



Geospatial CBRNE Mission Data Set Implementations

Optimized Architecture
Decision Systems
CBRNE Enablement



ECBC - NBC Battle Management

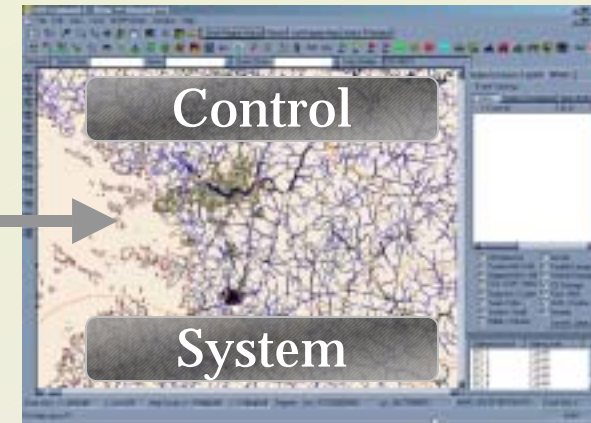
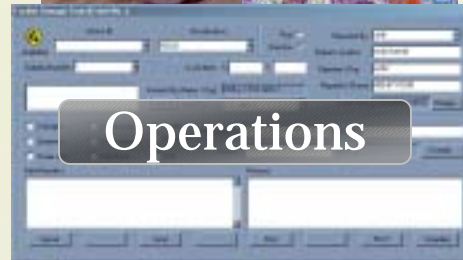
Tiered R&D technology transition team.

- ✓ R&D
- ✓ Engineering
- ✓ Technology Transition
- ✓ Platform Deployment

Sensor Fusion



- Joint Service/DoD
- Sensor Integration
- Operational Decision Systems





OGA & ACC

Optimized Geospatial Architecture

- Enabling mission critical situation awareness to individual stakeholders within tiered implementations to outlined Accuracy, Currency, and Completeness parameters.

Accuracy, Completeness, & Currency

- Mission critical data, certified, formatted, and configured for maximum stakeholder exploitation.





OGA Methods

- Integrated & Normalized Standards
- Scale, Extent, Jurisdiction
- OPTEMPO, CONOPS
- Classification
- Role
- Situation
- Permissions



Standards & Specifications

• SDSFIE 2.3	Open	FOUO	Sensitive	DoD
• NGA	Open	FOUO	Sensitive	DoD
• HIFLD				DoD
• HSIP		FOUO	Sensitive	
• DHS		FOUO	Sensitive	DoD
• JPM-CB			Sensitive	DoD
• USGS - National Map	Open	FOUO	Sensitive	
• DoD/Joint Service		FOUO	Sensitive	DoD
• Fed-St-Cnty-Local	Open	FOUO	Sensitive	



GeoBase Enablement

Geospatial Processing (OGA)

- Geodatabase/Oracle SDE rendered to **Shapefiles**
 - Readiness-Response-Recovery MDS integration
 - ROIMS specific attribution: CBRNE-R3
 - Average 30 hours preparation time
-
- ROIMS PACAF-GIO Testbed
 - GeoBase Integration Process

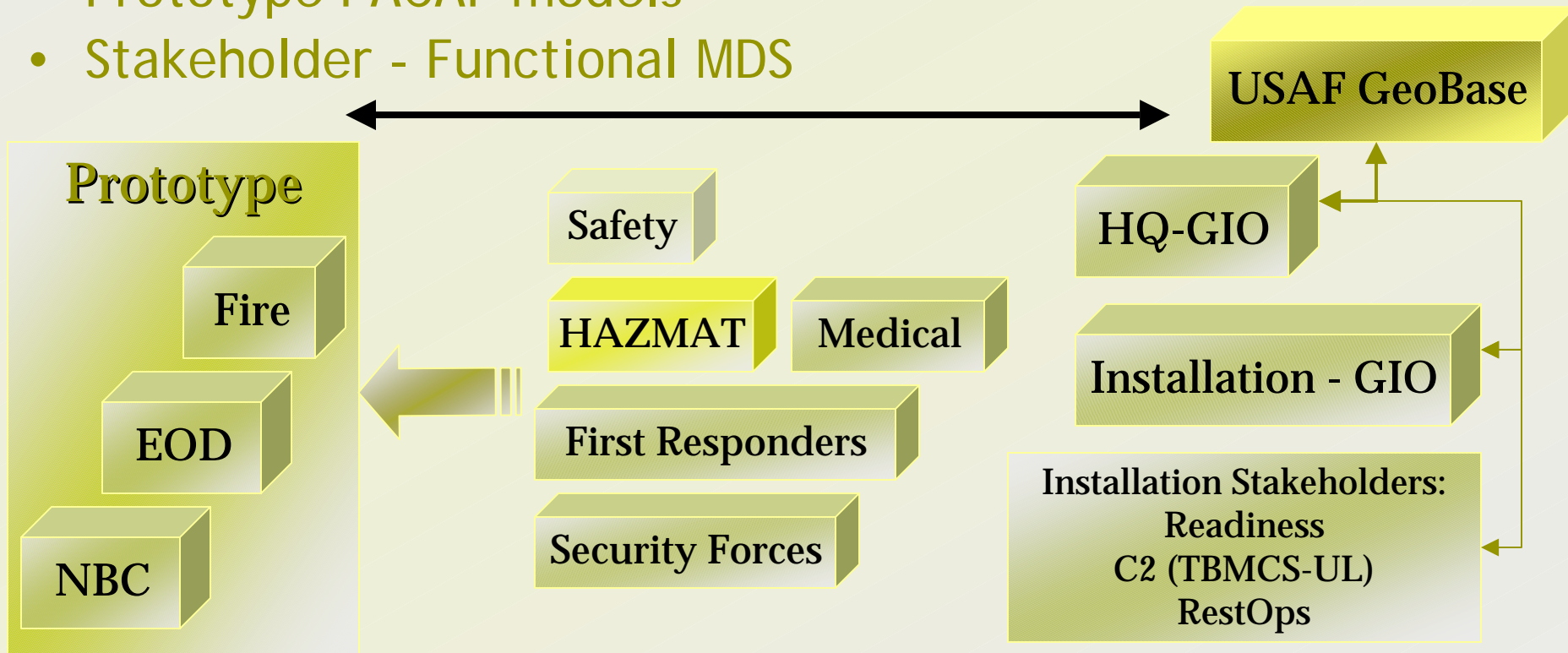


CBRNE-R3

Chem-Bio, Radiological, Nuclear, Explosive – Readiness, Response, & Recovery

The MDS (Mission Data Set) repository delivering the OGA (Optimized Geospatial Architecture) posture for end-to-end WMD incident management.

- Prototype PACAF models
- Stakeholder - Functional MDS





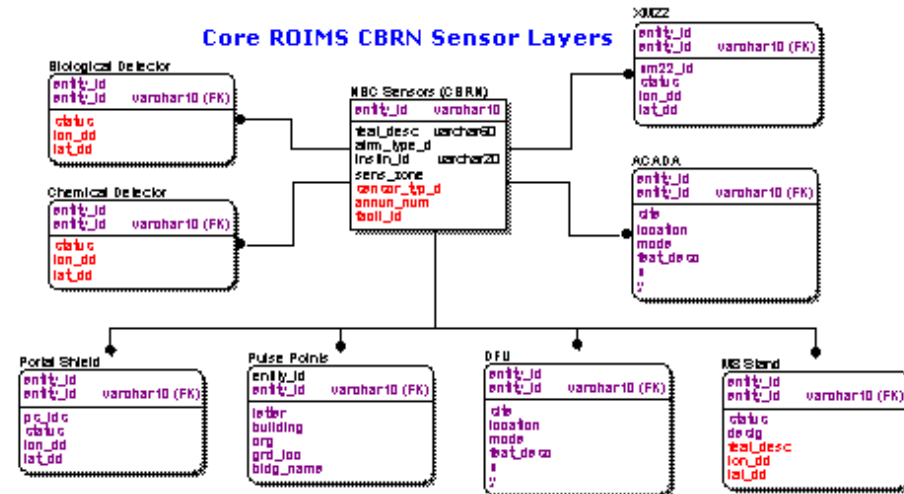
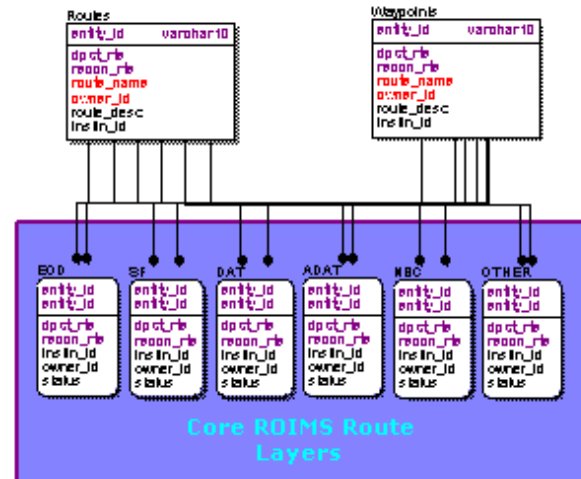
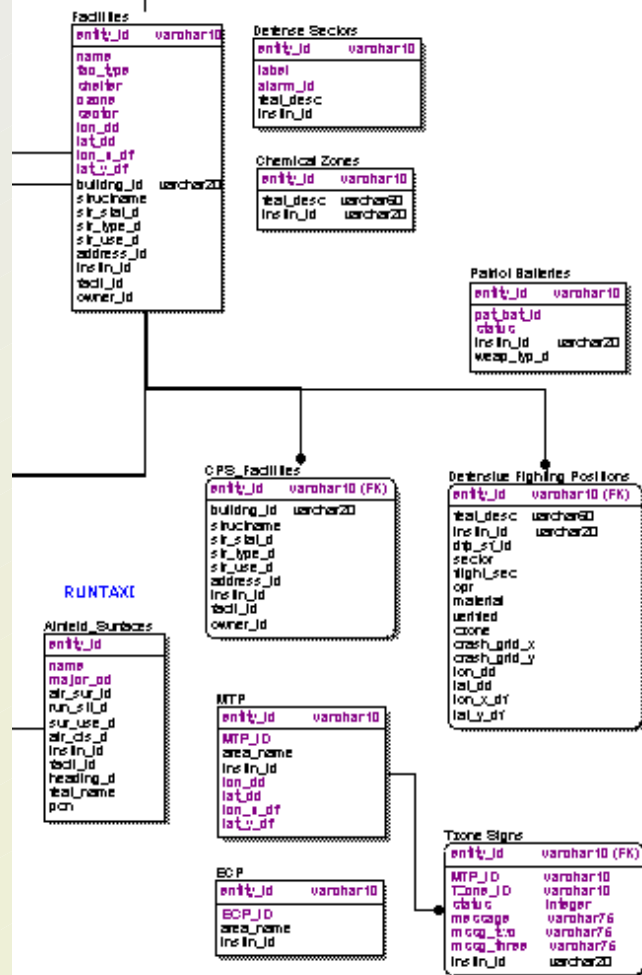
Prototype CBRNE-R3

Readiness Group	Proposed Layer	SDS Match
EOD	Facility Managers	
EOD	Hot Cargo Pads	airfield_facility_surface_area
EOD	Munitions Storage Areas	ammunition_storage_area
EOD	Explosive Movement Routes	explosive_transportation_route_line
EOD	Inhabited Building Distances	military_quantity_distance_arc_area
EOD	Old Munitions Burial Sites	munitions_waste_disposal_area
EOD	Buildings Identified According to Base Priority Listings	structure_existing_area
EOD	EOD Training/Disposal Ranges w/Clear Zones	training_site
FIRE	Facility Managers	
FIRE	Fire Districts	fire_department_responsibility_area
FIRE	Hazardous Materials Storage	hazardous_materials_storage_area
FIRE	Storm Drains	storm_sewer_inlet_point
FIRE	Structures	structure_existing_area
FIRE	Fire Connections	water_fire_connection_point
FIRE	Fire Hydrants	water_hydrant_point
RESTOPS	Airfield Surfaces	airfield_surface_area
RESTOPS	NBC Sensors	communications_sensor_point
RESTOPS	Patriot Batteries	firing_point
RESTOPS	Defense Sectors	force_protection_area
RESTOPS	Defensive Fighting Positions	force_protection_area
RESTOPS	Entry Control Points	military_access_point
RESTOPS	MOPP Transition Points	military_access_point
RESTOPS	Routes	military_route_line
RESTOPS	Waypoints	military_route_point
RESTOPS	Tzone Signs	military_safety_marker_point
RESTOPS	Chemical Zones	military_surface_danger_zone_area
RESTOPS	Facilities	structure_existing_area
RESTOPS	CPS Facilities (hardened shelters)	structure_existing_area



RestOps MDS v1.1

ROIMS RestOps Spiral 6 Implementation





ROIMS

Restoration of Operations Information Management System



- A series of applications that are bundled with or interfaced with Theatre Battle Management Core System - Unit Level (TBMCS-UL). They include:
 - Survival Recovery Center (SRC3) - Base Map (GeoBase CIP)
 - Digital Dashboard - Sweep/Sensor Management
 - Reporting, Plotting & Modeling (RPM) - Hazard Prediction
- Exports the WOC view to all the work centers connected with chosen network; i.e. TBMCS-UL
- Can operate independently of TBMCS-UL; Command post...etc
- Enables the GeoBase imagery, CIP, RIP, and MDS
- Background NGA (formerly NIMA) raster and vector libraries



ROIMS in Operation



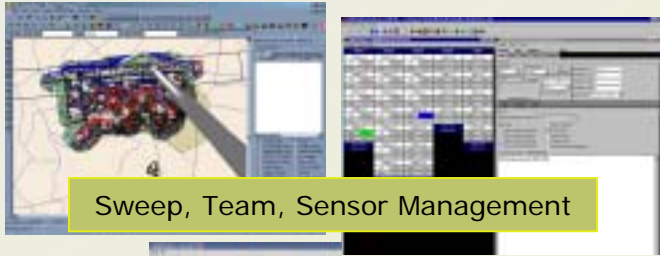
Edgewood Chemical Biological Center – Protecting the Warfighter and America



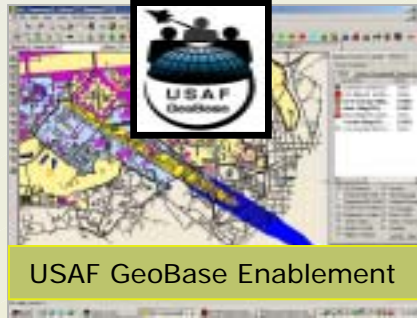
ROIMS Functional Structure

Common Operating Picture

- Automated Sweep Tool to input recon results
- Networked CB sensors with real-time inputs
- Integrated NBC modeling and messaging
- Integrated command and control directives



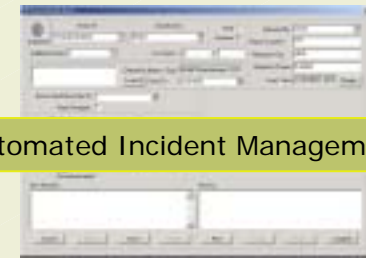
Sweep, Team, Sensor Management



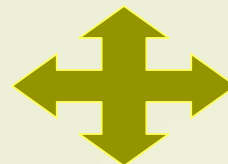
USAF GeoBase Enablement

Event Management

- Event management tools
 - Set attacks parameters (MOPP levels)
 - Parse incoming data
- Electronic incident reporting
 - Tracking for the duration of the event
- Tailored user defined interface
- After action tools



Automated Incident Management



TBMCS-UL Integration



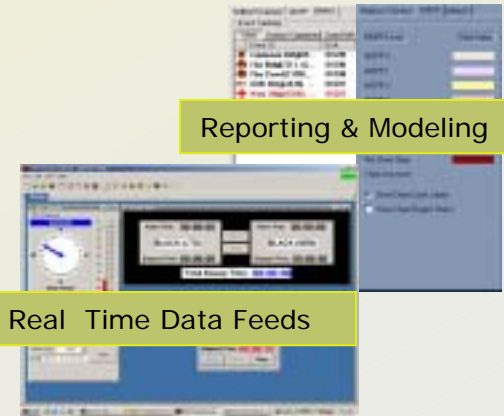
Air Operations Data Base

Situational Awareness

- Enhanced sweep progress monitor
- Team status and results
- Automated hazard and event visualization
- Seamless downwind hazard display
- Real-time weather feeds
- Advanced Data Wall display

Event - Incident Automation

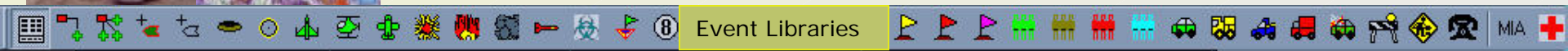
Reporting & Modeling



Real Time Data Feeds

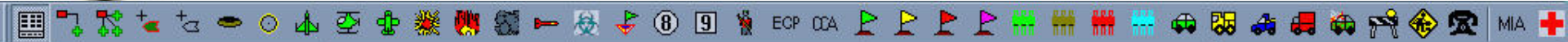


MET & CB Arrays





Event/Incident Management



Facility Damage Form (Event No. 3)

Attack ID: [] Classification: FDUO [] Post: [] Reported By: jhl []
Updated: [] Exercise: [] Report Location: ecbc-hawaii []
Building Number: [] or Location No: [] Reporter's Org: ecbc []
Reporter's Phone: 808-671-5100 []
Entered By (Name / Org): DHEU / CSS 480-1 [] Event Time: 3/30/2004 2:45:57 [Change]
Event ID: [] Send To: CSS 480-1 []
Relocated To: [] Author: []
Impact: [] ETC: [] [Change]
[] Damaged [] Container [] Unble []
[] Generator [] Environmental [] Discardable []
[] Power Out [] Fire Break [] H2O []
New Remarks: [] Previous: []
[Cancel] [Send] [Print] [Complete]

- BIO
- M8
- M9
- CES DAMAGE
- MEDICAL
- CS DAMAGE
- MIA
- VEHICLE PROBLEM
- ROADBLOCK
- INTRUDER
- EXPLOSION
- FIRE
- SMOKE
- AIRCRAFT
- UXO
- MISC
- TEAM (multi)
- CRATER
- CHEM REGION
- CORDON
- ECP
- CCA
- SPALL
- VEHICLE (multi)
- CHEMICAL

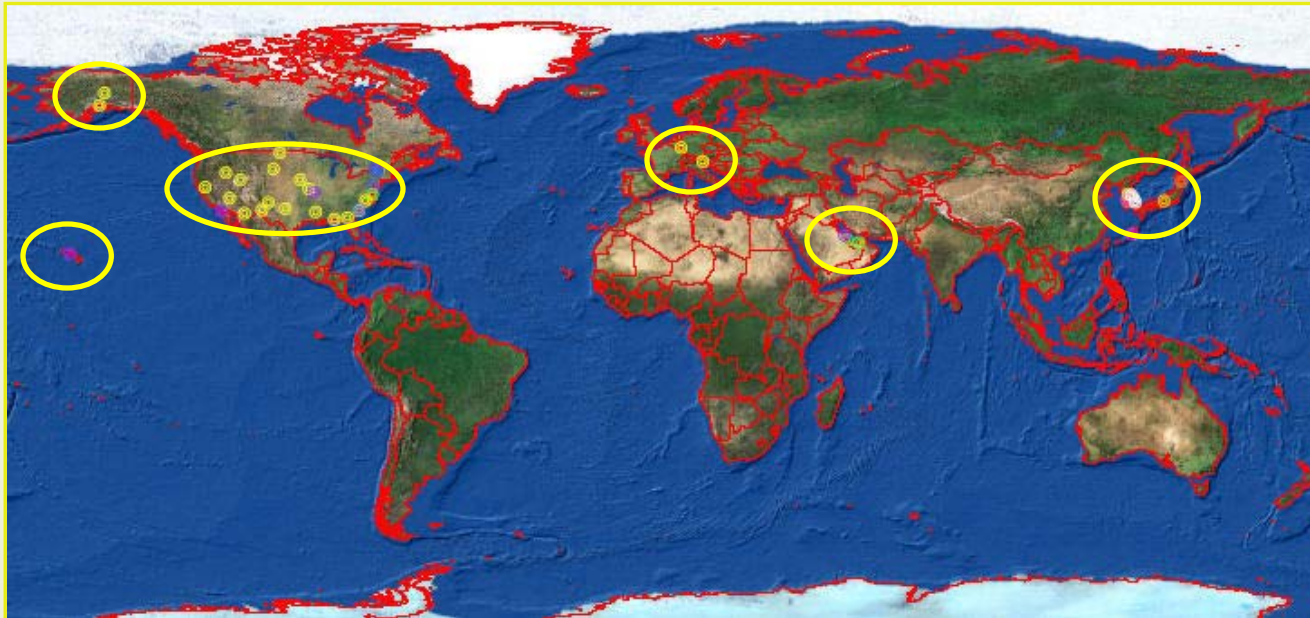
Event Driven Management and Communication

- All hazards scoping
- Electronic Attack/Incident Report (EAR)
- Stakeholder Notification and Communication
- Tracking, Follow-up, and Evaluation
- Who, What, Where, When, and How...



ROIMS Footprint

- RestOps in PACAF
 - Osan, Kadena, Kunsan, Misawa, Yokota
 - COB's 2Q-04
 - Elmendorf, Eielson, Hickam, Andersen TBD
- Embedded TBMCS-UL Sp7
 - CAF Potential
 - ROIMS ACC Deployment
 - 3Q/4Q 2004
 - 15 AOI + 2 OCONUS





ROIMS 7.1

unfielded

ROIMS Spiral 7.1 (not in regular TBMCS-UL Sp7)

Geospatial refinement - no SRC Space

Multiple coordinate systems display and function

Lat/Long Decimal Degree WGS84

UTM Feet WGS84

Crash Grid

MGRS

Map Orientation



Move To Coordinate, Display

Enhanced CIP, RIP, MDS integration

Background NGA (NIMA) raster and vector AOI enhancement

Digital Dashboard Team, Sweep, and Sensor integration improvements and management module





CASPOD



Contaminant Avoidance at Seaports of Debarkation

- Sensor Integration
- Command Post (Port)
- Mission Critical/Essential Resource management
- LUA (Mobile Sensors, OGA)
 - Dugway Proving Grounds
- FD (Sensor Integration, OGA)
 - Beaumont, Texas
- IIMS (I-WARN, Port-WARN)



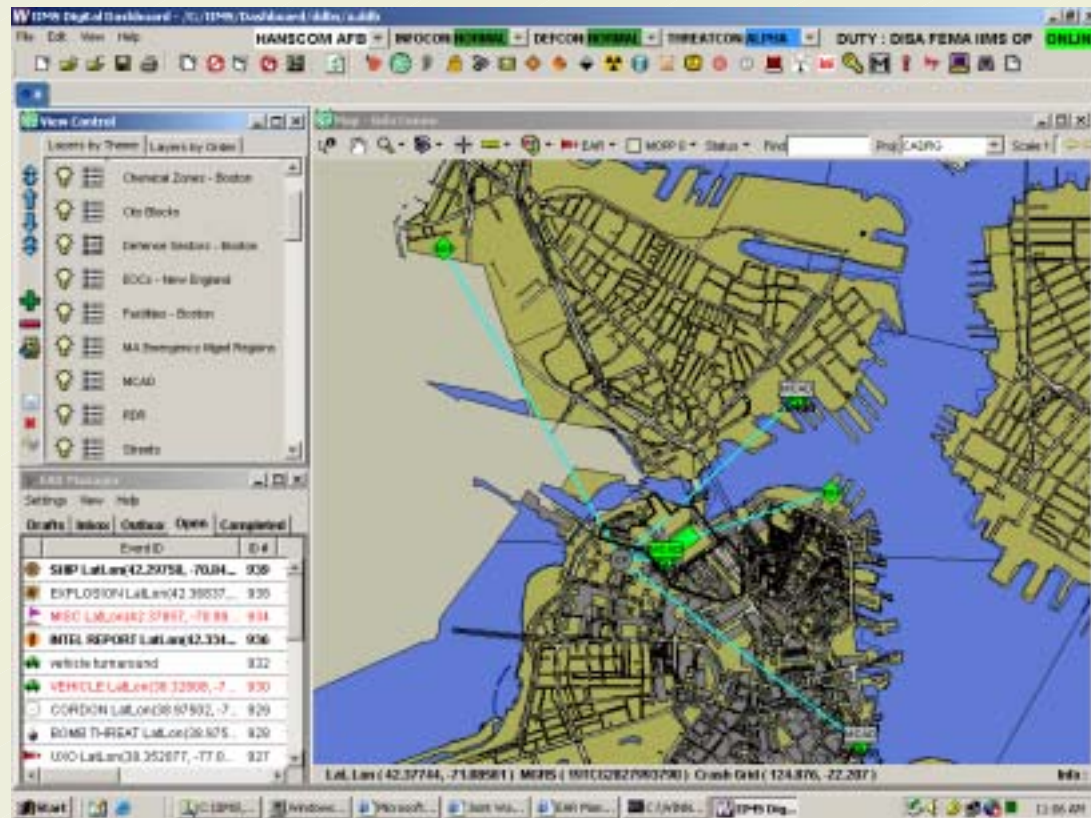


JWID



Joint Warrior Interoperability Demonstration

- Hierarchical Scope
- Multi-Network Interoperability
 - Diverse Locations
 - Geographical
 - Classification
 - DoD - Fed - Local
- OWA
 - USA
 - State(s)
 - Installation
 - Incident Site
 - DoD - Fed - Local

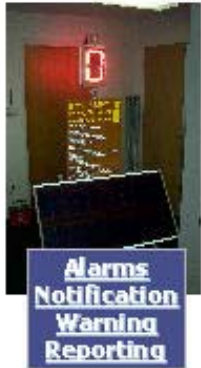




Operational Fusion



Decision Space Requirements



Functional Data Requirements

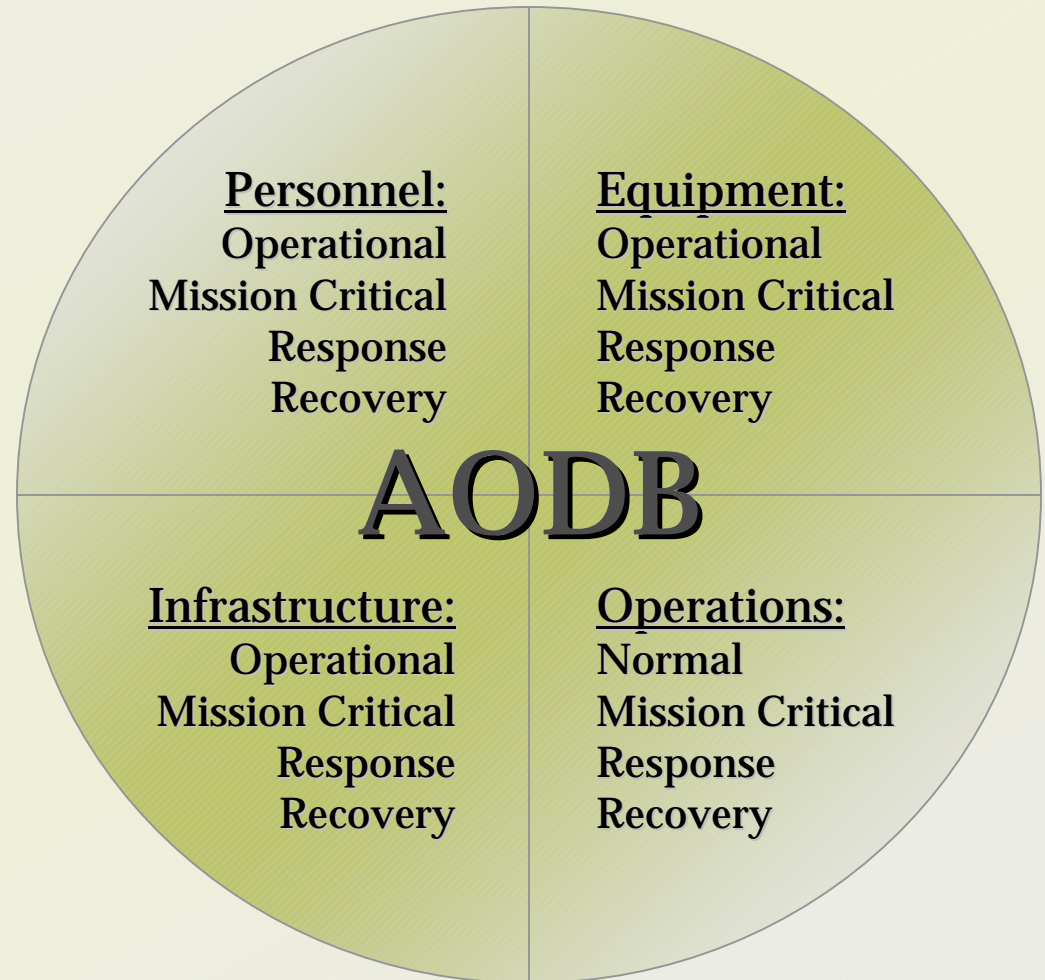
ROIMS: RestOps Information Management System



Resource Management

(Air) Operations DB

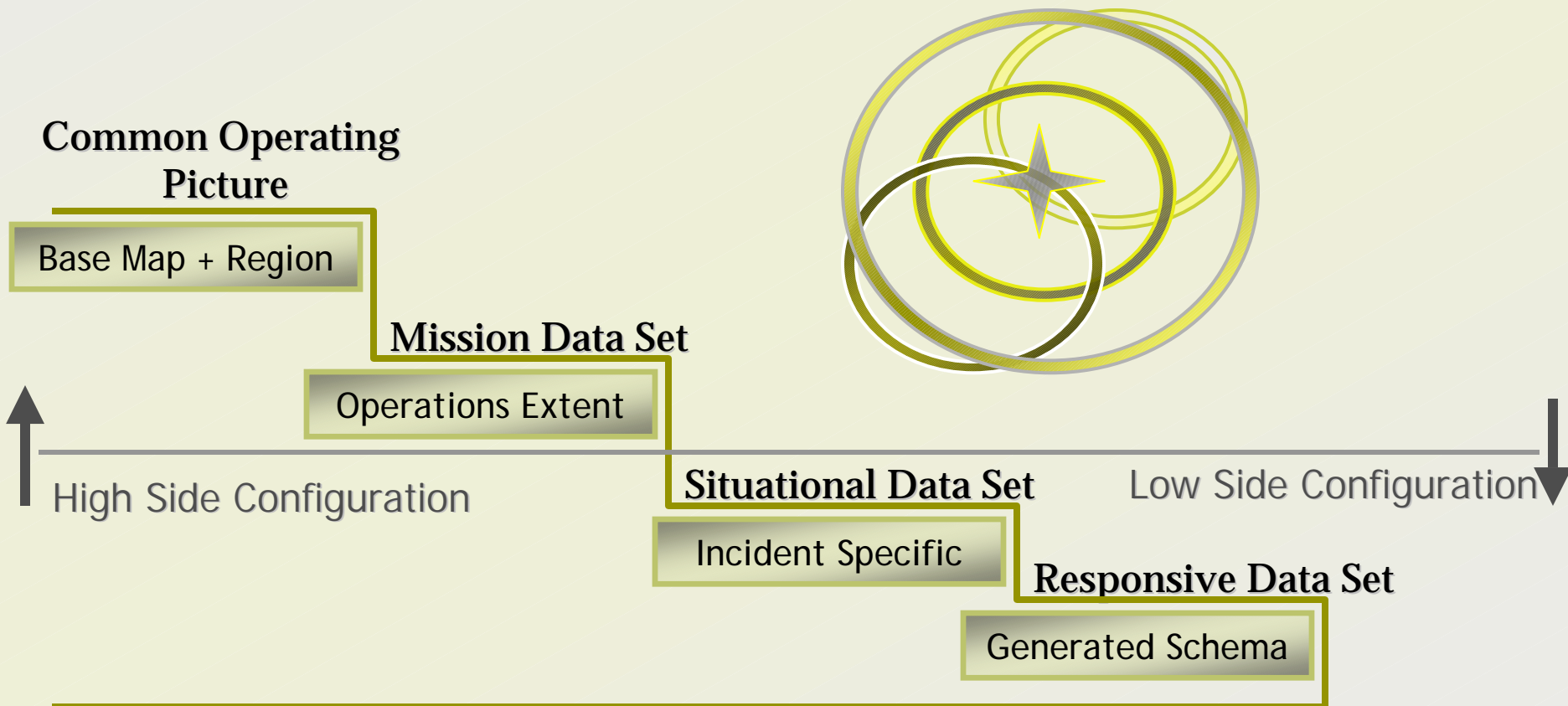
- Operations
 - Normal
 - Mission Critical
 - Response
 - Recovery
- Personnel
- Equipment
- Infrastructure





Functional Schemas

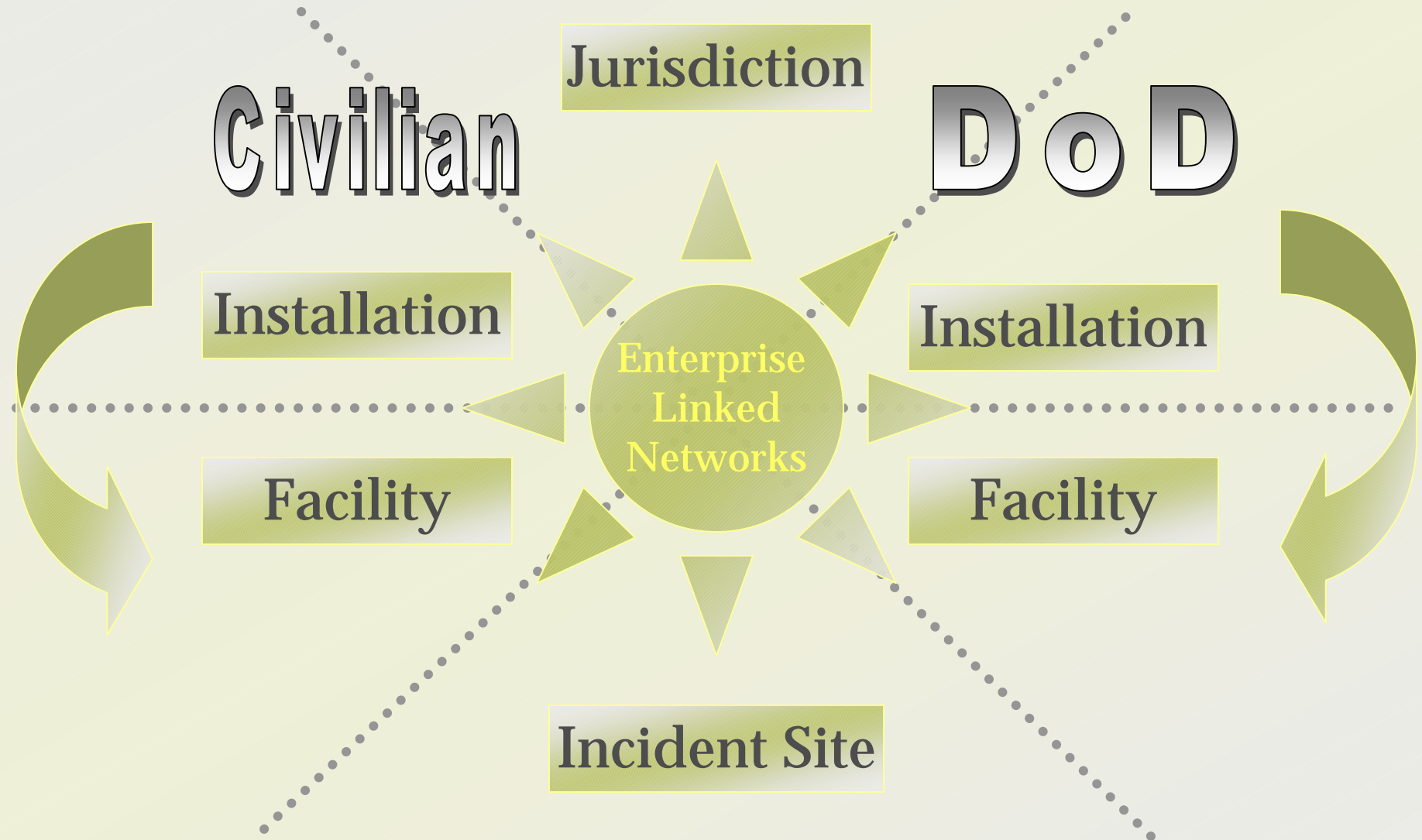
Enable 'the functional role' through schema differentiation, normalization, and prioritization.





Area of Responsibility (AOR)

Interoperability





Installation MDS

Common Installation Picture

Installation

Mission Data Sets

Infrastructure

Functional

Fire - EOD - SF

Incident

WMD - Disaster

? - UNK - ?



Installation Specific
Mission
Climate
Functional Expertise



2004 Initiatives

- Automated Routing
 - Resource, Situation, and Incident inputs
 - Tiered Networks
 - Multiple Classifications, LAN, WAN, VPN, WI-FI
 - Mission Multiplicity
 - Jurisdictions, Communications, Roles
 - OGA (Optimized Geospatial Architectures)
 - Installation, Functional, Incident tailorability
- One Incident...Coordinated Response



Conclusion

... Comments

Questions

Discussion...



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