

# Office of Infrastructure Protection

IP Remote Sensing

May 26, 2010



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# IP Remote Sensing: Mission & Scope

- **Mission**

Provide IP with an understanding of, and access to, Federal interagency remote sensing resources to enable infrastructure protection planning, response, and recovery activities

- **Scope**

Develop and maintain partnerships and collaborative strategies, plans, and approaches with Federal remote sensing partners to support CIKR remote sensing needs

Remote Sensing allows IP to take proactive steps to meet our situational awareness needs



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# IP Remote Sensing: Goals

## ▪ Goals

- Enable the development of infrastructure-related, pre- and post-event imagery analysis products for incident response activities
- Provide expertise to the IP A/S and other DHS decision-makers
- Leverage relationships across interagency networks to identify and access resources to meet the needs of IP, State, local, and private sector stakeholders
- Build IP's remote sensing knowledge base and improve awareness of remote sensing capabilities in support of critical infrastructure protection



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# IP Remote Sensing: Past and Present

- **2008: Hurricanes Gustav and Ike highlighted the need for IP remote sensing coordination within the Federal community**
  - Successful coordination with Federal partners (EPA, NOAA, CBP, FEMA-NRCC) via the JFO and IP-IMC to enable geospatial production in support of CIKR focused recovery and restoration operations
  - A/S directed the establishment of a remote sensing capability within IP, under the direction of IICD in October 2008
- **2009: Developed first IP Remote Sensing CONOPS and built critical foundation with DHS I&A and NGA**
- **2010: Actively building and sustaining partnerships, capabilities, and influencing Federal interagency remote sensing policy**
  - Access to open imagery sources, the ability to task, collect, and rapidly ingest remote sensing data, and provide imagery-based production to partners and decision-makers for situational awareness and incident-response support
  - Develop processes and documentation, for both internal use and within DHS
  - IP (IICD) represents NPPD for all remote sensing activity



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# IP Remote Sensing: DHS Level Activities

- **DHS Geospatial Management Office (GMO)**

- DHS Geospatial Concept of Operations (GeoCONOPS)
- Coordinating requirements for a potential DHS remote sensing contract

- **DHS Intelligence and Analysis (I&A)**

- Manages the DHS Remote Sensing Board
- Leads the Federal Interagency Remote Sensing Coordination Cell (IRSCC)
- Developed the DHS Intelligence , Surveillance, Reconnaissance (ISR) Playbook
- IP responsible for coordinating all ISR/Remote Sensing related activity with I&A, to include submitting requests for remote sensing collection

- **DHS Science and Technology (S&T)**

- S&T Special Programs
- Interagency Modeling Atmospheric Advisory Center (IMAAC)



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# IP Remote Sensing: Documentation

## ▪ **Documentation of Policies and Process**

- Formalize the IP Remote Sensing Concept of Operations (CONOPS)
  - Includes processes, partnerships, etc
- Document Process for Steady State and Contingency Response Support
- Assist with the development of IRSCC CONOPS Phase II
- Continue participation in DHS GeoCONOPS development
- Collaborate with GMO and IDMB
  - Future of remote sensing collection and data management
  - Cataloging data sources



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# IP Remote Sensing: Partnerships

Civil Air Patrol (CAP)

U.S. Air Force (USAF)

Department of Agriculture (USDA)

National Oceanic and Atmospheric Administration (NOAA)

National Guard Bureau (NGB)

Environmental Protection Agency (EPA)

National Geospatial-Intelligence Agency (NGA)

U.S. Geological Survey (USGS)

DHS Components:

Federal Emergency Management Agency (FEMA)

Office of Operations Coordination and Planning (OPS)

Customs and Border Protection (CBP)

U.S. Coast Guard (USCG)

Intelligence and Analysis (I&A)

Geospatial Management Office (GMO)

Office of Infrastructure Protection (IP)



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# IP Remote Sensing: Partnerships

## Federal Interagency Remote Sensing Coordination Cell (IRSCC)

- The IRSCC enables Federal remote sensing groups to coordinate requirements, collect, and disseminate imagery in support of various missions
  - Comprised of 16 Federal departments and agencies
  - Phases of Development
    - CONOPS Phase I – Stafford Act Declarations
    - CONOPS Phase II – Steady State
- IICD Remote Sensing Team serves as the NPPD and IP representative to the IRSCC EXCOM and the WG
  - IRSCC Executive Committee (EXCOM) ensures oversight of the IRSCC and the working group and provides IRSCC policy guidance, direction, and effectiveness
  - IRSCC Working Group (WG) coordinates, develops, and implements, IRSCC policies, procedures, and deliberates operational remote sensing matters

*IRSCC is managed by DHS I&A, but activates during Phase I at the discretion of FEMA NRCC*



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# IP Remote Sensing: Partnerships

## ▪ Environmental Protection Agency (EPA)

- Airborne Spectral Photometric Environmental Collection Technology (ASPECT)
  - Partnership for the tasking, collection, and dissemination of remotely sensed data and imagery as related to critical infrastructure protection
  - Memorandum of Understanding (MOU) and Standard Operating Procedure (SOP) in final stages
  - Steady state, baseline, and incident-driven collections



## ▪ U.S. Army Corps of Engineers (USACE)

- Developed a Pre-Scripted Mission Assignment (PSMA) with USACE Army Geospatial Center (AGC) to implement technical assistance with rapid infrastructure-related pre and post imagery analysis
  - SOP in final stages of development; need FEMA final approval
  - Stafford Act based support



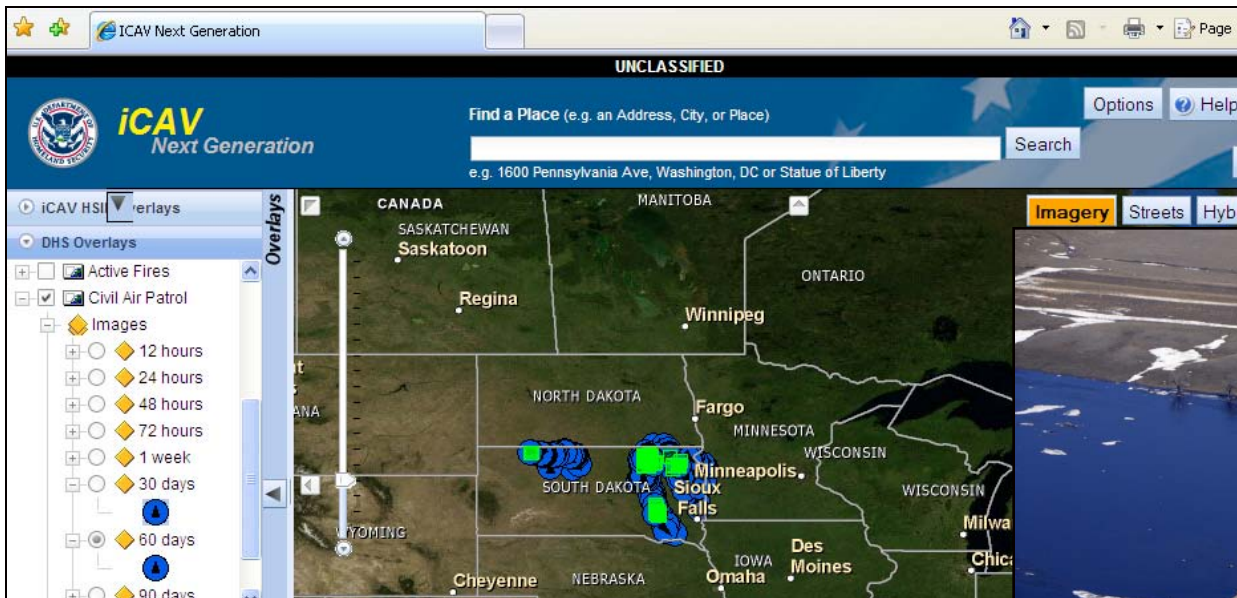
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Photo Courtesy of EPA ASPECT Team

# IP Remote Sensing: Partnerships

- **U.S. Civil Air Patrol (CAP)**

- ARGUS/ARCHER Program
- Near real-time remotely sensed data feeds into iCAV
- North Central Region currently available, working to expand



*2010 Midwest Flooding  
St. James River, South Dakota*



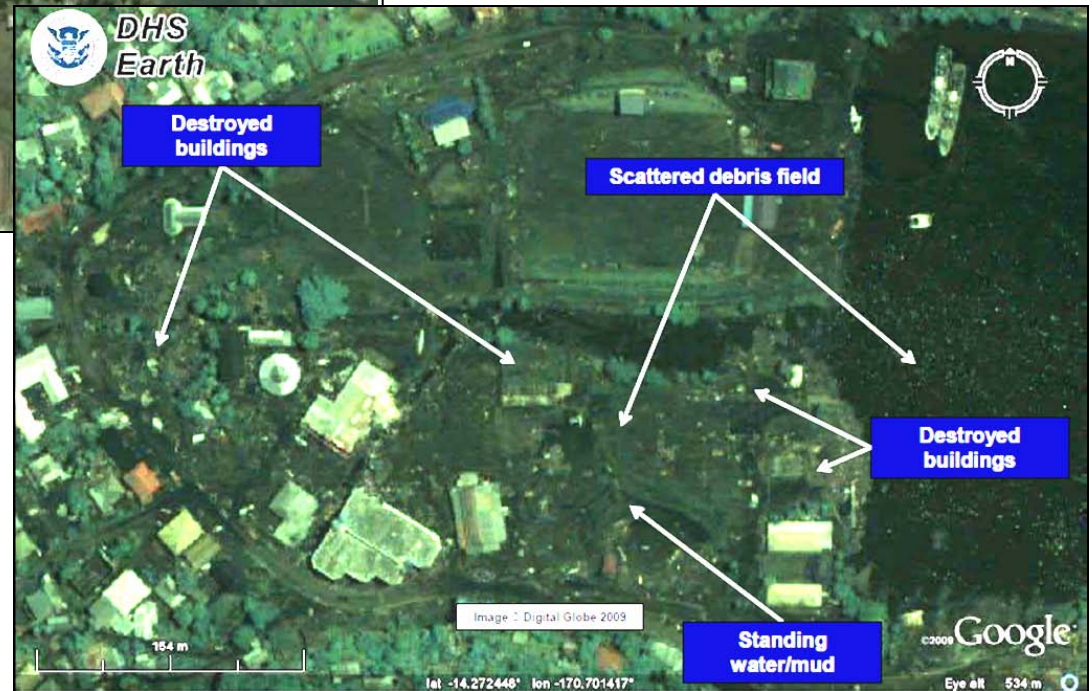
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# IP Remote Sensing: Examples



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# IP Remote Sensing: Examples



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# Challenges

- Light Detection and Ranging (LiDAR)
- Centralized location for posting and rapid dissemination of data
- Standardized data format
- Interagency partnerships take a while
- Present capabilities misconceptions:
  - IP can rapidly task and collect steady state imagery
  - IP owns remote sensing assets and has exploitation/production capabilities
  - IP has a remote sensing budget
  - IP remote sensing is the same as the IRSCC

## Q&A



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