



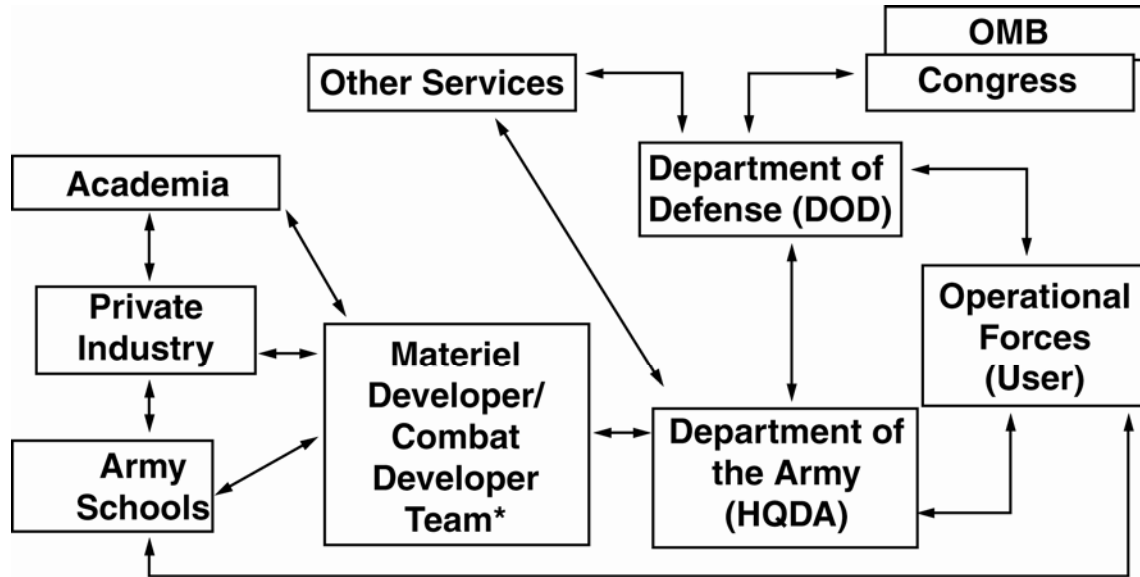
*This briefing is unclassified*

# Missouri National Guard Consequence Management

Capabilities, Challenges and Opportunities

**MG King E. Sidwell**  
**The Adjutant General**

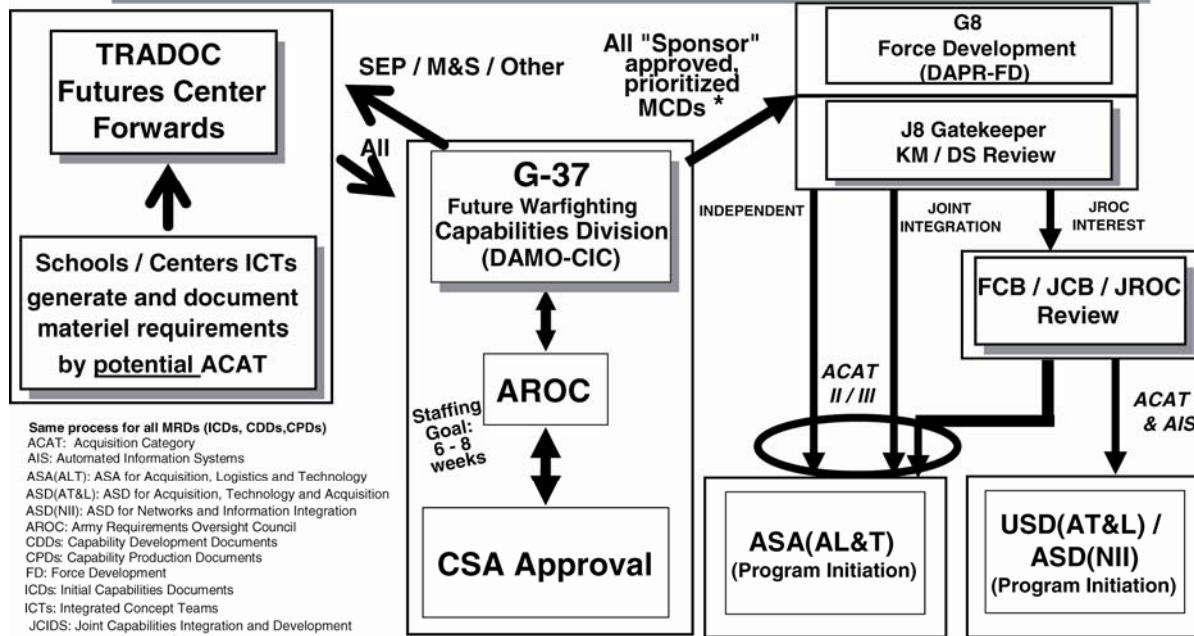
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\* Materiel Developer Includes Program Executive Officers (PEOs); Program, Project, Product Managers (PMs); and the U.S. Army Materiel Command (AMC). The Army's primary Combat Developer is U.S. Army Training and Doctrine Command (TRADOC), TRADOC Battle Labs, Integrated Concept Teams (ICTs), and Integrated Product Teams (IPTs) support the MATDEV/CBTDEV Team.

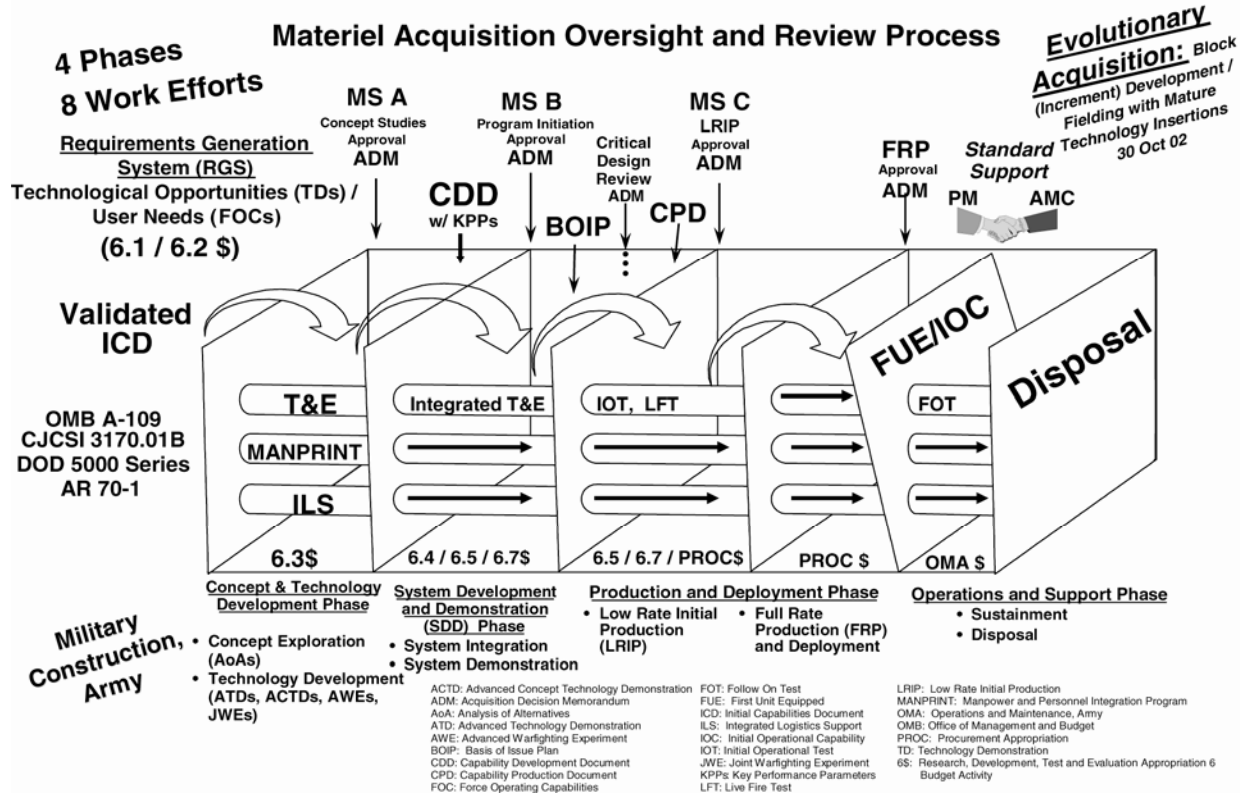


## Materiel Requirements Generation / Approval / Program Initiation Processes Summary



Same process for all MRDs (ICDs, CDDs, CPDs)  
 ACAT: Acquisition Category  
 AIS: Automated Information Systems  
 ASA(ALT): ASA for Acquisition, Logistics and Technology  
 ASD(AT&L): ASD for Acquisition, Technology and Acquisition  
 ASD(NII): ASD for Networks and Information Integration  
 AROC: Army Requirements Oversight Council  
 CDDs: Capability Development Documents  
 CPDs: Capability Production Documents  
 FD: Force Development  
 ICDs: Initial Capabilities Documents  
 ICTs: Integrated Concept Teams  
 JCIDS: Joint Capabilities Integration and Development System  
 JCB: Joint Capabilities Board  
 JROC: Joint Requirements Oversight Council  
 FCB: Functional Capabilities Board  
 KM/DS: Knowledge Management/Decision Support Tool database  
 M&S: Modeling and Simulation  
 MCDs: Materiel Capability Documents  
 SEP: Soldier Enhancement Program

**\* G-37 DAMO-CIC enters ALL MCDs into J-8 JCIDS (KM / DS database) process for Joint Potential Designator (JPD) assignment and assessment prior to hand-off to G-8 Force Development Directorate for final validation / approval / programming**



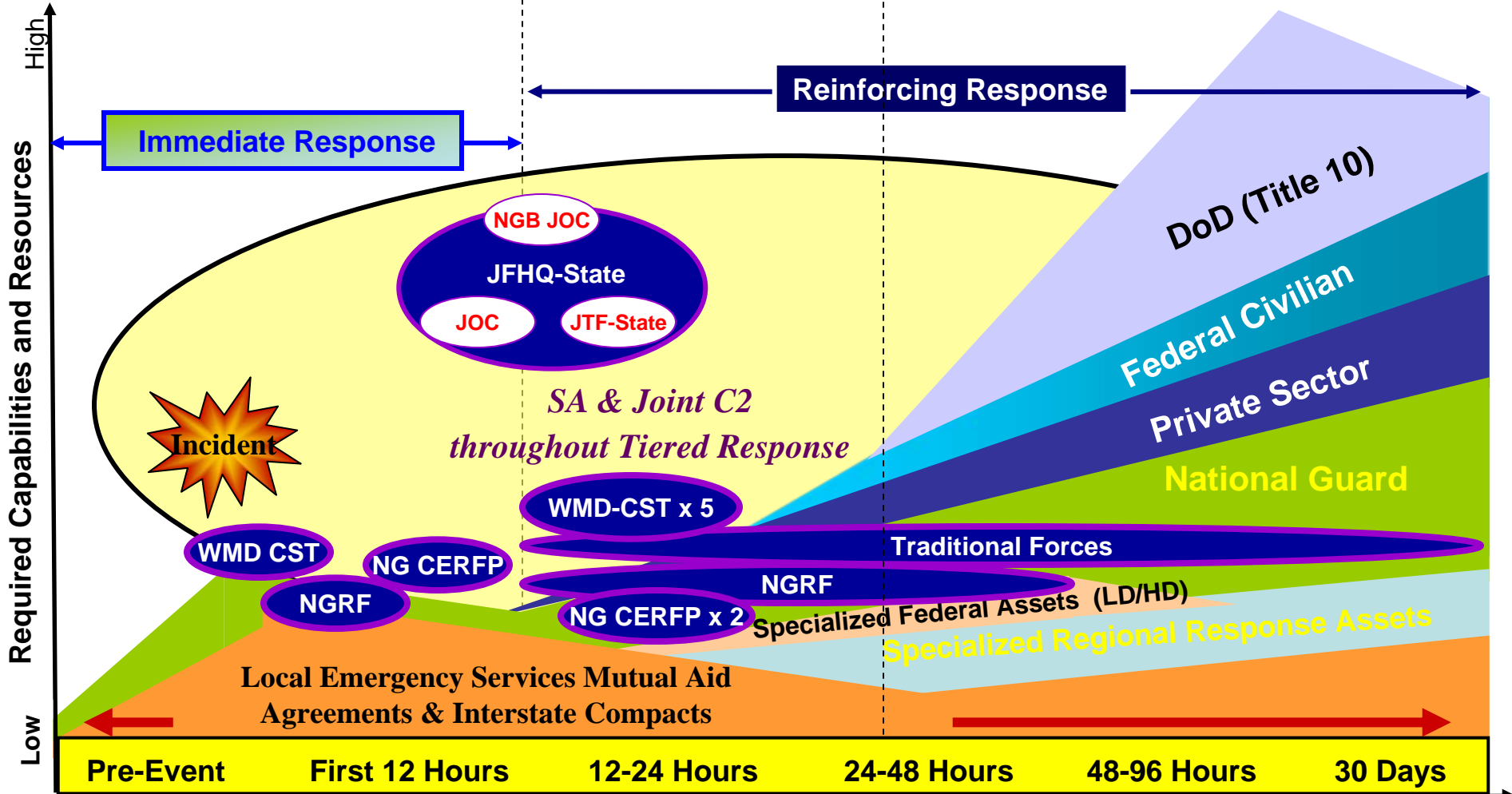


# *Agenda*

- **Response Spectrum**
- **Current Applications of S & T Response Tools**
  - **CST**
  - **CERFP**
  - **JISCC**
- **Challenges**
  - **Command and Control**
  - **Hazard Specific**
- **Opportunities**



# Response Spectrum – Where Consequence Management Begins





# ***CSTs & CERFPs***

- **The NG CERFP and CSTs provide a phased capability and mutual support**
  - **CSTs** detect and identify CBRNE agents/substances, assess the effects and advise the local authorities on managing the effects of the attack and assist with request for other forces (i.e. CERFP).
  - **CERFPs** locate and extract victims from a contaminated environment, perform medical triage and treatment, and perform mass patient/casualty decontamination



# ***CST Program Purpose***

**“ To provide military unique capabilities, expertise and technologies to assist State Governors (to) prepare for and respond to CBRNE incidents. Team must complement and enhance (not duplicate) State CBRNE response capabilities. “**

***DoD Program Review, Sep 01***

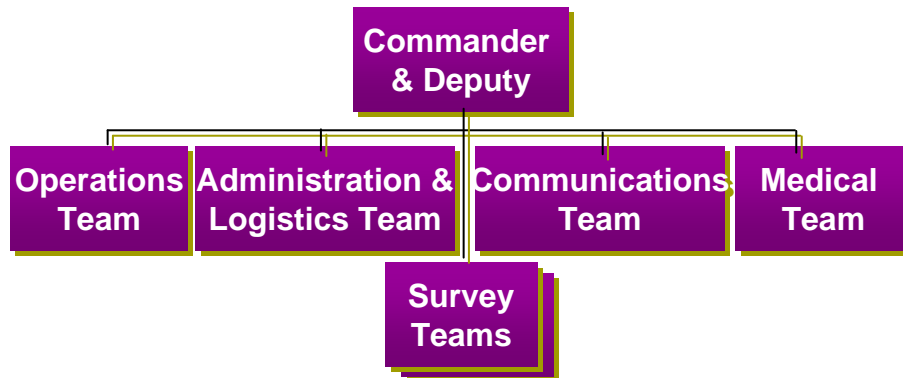




# WEAPONS OF *Mass Destruction* CIVIL SUPPORT TEAMS

**MISSION:** Support civil authorities at a domestic CBRNE incident site by identifying CBRNE agents/substances, assessing current and projected consequences, advising on response measures, and assisting with appropriate requests for state support.

*(Analytic, advisory, civil-military interface and communications functions)*



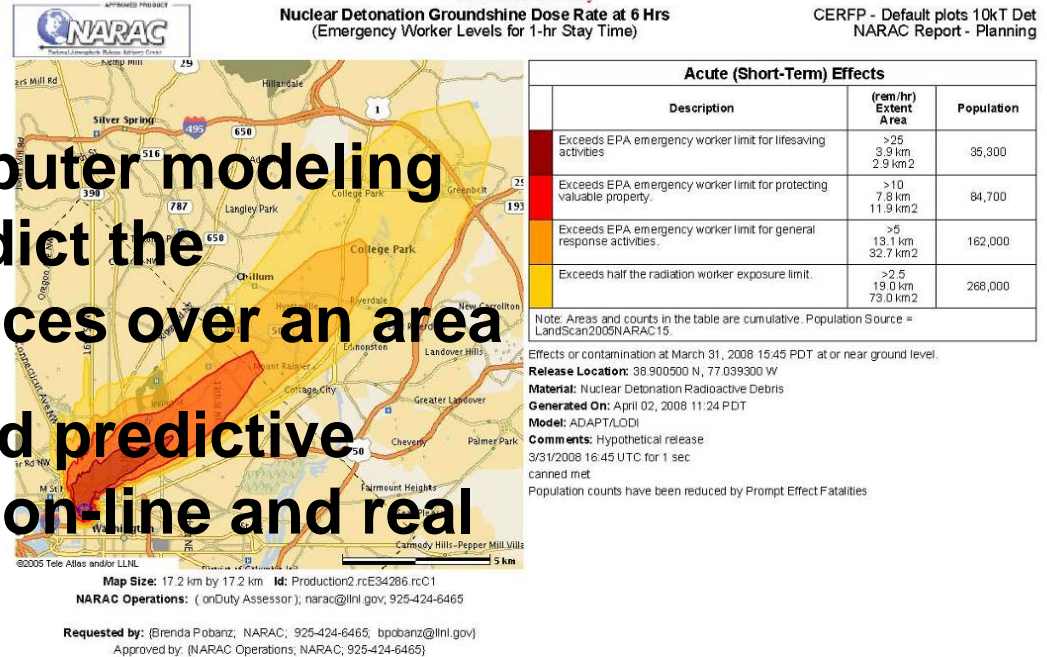
## **KEY CHARACTERISTICS:**

- **Must be certified by Secretary of Defense**
- **Unique to National Guard**
- **Main role is support to Governor and IC**
- **Sophisticated Reachback System**
- **Interoperable with Civil Responders**



# Computer Modeling

- Use a variety of computer modeling programs to help predict the dispersion of substances over an area
- Receive historical and predictive weather from various on-line and real time weather sources
- Assists in the determination of sheltering, street closure, decontamination and recovery areas.

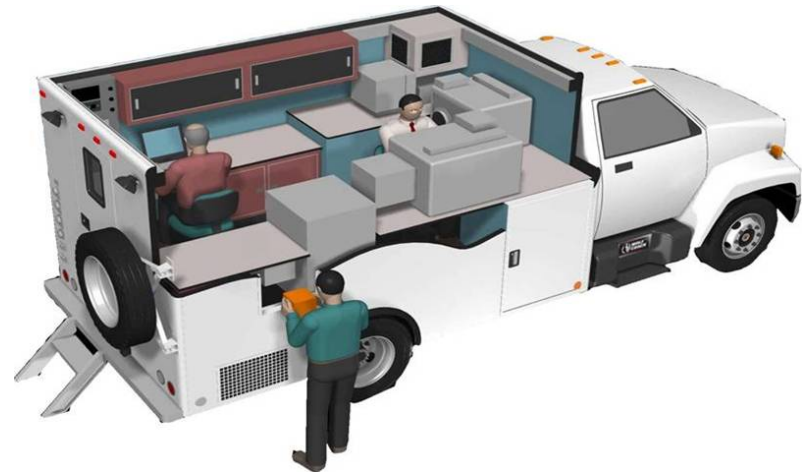


For Official Use Only



# *Analytical Laboratory System (ALS)*

- **Two Class III Containment Glove Boxes**
- **Hapsite GC/MS**
- **Fluorescent Microscope**
- **Fourier Transform Infrared Spectrometry**
- **Immunoassay Tickets**
- **Polymerase Chain Reaction**
- **Refrigerator**
- **Generator and Converter**
- **Digital transmission link to UCS**







# Analytical Laboratory System (ALS)

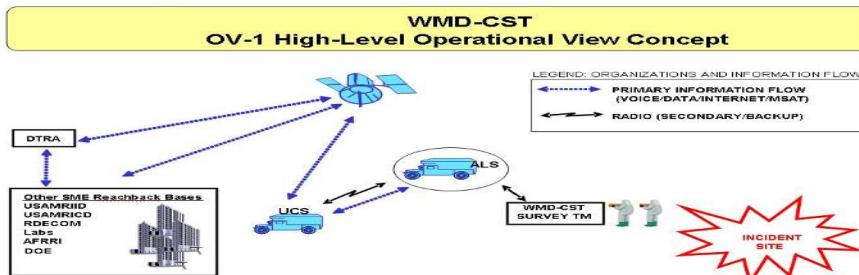


- Class III Bio Safety Cabinet (Glovebox) for Sample Characterization and Preparation
- Diesel Generator provides self-sustained power for 30+ hours before refuel



## Gas Chromatograph/Mass Spectrometer

- ID of Volatile Organic Chemical Warfare Agents and TICs/TIMs
- NIST Auto-Analysis of Mass Spectra
- Advanced Manual Mass Spectral Analysis to Find Co-Eluted Peaks and Hidden Compounds



## Fourier Transform Infrared (FTIR)

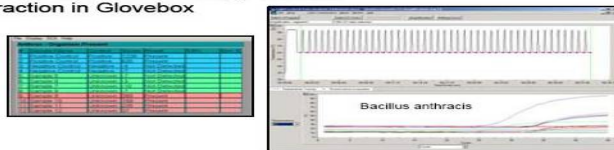
- ID of Chemical Warfare Agents and TICs/TIMs
- Liquids and Solids
- Absorption Signature of Infrared in Covalent Bonds
- Coupled with Microscope to Allow for ID of all Components of Mixtures
- Automated Library Search for ID
- Advanced Manual Interpretation of Spectra for Comprehensive Analysis of Compounds and Mixture Components

**Provides the CST Commanders with capabilities to:**

- Identify unknown CBRNE hazards on-site,
- Send presumptive results back to reachback labs for confirmation, and
- Advise incident command on presumptive analysis

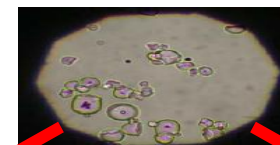
## Real Time – Polymerase Chain Reaction

- ID of Select Biowarfare Agents Through Matching of DNA Segments
- Multiple Targets of ~25 Base Pairs on Chromosomal and Plasmid DNA
- Fluorescence Resonance Energy Transfer
- DNA Extraction in Glovebox



## Polarized Light Microscope

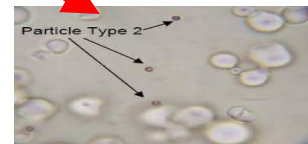
- ID of Solid Particulate Chemical and Biological Materials
- ID of "White Powders"
- Particle Characteristics in Polarized Light Path
- Fluorescent Characteristics
- McCrone Particle Atlas



A. Particle mixture detected



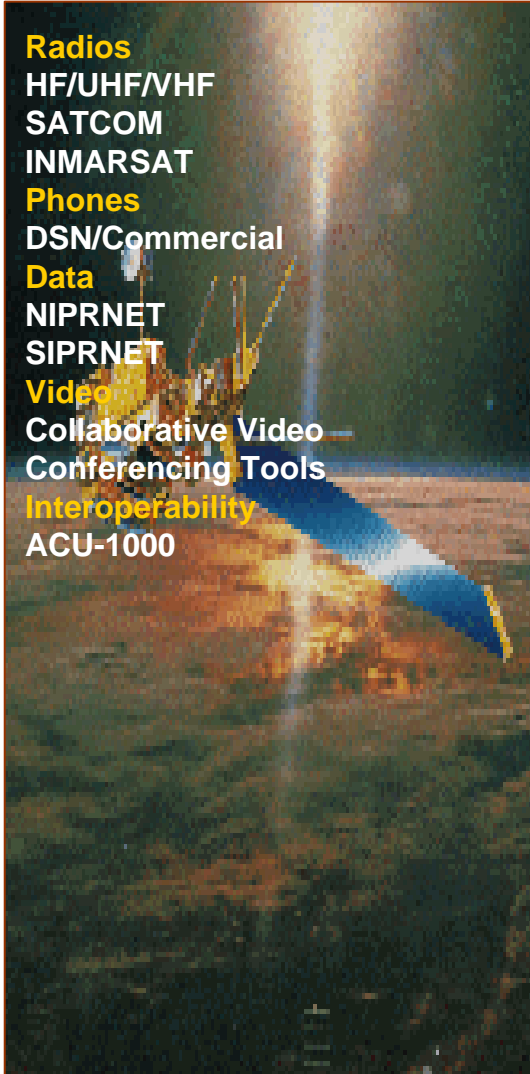
B. "Crossed polars" indicates starch



C. Size, shape, and color indicates biological spore particle 2



# Unified Command Suite (UCS)

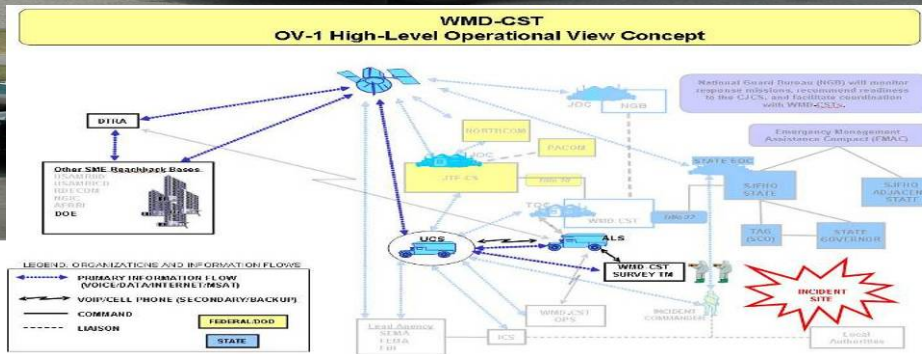


- Radios**
- HF/UHF/VHF
- SATCOM
- INMARSAT
- Phones**
- DSN/Commercial
- Data**
- NIPRNET
- SIPRNET
- Video**
- Collaborative Video
- Conferencing Tools
- Interoperability**
- ACU-1000





# Unified Command Suite (UCS)

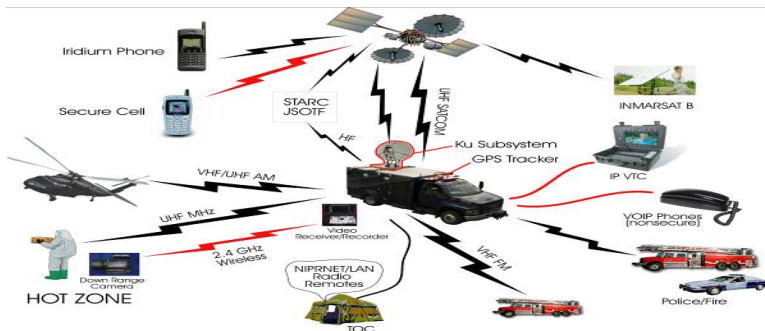


## Provides the CST Commanders with capabilities to:

- Assist incident command with interoperable communications
- Advise on incident response Common Operating Picture, and
- Assist incident command with access to DoD, State, and Federal reachback support.

## Capabilities

- Radios: LMR, Military UHF/VHF, Tactical SATCOM, INMARSAT, Phones (DSN and Commercial)
- Data: NIPRNET and SIPRNET
- Video: Collaborative Video and Tele-Conferencing
- Radio interoperability through Raytheon ACU1000
- Air Transportable by C-130, C-141, C-5, C-17
- 15 kW Diesel Generator, dual ECU System, and dual operator console



# Advanced Liaison (ADVON)



## Provides the CST Commanders with capabilities to:

- Assist incident command enroute to incident location,
- Coordinate with reachback resources on the move,
- Provide internet, phone, interoperable communications in minutes.

## Enroute Capabilities

### INMARSAT

- ISDN transmission rates up to 64kbps
- Communications maintained up to 68 mph
- STU-III, STE, and KIV 7HS compatible

### Integrated Radios / Satellite Telephone

- VHF/UHF, 800 MHz communications
- External speakers and microphone
- Global coverage, vehicle mounted antenna

### HAZARD Modeling Capability

- CBRNE plume modeling, mapping capability
- Integration with reachback modeling

## On-Scene Capabilities

### Internet/Network Access

- Auto-deploy very small aperture terminal (VSAT) broadband access in minutes
- Voice over Internet protocol (VoIP)
- Wireless network, computers, and all-in-one printer

### Incident Command Radio Interface (ICRI)

- Provides interoperable communications between radio/telephone/different frequency systems



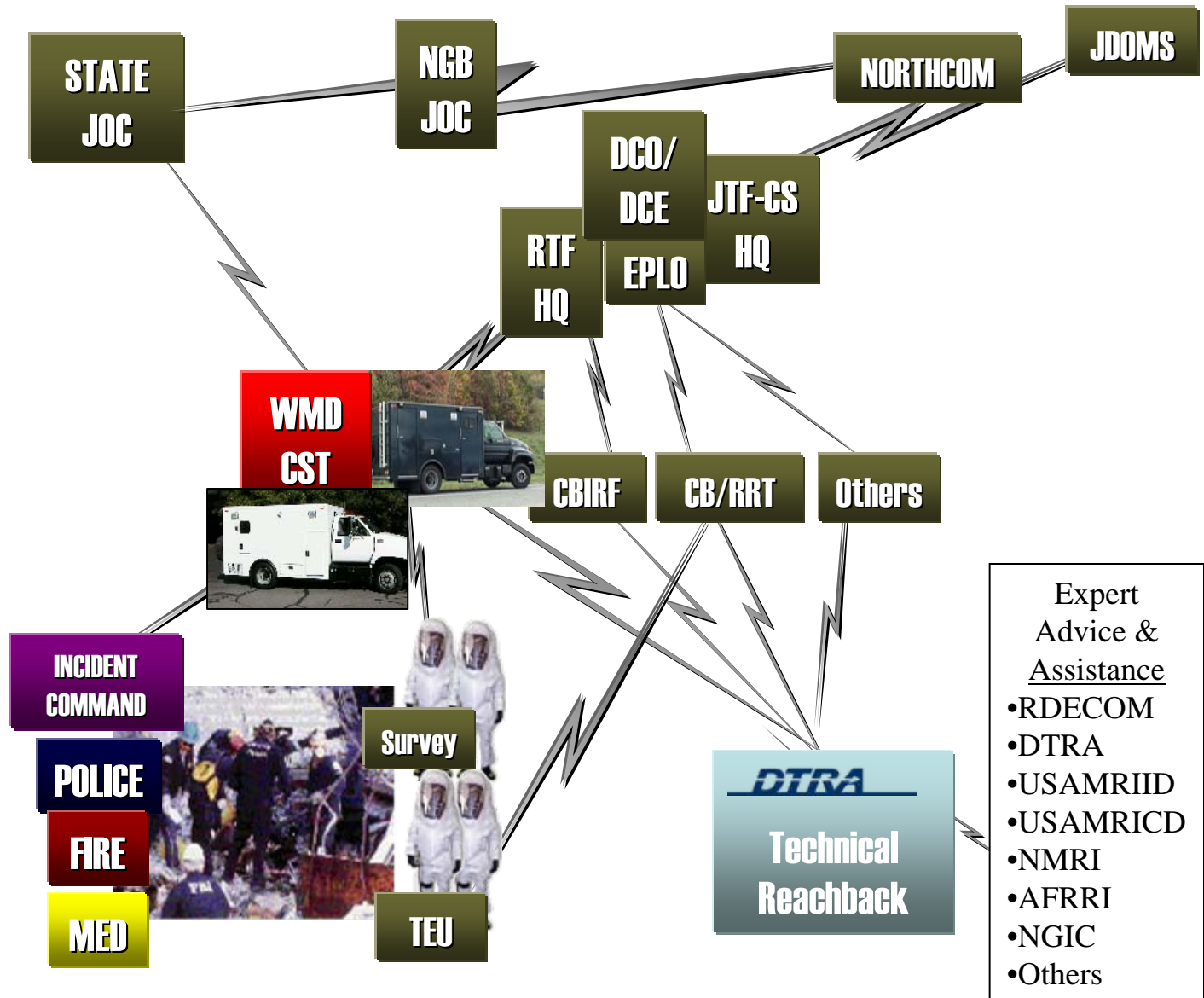
# Reachback System

Reachback includes  
Secure & Non-Secure  
Voice, Video, and  
Data Connectivity to:

- Local Responders
- Incident Commander
- National Guard Elements
- DTRA and other supporting technical assets

*Through the chain of command to:*

- Regional Task Forces
- DCCO/DCE
- JTF-CS
- CBIRF
- NORTHCOM
- JDOMS







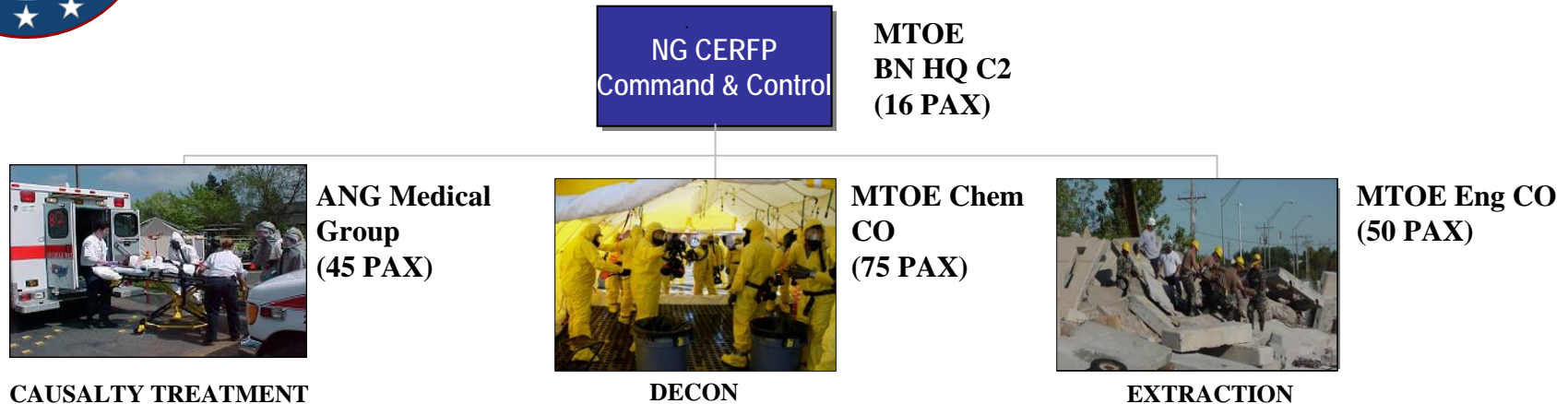
**CST Loaded on a C-17**



***National Guard  
CBRNE ENHANCED RESPONSE  
FORCE PACKAGE  
(NG CERFP)***



# CBRNE Enhanced Response Force Package (NG CERFP)



**MISSION:** On order: Responds to chemical, biological, radiological, nuclear, or high yield explosive (CBRNE) incident and assists local, state, and federal agencies in conducting consequence management by providing capabilities to conduct **patient decontamination, emergency medical services, and casualty search and extraction.**

*(Casualty Search and Extraction, Mass Casualty Decontamination, and Emergency Medical Treatment )*

## **KEY CHARACTERISTICS:**

- **Comprised of NG MTOE units**
- **Unique to National Guard**
- **Specialized Training and Equipment meets NFPA certification and NIOSH / OSHA standards**
- **ARNORTH validated capabilities**
- **Interoperable with Civil Responders**
- **At least one CERFP per FEMA Region**



# Search and Extraction Element

MTOE Engineer Company(-); 50 personnel



- Receive NFPA certified training to operate in confined space collapsed structure
- Specialized equipment meets NIOSH/OSHA standards
- Trained to operate within the National Incident Management System



*Listening Device*



*Extraction Tool Kit*



*Thermal Imaging Camera*





# NG CERFP Casualty Extraction



**Skeds:** minor injury - minimum distances  
**Wheeled litters** – reduces effort over longer evac distances  
**Mobile:** evac for the seriously injury



# Mass Casualty Decontamination Element

**MTOE Chemical Company(-); 75 personnel**



--Force sizing and special equipment designed to support a throughput of 75 non-ambulatory and 225 ambulatory per hour

--Establish CBRNE response decontamination site



*Powered Air Purified Respirator*



*Chemical / Radiological Monitoring-Ambulatory*





# *Medical Element*

**Air National Guard Medical Group(-); 45 Personnel**



- Provide medical triage & stabilization and treat CBRNE casualties
- Supports a throughput of 75 non-ambulatory and 225 ambulatory per hour
- Ten medical personnel participate in confined space collapsed structure operations





# *Joint Incident Site Communications Capability (JISCC)*

- JISCC provides cross banding systems for interoperability with up to 18 Organizational radio nets to include first responders
  - **Ku-band SATCOM reach back**
  - **INMARSAT backup**
  - **VHF/UHF/800MHz radios**
  - **Voice / DSN / Internet / NIPR**
  - **VTC**
  - **Secure wireless LAN**
  - **Support up to 250 LMR Radios (20 Provided)**
  - **SIPR over NIPR design (future)**
  - **STE interface (future)**







# ***Challenges***

- **Command and Control**
  - **Situational Awareness**
  - **Interoperable Communications**
  - **True interagency Information Sharing and Access**
  
- **Other Response Challenges**



# ***Command and Control Challenges***

- **Common Operating Picture – Is it really Common?**
  - How can we get info to/from other agencies?
  - Integrated Components for Multi Agency Dashboard
  - Blue Force Tracker equivalents for Domestic Opns
- **Incident Awareness Assurance (operationally known as Intelligence, Surveillance and Reconnaissance (ISR)) Before, During, and After Incident**
  - Google Earth the answer?
  - Real time information?
  - Wide Area Surveillance Capability?
  - National Asset Availability?
- **How do we allow access/conversely deny access to planning information? i.e. DOD Security Systems**



# *Other Response Challenges*

- **Water Availability and Distribution**
  - Bottling systems?
  - LifeStraw®?
- **Hazard Specific Challenges**
  - Flood Barrier improvements
  - Breached Levee Response Tools
  - Rapid Damage Assessment
    - Bridges
    - Roads
    - Runways





# ***Opportunities***

- **Each Challenge brings its own opportunities**
- **We must collaborate to resolve the fundamental requirement for all Domestic Emergencies**
  - **Application of Federal, State, and County/Community resources and support at the right time and place to save lives and protect our citizens from unnecessary human suffering**
- **Enable interagency and corporate synergy to develop and act**
- **Concept mining is a must**



Questions?