The United States Interagency Coordinating Committee for Airborne Geosciences Research and Applications (ICCAGRA)

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SCOAR
Marina, CA
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ICCAGRA Overview

- Goals of ICCAGRA
  - Improve cooperation amongst US Agencies
  - Foster awareness
  - Facilitate communication
  - Resource for senior level management
- Has no binding authority
  - Agencies voluntarily participate and voluntarily adopt standards at their own pace
  - Different from EUFAR
- Members actively involved in standardizing US and international airborne datasets and instrumentation
  - Involved internationally within ISPRS WG I/1: **Standardization of Airborne Platform Interface**
- Each US Agency has developed their own specialties with slight overlaps








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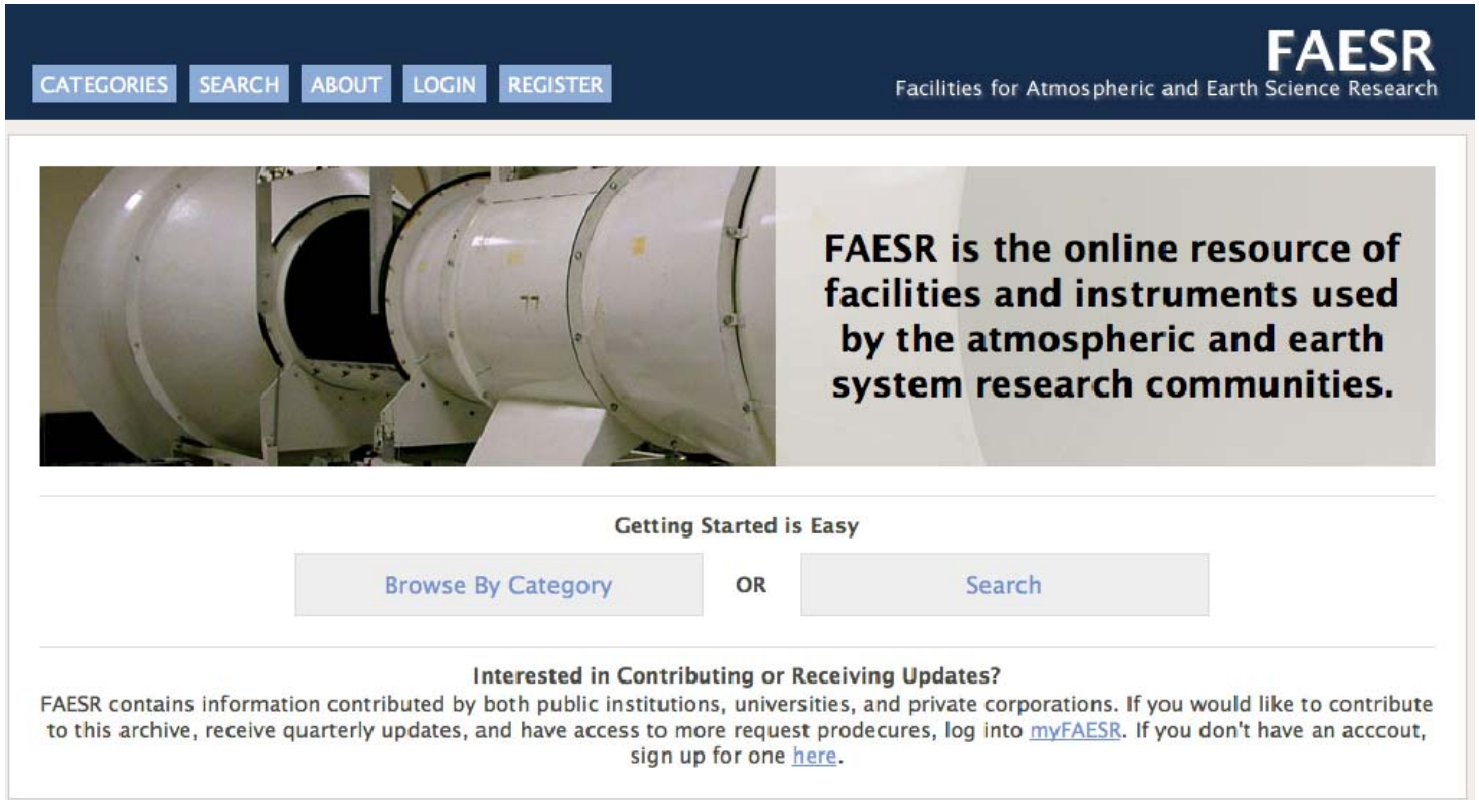
ICCAGRA Overview

UCAR
UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH

NSF

Facilities for Atmospheric and Earth Science Research

http://faesr.ucar.edu



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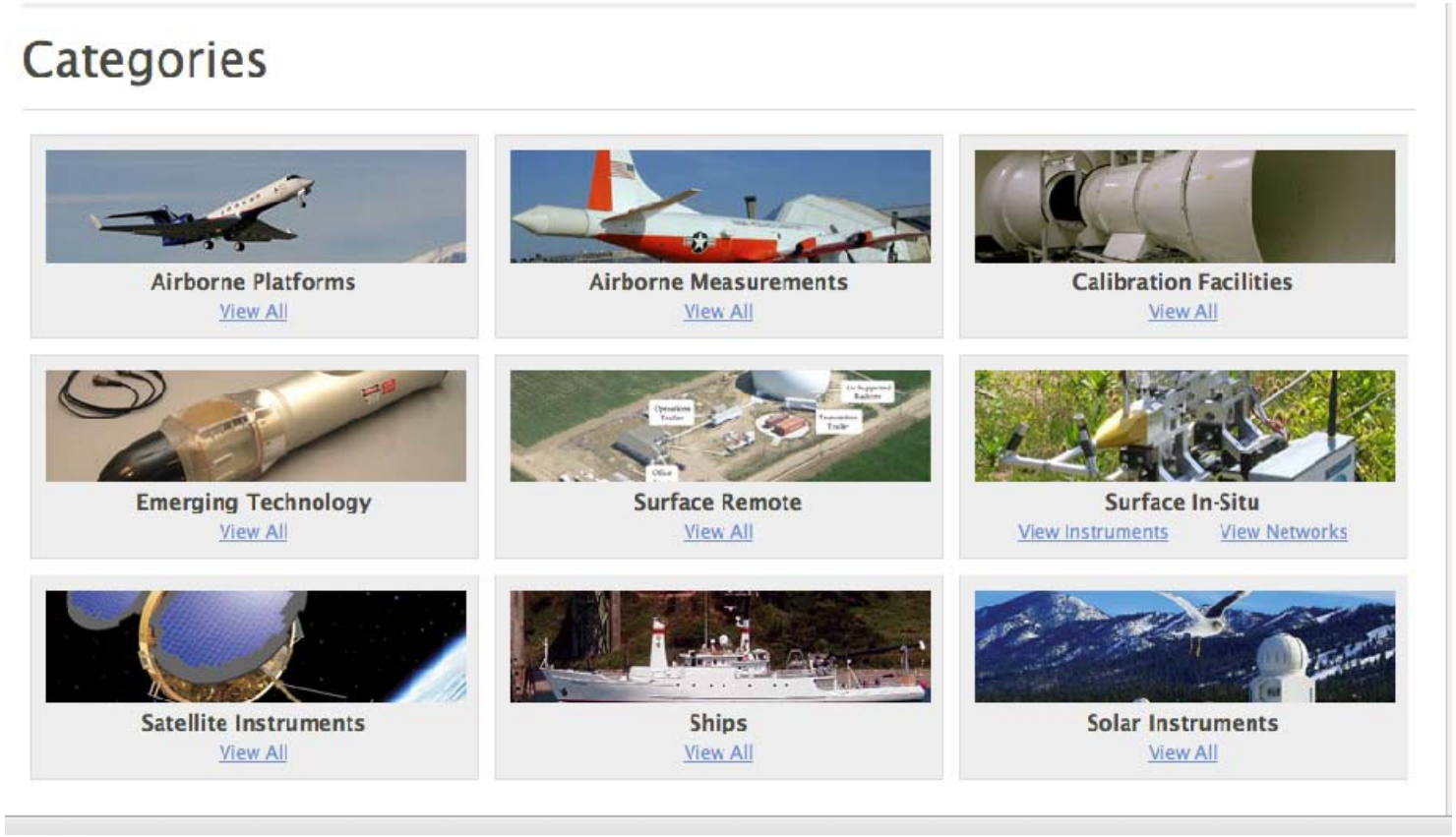

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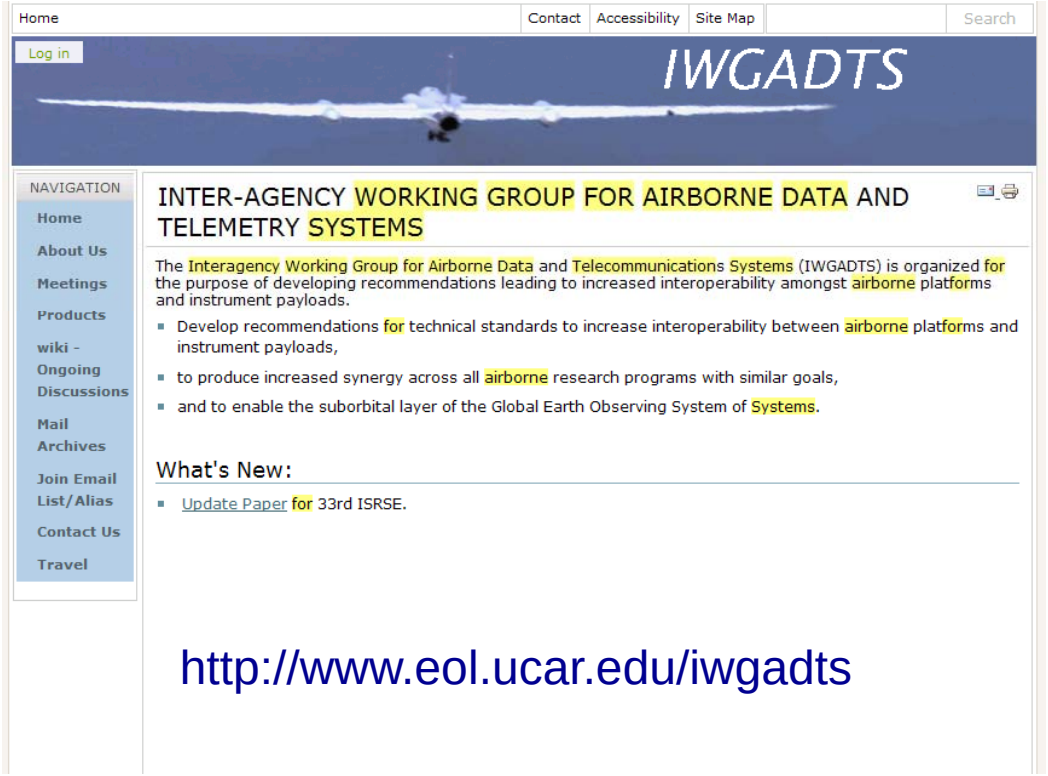
ICCAGRA Working Group

- IWGADTS Working Group
  - Commonality in data streams
  - Commonality in DAQ systems
  - Instrument integration
  - Commonality in data formats



http://www.eol.ucar.edu/iwgadts

WG I/1 - Standardization of Airborne Platform Interface

http://**www.commission1**.isprs.org/wg1/

- International Society for Photogrammetry and Remote Sensing
  - Promote the standardization of instrument interfaces, data formats, and aircraft accommodations
  - Facilitate more efficient, flexible, and cost-effective international science flight operations

DOE

- Department of Energy Atmospheric Radiation Measurement (ARM) Aerial Facility (AAF)
  - Science dictates the platform
    - Many field campaigns focused around DOE ARM mobile and fixed facilities. This includes the AMF2 which can be installed on a ship
    - Operates a “Virtual Hangar” and a G-1 Aircraft
  - Wide range of instrumentation
    - DOE ACRF procured 18 new instruments under the 2009 Recovery Act
    - Can be installed on a multitude of aircraft

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NASA

- National Aeronautics and Space Administration
  - Provide aircraft systems that further science and advance the use of satellite data
    - Calibration and validation of satellites (A-Train)
    - Test new sensor technologies in space-like environment
    - UAS
  - Maintains a catalog of research aircraft

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NSERC

NSERC
National Suborbital Education and Research Center
THE UNIVERSITY OF NORTH DAKOTA
National Aeronautics and Space Administration

- National Suborbital Education and Research Center
  - Joint Venture between NASA and The University of North Dakota (UND)
  - Student Airborne Research Program (SARP)
    - Allows students hands-on training in airborne science using earth-observing instruments aboard the NASA DC-8
  - Aircraft is used for other NASA field campaigns throughout the year

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1: http://www.esrl.noaa.gov/csd/arcpac/photos/inter_dc8.php?num=8

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NSF/NCAR

- National Science Foundation/National Center for Atmospheric Research
  - NCAR Research Aviation Facility operates a C-130Q and G-V supported by NSF
- NSF supports other platforms
  - NRL P-3
  - Wyoming King Air

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NRL

- Naval Research Lab
  - Mostly military related deployments but can be deployed for other USA agency related research
  - Primary focus on remote sensing
  - Mix of aircraft
    - NP-3D Orion, C-12 (King Air B200), MZ-3A Airship, and UAS

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NOAA

- National Oceanic and Atmospheric Administration
  - NOAA's mission is to describe and predict changes in the Earth's environment and to conserve and manage wisely the nation's coastal and marine resource
  - Operate the hurricane hunters
  - Also conduct flights for marine and atmospheric research


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1: http://www.aoc.noaa.gov/Photos_NOAA_Aircraft.html

ONR/CIRPAS

- Office of Naval Research/Center for Interdisciplinary Remotely-Piloted Aircraft Studies
  - Twin Otter is operated under a cooperative agreement with NSF
  - Primary focus is atmospheric research with some flight operations for the Navy
    - Twin Otter and a Pelican (Cessna 337 Skymaster)
    - UAS research
  - Looking to acquire an A-10 for storm penetration

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1: http://www.cirpas.org/index.html

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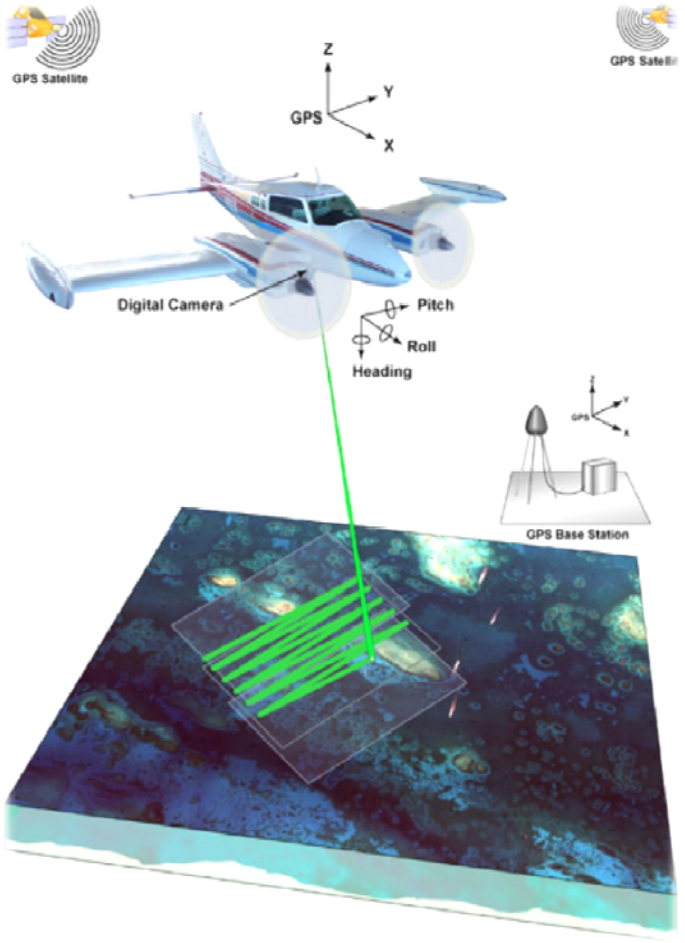
USFS

- U.S. Forest Service
  - Owns and operates 27 aircraft and helicopters
  - Contracts with over 800 aircraft and helicopters annually
  - Missions Include:
    - Fire surveillance
    - Aerial reconnaissance
    - Air Attack
    - Delivery of smokejumpers
    - Firefighter and cargo transport
    - Aerial delivery of retardant and water
    - Natural Resource Management
    - Research

USGS

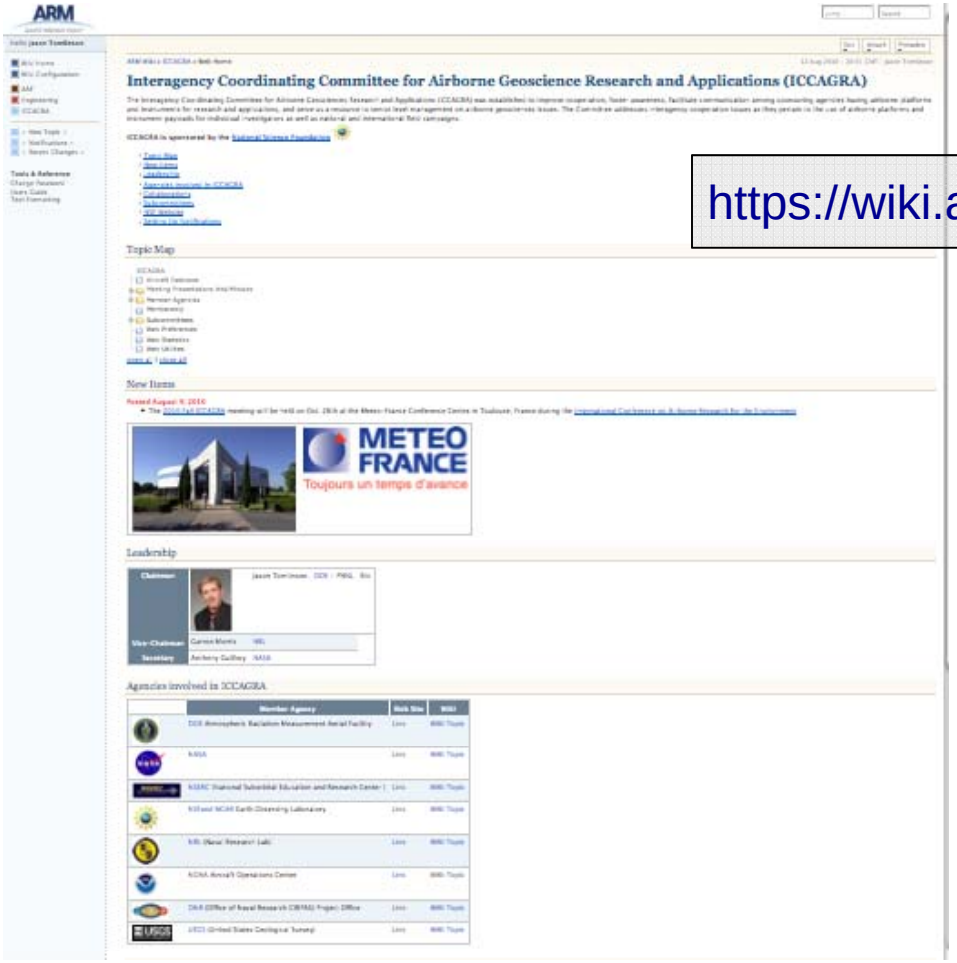
- U.S. Geological Survey
  - Experimental Advanced Airborne Research Lidar (EAARL)
    - Remote sensing of vegetation canopy structure and submerged topography for use in ecological models and environmental stewardship
    - Recently started to using a version 2 EAARL



ICCAGRA Successes

- ICCAGRA is fostering cooperation and communication amongst US agencies and international counterparts
  - IWGADTS
  - EUFAR and ISPRS WG
- Each agency has unique capabilities
  - Intercomparisions and cooperation during field campaigns
    - DOE/CIRPAS – CALWATER February 2011
    - NOAA/DOE – CALNEX/CARES May and June 2010
    - NOAA/NASA/DOE – ARPAC/ARCTAS/ISDAC April 2008
- Member agencies are pushing forward with the use of UAS for scientific research
  - NOAA and NASA joint work on the Global Hawk

ICCAGRA Additional Information



https://wiki.arm.gov/bin/view/ICCAGRA/WebHome

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