



Homeland Security



Geospatial Capabilities for Homeland Security

Brief for USTTI

DHS Geospatial Management Office



Homeland Security

Agenda

- GMO Overview
- GMO Activities
- Real World Use Cases
- Questions



Geospatial Management Office (GMO): Overview

Authorities

- Established by the Intelligence Reform and Terrorism Prevention act of 2004 TITLE VII, Subtitle B, Section 8201, HOMELAND SECURITY GEOSPATIAL INFORMATION
- Implemented through DHS Management Directive 4030

Structure

- Reports to the DHS Chief Information Officer
- Internal & external governance
 - Open Geospatial Consortium
 - Federal Geographic Data Committee
 - INCITS L3
 - Internal DHS Executive Steering Committees
- Liaisons with
 - DHS Science and Technology
 - Program Manager for Information Sharing Environment
 - National Protection and Programs Directorate
 - National Geospatial-Intelligence Agency

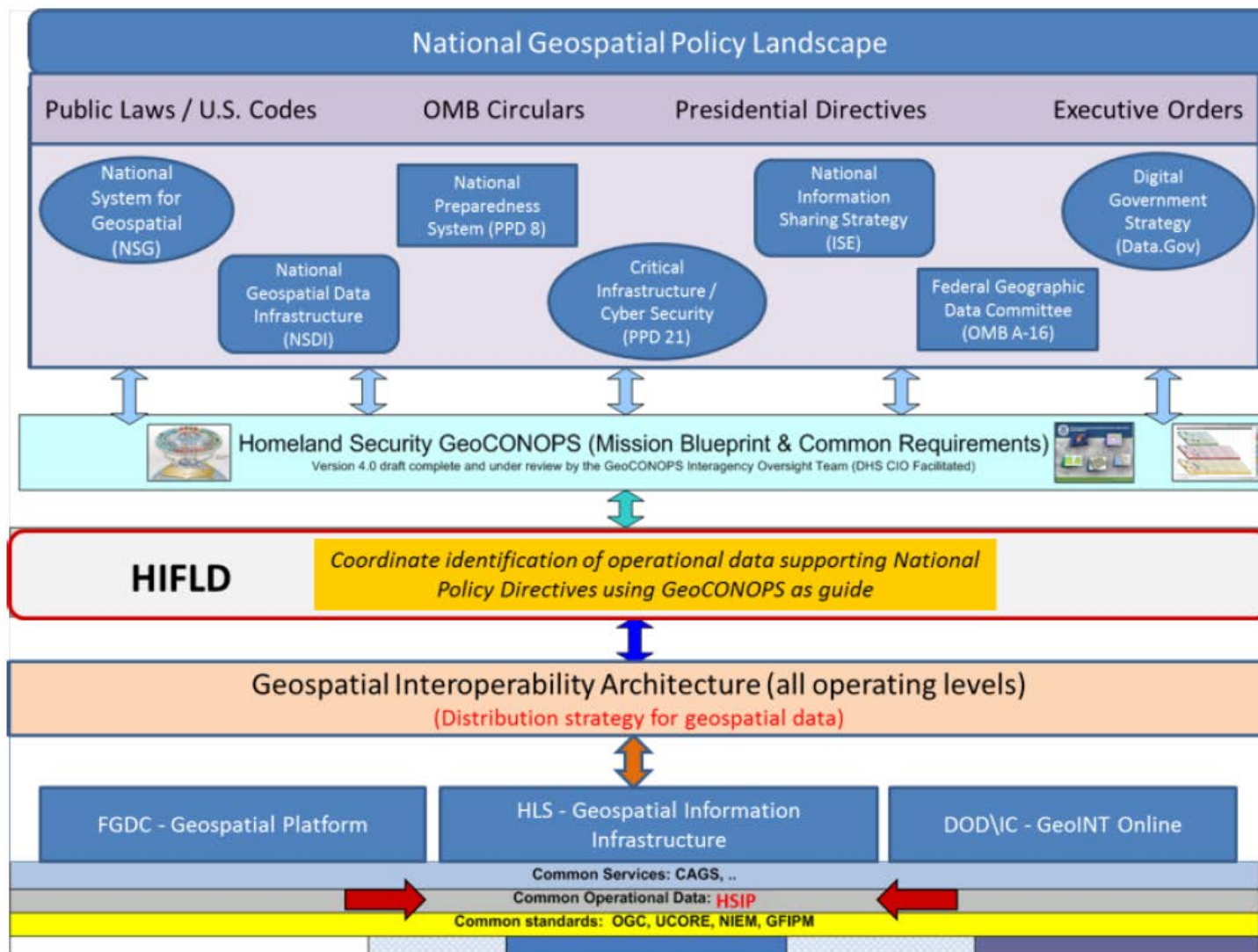


Activities to support Homeland Security

Area	Description	Outcomes
Coordination	Work with all mission partners to establish trusted / authoritative sources of geospatial data, assure interoperability, provide best practices, and mission coordination	<ul style="list-style-type: none"> • Homeland Security Geospatial Concept of Operations developed <ul style="list-style-type: none"> • Incorporated under PPD-8 National Preparedness framework • Supports Section 515 of the Homeland Security Act • Developing DHS unclassified capability on the Federal GeoPlatform • Working with the National System for Geospatial Intelligence, the Federal Geographic Data Committee and the White House Information Sharing Environment Office to define the architecture for CUI / SBU geospatial information sharing
Geospatial Data Provisioning	Provide access to common operating data and event / mission data to homeland security partners	<ul style="list-style-type: none"> • Developed agreed-on set of common operating data (COD) <ul style="list-style-type: none"> • Homeland Security Infrastructure Protection Gold data set • 450+ layers of information • Divested or consolidated other data investments to avoid costs of over \$10M per year since 2007 • Ongoing development of standards-based shared data services with mission partners • Incident Imagery service (May, 2012)
Shared Geospatial Infrastructure	Establish shared geospatial infrastructure that can be leveraged by homeland security mission partners	<ul style="list-style-type: none"> • DHS Geospatial Information Infrastructure established <ul style="list-style-type: none"> • Data services (top ten services have been called 3 million times in FY2012!!) • Geoanalytics • Visualization tools • Re-use of Homeland Security Information Network Identity and Access Management controls
Geospatial Software Provisioning	Establish enterprise license agreements for geospatial software to support rapid deployment for incident response and reduce costs	<ul style="list-style-type: none"> • Agreements in place with ESRI, Google, MS Bing Maps • Over \$30M in savings over GSA schedule since 2006



Coordination: GEOCONOPS



Coordination: GeoCONOPS

U.S. DEPARTMENT OF HOMELAND SECURITY

HOMELAND SECURITY GEOSPATIAL CONCEPT OF OPERATIONS
Coordinating Geospatial Support for the Homeland Security Mission

Login | Register

Search

HOME DATA HLS MISSIONS TOOLS BEST PRACTICES SEARCH COMMUNITY FORUM ABOUT

GeoCONOPS_Video_Short_Ve

WHAT IS THE GEOCONOPS?
HOW DO I USE THIS SITE?
WHO ARE THE SUPPORTING PARTNERS?

0:00 / 1:36 YouTube

FEATURED GEOSPATIAL CAPABILITIES

AUTHORITATIVE DATA



For the purpose of the GeoCONOPS, authoritative data classifications provide clarity beyond the frequent notion that an authoritative data source is simply the entity trusted because of a subjective belief that it is the "best" or "most accurate" source for a specific data theme.

BEST PRACTICES



The GeoCONOPS Best Practices highlight more than a dozen mature methods and innovative practices for geospatial management processes, analyses, data products, technology, and models that are addressing key emergency response needs at the national, regional, and field levels.

COMMUNITY FORUM



Join our discussion community!

HOME DATA HLS MISSIONS TOOLS BEST PRACTICES SEARCH COMMUNITY FORUM ABOUT GET CONNECTED SITE MAP



Coordination: GeoCONOPS

The screenshot shows the homepage of the Homeland Security Geospatial Concept of Operations (GeoCONOPS) website. At the top left is the DHS logo. The main header reads "HOMELAND SECURITY GEOSPATIAL CONCEPT OF OPERATIONS" with the subtitle "Coordinating Geospatial Support for the Homeland Security Mission". On the right, there are links for "Login" and "Register", and a search bar with a "Search" button. Below the header is a navigation menu with tabs for "HOME", "DATA", "HLS MISSIONS", "TOOLS", "BEST PRACTICES", "SEARCH", "COMMUNITY FORUM", and "ABOUT". The "HLS MISSIONS" tab is highlighted with a red box. Below the navigation is a large banner image of a disaster scene with the text "GEOSPATIAL CONCEPT OF OPERATIONS". On the left side, there is a sidebar menu with two main sections: "HLS MISSIONS" and "DISASTER". Under "HLS MISSIONS", there are links for "GEOSPATIAL REQUIREMENTS AND CAPABILITIES", "PPD-8 MISSION AREAS", "DISASTER OPERATIONS", "CATASTROPHIC DISASTERS", and "APPENDIX B". Under "DISASTER", there are links for "OVERVIEW", "DHS NATIONAL OPERATIONS CENTER", "DHS NATIONAL INFRASTRUCTURE COORDINATING CENTER", and "FEMA NATIONAL RESPONSE COORDINATION CENTER". The "DISASTER OPERATIONS" and "FEMA NATIONAL RESPONSE COORDINATION CENTER" links are highlighted with red boxes. On the right side, the main content area displays the "FEMA NATIONAL RESPONSE COORDINATION CENTER" section, including an "Overview" and "Roles and Responsibilities" section. A text box on the right side of the page contains the text: "GeoCONOPS content is driven by the GeoCONOPS taxonomy structure. Users can navigate content by HLS Mission, keyword/tags or through menu navigation." Two black arrows point from this text box to the "HLS MISSIONS" navigation tab and the "FEMA NATIONAL RESPONSE COORDINATION CENTER" link in the sidebar.

GeoCONOPS content is driven by the GeoCONOPS taxonomy structure. Users can navigate content by HLS Mission, keyword/tags or through menu navigation.

Coordination: GeoCONOPS

AUTHORITATIVE DATA MATRIX

DATA MATRIX

- DATA MATRIX GRID
- INTERACTIVE DATA MATRIX

DATA MATRIX

CATEGORY/SUBCATEGORY

- Agriculture/Food
- Animal Health Surveillance
- Mobile Food
- Processing/Packaging/Production
- Product Distribution
- Product Storage
- Product Transportation
- Supply
- Support Facilities

AGENCIES/POC

- AAMS ADAMS
- AGI
- AHA
- American Burned Association
- AMS
- ARC
- ASDWA
- AWWA
- BOEMRE

RESTRICTIONS **THEME** **SOURCE**

PPD8: - Any -
ESF: - Any -

Apply **Reset**

CATEGORY	AGENCY	URL	RESPONSE	ESF
Animal Health Surveillance	USDA	http://www.apis.usda.gov/vs/nahss/index.htm	Prevention, Response	ESF #5, ESF #11
	Dun & Bradstreet, FDA	https://gii.dhs.gov/arcrest/services/	Response, Recovery	ESF #5, ESF #11
	DOI, NIFC		Response, Recovery	ESF #4, ESF #5, ESF #6, ESF #9
	DOI, NIFC		Response, Recovery	ESF #4, ESF #5, ESF #6
	DOI, NIFC		Response, Recovery	ESF #4, ESF #5, ESF #6
	DOI, NIFC		Response, Recovery	ESF #4, ESF #5, ESF #6

Mobile Food

Mobile Food Unit - Base

Mobile Food Unit - Mobilized

Mobile Food Unit - Mobilized Locations

Mobile Food Unit - Base

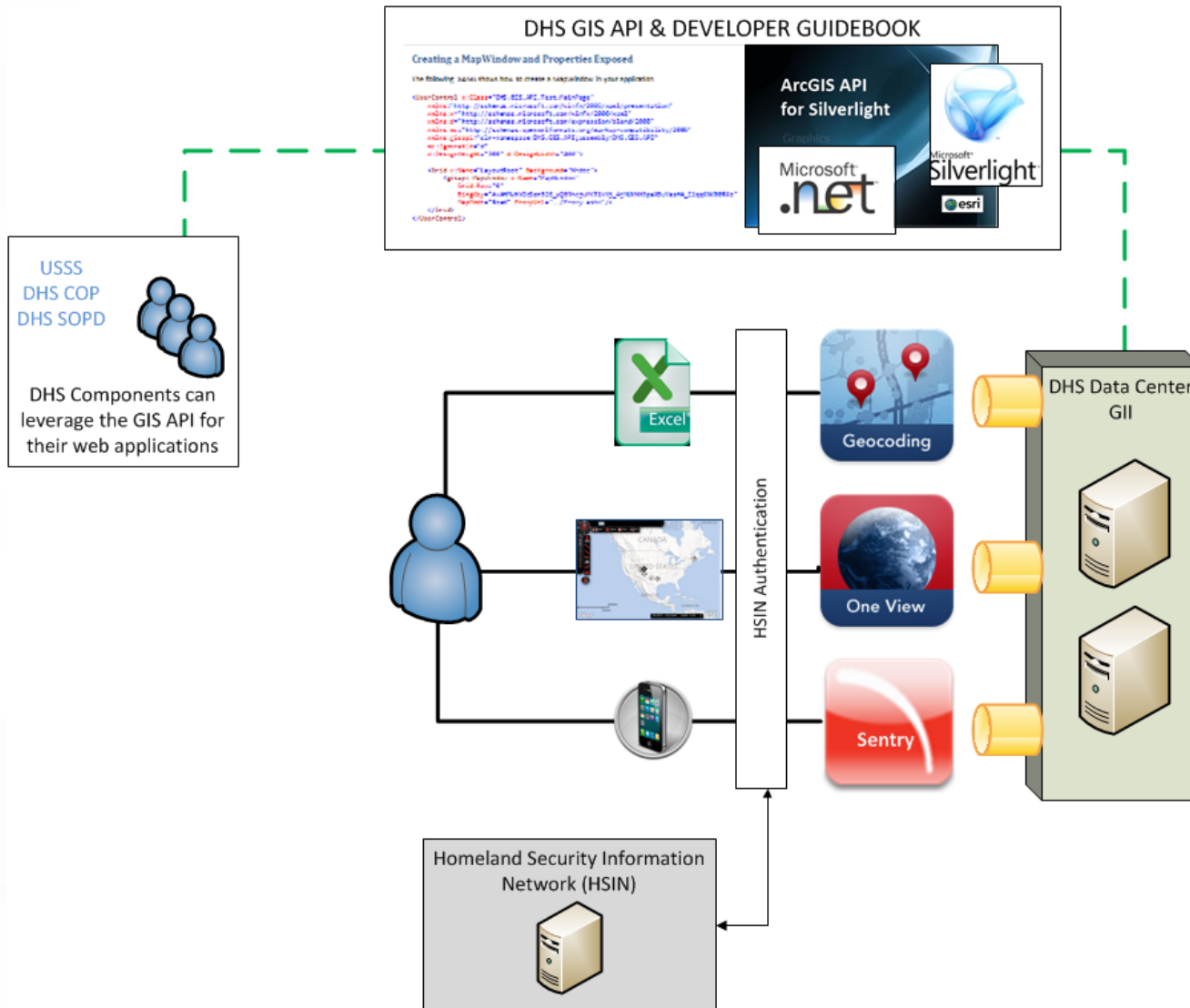
Mobile Food Unit - Mobilized

User can search/filter for data in addition to content through the Data Matrix.

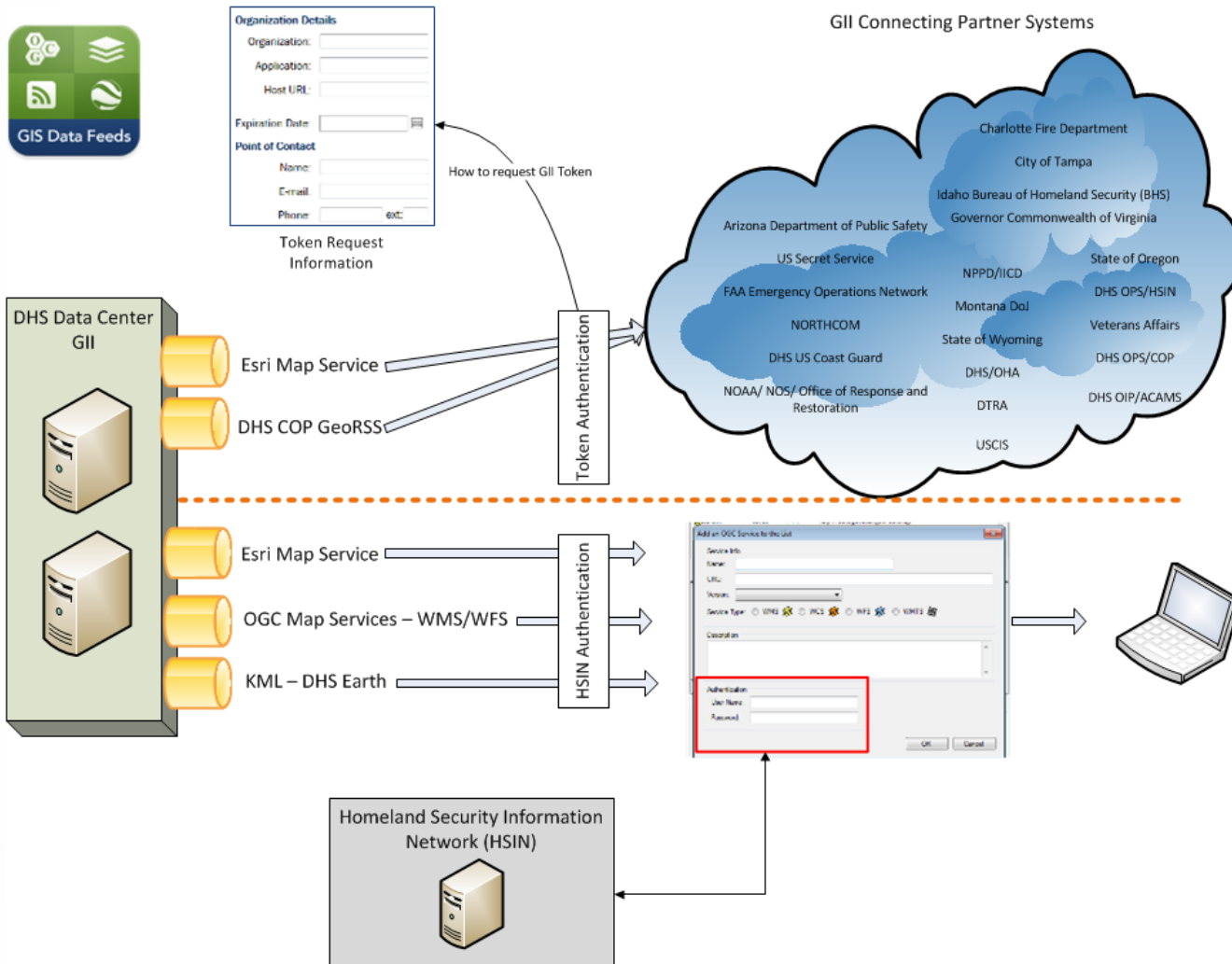
- Agency
- ESF
- PPD8 Mission
- Data Category



Geospatial Data Provisioning: GII



Geospatial Data Provisioning: GII



Geospatial Data Provisioning: GII

The screenshot displays the Geospatial Information Infrastructure (GII) web application interface. The browser shows the URL <https://gi.dhs.gov>. The page features the Homeland Security logo and navigation tabs for Home, OneView, GII Services, and DHS Earth. A "Welcome" message is displayed. A "File Download" dialog box is open, showing a file named "dsearth.html" from "gi.dhs.gov". A "Google Earth Pro" window is open, displaying a 3D map of the United States with a red diamond overlay. A "Composite Map - ArcMap" window is open, showing a 2D map of the United States with a red diamond overlay. A "Mozilla Firefox" window is open, displaying an XML document with metadata for a WMS service. A "Add WMS Server" dialog box is open, showing the URL https://gi.dhs.gov/arcgis/HSIP2011_WMSEmergencyServices/MapServer/WMSServer and a "Get Layers" button.



Shared Geospatial Infrastructure: Delivery Architecture

Key Points:

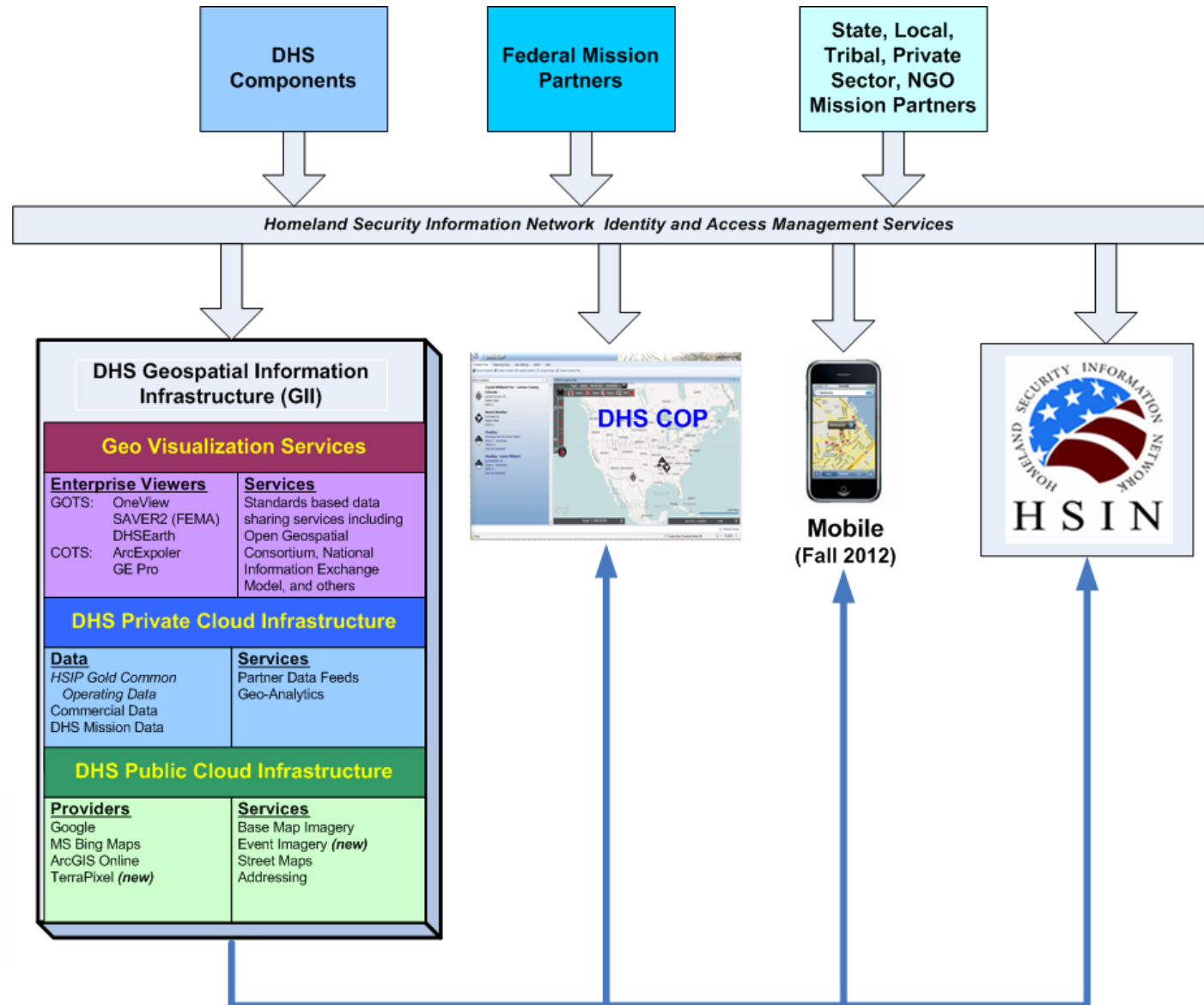
The GII is physically located in the DHS Data Centers

Accessible through the HSIN identity service

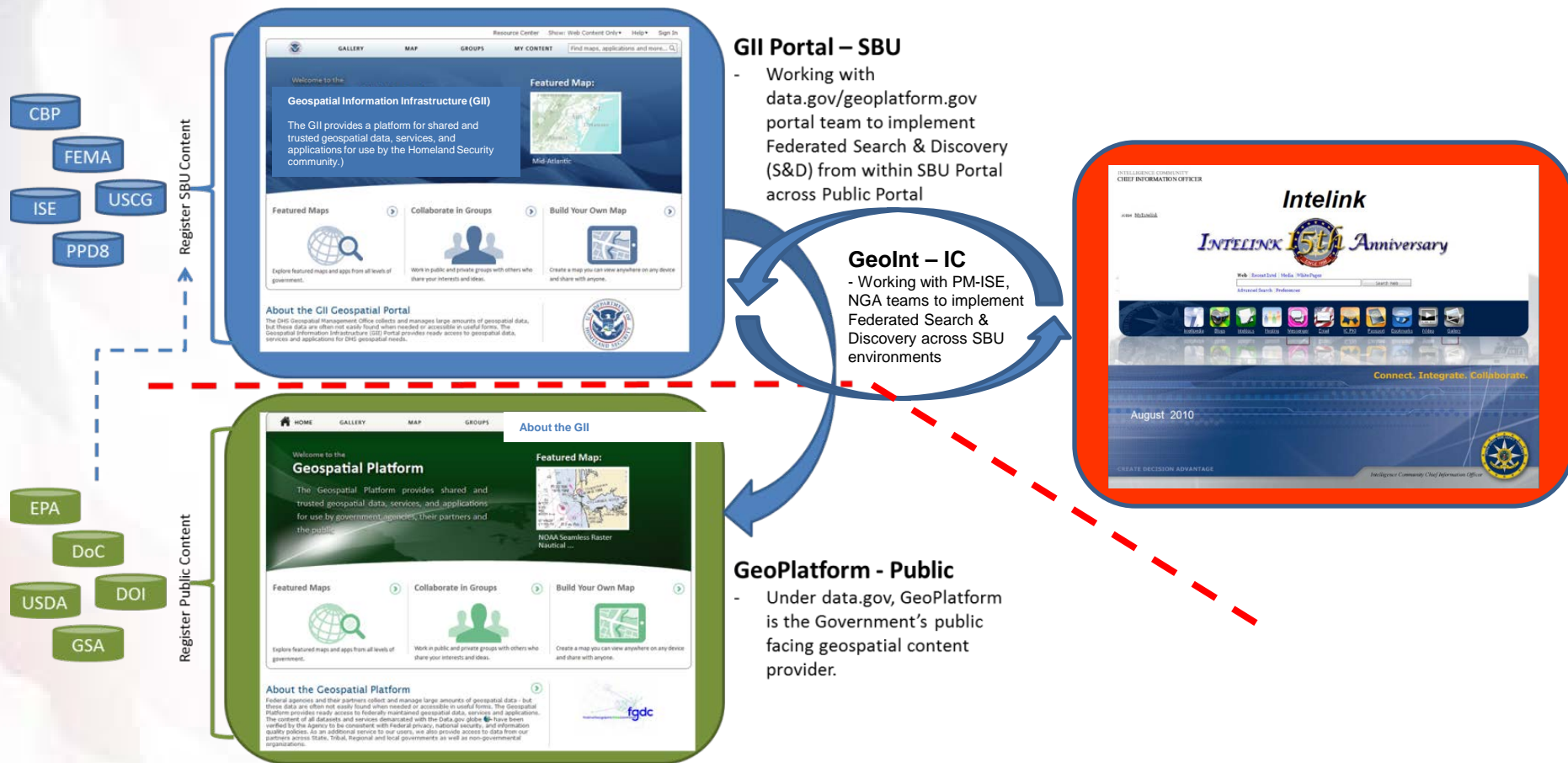
Provides viewing tools, data and analytical services

Supports the DHS COP and HSIN

Supports User Defined Operating Pictures (UDOP) across the Homeland Security Enterprise



Shared Geospatial Infrastructure: Interoperability

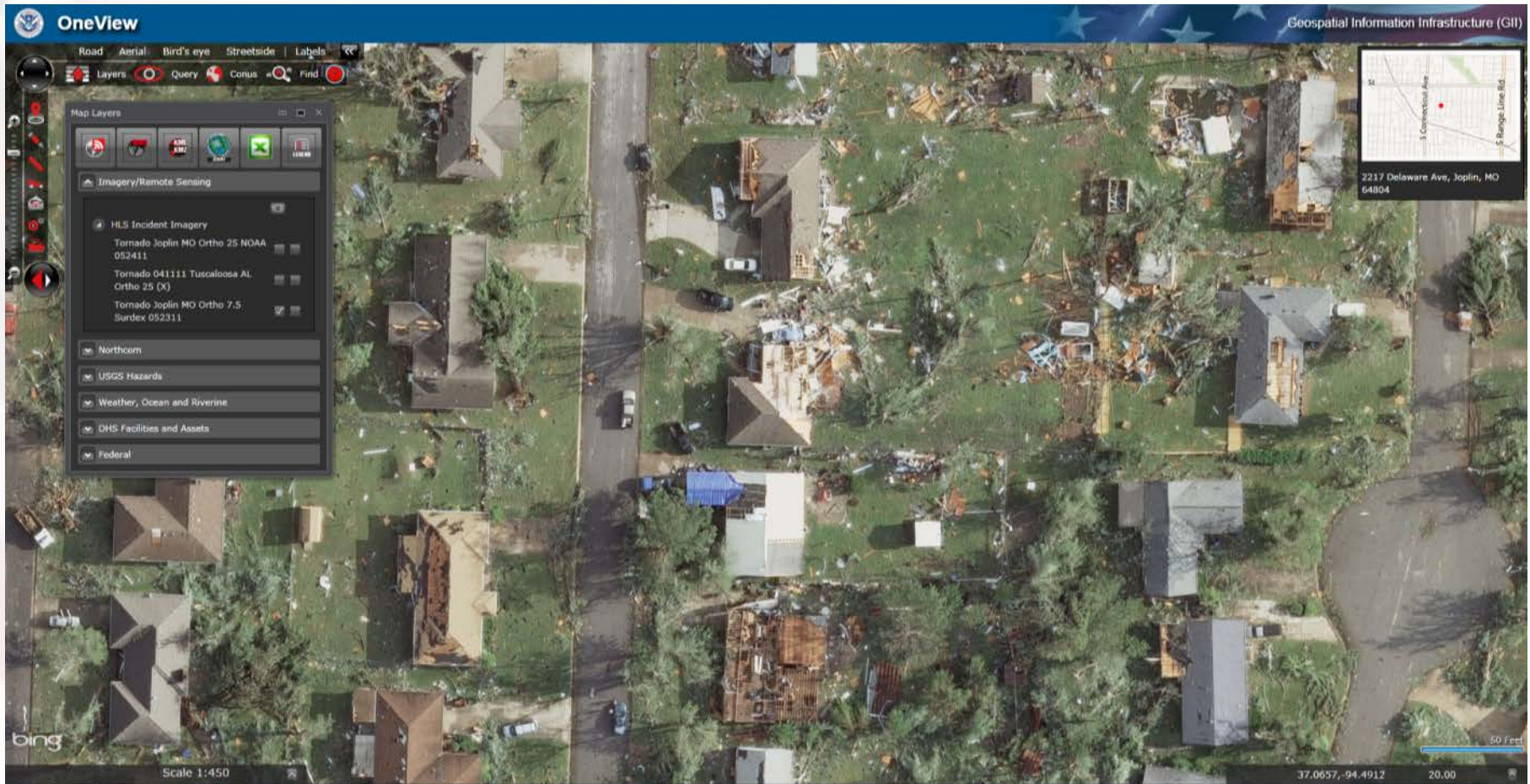


Shared Geospatial Infrastructure: GII and APIs

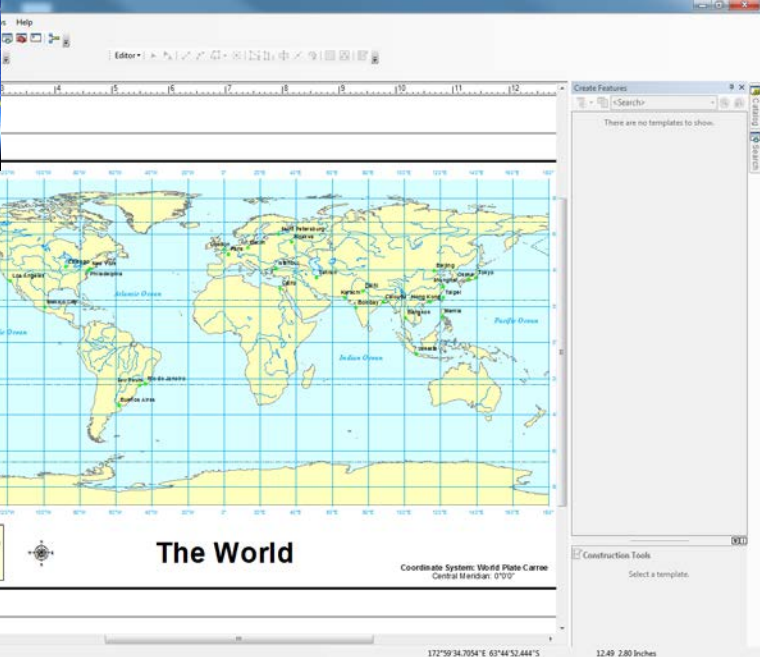
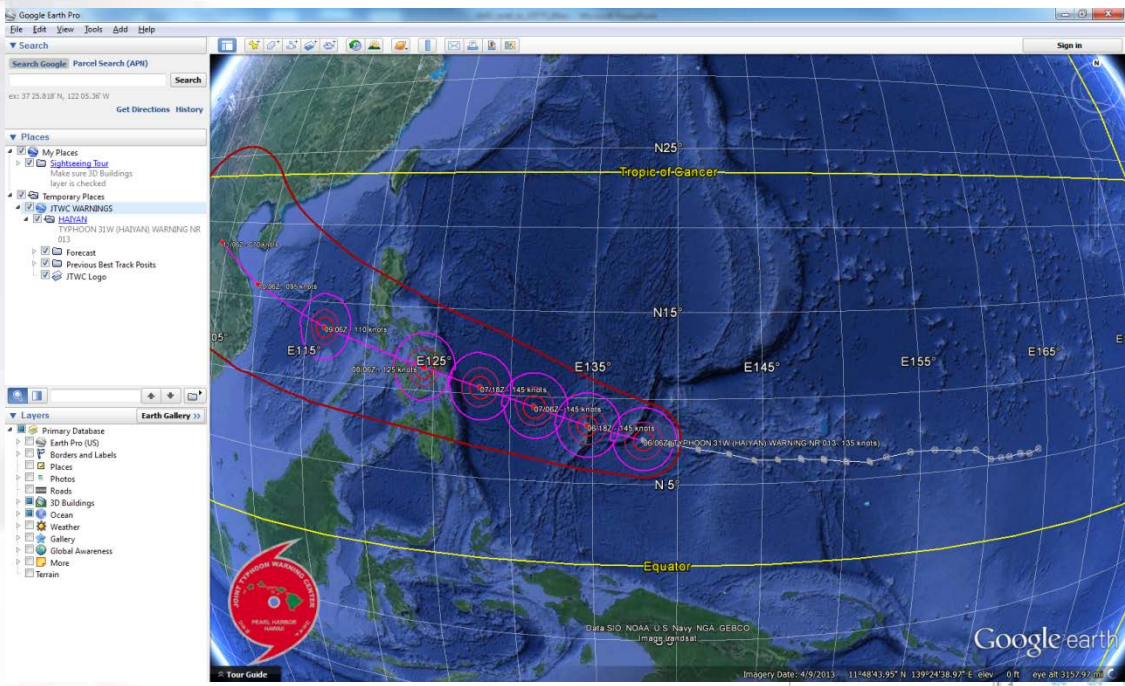
The screenshot displays the DHS OneView web application in a Windows Internet Explorer browser. The browser's address bar shows the URL <https://oii.dhs.gov/OneView/>. The application interface features a top navigation bar with the DHS logo and the text "OneView" and "Geospatial Information Infrastructure (GII)". Below this is a toolbar with various map controls: "Road", "Aerial", "Bird's eye", and "Streetside" views; "Layers", "Query", "Conus", and "Find" buttons; and a search input field. The main map area shows a satellite-style map of North America, with state and provincial boundaries overlaid. Labels for "CANADA", "UNITED STATES", and "MEXICO" are prominently displayed across their respective regions. Major cities like Ottawa, Washington, Mexico City, and Havana are marked. The map includes geographical features like Hudson Bay, Lake Superior, and the Gulf of Mexico. A scale bar at the bottom indicates "Scale 1:29139589" and "1000 Miles". The status bar at the very bottom shows coordinates "60.1330, -54.4160", a zoom level of "4.00", and a "Local intranet" connection.



Shared Geospatial Infrastructure: Remote Sensing



Software Provisioning: ESRI ArcGIS, Google Earth



Real World Use Cases: Situational Awareness

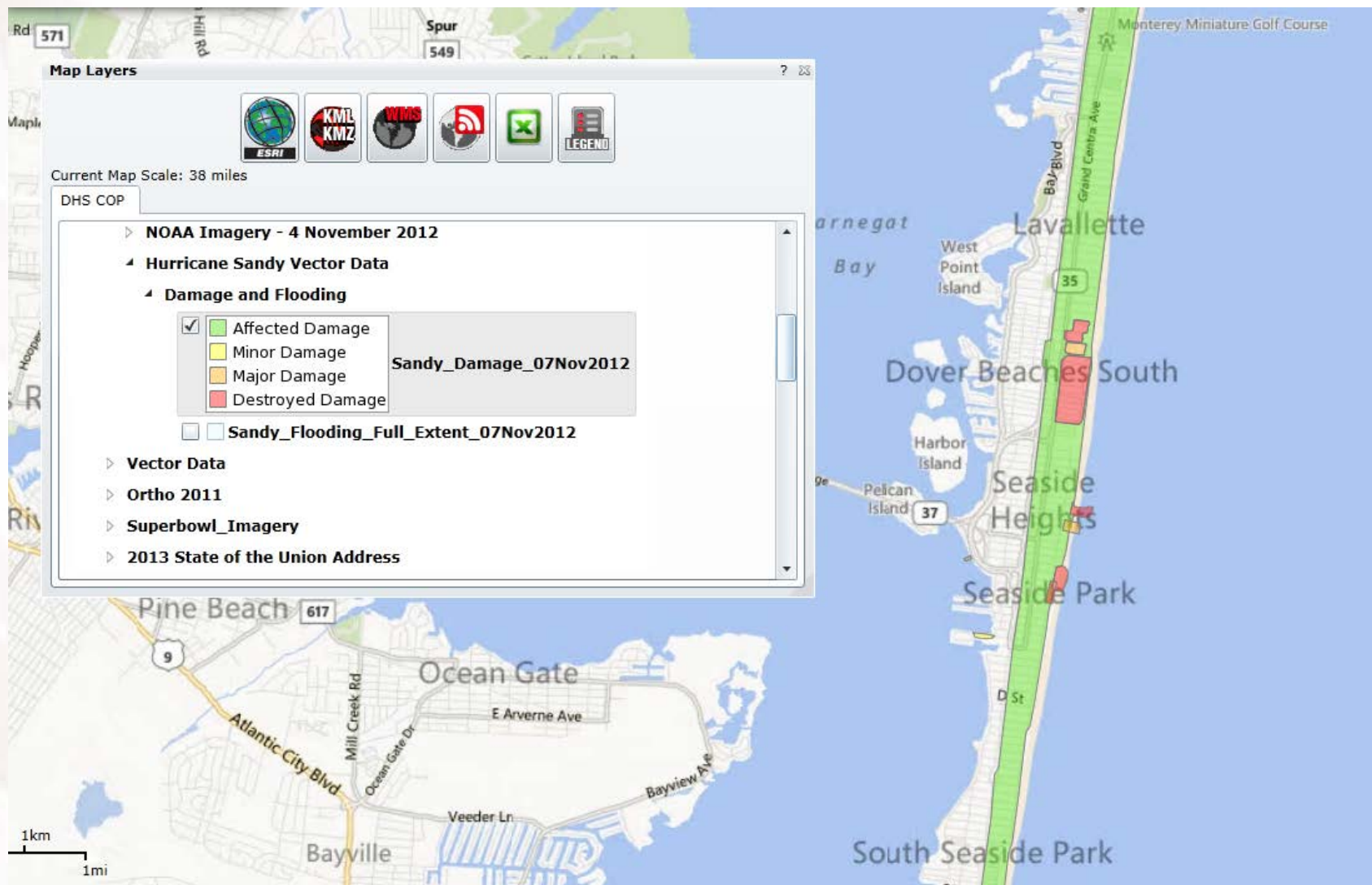
The screenshot displays the DHS COP (Department of Homeland Security Crisis Operations Platform) interface. At the top, the header includes the DHS logo, the text "DHS COP", and a "Logout russell.dash1" link. Below the header is a navigation bar with "Incident Tools", "User Settings", and "Help". A secondary bar shows "Active Incidents" and "Archived Incidents".

The main area is divided into two panes. On the left is a list of "Active Incidents" with the following entries:

- Dale Fire**
Shasta County, CA
Monitored
1256-12
Buttons: Form Image Map
- Power Outages**
Southeastern MI
Monitored
1249-12
Buttons: Form Image Map
- Fontenelle Fire**
Bridger-Teton National Forest, WY
Monitored
1245-12
Buttons: Form Image Map
- Potential Flooding**
Catron County, NM
Monitored
1244-12
- Quail Fire**
Alpine, UT
Monitored
1242-12
Buttons: Form Image Map
- Squirrel Creek Fire**
Albany County, WY
Monitored

On the right is the "CONUS Incidents Map" showing a map of the United States with various incident markers (flame icons for fires, lightbulb for power outages, and water for flooding). The map includes navigation controls (compass, zoom, pan), a toolbar with "Layers", "Query", "Conus", and "Find", and a scale of 1:14291202. The map shows several fire incidents in the western US and power outages in the eastern US.

Real World Use Cases: Damage Assessments



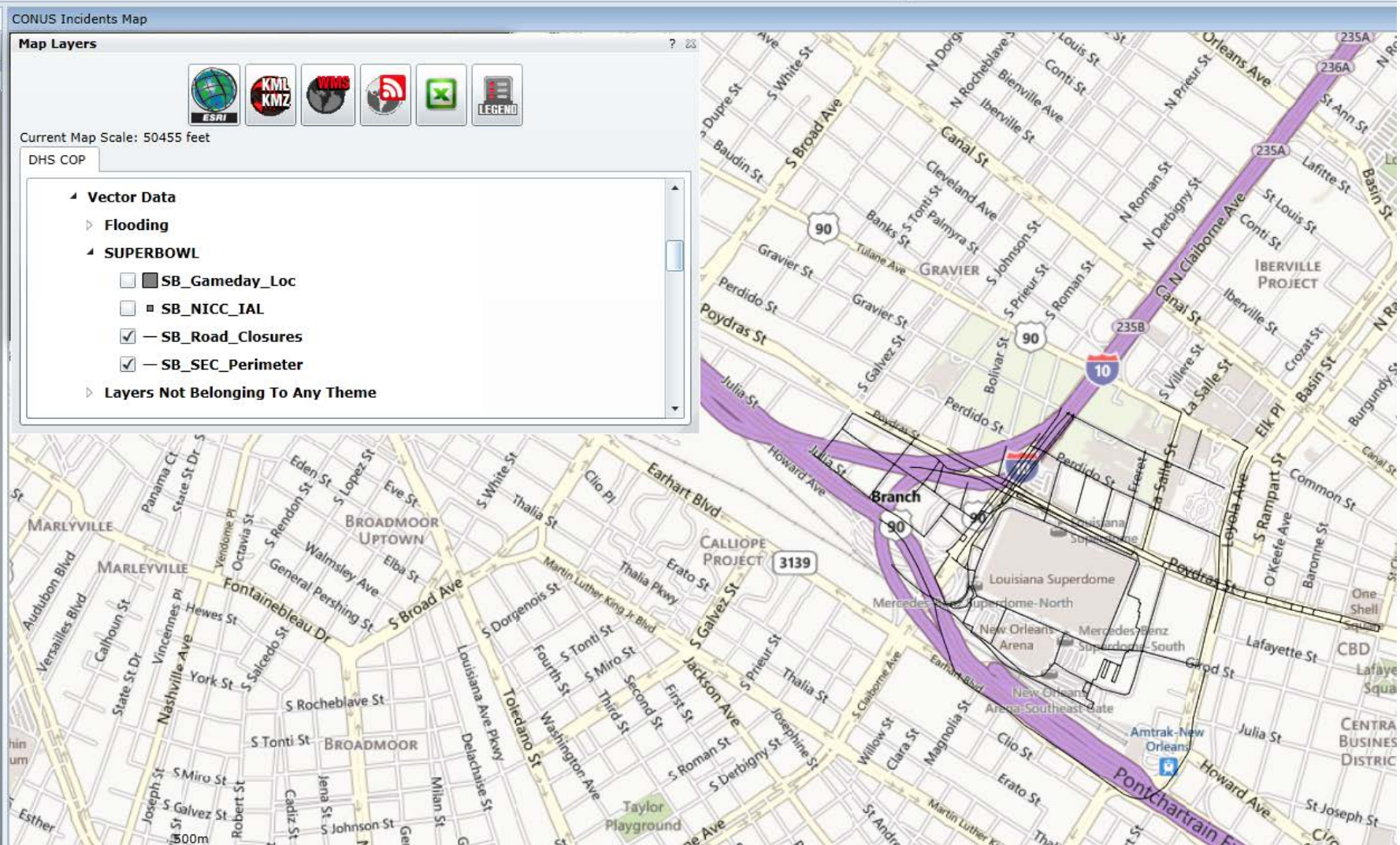
Real World Use Cases: Disaster Response

The screenshot displays the Google Earth Pro application window. The main map area shows a 3D view of an airport and surrounding fields. Numerous oblique flight photos are overlaid on the map, each labeled with a filename such as "Oblique West_Texas_Second_Flight_001.jpg" through "Oblique West_Texas_Second_Flight_009.jpg". The interface includes a search bar at the top left, a "Places" panel on the left listing various locations and photos, and a "Layers" panel at the bottom left. The status bar at the bottom right shows the "Imagery Date: 10/18/2012" and coordinates "31°48'38.32\" N 97°04'22.92\" W".

Real World Use Cases: Disaster Response

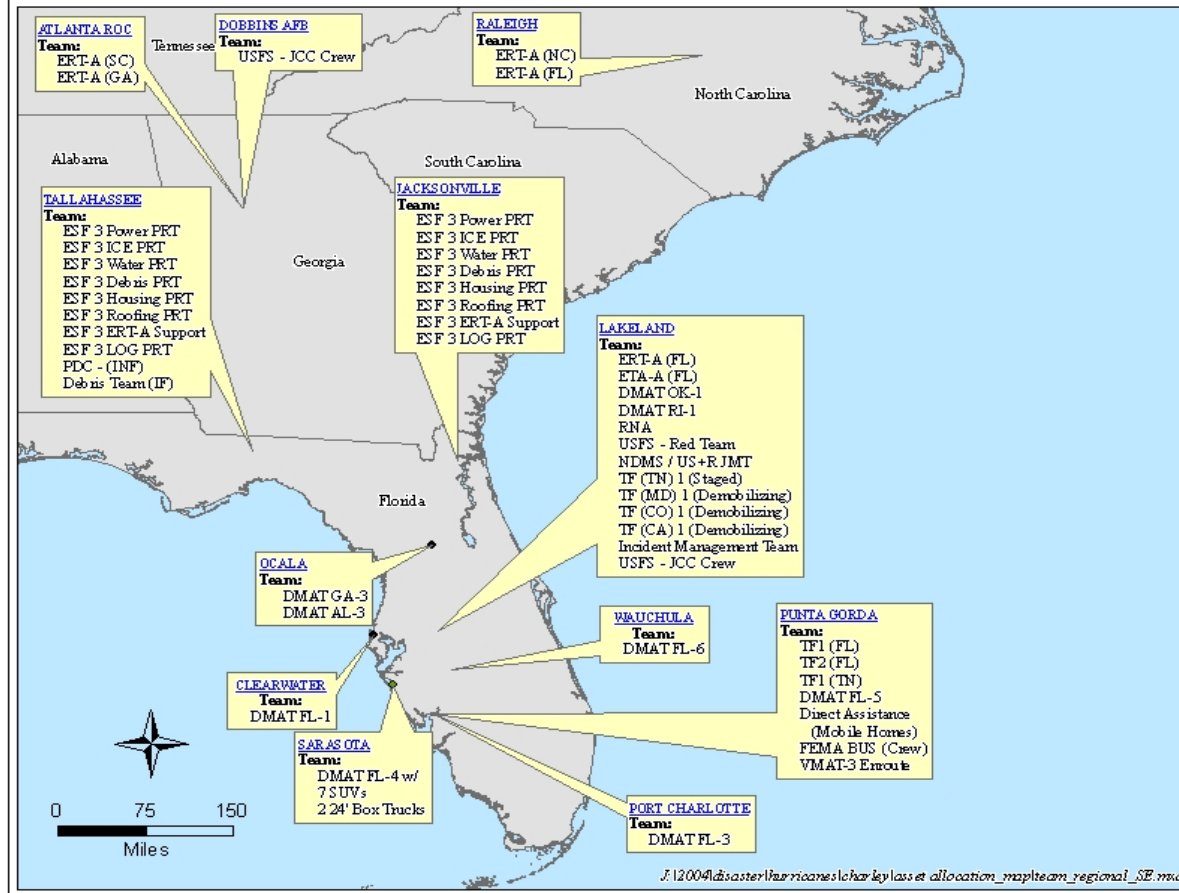


Real World Use Cases: Event Planning



Real World Use Cases: Event Planning

FEMA-1539-DR, Florida Southeast Team Tracking Status As of 8/17/2004 02:29:00 EDT



Location Map



OTHER PERSONNEL LOCATIONS

- Team:**
- 1 - FL State EOC
 - 7 - R4 ROC
 - Region VIII ERT-A: Georgia
 - Region VI ERT-A: North Carolina
 - Region X ERT-A: South Carolina
 - Region IV: Fully engaged
 - 1 Incident Management Team
(base camp coordination)

Data Source: Information Planning
ESF-5 Region IV and ESF-4



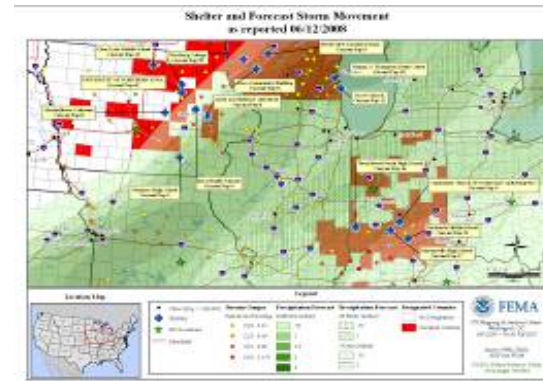
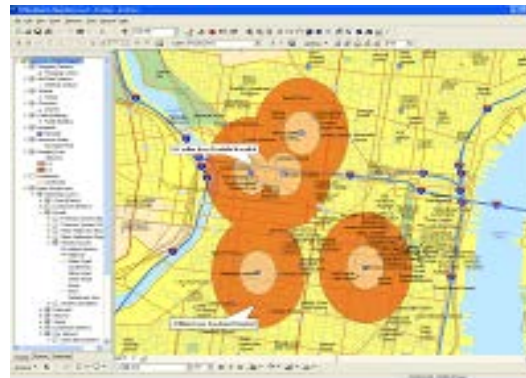
ITS Mapping and Analysis Center
Washington, D.C.
8/17/2004 - 04:30 EDT



Summary

- **GIS is essential to Emergency Management business, functions, and missions from response and recovery to mitigation and preparedness.**
 - GIS is the cornerstone of situational awareness.
 - GIS provides the foundation for disaster modeling.
 - GIS technology is critical to locating, sizing, and understanding an emergency and/or disaster
 - GIS provides the capability to evaluate the consequences of a disaster.
- **Geospatial capabilities enhance situational aware and enable core missions**
 - To ensure the right data are available
 - To ensure the right tools are used
 - To ensure the right information is communicated, consistently

Proximity Analysis



Shelter Management

Questions

Contact:

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