

# IWGADTS Update

## Inter-agency Working Group for Airborne Data and Telemetry Systems

ICCAGRA Meeting  
AERO Institute, Palmdale, California  
October 21<sup>st</sup>, 2008  
Lawrence C. Freudinger

# The IWGADTS Mission

- Identify interagency needs for data and networked systems.
- Improve interoperability of airborne platforms between agencies.
- Enhance opportunities for interagency sharing of aircraft resources, airborne instrumentation and data to minimize duplication, and to expand science investigators' access to interagency assets.
- Provide technical standards recommendations to senior level decision makers.
- Evaluate the current state of interoperability and recommend, as appropriate, interagency standards to facilitate the development of common data and networking systems leading to a fully interoperable global observing system which includes suborbital and space-based components.
- **Encourage international participation.**

# Background

- We have met 8 times since January 2005

- 53 Action Items
- 24 currently open

	Total	Completed	Open
2005	8	7	1
2006	14	11	3
2007	18	9	9
2008	13	2	11

- Primary recommendation to date is the IWG1 real-time onboard data feed.
  - Triggered expanding use of comma separated variable records for data exchange

# IWG1 Packet

- Very useful and effective.
- Available on all NCAR; NASA aircraft.
  - Includes upcoming Global Hawk infrastructure
- Available in NASA ground distribution
- Available for some non-Gov't platforms
- De facto standard practice
- Software readers and applications:
  - Labview reader, Aeros,
  - NASA web displays (ground & in-flight servers)
  - UDP distribution -> easy ad hoc programs

# Notes on IWG1 and CSV

- IWG1 conceived for onboard distribution
- Used extensively for ground; air-air distribution
- Similar comma-separated variable (CSV) records increasingly useful
  - Aircraft *and* instruments can generate their own unique CSV records
  - Adhere to IWG1 parameter order where possible

Example (SMAP-VEX, Oct 08)

```
IWG1,2008-10-13T17:58:49.018,37.933238,-75.472032,-11.12,-335.0,,,15.433333,14.1875,(etc)
```

```
IWG1,2008-10-19T18:47:54Z,39.127499,-108.536163,1470.1,,,,,214.0,,,,,0.0,,,,,,,,,,,,,
```

```
N255SA,2008-10-19T18:47:54Z,39.127499,-108.536163,1470.1,214.0,0.0
```

- Both NASA P-3B and Twin Otter have IWG1 packets visible on ground and on P-3B
- Twin Otter also has more efficient CSV record since only SkyConnect & FlightAware are data source

# IWG1 & CSV for almost any aircraft

Directory listing for: /RBNB/INDS5/SkyConnectMon/N255SA - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://indscore.dfr.nasa.gov/F

[Up one level]

Directory listing for: /RBNB/INDS5/SkyConnectMon/N255SA

Filename	Size	
<a href="#">Altitude</a>	4 bytes	Sun 0
<a href="#">GroundSpeed</a>	4 bytes	Sun 0
<a href="#">Heading</a>	4 bytes	Sun 0
<a href="#">Latitude</a>	4 bytes	Sun 0
<a href="#">Longitude</a>	4 bytes	Sun 0
<a href="#">Time</a>	8 bytes	Sun 0
<a href="#">CSV</a>	68 bytes	Sun 0
<a href="#">IWG1</a>	92 bytes	Sun 0

RBNB WebDAV 2.0

Done



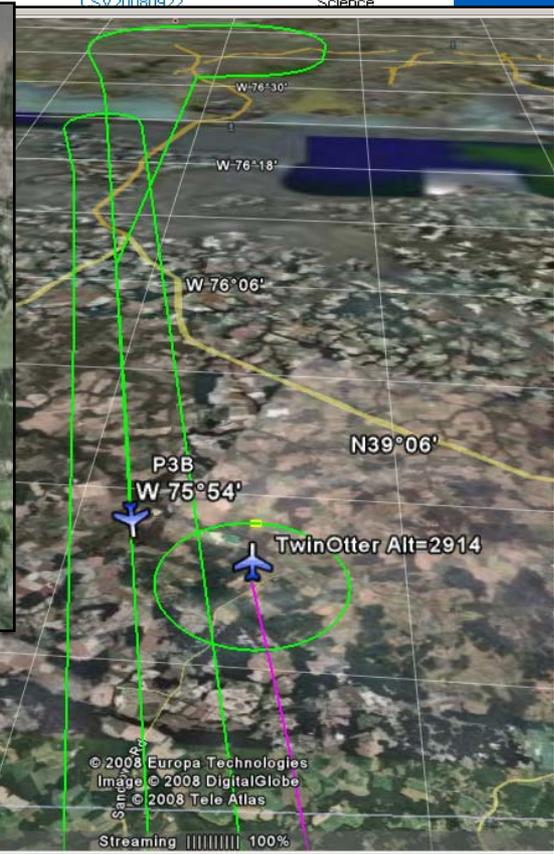
Home > Missions > Twin Otter > Data Archives

ARCHIVES

TWIN OTTER DATA ARCHIVES

N255SA

Flight Date	Data File	Flight Objective
Aug 21, 2008	CSV20080821	Science
Aug 22, 2008	CSV20080922	Science



- IWG1 & CSV Vehicle data from commercial data sources
- "dead reckoning ring" estimates to-the-second position
- Open source infrastructure & tools promote interoperability

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© 2008 Tele Atlas

04.34° W elev 14 ft

Streaming ||||| 100%

nasa.gov/TimeDrive/

> Live << < || > >> [RT] TimeStep: 1sec

2008 Oct 4 13:15:05 GMT+0000 Interval: 1hour

# Past Year

- June 5<sup>th</sup> 2008
  - Updated Charter
  - Began formulating online survey questions
  - Networking-oriented and services-oriented discussions
- September 18<sup>th</sup>, 2008
  - Discussion of what's beyond IWG1
    - Looking to document use scenarios and build requirements
    - More networking-oriented and services-oriented discussions; GPS followup action to list discussion
    - Action 0809.3: **CSV recommendation**
    - Considering a two-day meeting to get more work done

# General Directions

- Get what we have more reliable, more automated
  - IRC text "Chat" and Google Earth situational awareness displays continue to be useful/most visible tools
  - Satcom links continue to be an Achilles heel for some platforms; the IWGADTS form is good for sharing lessons learned.
  - Critical mass: customer not happy *without* network connectivity
- Interoperability in web services slowly moving to front burner
- Automated instrument tasking remains a future issue

# Is IWGADTS Effective?

- We continue to identify problems and work solutions.
- We've helped to evolve landscape
  - Networked instruments
  - Ground communication
  - Google Earth

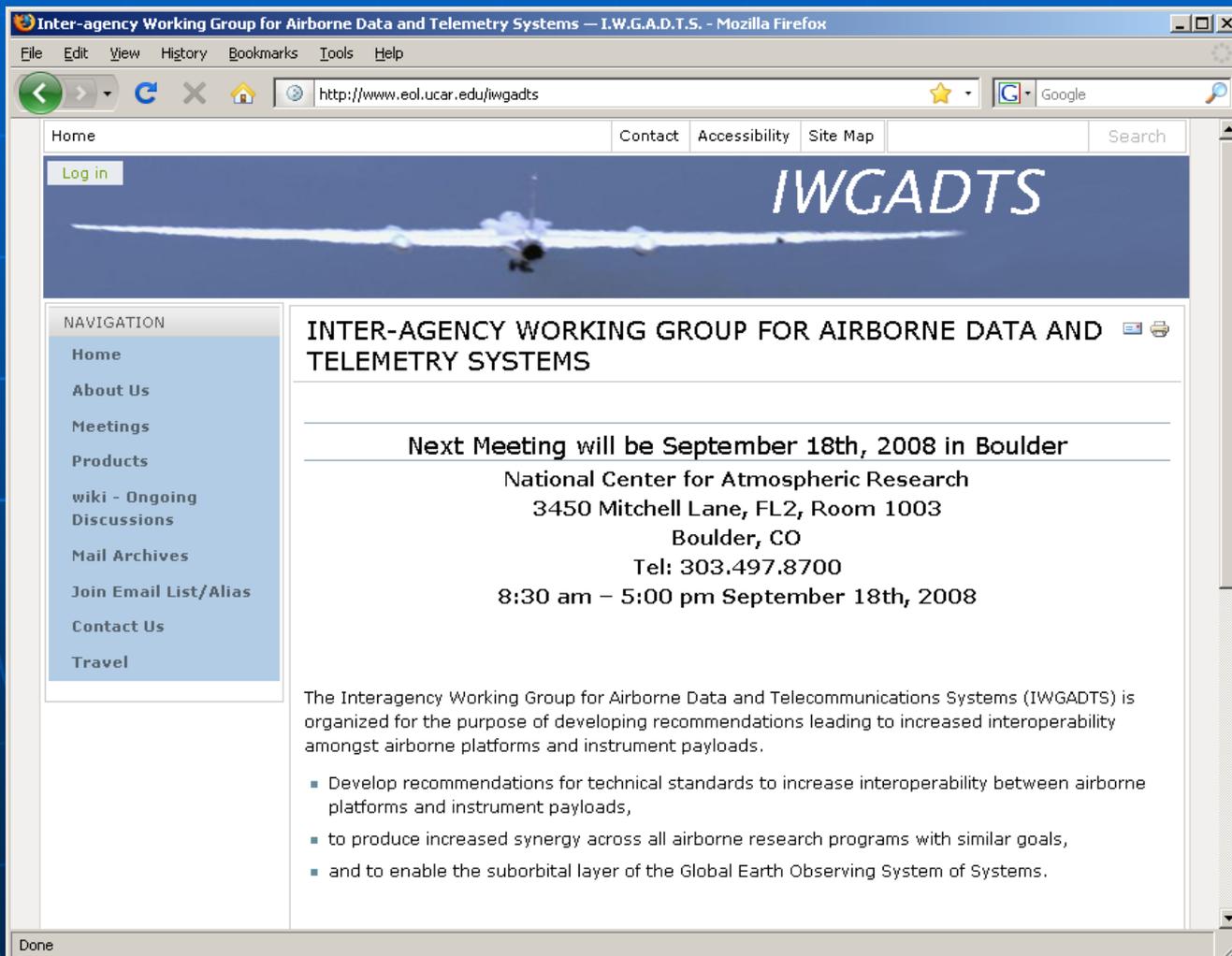


# Questions:

- Is IWGADTS scope adequate?:
  - IWGADTS oriented toward Real-time field project support
  - More than just a platform data system; Network services and applications on plane & ground relevant
  - Consensus on expansion hampered by different ways of doing business beyond field project activities, e.g. post-flight/post mission requirements.
- Do ICCAGRA members have concerns, questions, suggestions for IWGADTS?
  - Chair: Chris Webster [cjw@ucar.edu](mailto:cjw@ucar.edu)
  - Group: [iwgadts@eol.ucar.edu](mailto:iwgadts@eol.ucar.edu)

# Website

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



The screenshot shows a Mozilla Firefox browser window displaying the website for the Inter-agency Working Group for Airborne Data and Telemetry Systems (IWGADTS). The browser's address bar shows the URL <http://www.eol.ucar.edu/iwgadts>. The website's header features a navigation menu with links for Home, Contact, Accessibility, Site Map, and Search. Below the navigation is a large banner image of an aircraft in flight with the acronym "IWGADTS" overlaid. A "Log in" button is visible in the top left corner of the banner area.

**NAVIGATION**

- Home
- About Us
- Meetings
- Products
- wiki - Ongoing Discussions
- Mail Archives
- Join Email List/Alias
- Contact Us
- Travel

**INTER-AGENCY WORKING GROUP FOR AIRBORNE DATA AND TELEMETRY SYSTEMS**

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**Next Meeting will be September 18th, 2008 in Boulder**

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National Center for Atmospheric Research  
3450 Mitchell Lane, FL2, Room 1003  
Boulder, CO  
Tel: 303.497.8700  
8:30 am – 5:00 pm September 18th, 2008

The Interagency Working Group for Airborne Data and Telecommunications Systems (IWGADTS) is organized for the purpose of developing recommendations leading to increased interoperability amongst airborne platforms and instrument payloads.

- Develop recommendations for technical standards to increase interoperability between airborne platforms and instrument payloads,
- to produce increased synergy across all airborne research programs with similar goals,
- and to enable the suborbital layer of the Global Earth Observing System of Systems.

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