Homeland Security University Programs

The Third Annual DHS University Network Summit

Providing Relevant and Dependable Real-Time Data to First Responders

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NATIONAL CENTER FOR FOREIGN ANIMAL AND ZOONOTIC DISEASE DEFENSE

Panel 27

Models and Databases for Decision-Makers on Foreign Animal and Zoonotic Diseases

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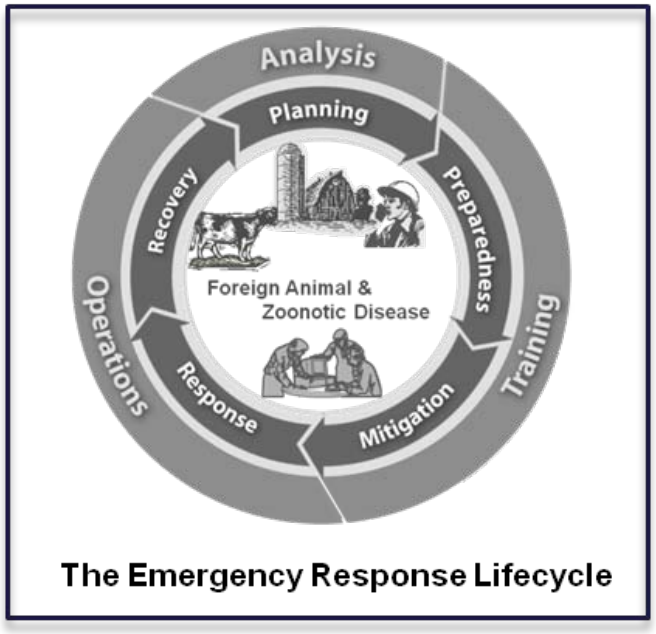
Defining the Need



The Emergency Response Lifecycle

- An animal disease outbreak, whether naturally occurring or human-induced, presents a complex response challenge and very quickly involves several levels of decision makers (local, state, and federal).
- A need exists for a consolidated view of the incident being presented to the full array of decision makers with synchronized data being represented from multiple distributed sources.
- Such an integrated view with these diverse data representations provides a useful tool for both training, operational (incident management), and analytical applications.

DPS Dynamic Preparedness System

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DPS High Level Requirements

- An overarching framework with a well-documented application programmer's (API) interface for the integration of training, analytical, decision support, and resource management tools, as appropriate.
- Modularized design to support component integration from diverse group of tool providers including both legacy and newly developed tools.
- An integrated view serving as a common operational picture that reflects the aggregate (or filtered) output of included suites of tools for maintaining situational awareness.
- Fully compliant with the National Incident Management System (NIMS) and is scalable from county to regional to national command centers.
- Suite of complementary tools (exercise management, after action review) to support training requirements. The training system becomes the emergency response system during an actual event.

Scalable … Multi-level Perspective … Multiple Incidents

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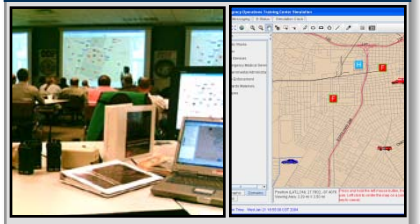
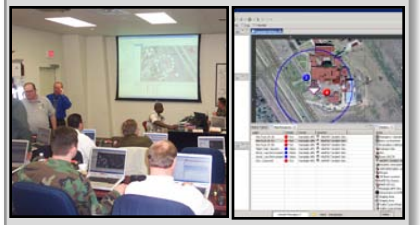
Leveraging On-going Successes

Emergency Ops Training Center Simulation



- Customer – Department of Homeland Security
- Focus is on the Incident Command Post
- More than 4000 responders trained

Emergency Management ✭ Exercise System



- Customer – United States Air Force
- Focus is on the Emergency Operations Center
- Training for all AETC bases

Emergency Management ✭ Exercise System

- Customer – Governor's Division of Emergency Management, State of Texas
- Focus is on the Multi-Agency Coordination Center (MACC)
- Supporting training of all 26 MACC's in State of Texas

Common Characteristics

- Scenario-driven simulation-supported exercise environment that offers great flexibility with respect to the target training audience and types of incidents introduced in the scenario.
- Can be used operationally as a command and control system – blurs the line between training and operations. Focus is on decision making.
- Provides common operational picture for emergency management personnel thereby facilitating a higher state of situational awareness for all participants.

Creating "virtual veterans" of large scale disasters, both natural and human initiated.

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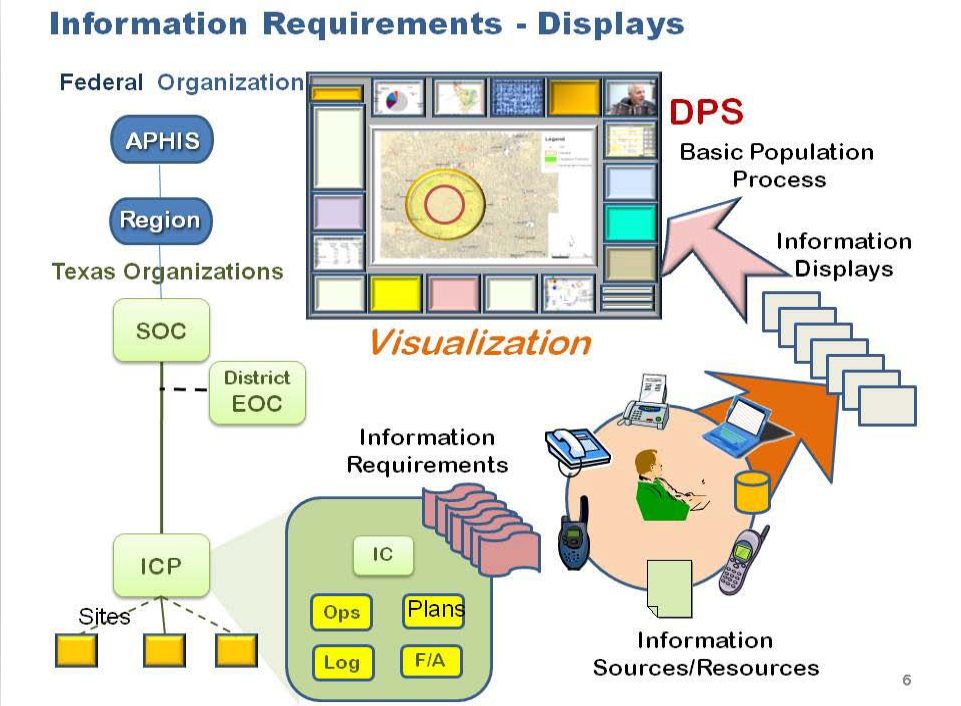
DPS – An Information Dashboard



Mapping | Resource Mgmt | Planning | Admin | Sim Engine | Checklists and Forms | Exercise Mgmt

Logs | Reporting | Comms | External Links | Models and Data | After Action Review | O/C Forms

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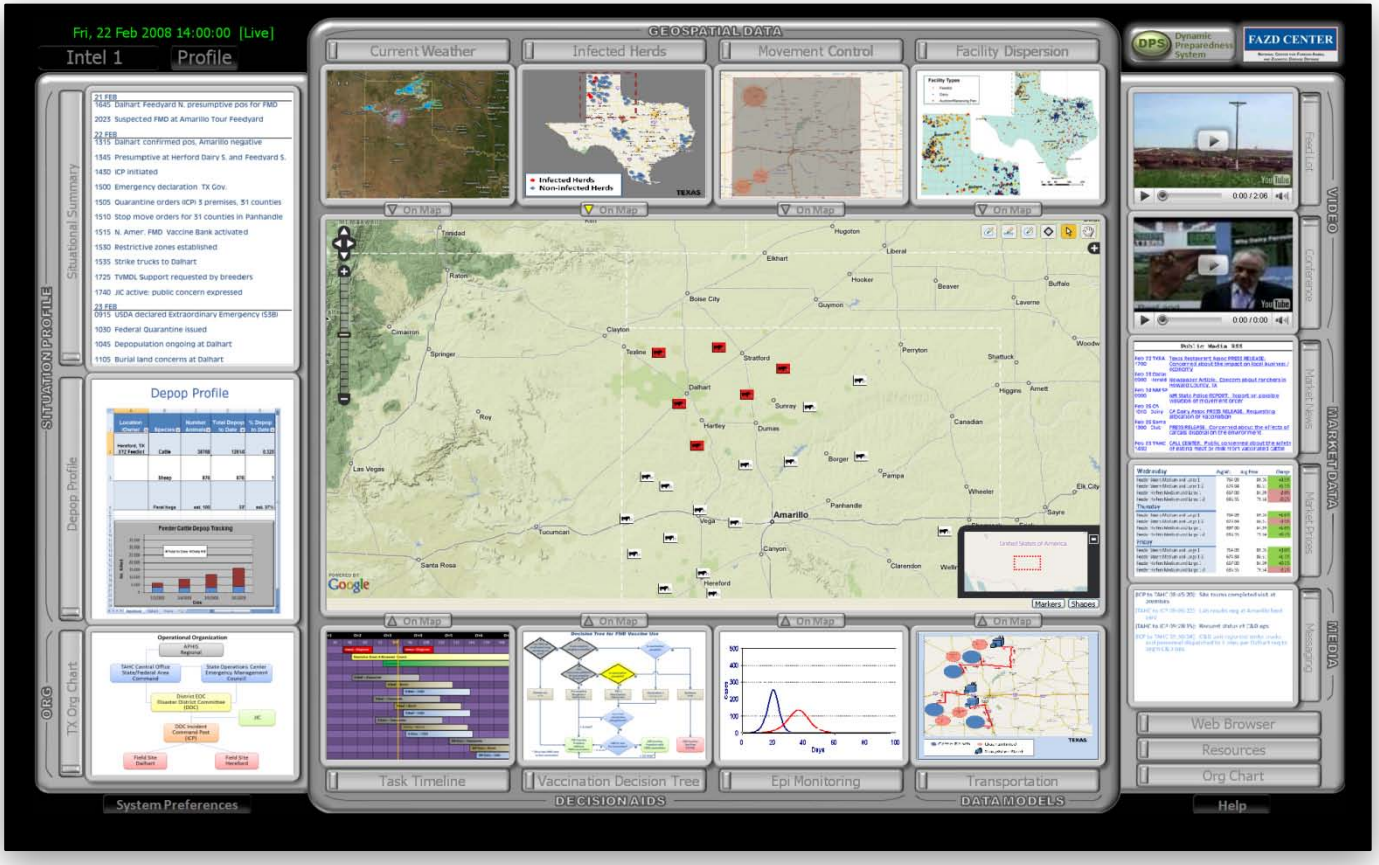
Dynamic Preparedness System (DPS)



- Common integrated display driven by data from authoritative data sources.
- Customization achieved by selecting a tailored set of components.
- Plug-in architecture (documented) allows 3rd party developers to contribute components.

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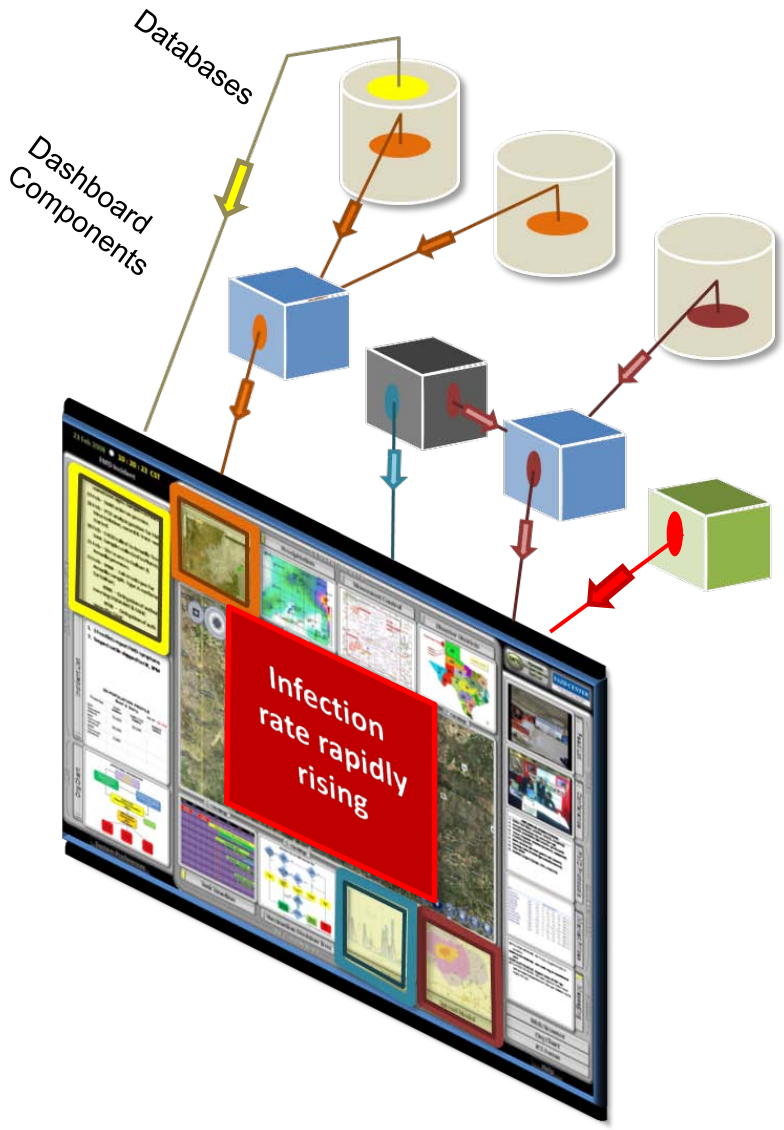
Dashboard Components



Levels of Integration

- Visual
- Middleware (converging data streams)
- Application to Application Data Sharing
- Hybrid (any combination of the above)

Decision Support Tools

- Manual – visual integration of data
- Assisted – visualization development using visual programming
- Automated – monitoring agents

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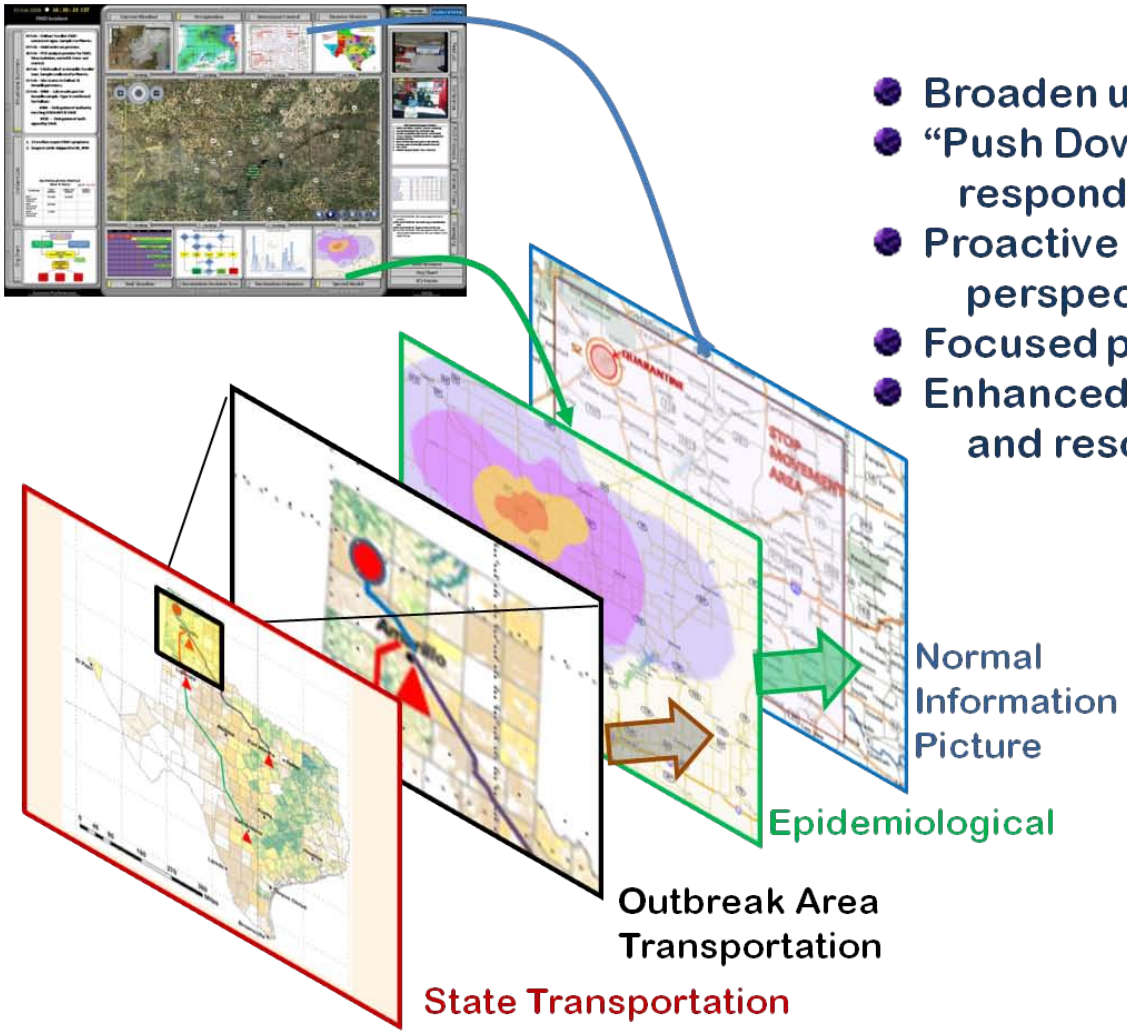
Model Integration – An Incident Response Multiplier



- Broaden use of the models
- "Push Down" distribution to responders
- Proactive operational perspective
- Focused planning parameters
- Enhanced economies of effort and resource allocation

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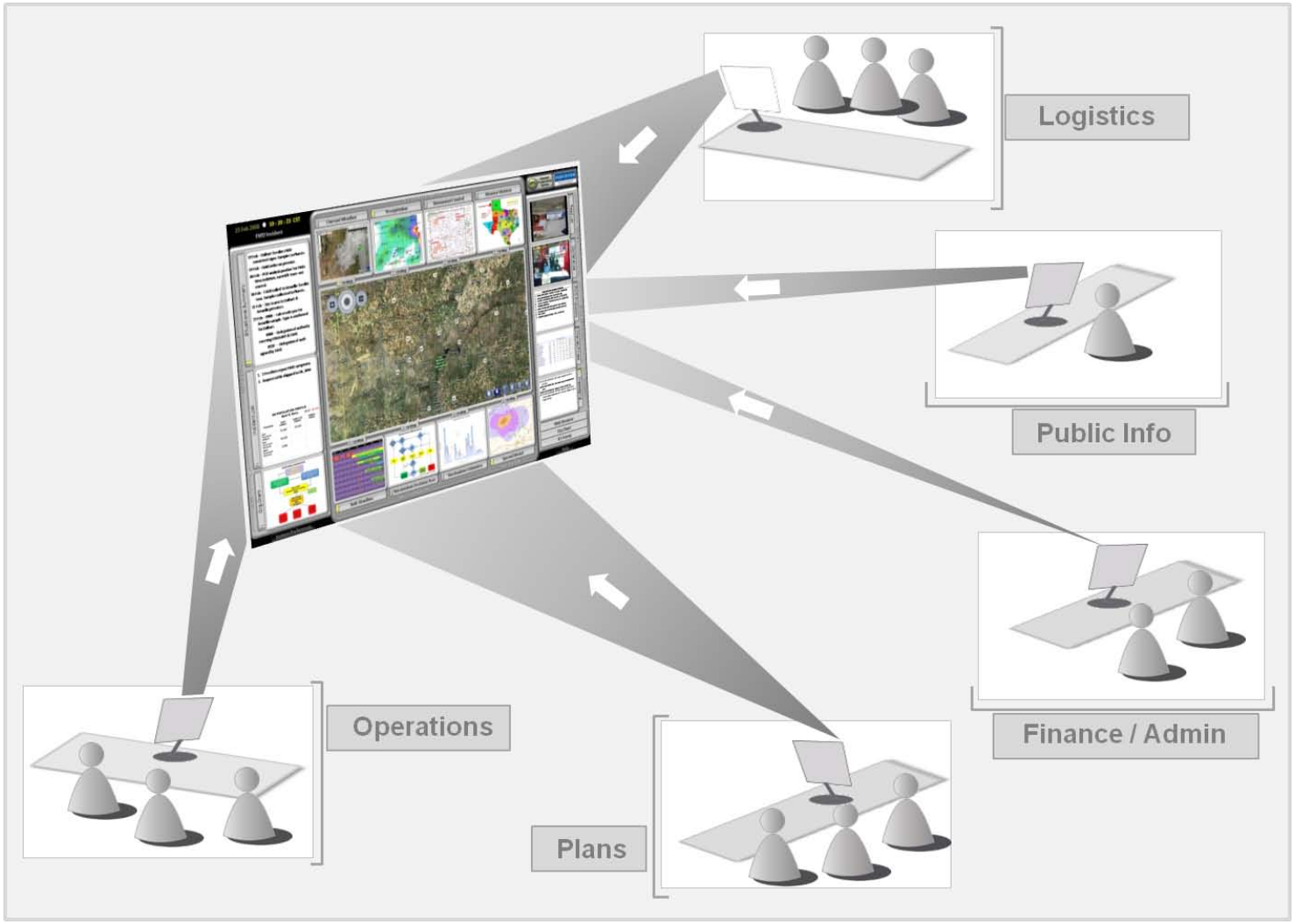
A Common Integrated Display



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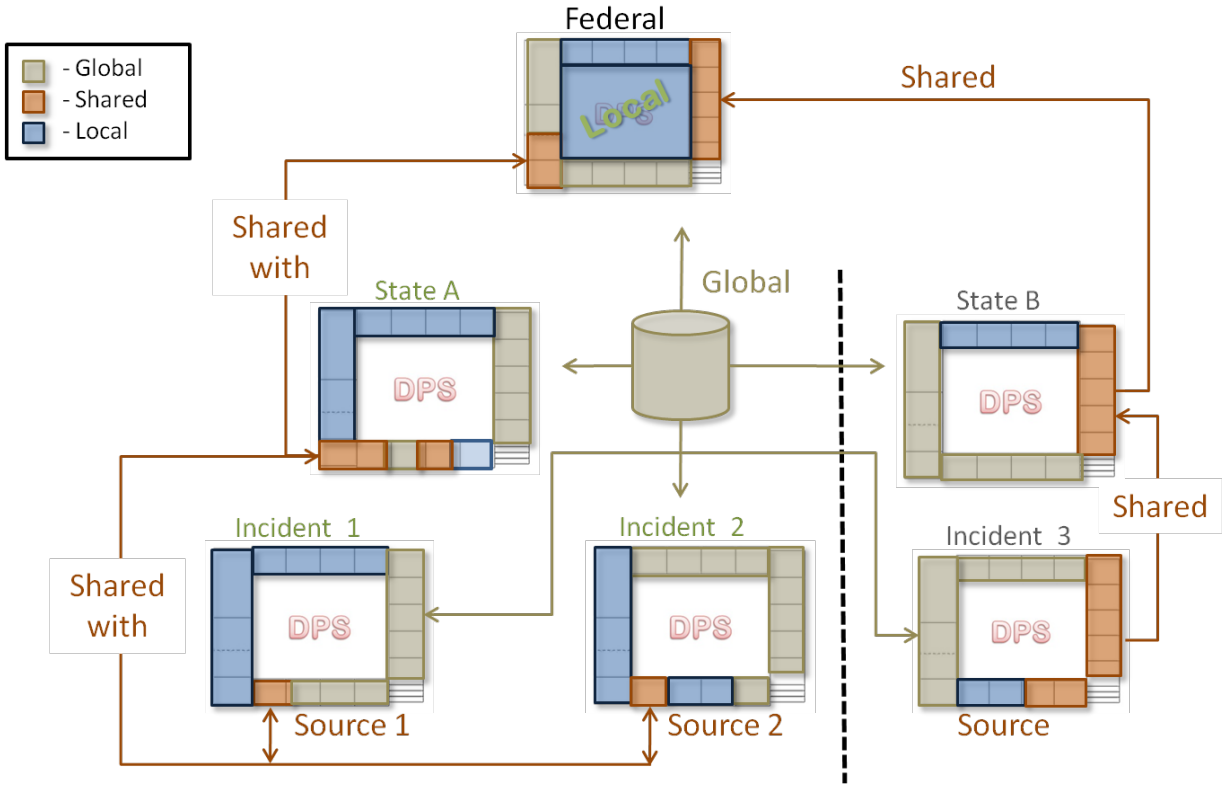
Dashboard Hierarchy



- Global Data – Data that is shared by all participants at all levels
- Shared Data – A subset of global data where only selected sites share data
- Local Data – Data that is locally displayed at a particular dashboard

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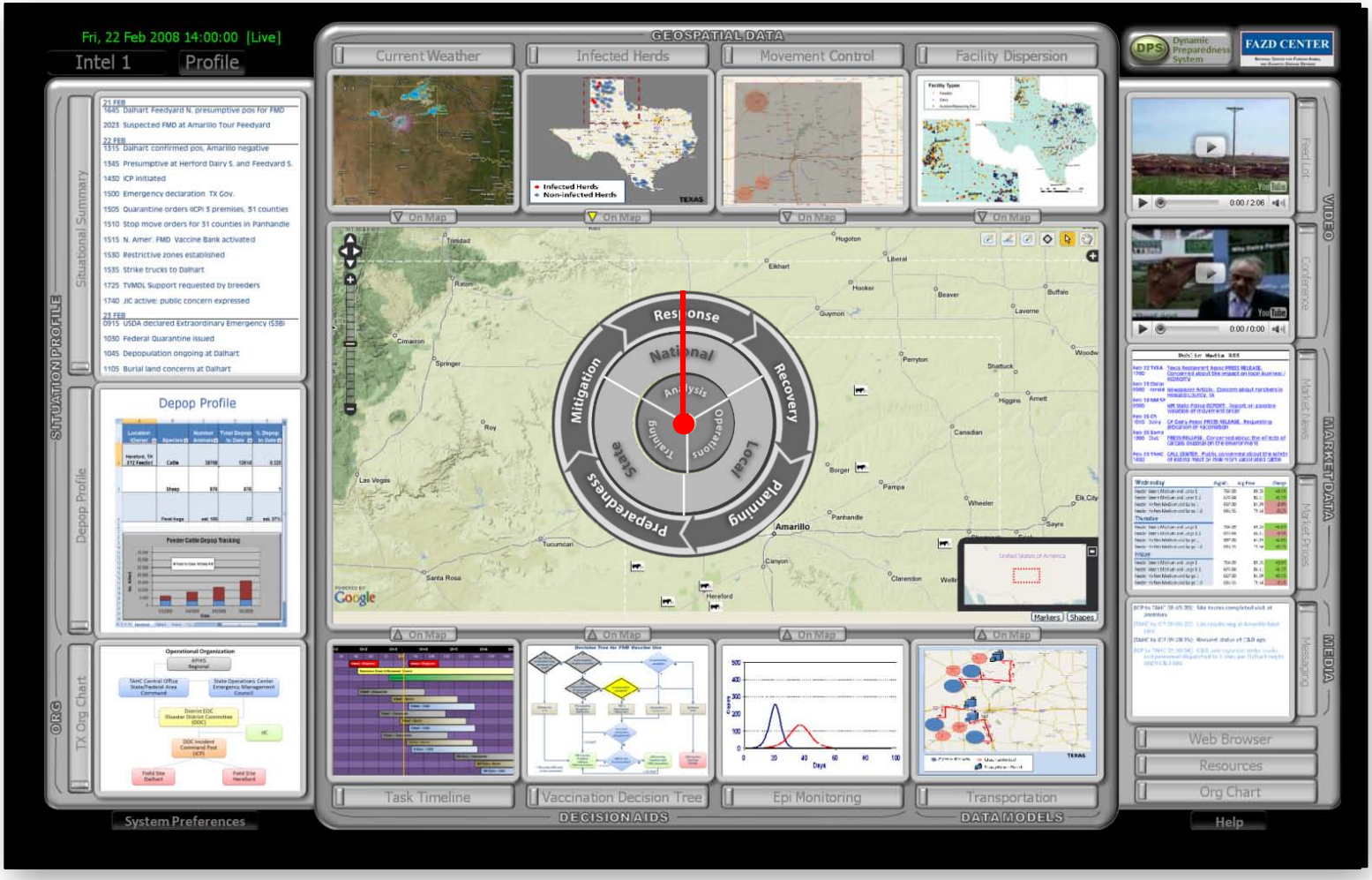
Dynamic Preparedness System (DPS)



State-Preparedness-Training

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Current Status

- The DPS is a prototype built on the Information Dashboard Framework (IDF).
- Current efforts are focused on increasing the overall functionality of the prototype.
- Consideration is underway for selecting a suitable testbed(s) for further evaluation.
- The first application of DPS and IDF is the Bio-surveillance Common Operating Picture (BCOP) for the DHS National Bio-surveillance Integration Center.