Director's Report

Joint Meeting of the

Unidata Policy Committee and

Unidata Users Committee

15 October 2009

Boulder, CO

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UCAR Office of Programs
Boulder, CO

New and Departing Committee Members

- Policy Committee:
  - Jim Steenburgh, University of Utah
  - Gary Lackmann, North Carolina State University
  - David Tarboton (renewal appointment)
- Please join me in welcoming the new members and thanking members that are rotating off.
  - Tom Whittaker, Chair, University of Wisconsin/SSEC
  - Patrick Market, University of Missouri-Columbia
  - Kevin Tyle, University of Albany
  - Anne Case Hanks, University of Louisiana-Monroe
  - Steve Lazarus, Florida Institute of Technology
  - Rich Signell, USGS representative
- Rotating off:
  - Rich Clark and Rudy Husar, Policy Committee
  - Gary Lackmann, Eugene Cordero, and Scott Rochette, Users Committee

25th Anniversary Event

- There is a little event planned for later today and tomorrow.
- Staff have been extremely busy preparing for it and this joint meeting.

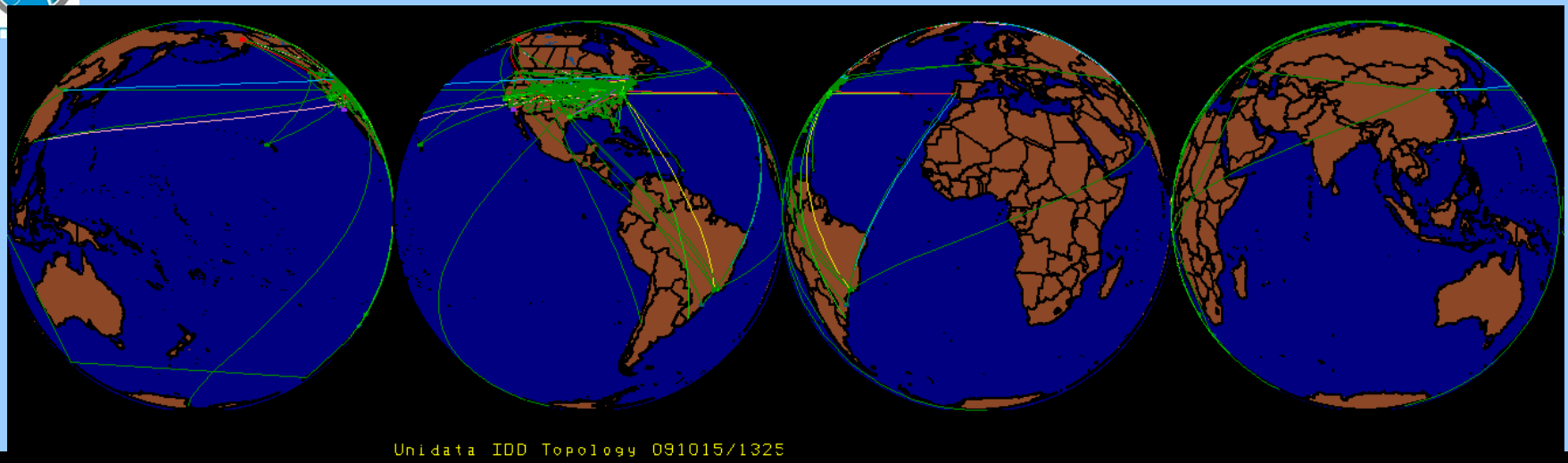
Unidata Triennial Users Workshop

- Unidata held a workshop on ***Operational and Experimental Observations in Geoscience Education*** during June 8 - 12, 2009 in Boulder, CO.
- The workshop attracted 81 participants from 32 universities and 3 U. S. government labs.
- The program included oral presentations, hands-on and interactive labs, and field activities.
- It was widely viewed as one of the most successful users workshops in Unidata's history.

AWIPS II and N-AWIPS Migration

- There has been quite a bit of discussion and movement on the AWIPS II front.
- The Policy Committee received a full briefing from NWS/OST and NCEP at the May meeting.
- The UPC staff have been engaged in additional negotiations and discussions since that meeting that have resulted in a revised schedule for the availability of the software.
- The UPC staff have successfully installed and tested the Task Order 10 release of the AWIPS II software from NCEP on a CentOS machine. The AWIPS II installation procedure has also been tested on 32 bit Red Hat 4.6, Red Hat 5.0 and CentOS 4.7 Linux systems.
- A white paper has been developed, which will be discussed later today.
- The current schedule calls for AWIPS II software to be available to users in CY 2011.

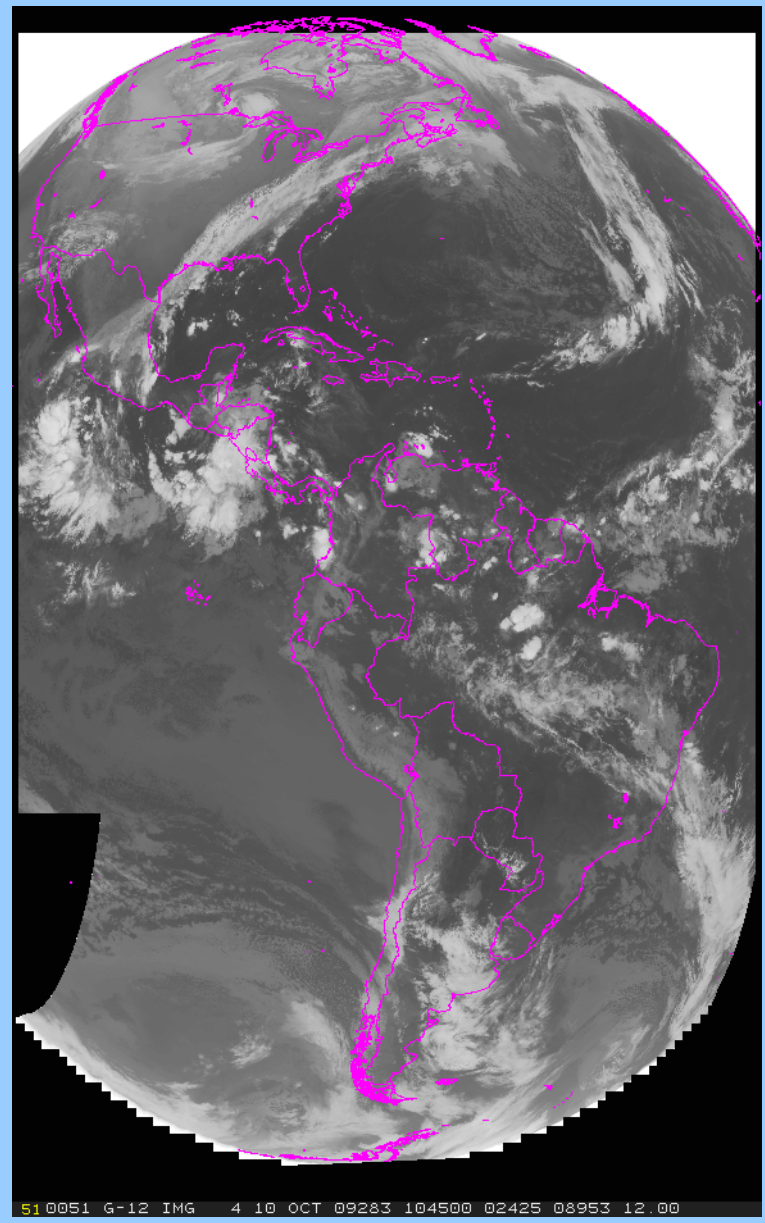
Real-time Data Flows



- Over 500 machines at 250+ sites were running LDM-6 and reporting real time statistics. These numbers have not changed much in the past two years, but the data volume has grown significantly.
- UPC's IDD Cluster relays data to more than 600 downstream connections. Average data output/day: 4.4 TB!
- Unidata moves more than 33 TB/week with LDM via Internet 2!
- Data input to the cluster is approx. 5.5 GB/hr, a big increase due to switch to super resolution NEXRAD Level II data.
- NEXRAD Level II now has the largest data volume (35.2%), followed by CONDUIT (31.7).
- Average data output by the cluster is approx. 430 Mbps (~4.4 TB/day);

GOES-10 Project

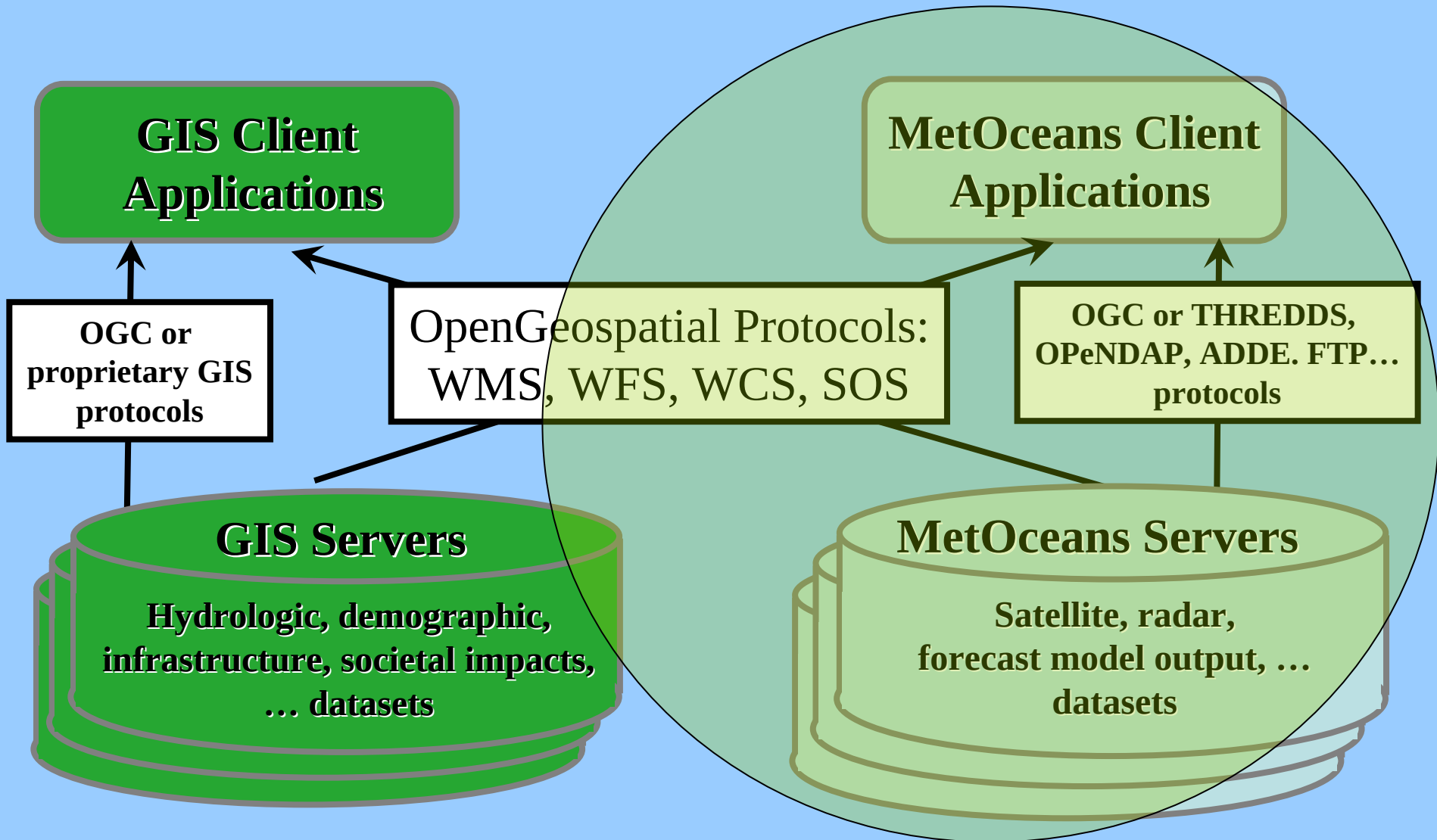
- In 2006, Unidata, EOL and RAL, proposed an inexpensive system to ingest and serve GOES-10 data – in particular to the North and Latin America university communities
- UCAR approached NESDIS with the idea and NOAA provided the funding to implement this capability in UCAR for GOES-10, GOES-East and GOES-West data
- In August 2008, Unidata and U. São Paulo (Brazil) hosted a workshop in which GOES-10 data was highlighted
- Since the workshop, over 450 users in 33 countries have downloaded an average of 615 gigabytes of real-time GOES-10 data per month
- This small project has dramatically extended the use of GOES-10 data and strengthened North and Latin American education and research collaborations
- UCAR recently approached NOAA to continue South American surveillance by GOES platforms as they near their end of life



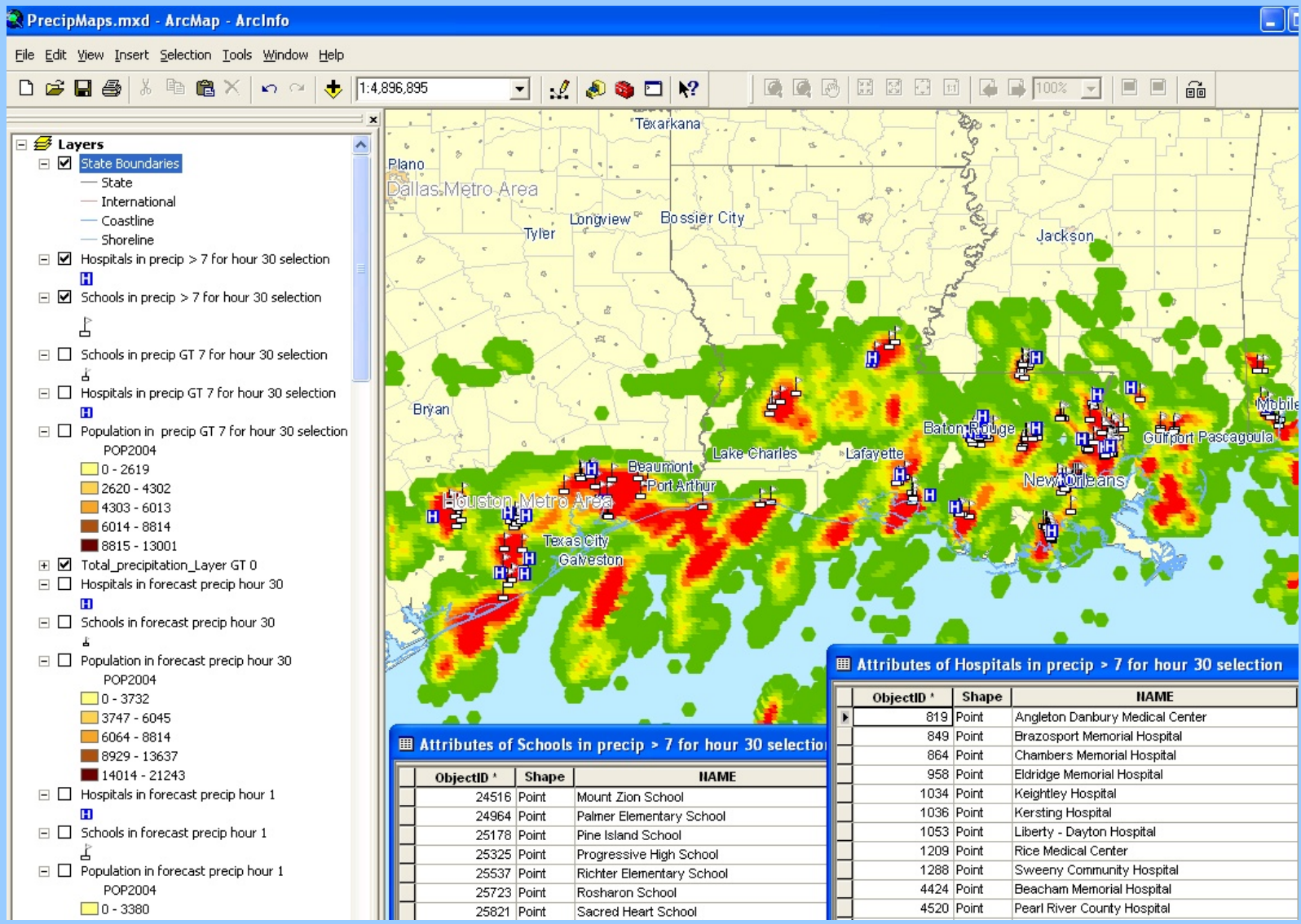
Remote Data Access

- Continued progress is being made on THREDDS Data Server (TDS), Common Data Model, and RAMADDA.
- NetCDF-Java/CDM 4.0 library is now available as a stable release (v 4.0.26).
- Advances in I/O Service Provider software have made many new data types accessible via the netCDF-Java API (HDF5, HDF4, HDF-EOS/HDF5-EOS metadata, GEMPAK grids, BUFR, McIDAS Area files, Universal Radar Format, NIDS, and GEMPAK point data.)
- TDS now has a WMS interface, along side WCS.
- RAMADDA was released in August. Many new collections of data (including Case Studies) are now available via RAMADDA. Several groups are evaluating the use of RAMADDA. Its publishing API is being integrated into JGrass GIS client at the University of Trento, Italy

Standards-based Web Services for Inter-community Data System Interoperability



Applying GIS Tools To Atmospheric Science Data



NetCDF Status Report

- NetCDF-4 classic model will be used in the CMIP5 archive of climate models for fifth assessment report of the IPCC.
- Completed work on improving OPeNDAP-netCDF integration by integrating a DAP client library with the latest netCDF releases. The SDCI project was awarded supplemental funding to further work on scientific data streaming.
- Continued progress being made in developing libcf, a library for supporting CF metadata conventions.
- There is a new effort underway to propose netCDF-CF as an OGC standard. NOAA is planning to hire a staff member to the point person to facilitate the advancement of netCDF-CF.
- According to Google, 1.36 million web pages and 2,180 books mention netCDF.
- The Ocean Observing Initiative CI project: “This [netCDF] format is so prevalent in the community that it rises to the level of a requirement.”

End-to-End Data Services

“Unidata’s vision calls for providing end-to-end, well-integrated data services for the geosciences. These include an array of functions for collecting, finding, and accessing data; data management tools for generating, cataloging, and exchanging metadata; and submitting or publishing, sharing, analyzing, visualizing, and integrating data.”

We are having discussions on what this vision means and how to go about realizing it.

Integrated Data Viewer

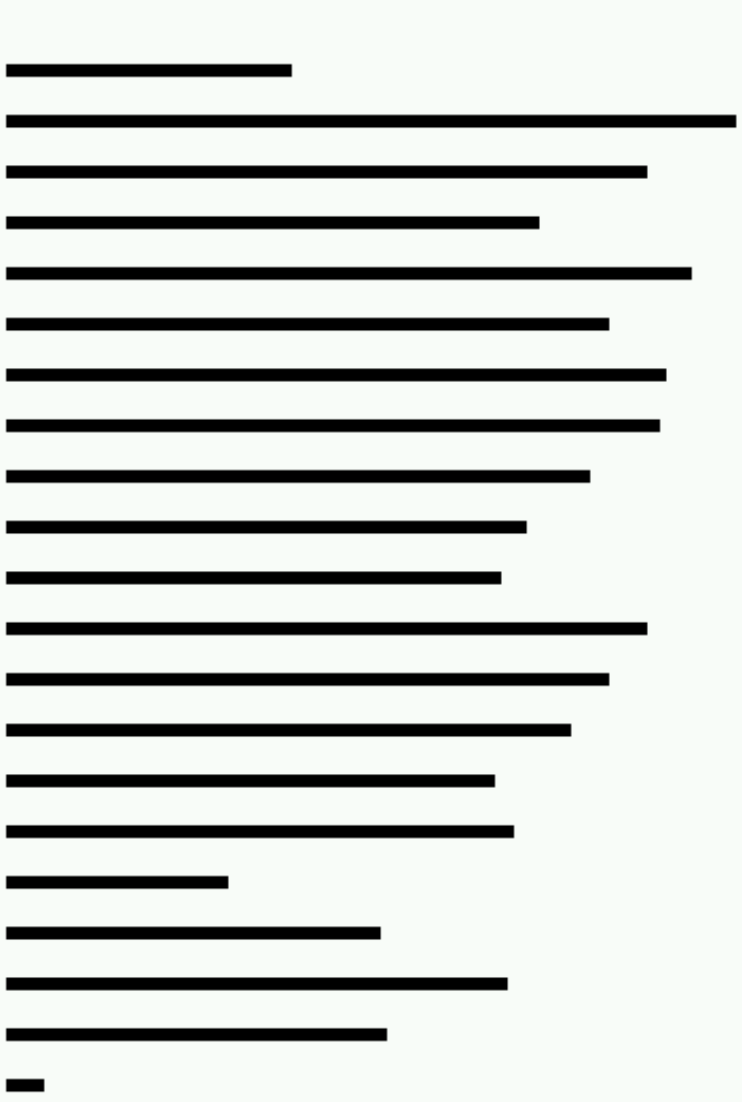
- IDV is now Unidata's most widely used analysis and display tool.
- IDV version 2.7 (and 2 updates) were released this summer.
  - Parallel data reading and rendering
  - Use of First Guess for Objective Analysis
  - Ability to export netCDF data
  - Improved import of text point data
  - New radar format (UF) and display (RHI sweeps)

- Next version (2.8) will have improved Globe Display; Remote reading of netCDF point and GEMPAK surface files; COSMIC data display;

IDV Usage since Dec 2007

Monthly summary

Month	Count	*5	10	20	30
2009_10	5452	188	101	48	28
2009_09	13859	364	193	96	65
2009_08	12185	331	160	81	53
2009_07	10199	326	162	82	46
2009_06	12986	357	195	98	65
2009_05	11508	353	178	82	52
2009_04	12573	379	199	101	70
2009_03	12371	355	204	113	71
2009_02	11114	325	187	99	59
2009_01	9883	301	168	84	58
2008_12	9448	262	147	96	59
2008_11	12200	260	158	96	67
2008_10	11449	248	153	87	61
2008_09	10740	264	159	92	57
2008_08	9274	252	147	75	53
2008_07	9611	261	164	88	51
2008_06	4224	129	73	41	22
2008_03	7131	201	115	58	44
2008_02	9583	256	156	100	68
2008_01	7217	218	122	65	51
2007_12	781	32	22	8	4



** - Count of unique sites that have used the IDV at least N times in a month*

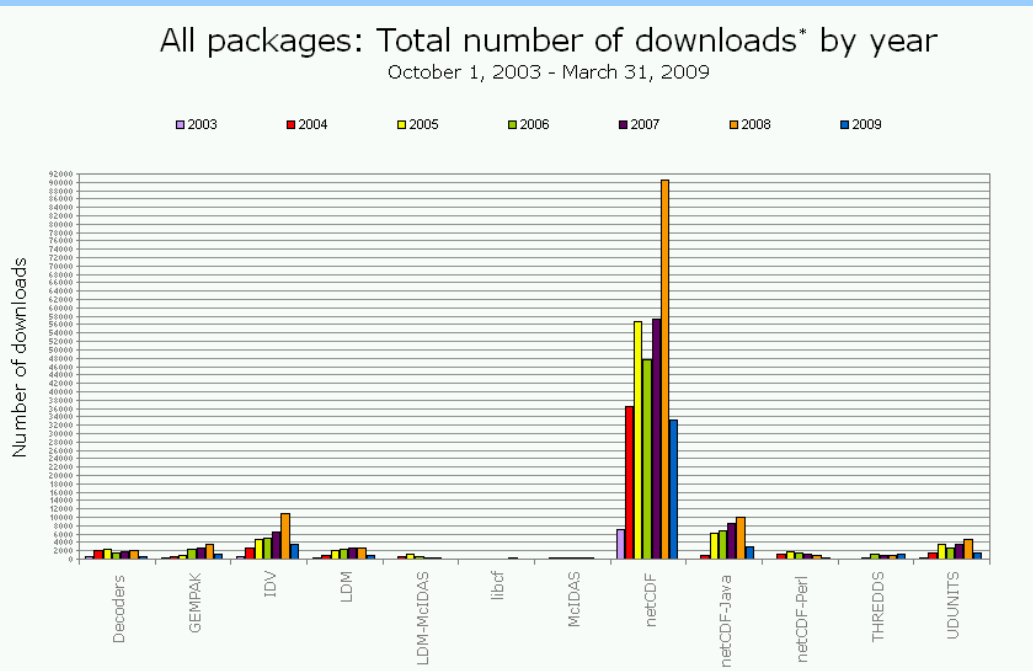
Software Download Metrics

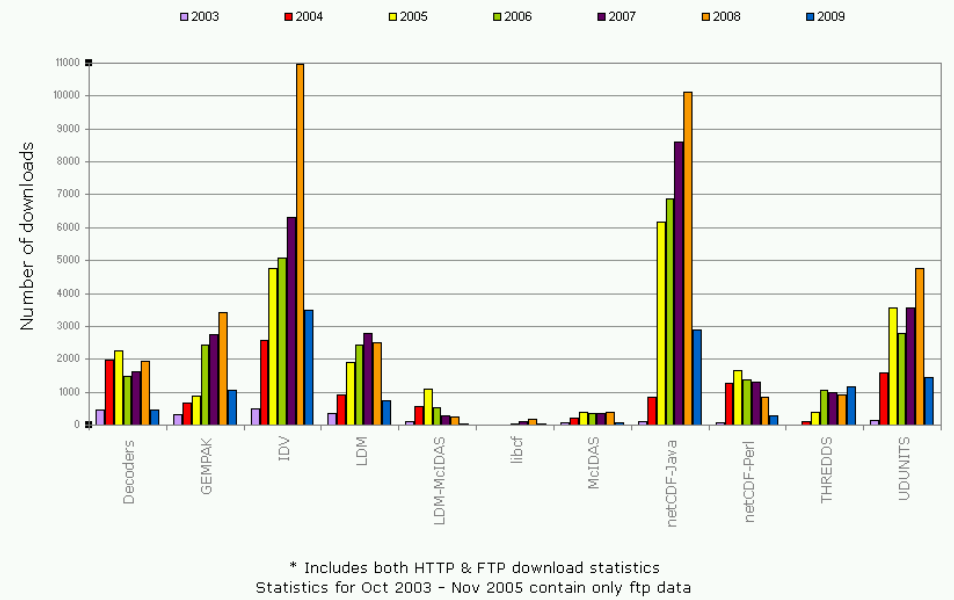
IDV had more downloads than GEMPAK in each of the past 6 years;

UDUNITS is the 4th most downloaded, ahead of LDM and GEMPAK;

Downloads for most packages are growing rapidly (GEMPAK 11%, IDV 20%, LDM 15%, netCDF (38%), and THREDDS (523%)

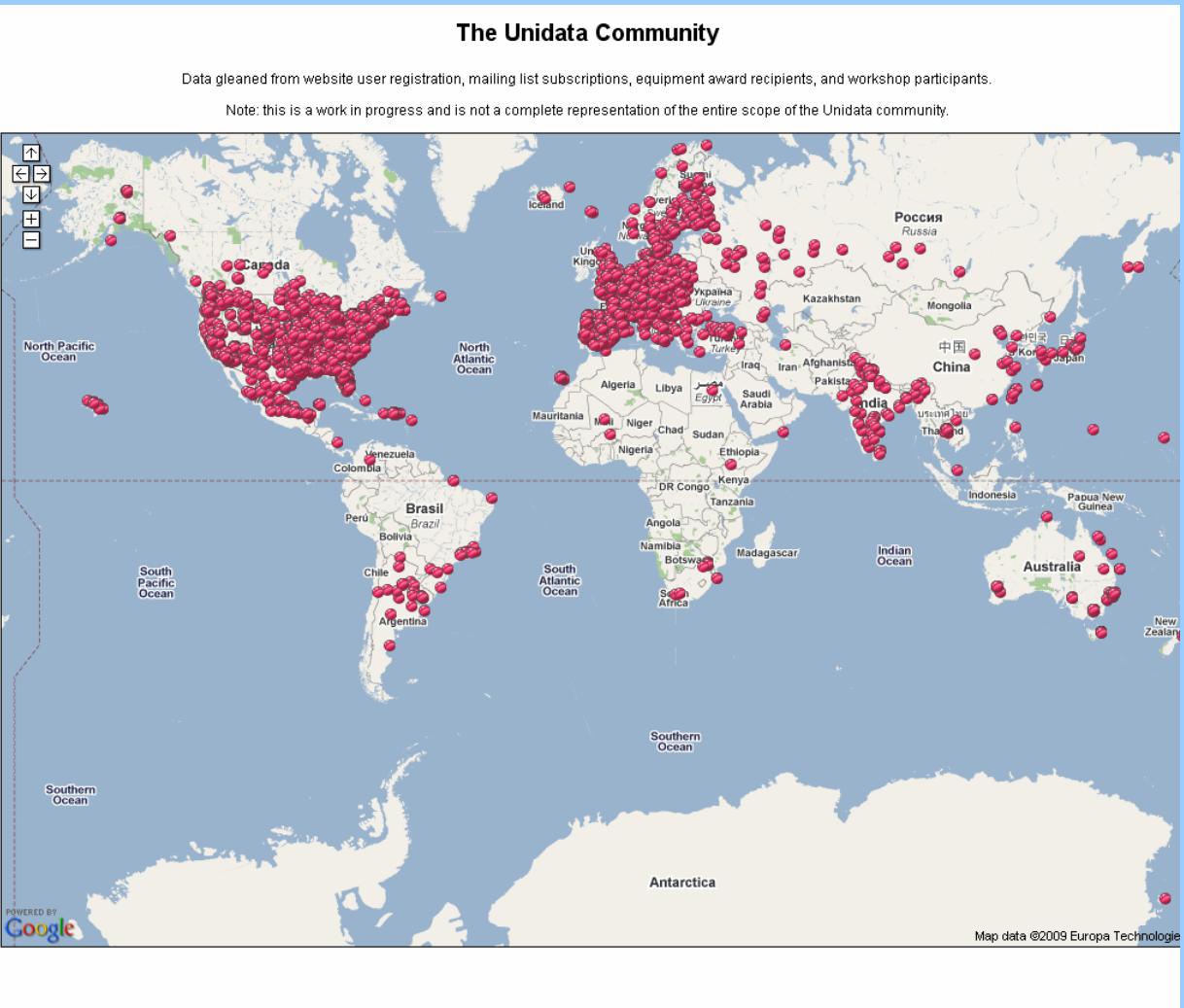
LDM-McIDAS and McIDAS seem to be decreasing from 2008 to 2009 (if you extrapolate).





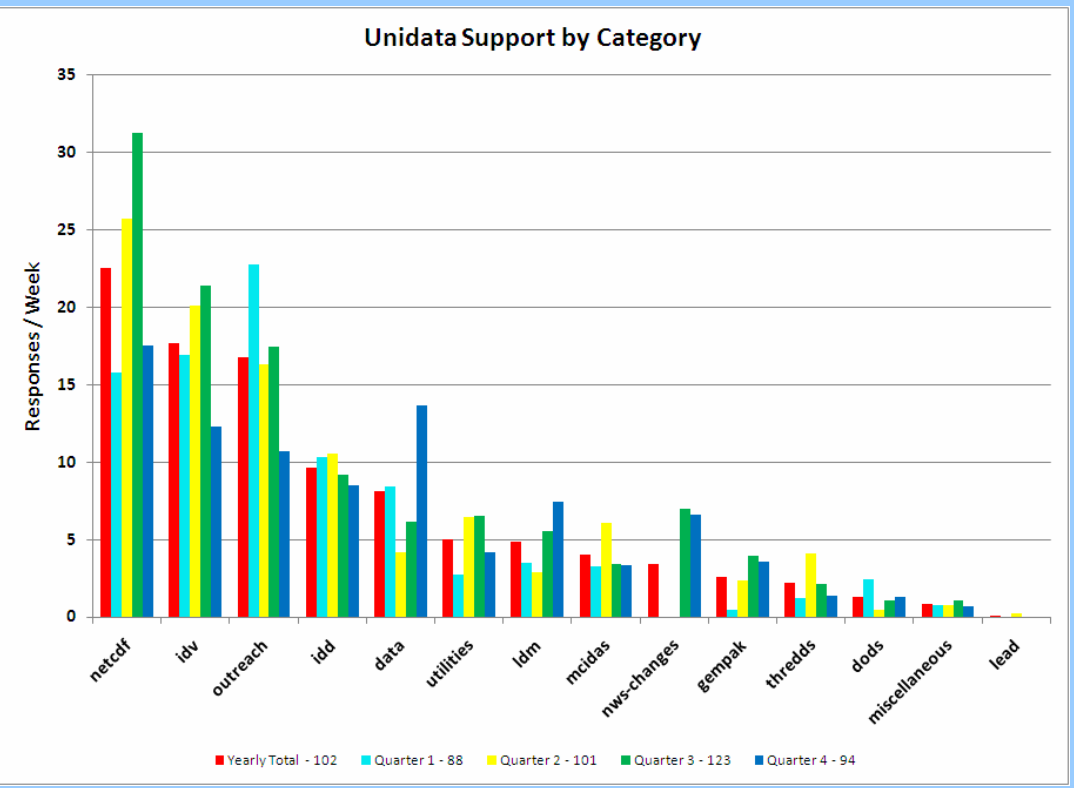
NetCDF downloads (just from the UPC) are nearly 10 times the next highest software (IDV)!

Metrics: Geospatial Depiction



- This a work in progress
- We are refining the map-generation tool
- We are continually adding to and improving the database.

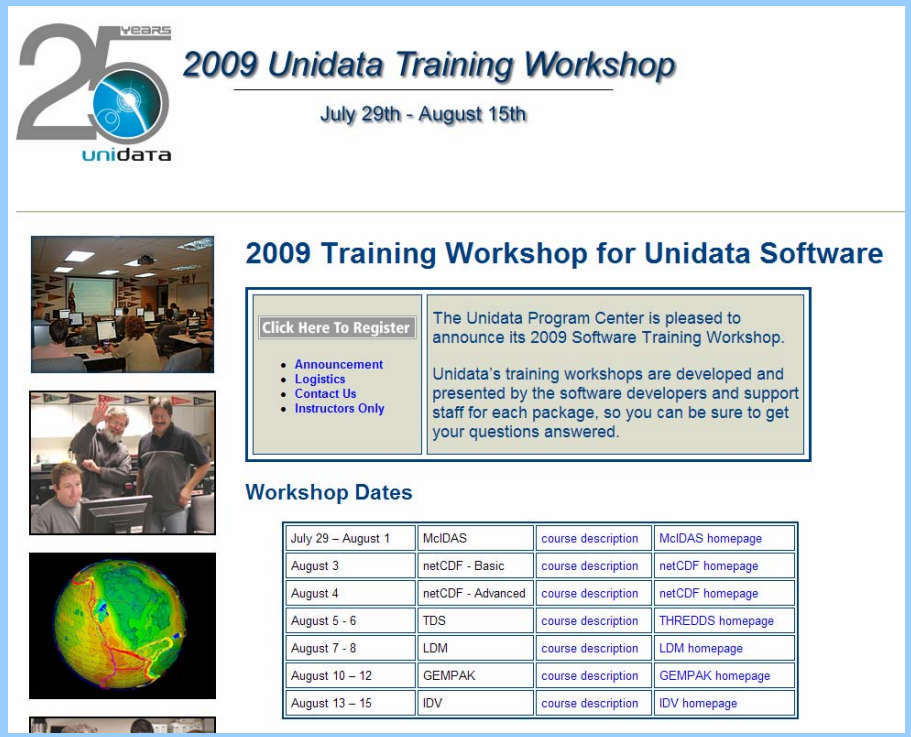
Support Load



- The support load continues to be high.
- Yearly average: 102 inquiries/week.
- It has been steady for the past 2 years

- The number of inquiries to support and mailing lists has gone up in recent months, in concert with new releases and increase in downloads and usage.

2009 Unidata Training Workshop



A total of 91 participants attended;

They represented

Canada

Colombia

Germany

Saudi Arabia

United States

McIDAS	7
netCDF Beginner	61
netCDF Advanced	50
THREDDS	23
LDM	15
GEMPAK	9
IDV - 22	22

2009 Unidata Training Workshop

Community Equipment Awards

- We had set aside $100K for this year's awards. This year's themes were:

  - Enhance participation and advancement of underrepresented populations.

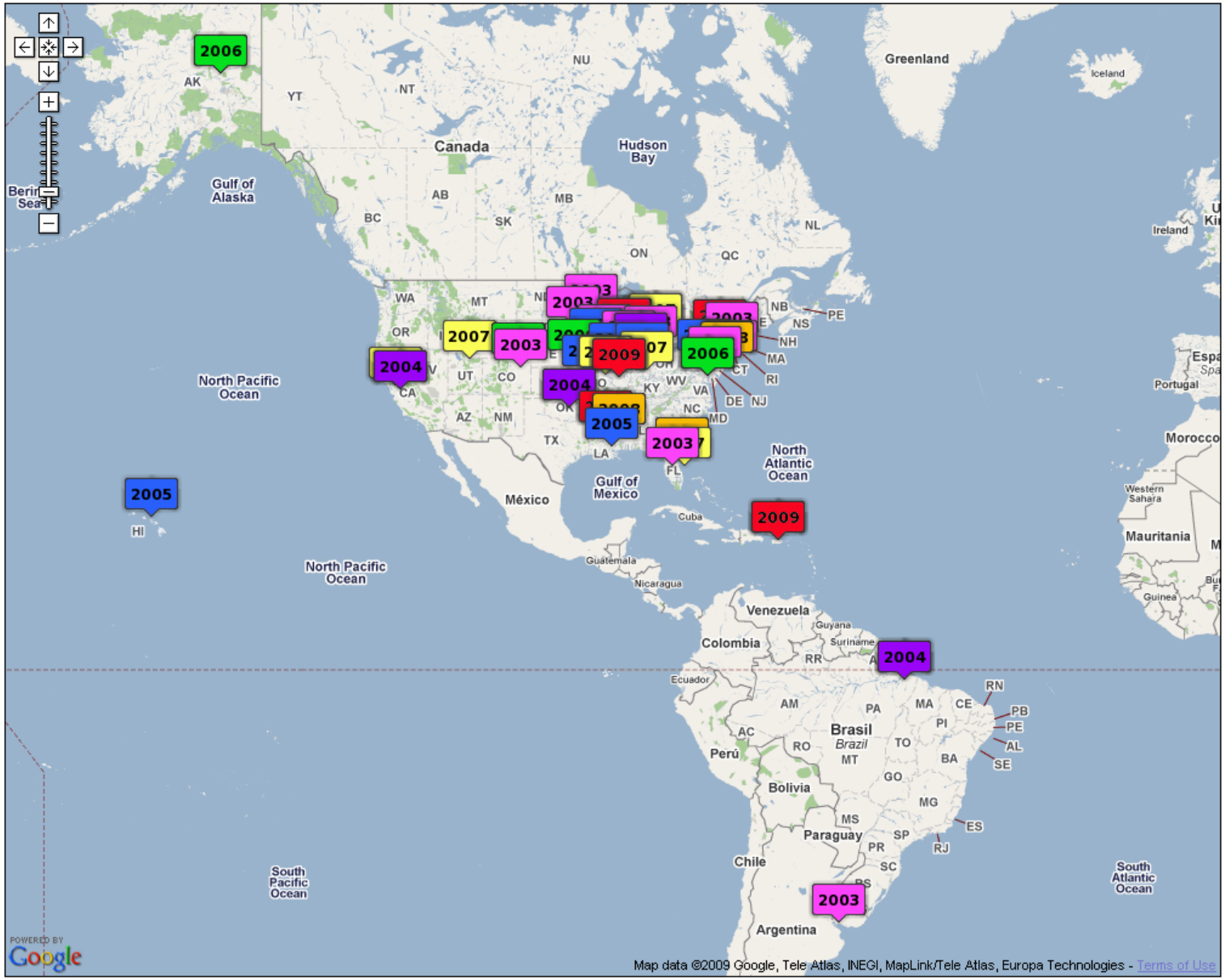
  - Provide useful datasets to the community to support and education and research.

- We have received eight proposals. Six proposals were funded, including a couple that addressed the diversity theme.
  - **Lyndon State College, Dr. Bruce Berryman - "Update Equipment, Sharing of New Dataset, and Outreach to Underrepresented Populations"**
  - **Madison Area Technical College, Dr. Matthew A. Lazzara - "Madison Area Technical College Meteorological Interactive Processing Project"**
  - **Saint Louis University, Dr. Charles E. Graves - "A Proposal to Update Computing Hardware to Support Weather and Climate Initiatives at Saint Louis University via Unidata Activities"**
  - **University of Louisiana Monroe, Dr. Anne T. Case Hanks - "Weather Research Laboratory Expansion at ULM"**
  - **University of Puerto Rico, Dr. Miguel Canals - "Caribbean Ocean Data Distribution and Visualization Laboratory"**
  - **University of Wisconsin-Madison, Dr. Jonathan Martin - "Equipment Modernization for a Geophysical Data Visualization Classroom"**

- Over the past 7 years, we have given out 45 such awards.
- Would like your input on how we can increase the number of proposals submitted to this program.

2003-2009 Unidata Equipment Awardees

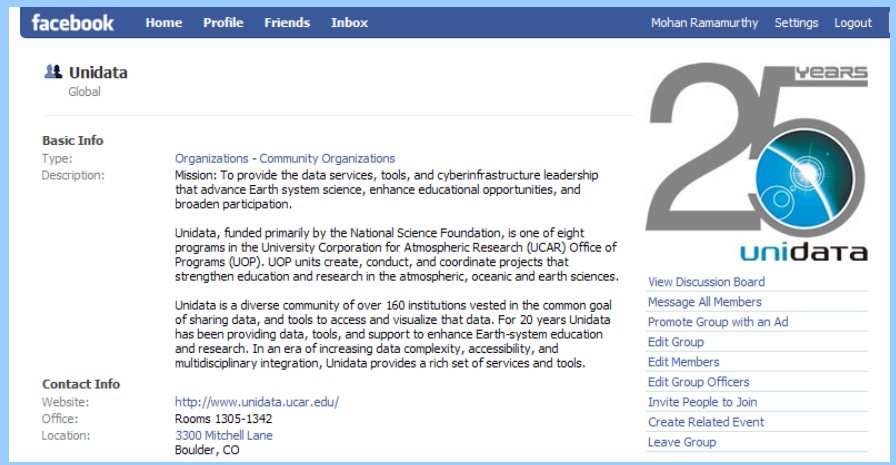
Click on the icons to view awardee information and proposal/article.

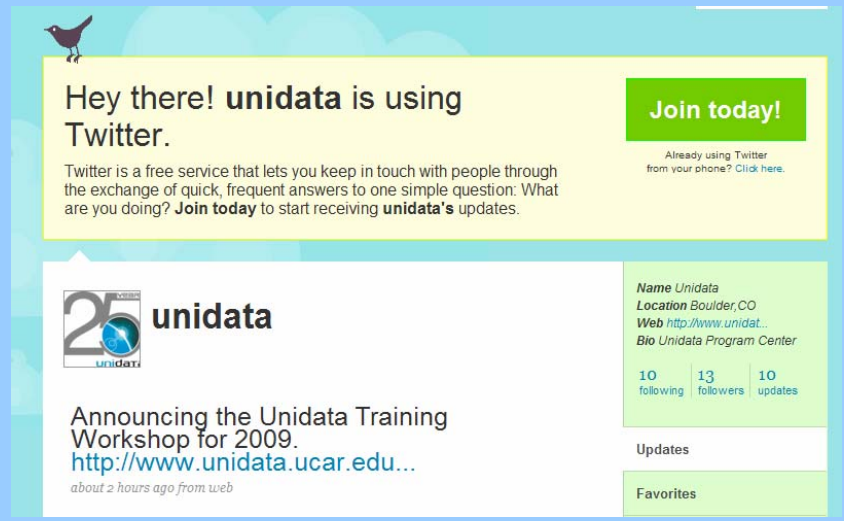


LEAD

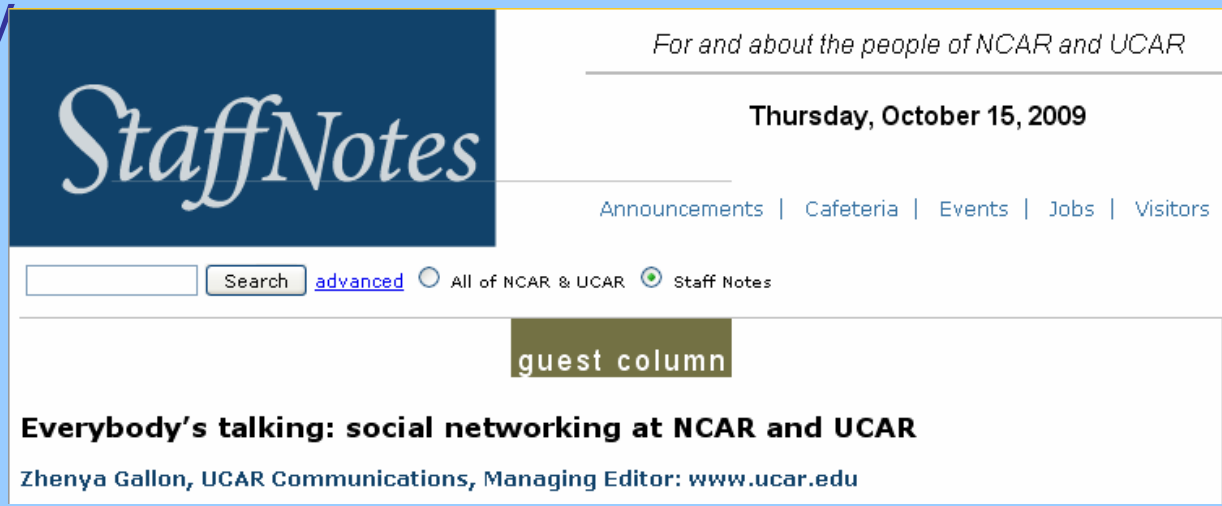
- The period of performance for the LEAD ITR project ended on 30 September 2009 after a one-year no-cost extension period.
- The six year project had pioneered a new approach for integrating complex weather data, assimilation, modeling, mining, and cyberinfrastructure systems to enable on-demand, real-time weather prediction using scientific workflows.
- The project, in partnership with Indiana University and with funding from NSF, organized a workshop on Cloud Computing and Collaborative Technologies in the Geosciences on 17-18 September in Indianapolis.
- The Unidata LEAD Testbed was recently upgraded to a powerful system to meet the ongoing and future needs of the project. The new system has 64 GB RAM and 72 TB disk space.
- A large volume of data from Unidata datastreams is hosted on the machine for periods varying from 45 days to over a year. It will remain a valuable resource for the community beyond LEAD.
- The LEAD system and the tools and technologies developed in the project will continue to exist and evolve as other funding becomes available.

Unidata & Social Networking





Unidata group on Facebook currently has 111 members



3375 Mitchell Lane Purchase and FL-4 Remodeling

- To meet its space needs, UCAR has purchased the building across from FL-4, aka FL-5.
- The interior needs considerable remodeling work before UCAR can occupy it. Remodeling will begin in summer 2010 and is planned to be completed early in 2011.
- Remodeling is also planned for FL-4. FL-4 occupants, including Unidata, will temporarily move into FL-5, in March 2011. The remodeling of FL-4 is expected to take 8-9 months.
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State of the Program: A Snapshot

- Community relations : Green
- Data flows : Green
- Software development : Green
- Collaborations : Green
- Staffing : Yellow
- Support : Green
- Finances : Green

Questions?