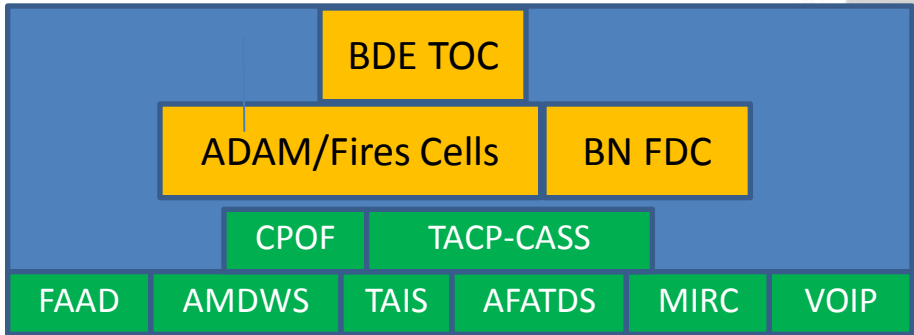
**AAMDC**



**Soldier in Loop**



**BDE & Below**





# White Cell Capability

This White Cell simulation stimulation capability is transportable allowing Digital Sustainment Training to be executed whether in a Garrison or in a Tactical environment at any time. Facilitate a combination of live and live over sim

## Airspace Management Environment (AME):

Stimulates: AFATDS, ADSI, FAAD, TACP CASS and creates a Local/Joint Air Picture

Generates: Fixed / Rotary Wing / UAS / Rockets / Artillery / Mortars / TBMs / CM

Emulates: Sensors; Q64/36/37/48, (Sentinel, FF, LCMR, TPS-75, AWACS)

## Extensible C4I Instrumentation Suite (ExCIS):

Emulates: Multi-echelon AFATDS, FA Weapon Systems, Forward Observers / FOSs

## Mission Command Staff Trainer (MCST):

PM MC tool for training ABCS operations. Replicates CPOF BFT Icons & SIGACTS in order to further stimulate battle staff interaction/coordination



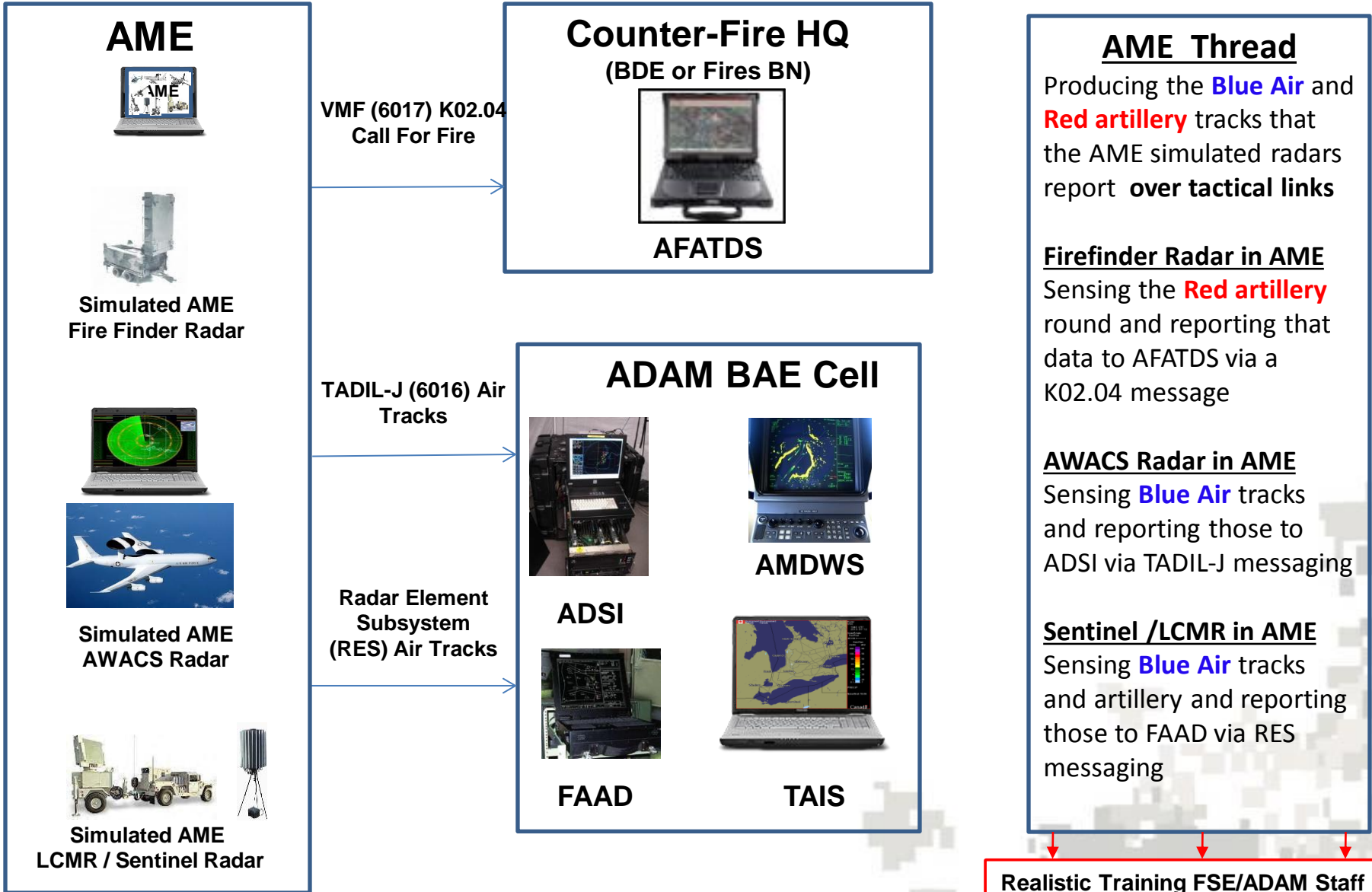


# Airspace Management Environment (AME) Track Record



- ADAM Cell Course simulation support to 2-6 ADA on a continuous basis since 2010 (Ft. Bliss and Ft. Sill)
- Supporting 2-6 ADA WOES (WOBC/WOAC)
- AME included in the TRADOC/2-6 ADA Resident ADAM Course POI
- Provided AMD and ADAM Cell simulation support to 3rd Infantry Division
- Providing the Army Evaluation Task Force (AETF), part of the Future Force Integration Directorate, AC<sup>2</sup> simulation support during AETF FTX, STX and FDT&E activities 09'-11'
- Conducted AC<sup>2</sup> simulation ISO TRADOC pilot Air Ground Integration Course (AGI, combined ADAM and BAE course), supporting 1st & 2nd -101st BCTs 1-12 Dec 09
- Coordinating with BCTP/CTC to provide ADAM Cell simulation support to Training Centers
- Conducted ADAM Cell systems integration support to 3-1AD, Jan10- present
- Coordinating with Ft. Bliss and Sill Battle Simulation Center, combine capabilities in support of Brigade and below Command Post Exercises and Mission Rehearsal Exercises
- Supported 169th Fire Bde ARNG with AC<sup>2</sup> stimulation, Jan 11'
- Support 1-1AD Simulated Fires Constructive Training
- 1-1AD BCSoSIT and Fires/AC<sup>2</sup> Digital Sustainment Training (2011)
- 1AD and subordinate Brigade BCSoSIT events in collaboration with Bliss MTC (2011)
- Support TCM Fires Cells with Dynamic Airspace Management Demonstration (Mar 2012)
- Air Ground Integrations Concept Training Support and NIE 13.1 Demonstration (Sep 12)
- 3-1 AD and 212th FiB CPX in conjunction with FTB MTC (Apr 13)





## AME



VMF (6017) K02.04  
Call For Fire

TADIL-J (6016) Air  
Tracks

Radar Element  
Subsystem  
(RES) Air Tracks

## Counter-Fire HQ (BDE or Fires BN)



AFATDS

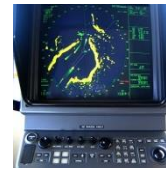
## ADAM BAE Cell



ADSI



FAAD



AMDWS



TAIS

## AME Thread

Producing the **Blue Air** and **Red artillery** tracks that the AME simulated radars report **over tactical links**

**Firefinder Radar in AME**  
Sensing the **Red artillery** round and reporting that data to AFATDS via a K02.04 message

**AWACS Radar in AME**  
Sensing **Blue Air** tracks and reporting those to ADSI via TADIL-J messaging

**Sentinel /LCMR in AME**  
Sensing **Blue Air** tracks and artillery and reporting those to FAAD via RES messaging

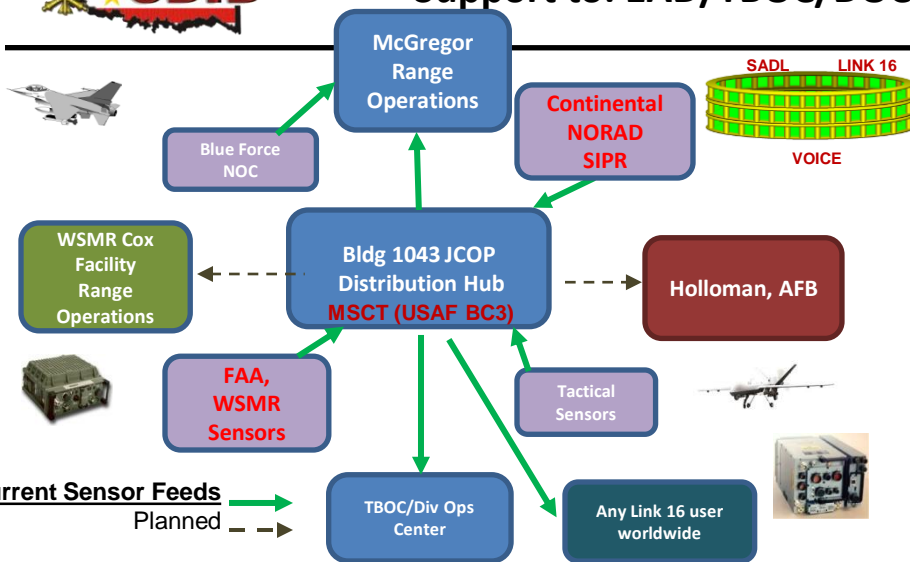
Realistic Training FSE/ADAM Staff  
Coordination of the Air Space



# Joint Common Operating Picture Objectives



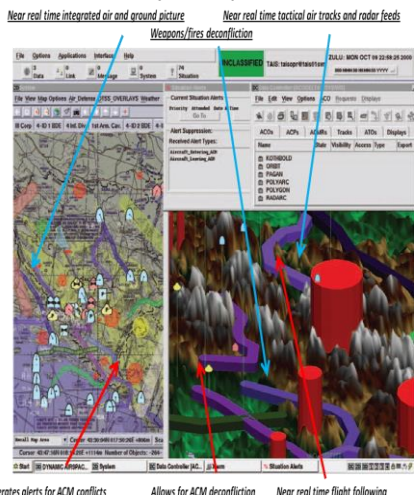
Support to: 1AD/TBOC/DOC, CAB Mission Support Element



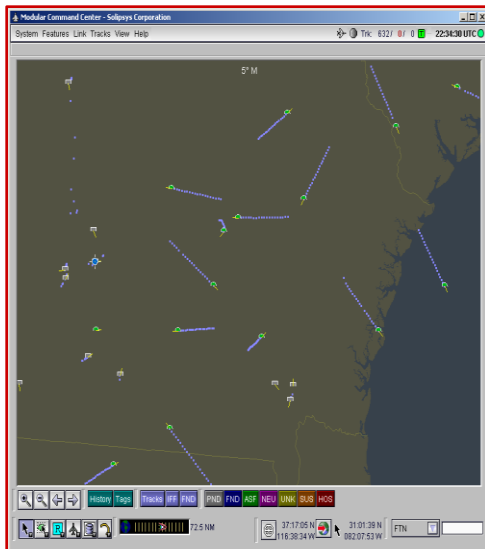
- Leverage Existing Tactical Systems and integrate them into the COP reducing costs
- Mitigate risk of combined arms/joint full spectrum operations through real time situational awareness and management
- Range Operations becomes focal point for AC
  - Div/ASOC personnel manage FTB airspace
  - Produce daily ACO shared with HAAF
  - Joint and Combined Ops de-confliction and coordination
  - Facilitate dynamic Airspace Management
- System will provide persistent joint communications/interoperability and enhance joint use
- RF Link 16 architecture includes all local stakeholders (Div, 32d, WSMR, HAFB, McGregor and separates)

## Seamless Joint Air/Gnd Integration

### TAIS Dynamic Capabilities



Army TAIS  
Control below CA



Air Force TDF CRC  
Control above CA

CDI-Cell feeds JCOP into 1AD TBOC/DOC, CAB, 7<sup>th</sup> ASOS



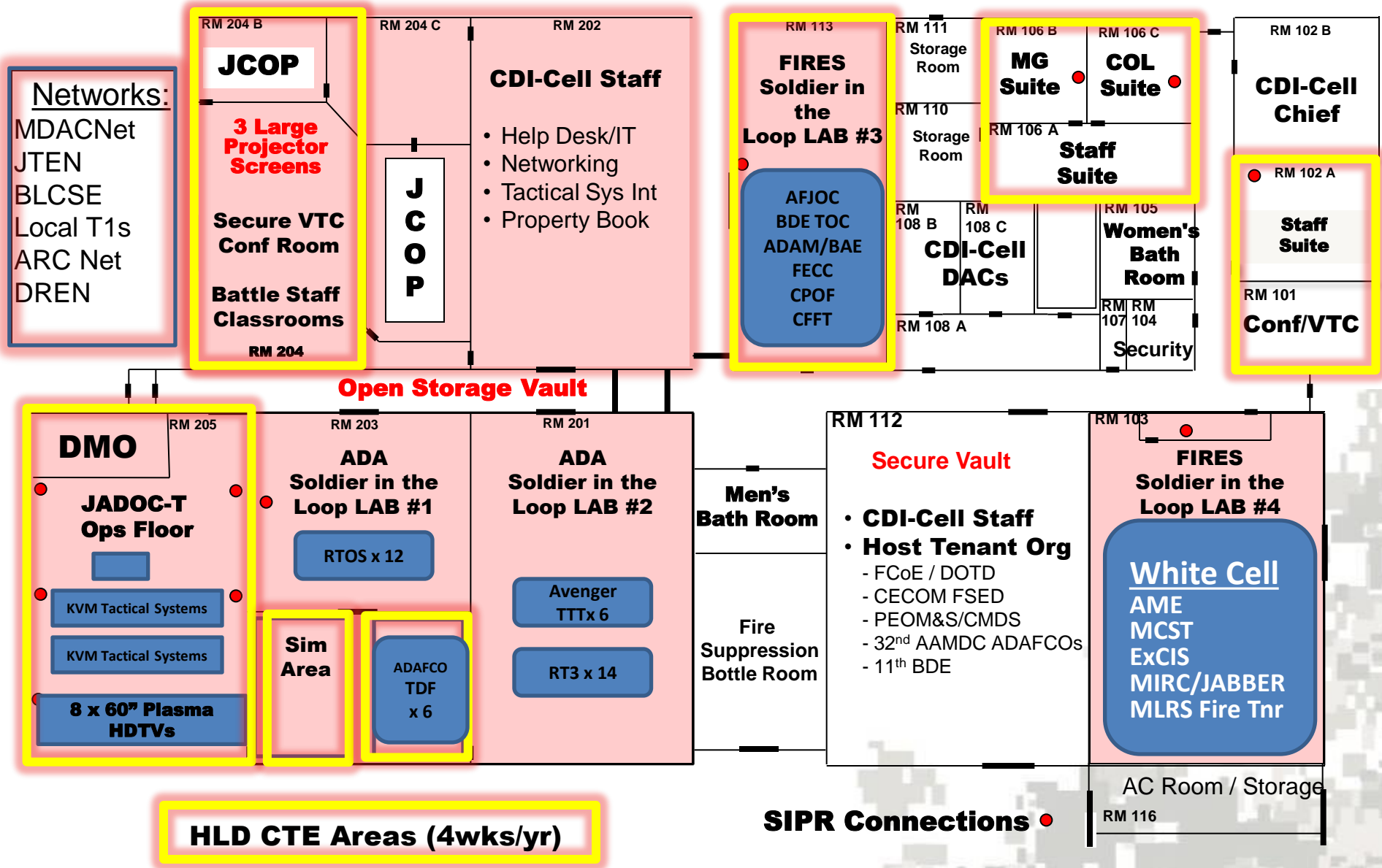
# CDI-Cell NIE Related Efforts



- NIE 13.1 AME used ISO JAGIC @ BDE Demo
- NIE 13.2 BMC G3 requested AME to stress AGI
- NIE 14.1 AME as a System Under Evaluation (SUE)
- **NIE 14.1 Support BMC by integrating AME into MCC**
  - AME push OneSAF tracks into Tactical Systems
  - Tailored injects (RAM or Air) focus on specific TTPs/Battle Drills
  - Portray realistic environment by Stimulating Fires Net w/ Artillery Sim



# CDI-Cell Building 1043





QUESTIONS?



# Contact Information



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# AME Improvements (Aug 2013)



- Scenario Generation Program (SGP)
  - ✓ Now supports ground track creation
  - ✓ Improved radar definitions (much easier for user to define radars capabilities),
  - ✓ Capability to designate an air track as a blue force self-reporter either via TADIL-J or VMF, mutually exclusive .
  - ✓ Rocket, artillery, and mortar threat types have been improved.
  - ✓ Enumeration database that is used to define platform types of targets was improved
  - ✓ Interface between the SGP and Dynamic Driver has been upgraded to support the enhanced platform definitions (including ground tracks)
- Dynamic Driver
  - ✓ Publishing DIS Protocol Data Units for ground units
  - ✓ Support air track's capability to self-report either via VMF message K05.1, or TADIL-J 3011-C message J2.2 and J2.0.
  - ✓ Added the J2.2, J2.0 and K05.1 messages
  - ✓ Display the ground track on the Dynamic Driver map.
- Radar Model
  - ✓ Developed improved air-borne radar capability to model a JSTAR which will track ground tracks and report them on the JTIDS net in a J3.5 message.
  - ✓ Added 3011-C TADIL-J protocol