IWGADTS Update

Inter-agency Working Group for Airborne Data and Telemetry Systems

ICCAGRA Meeting
AERO Institute, Palmdale, California
October 21st, 2008
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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)

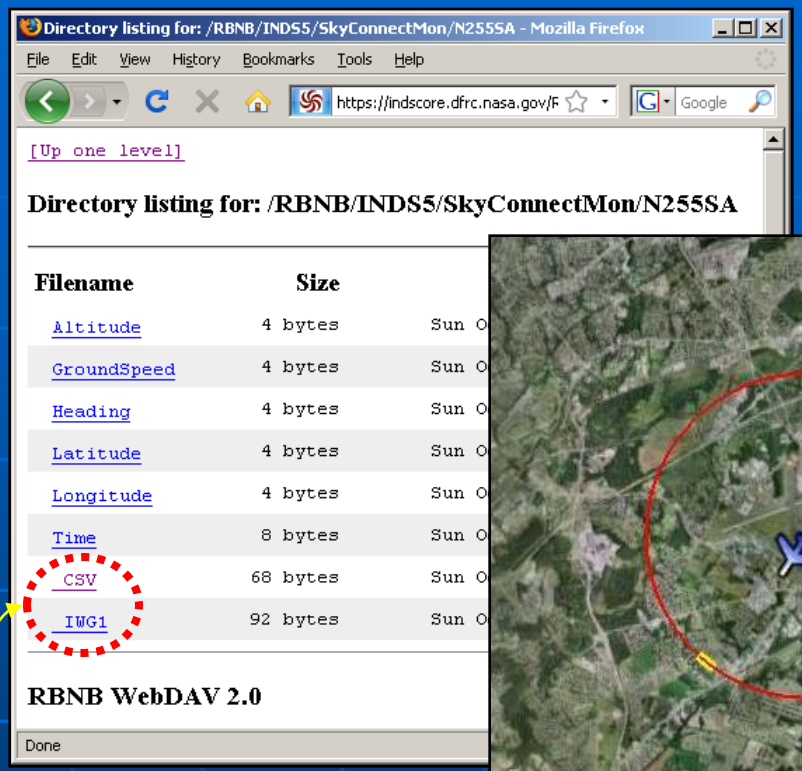
IWG1,2008-10-13T17:58:49.018,37.933238,-75.472032,-11.12,-335.0,,,15.433333,14.1875,*(etc)*

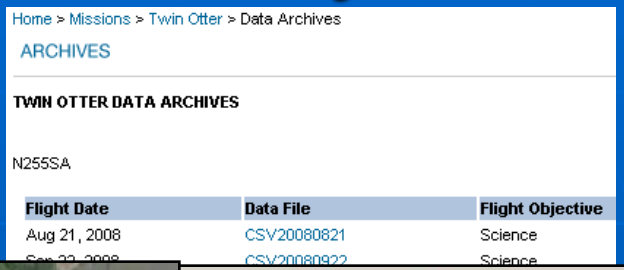
IWG1,2008-10-19T18:47:54Z,39.127499,-108.536163,1470.1,,,,214.0,,,,,0.0,,,,,,,,,,,,,,,,,,

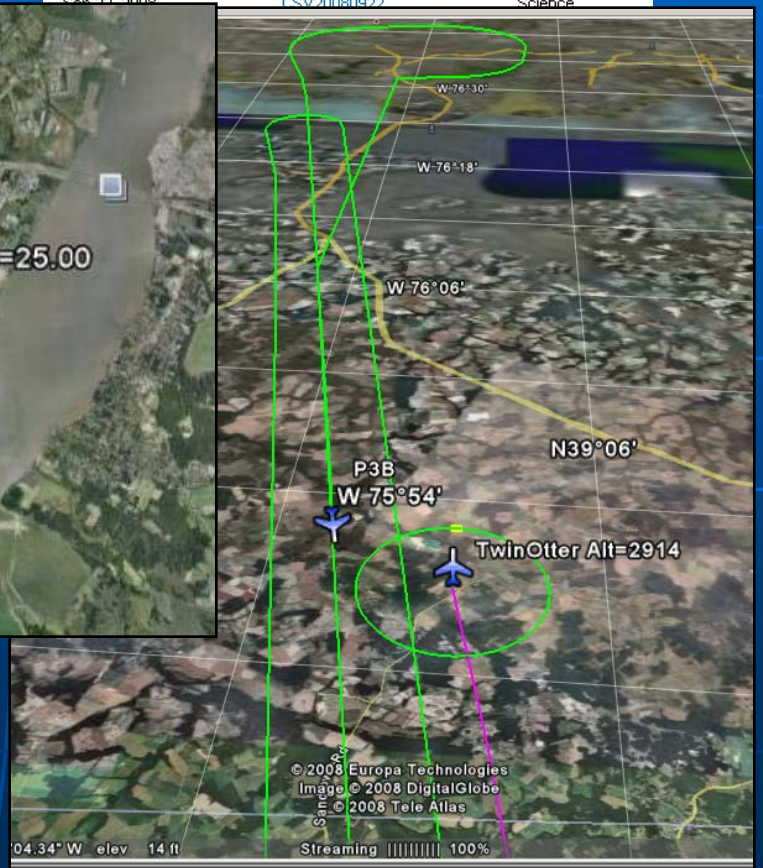
N255SA,2008-10-19T18:47:54Z,39.127499,-108.536163,1470.1,214.0,0.0

- 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







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

Past Year

- June 5th 2008
  - Updated Charter
  - Began formulating online survey questions
  - Networking-oriented and services-oriented discussions
- September 18th, 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?
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Website

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