Civil Applications Committee
2009
Activity Report

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Civil Applications Committee Annual Report - 2009

Background

Overview
The Civil Applications Committee (CAC) is an interagency committee that coordinates and oversees the Federal civil use of classified collections. The CAC was officially chartered in 1975 by the Office of the President to provide Federal civil agencies access to National Systems data in support of mission responsibilities. The CAC is operated and staffed by the U.S. Geological Survey on behalf of the Department of the Interior (DOI). In recent years, CAC activities have expanded beyond traditional mapping applications to a broad range of environmental, climate, natural disaster, and remote sensing applications central to Federal agency missions. Examples include monitoring volcanoes; coordinating emergency response to and determining impacts of natural disasters, such as hurricanes, earthquakes, and floods; monitoring ecosystems; and mapping wetlands.

Membership
In addition to the DOI, the CAC is made up of voting representatives from the Departments of Agriculture (USDA), Commerce (DOC), Health and Human Services (HHS), Homeland Security (DHS), and Transportation (DOT), as well as the Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA), National Aeronautics and Space Administration (NASA), National Science Foundation (NSF), U.S. Coast Guard (USCG), and U.S. Army Corps of Engineers (USACE). Additional non-voting associate members of the CAC include representatives from the Departments of Energy (DOE) and State (DOS), Office of the Director of National Intelligence (ODNI), Defense Intelligence Agency (DIA), National Geospatial-Intelligence Agency (NGA), and National Reconnaissance Office (NRO).

Responsibilities and Functions
Primary CAC responsibilities include:
- Providing oversight for all civil source collection and management of National Systems data;
- Ensuring that National Systems data collected to satisfy CAC Member Agency mission requirements are not used in any way that threatens civil rights, civil liberties, or personal privacy;
- Promoting and overseeing the use of imagery and imagery derived products (IDPs);
- Overseeing the Global Fiducials Program;
- Facilitating the relationships between the Civil Community, the Department of Defense (DOD), and the Intelligence Community (IC);
- Presenting Civil Community requirements to the IC and DOD;
- Supporting national disaster response;
- Representing and advocating civil requirements and interests in various DOD and IC forums;
- Ensuring that the Civil Community has a voice in defining future space architectures;
- Providing an inter-community forum for technology and information exchange; and
· Coordinating Civil Community training.

Functionally, the CAC is composed of a technical and coordinating committee. Each Member Agency and Associate Member Agency identifies a representative and an alternate to the CAC. The committee is chaired by the Director of the USGS. The CAC Secretariat, led by the Executive Director, provides day-to-day oversight of CAC activities. The CAC typically meets monthly.

Oversight is provided to the CAC by the Executive Steering Group (ESG), chaired by the Deputy Secretary of the Interior. The ESG meets on an ad hoc basis and normally not more than once annually. As necessary, the CAC sponsors working groups to address specific issues. The Global Fiducials Working Group (GFWG) is a standing interagency working group that provides guidance to the operations of the Global Fiducials Program, which monitors climate-induced and other physical changes within environmentally sensitive areas on the Earth’s surface. Like the ESG, the Emergency Response Working Group (ERWG), Imagery Derived Products Working Group (IDP WG), Requirements Working Group (RWG), Security Working Group (SWG), and Thermal Event Sensing Working Group (TESWG) also meet on an ad hoc basis. In 2009, the GFWG and TESWG each met at least once.

The CAC provides a forum through which Federal civil agencies can coordinate data requirements, develop tasking strategies, certify proper use of data, and track and plan for the progress and evolution of National Systems. By working hand-in-hand with civil programs such as the USGS National Civil Applications Program (NCAP), the CAC can assist member agencies with data exploitation and derived product generation. The USGS NCAP maintains two facilities dedicated to serving the needs of the civil community: the Advanced Systems Center (ASC) located in Reston, Virginia, and the Special Applications Facility located in Denver, Colorado. Through the CAC, arrangements can also be made for technical support from DOD and IC organizations.

**Data Acquisition and Management**

Prior to being submitted, CAC Secretariat reviews of member agency data requests are performed to ensure that the intended use in no way threatens civil rights, civil liberties, or personal privacy. The CAC review and approval process ensures: 1) that requests are only from member agencies and within the scope of member agency statutory missions; 2) that National Systems are being requested as a source of last resort; 3) that tasking is not intended to support law or regulatory enforcement purposes; 4) that “U.S. persons” are not being targeted; and 5) that in no way will the requested use of National Systems be used for “intelligence purposes.” When this analysis is completed, requests are presented to NCAP staff members to begin the acquisition process.

In concert with the CAC Secretariat, the NCAP staff at the ASC assists CAC member agencies in the tasking, collection, processing, exploitation, and dissemination of National Systems data in support of a wide variety of scientific investigations and mapping projects with unique requirements. The CAC Secretariat and NCAP personnel work together with CAC member agencies to analyze requirements, plan and coordinate support for submitting data requests, and
acquire approval from appropriate authorities. In addition to initiating new data collections to meet project needs, archive searches can also be performed to locate existing data sources. Upon receipt of new or archived data, ASC staff members perform a quality assessment to ensure that the data received satisfy the customer's requirements. Only then are data delivered to the customer and properly archived.

NCAP employs a collection manager at the ASC who also serves as a Departmental Requirements Officer for the Civil Community. The presence of the CAC Secretariat and NCAP staff at meetings in which imagery acquisitions are adjudicated provides opportunities to further explain and defend CAC agency collection needs. Regular participation in the Domestic Requirements Working Group is particularly important because most CAC requirements fall within the U.S. and its territories. Coordination with other members of the imagery community results in higher success rates for competing and obtaining imagery on a non-interference basis with other agency requirements.

The Global Fiducials Program and the Global Fiducials Library
For more than a decade, the CAC and NCAP have worked together to oversee the Global Fiducials Program in an effort to improve our understanding of the changes taking place throughout the Earth. The goal of the Global Fiducials Program is to collect and analyze images with defined characteristics and specified repeat intervals for sites located across the globe. Studying these sites is intended to enhance our ability to understand environmental processes, determine long-term trends and impacts, and define environmentally critical areas.

The NCAP has established an archive of imagery for each Global Fiducials site. This archive, known as the Global Fiducials Library (GFL), is maintained by NCAP staff members. GFL imagery and associated imagery derived products (IDPs) are used to support current agency programs while also being stored for future use by the scientific community.

2009 CAC Highlights

CAC Executive Steering Group
No CAC Executive Steering Group (ESG) meetings were held.

CAC Participation in External Forums
The CAC participated in the following external forums to represent civil community interests and advocate for civil community requirements:

- NSG Senior Management Council (NSMC)
- GEOCOM
- Future Needs Working Group (FNWG)

Imagery Derived Products
CAC Member Agency Activities

Forest Service

Forest Mapping
The Forest Service is responsible for mapping all National Forest lands, and, as part of the National Digital Orthophoto Program, for creating and maintaining digital orthophoto quadrangles over those lands. One of the critical steps in the process is to obtain ground control point coordinates in order to accurately reference the products to a world coordinate system. Typically, Global Positioning System (GPS) technology is used to collect control by physically visiting field sites; however, the process of control extension, in combination with National Systems data, can be used to generate control locations based on a minimal number of field-surveyed control points. In 2009, this technique was used to advantage where control was needed in remote wilderness areas and in the glacier-covered mountains of Alaska, while surveyors obtained control for the accessible portions of the project by traditional methods. Control extension work covering about 1.2 million acres was completed during the year, saving field personnel approximately $112,000 in surveying costs, while increasing safety by reducing field work in remote areas. This completes a network of 470 control points for the Tongass National Forest, which encompasses about 16.8 million acres in southeast Alaska.

National Oceanic and Atmospheric Administration

National Ocean Service
In 2009, NOAA’s Coastal Mapping Program accomplished the mapping of several areas in Alaska, Bering Strait (Diomede Islands), Kotzebue Harbor, Kusokwin River, Nushagak Bay, and Port Clarence. In addition, Controller Bay, Alaska (2008 request) had additional National Systems data requests and uses in 2009.

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In 2009, National Systems data was also included in Louisiana projects LA0701, which includes the Mississippi River delta wetlands area in the vicinity of Lake Borne and approaches, and LA0703, the Barataria Bay area.

Lastly, in 2009, National Systems data requests supported NOAA's requirements from the Federal Aviation Administration (FAA) Aeronautical Survey Program, in particular the Sawyer County Airport and Wisconsin and St. Paul, Minnesota.

U.S. Army Corps of Engineers
The Army Geospatial Center (AGC), representing the US Army Corps of Engineers, produced 33 (Urban Terrain) Imagery Derived Products (IDPs) in CY2009, [redacted], and [redacted]. The AGC maintained a representative in the Global Fiducials Library Program during 2009.
## CAC Monthly Meetings

<table>
<thead>
<tr>
<th>Month</th>
<th>Topic</th>
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</table>
| Jan   | SAR-Based Land Cover Classification  
       | Monitoring the Dynamics of a Climate Change Produced Landslide  
       | Optical Bar Camera (OBC) Replacement Exercise |
| Feb   | The Greenland Ice Sheet: Why Worry?  
       | OPIR  
       | Pine Island Glacier  
| Mar   | Tactical Imagery Visualization & Exploitation Toolset (TIVET)  
       | AGI Toolkit  
       | Data Downgrade Status Briefing  
       | Systems Briefing – Part I  
       | Systems Briefing – Part II |
| Apr   | Summaries of the Civil Community and NGA Support to the  
       | Legal and Policy Brief |
| May   | Special off-site meeting held at selected sites in Denver and Colorado Springs, Colorado |
| Jun   | Agriculture, Climate Change and Food Security: Using NASA Earth Science Models and Observations  
       | National Security Impacts of Climate Change  
       | Climate Change and the Arctic/Alaskan Cryosphere |
| Jul   | No Meeting |
| Aug   | EO Way Ahead  
       | The Basics for **Remote Sensing**  
<pre><code>   | Unmanned Aircraft Systems in the National Airspace System |
</code></pre>
<p>| Sep   | African Diamonds |</p>
<table>
<thead>
<tr>
<th>Oct</th>
<th>A Tool for Re-evaluating the Natural Resource Sector in Afghanistan</th>
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<tbody>
<tr>
<td></td>
<td>Interagency Remote Sensing Coordination Cell (IRSCC)</td>
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<td></td>
<td>National GEOINT Coordination Working Group Findings National GEOINT Coordination Working Group Findings</td>
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<tr>
<td></td>
<td>MEDEA</td>
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<td>Nov</td>
<td>NSG 2020 Storage Study</td>
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<td>PUM / PPUM Discussion</td>
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<td></td>
<td>GFL Discussion</td>
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<td>Dec</td>
<td>Process For Domestic Imagery Requests</td>
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<td>GIMS</td>
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<td></td>
<td>Domestic Future Needs Review</td>
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<td>ODNI Centers of Academic Excellence</td>
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<td>MEDEA Update</td>
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Partial List of Data Requested by CAC Member Agencies in Response to Specific Mapping and non-Disaster Science Events:

<table>
<thead>
<tr>
<th>Date</th>
<th>Name &amp; Location</th>
<th>Event</th>
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<tbody>
<tr>
<td>Jan</td>
<td>Source materials for Grand County, CO, USGS RMGSC</td>
<td>Wetlands change analyses</td>
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<tr>
<td>Feb</td>
<td>Search archives of ASC, NGA, and NES for Lake Chapeau, LA, historical source for NOAA NMFS</td>
<td>Mapping</td>
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<td></td>
<td>Source for Tongas National Forest, AK, USDA FS</td>
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<tr>
<td>Mar</td>
<td>Historical source for Tanana Area, AK, USDA FS</td>
<td>Forest cover studies</td>
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<tr>
<td>Apr</td>
<td>Source for Arctic Ocean Areas, MEDEA</td>
<td>Sea Ice Studies</td>
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<td></td>
<td>Source for GFP areas, USGS BRD NWRC</td>
<td>BRD GFP Analysis</td>
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<tr>
<td>May</td>
<td>Source for Antarctic GFL Sites, MEDEA</td>
<td>GFL Analyses</td>
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<td>June</td>
<td>Source for Louisiana coastline and Valdez, AK, for NOAA, coastal map and charting activity</td>
<td>Mapping</td>
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<td></td>
<td>Source for several Louisiana Wetland Sites NOAA NMFS</td>
<td>Pre-Hurricane Assessment</td>
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<td>July</td>
<td>Source for Mississippi Delta, LA, NOAA</td>
<td>Mapping</td>
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<td></td>
<td>San Andreas Fault rupture regions; identified locations from the Shake Out exercise, USGS</td>
<td>Earthquake Situational Awareness</td>
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<td>Aug</td>
<td>Source for Kayak Island, AK, for NOAA</td>
<td>Mapping</td>
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<td>Source for Bering Glacier, AK, USGS</td>
<td>Environmental Studies</td>
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<td>Sep</td>
<td>Source for Arctic Ocean floating buoys, MEDEA</td>
<td>Sea Ice Studies</td>
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<td>Oct</td>
<td>Source for Sawyer Airport, WI, NOAA</td>
<td>Terrain / tree cover review</td>
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<td>Dec</td>
<td>Searched Archive for Dry Valleys, Antarctica</td>
<td>Antarctic Studies</td>
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Data Was Requested by CAC Members to Monitor the Following Volcanoes:

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<th>Volcano Name &amp; Location</th>
<th>Outcome</th>
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<td>Chiginagak, Alaska</td>
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<td>Cleveland, Alaska</td>
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<td>Kasatochi, Alaska</td>
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<td>Kilauea, Hawaii</td>
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<td>Korovin, Alaska</td>
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<td>Mauna Loa, Hawaii</td>
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<td>Mount Rainier, Washington</td>
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<td>Mount Spurr, Alaska</td>
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<td>Mount St. Helens, Washington</td>
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<td>Location</td>
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<td>Okmok, Alaska</td>
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<td>Redoubt, Alaska</td>
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<td>Shishaldin, Alaska</td>
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<td>Trident / Novarupta, Alaska</td>
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<td>Veniaminof, Alaska</td>
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Partial List of Data Requested for Ongoing CAC Member Agency Projects:

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<tr>
<th>CAC Member</th>
<th>Request Type</th>
<th>Project Description</th>
<th>Approval Date</th>
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<tr>
<td>DOC National Oceanic and Atmospheric Administration</td>
<td>Renewal</td>
<td>Louisiana wetlands restoration monitoring</td>
<td>September 2009</td>
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<td>DOC National Oceanic and Atmospheric Administration</td>
<td>Renewal</td>
<td>Coastal and harbor mapping</td>
<td>September 2009</td>
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<td>DOC National Oceanic and Atmospheric Administration</td>
<td>Renewal</td>
<td>Hawaiian Island Marine Monument monitoring</td>
<td>March 2009</td>
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<td>DOC National Oceanic and Atmospheric Administration</td>
<td>New</td>
<td>Arctic marginal seas boat inventory</td>
<td>June 2009</td>
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<td>DOI Bureau of Land Management</td>
<td>Renewal</td>
<td>National Petroleum Reserve, AK</td>
<td>September 2009</td>
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<td>DOI Bureau of Land Management</td>
<td>Renewal</td>
<td>Global Fiducials – 8 monitoring sites</td>
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<td>Renewal</td>
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<td>January 2009</td>
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<td>DOI Fish and Wildlife Service</td>
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<td>Alaska marine mammal (Walrus) monitoring – seasonal off-shore and coastal ‘haul-out’ study</td>
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<td>DOI</td>
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<td>National Park Service</td>
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<td>Renewal</td>
<td>Use of data for testing</td>
<td>March 2009</td>
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<td>Renewal</td>
<td>Volcano monitoring</td>
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<td>U.S. Geological Survey</td>
<td>Renewal</td>
<td>Natural disaster assessment and monitoring</td>
<td>October 2009</td>
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<td>Renewal</td>
<td>Vegetative mapping - NPS vegetation mapping</td>
<td>October 2009</td>
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<tr>
<td></td>
<td></td>
<td>and monitoring program at Great Sand Dunes National Park</td>
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<td>U.S. Geological Survey</td>
<td>Renewal</td>
<td>Louisiana coastal shoreline mapping</td>
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<td>Renewal</td>
<td>Tornadoes</td>
<td>May 2009</td>
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<td>Flood inundation mapping and analysis</td>
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<td>Earthquake monitoring</td>
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<td>Hazardous materials response</td>
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<td>Global Fiducials – 50 monitoring sites</td>
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<td>Long-term monitoring of sea ice characteristics</td>
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<td>Antarctic studies</td>
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<td>USDA Forest Service</td>
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<td>Natural disaster impacts on forests</td>
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<td>USDA Forest Service</td>
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<td>Control point collection, forest inventory and analysis program</td>
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<td>USACE Army Corps of Engineers</td>
<td>Renewal</td>
<td>Global Fiducials – 8 monitoring sites</td>
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<tr>
<td>USACE Army Corps of Engineers</td>
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<td>Natural disaster damage assessment</td>
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