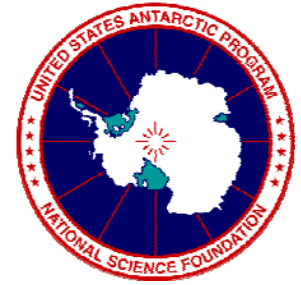




The Antarctic-IDD



Matthew A. Lazzara

*Antarctic Meteorological Research Center, Space Science and Engineering Center
University of Wisconsin-Madison, Madison, WI*

Robert Vehorn and Jason Stokes

*SPAWAR System Center Charleston, Aviation Technical Services
Charleston, SC*

SPAWAR



Systems Center
Charleston



THE UNIVERSITY
of
WISCONSIN
MADISON

Kevin Manning, Jordan Powers, and Mike Duda

*Mesoscale and Microscale Meteorology Division
National Center for Atmospheric Research
Boulder, CO*



Gabe Langbauer

*Byrd Polar Research Center, The Ohio State University
Columbus, OH*



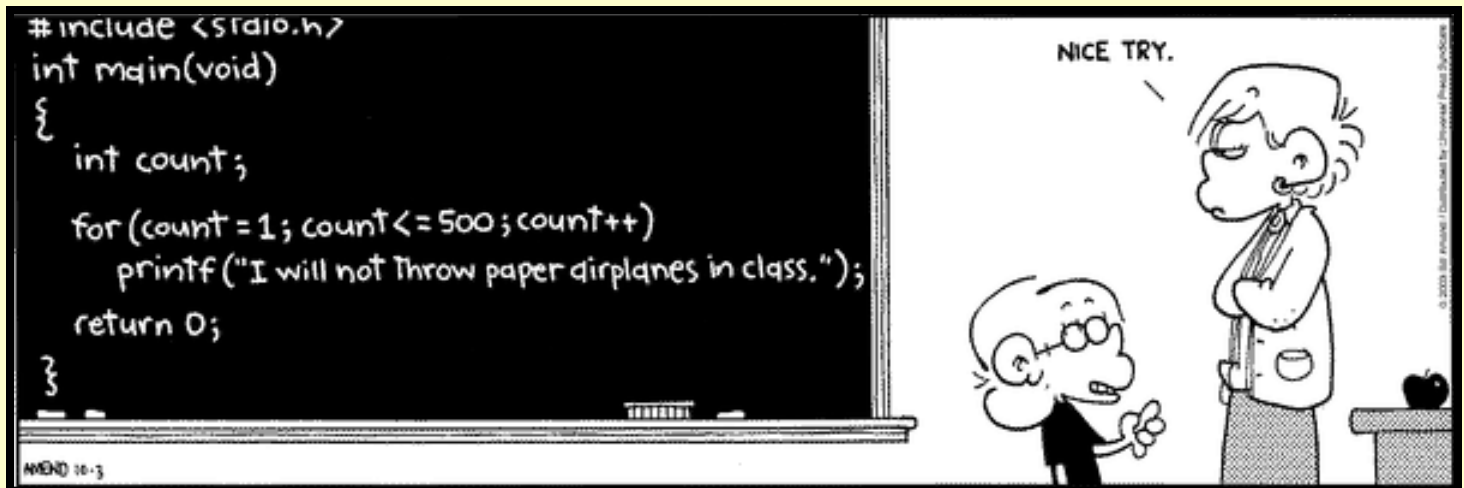
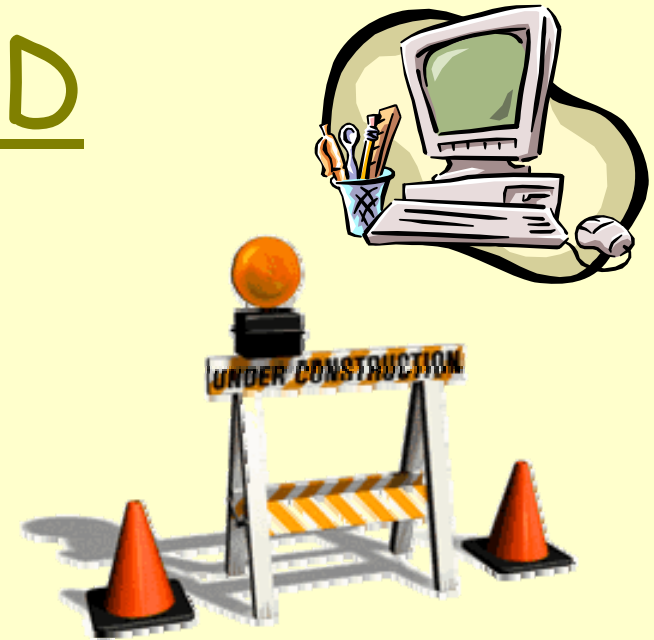
Colorado
University of Colorado at Boulder

Mark Seefeldt

*University of Colorado
Boulder, CO*

The Antarctic-IDD

- Background & Why Do This?
- What Is LDM?
- What Data Are We Sharing?
- File Naming Convention
- Training...
- Original, Current, and Planned Design
- Issues & Considerations
- Future Plans

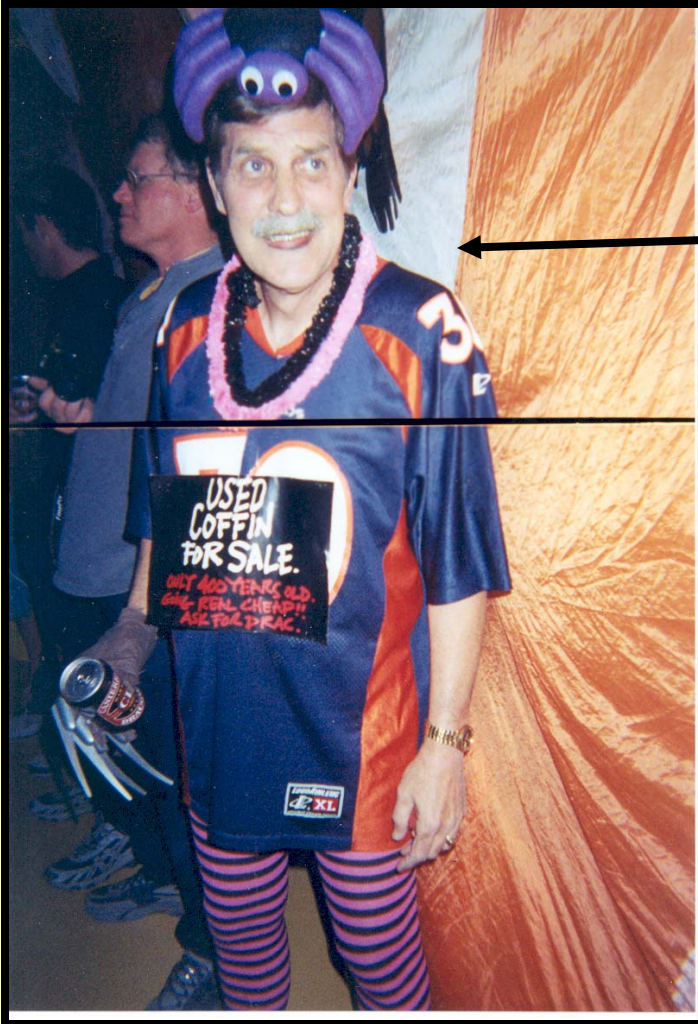


Background

- Initial discussion of Unidata help with the Antarctic (several years back)
 - Cliff Jacobs/NSF & Unidata & SPAWAR (& AMRC)
- Last year's synergy discussion last year:
 - Al Sutherland/NSF
- Start of the “antdiscussion” e-mail list
- “Data sharing” topic chosen:
 - Using Unidata Local Data Manager (LDM) software
 - Hence birth of the Antarctic-Internet Data Distribution (IDD) system

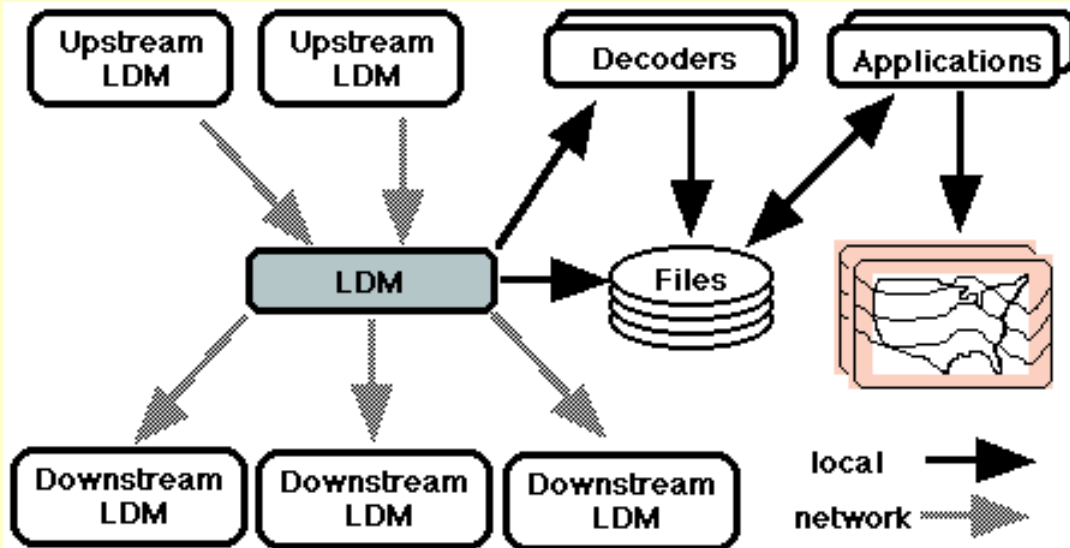
Why do this?

To help out this poor fellow!?



Seriously –

- Improved exchange and availability of Antarctic meteorological data (Wider audience)
- Establish a better exchange network
- Redundancy
- System with potential for:
 - Throttling data selection
 - Coupling with future advanced data compression methods
- The price is right (free!), and will have long term support
 - (Unidata is NSF funded)



What is LDM?

- Get data from one or more upstream data sources
- Relay data to one or more downstream data sinks
- Store selected data products in local files
- Pass data through local decoder programs
- Freely available software
 - Used by the Unidata community
 - Internet Data Distribution (IDD)
 - Used in private sector, government & internationally

What data are we sharing?

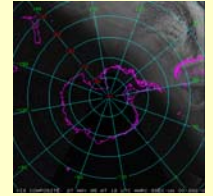
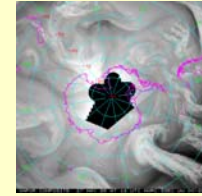
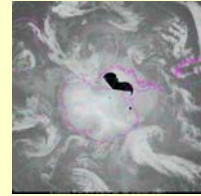
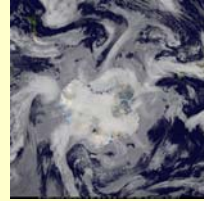
- AMRC

- Satellite Composites

- Infrared, Water Vapor, Experimental Visible, and Pseudo-color

- AWS Observations

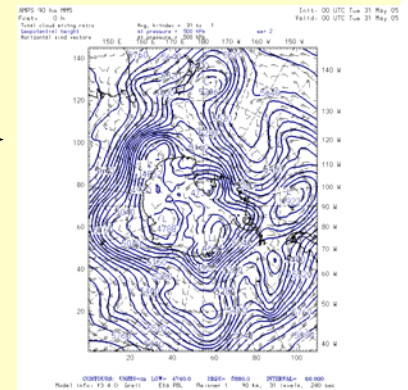
- Received at Palmer, McMurdo, Gilmore Creek (AK), and Wallops Island (VA) ground stations



- NCAR

- AMPS

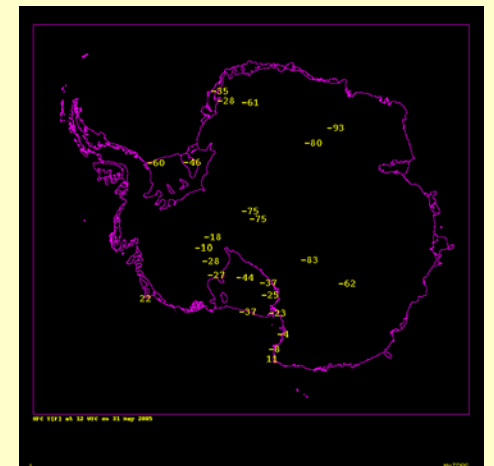
- Antarctic continental 30 kilometer D2 model output



- SPAWAR

- SPAWAR AWS & MAWS

- Test Web Camera Imagery



File Naming Convention

- Using the experimental (EXP) data feed in LDM
 - Issue with need to share feed with other data
- Hence file name are prefix as:
 - USAP.center.data.day.time.etc.etc.**
 - **USAP** = Antarctic-IDD product prefix
 - **Center** = Originating group
 - e.g. AMRC, NCAR, SSCC, etc.
 - **Data** = Type of Data
 - e.g. AWS, Composite, GRIB, etc.
 - **Day, time, model level, forecast hour, spectral band**, etc.
- Question for discussion:
 - Julian or Georgorian dates?

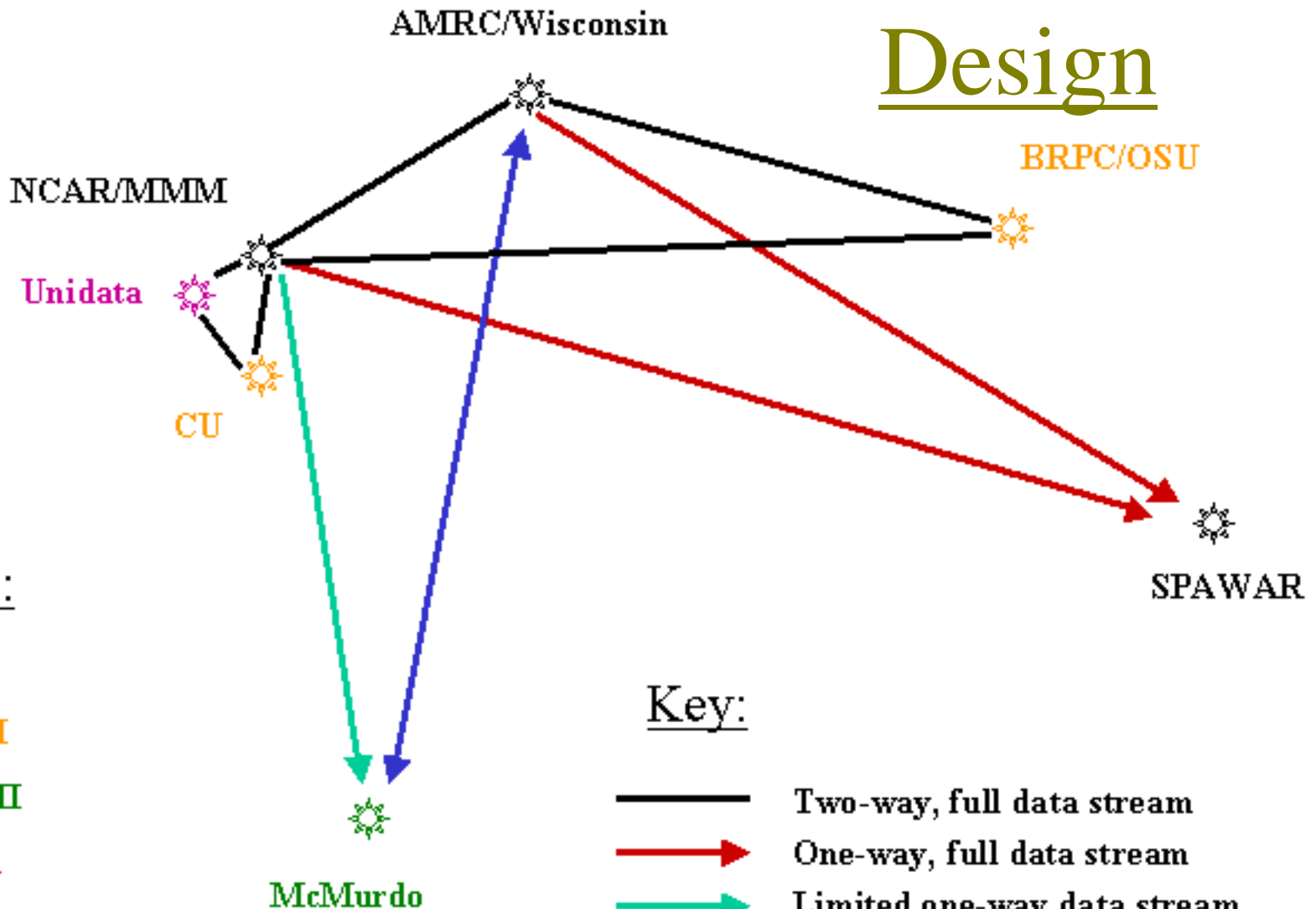
Training...

- Thank you to Unidata!
 - Tom Yoksas
 - Steve Emerson
- Training
 - Regular LDM session
 - Mark Seefeldt, UC
 - Gabe Langbauer, OSU
 - LDM “Invitational”
 - Bob Vehorn, SPAWAR
 - Jason Stokes, SPAWAR
 - Jordan Powers, MMM/NCAR
 - Mike Duda, MMM/NCAR
 - Kevin Manning, MMM/NCAR
 - Matthew Lazzara, AMRC/UW



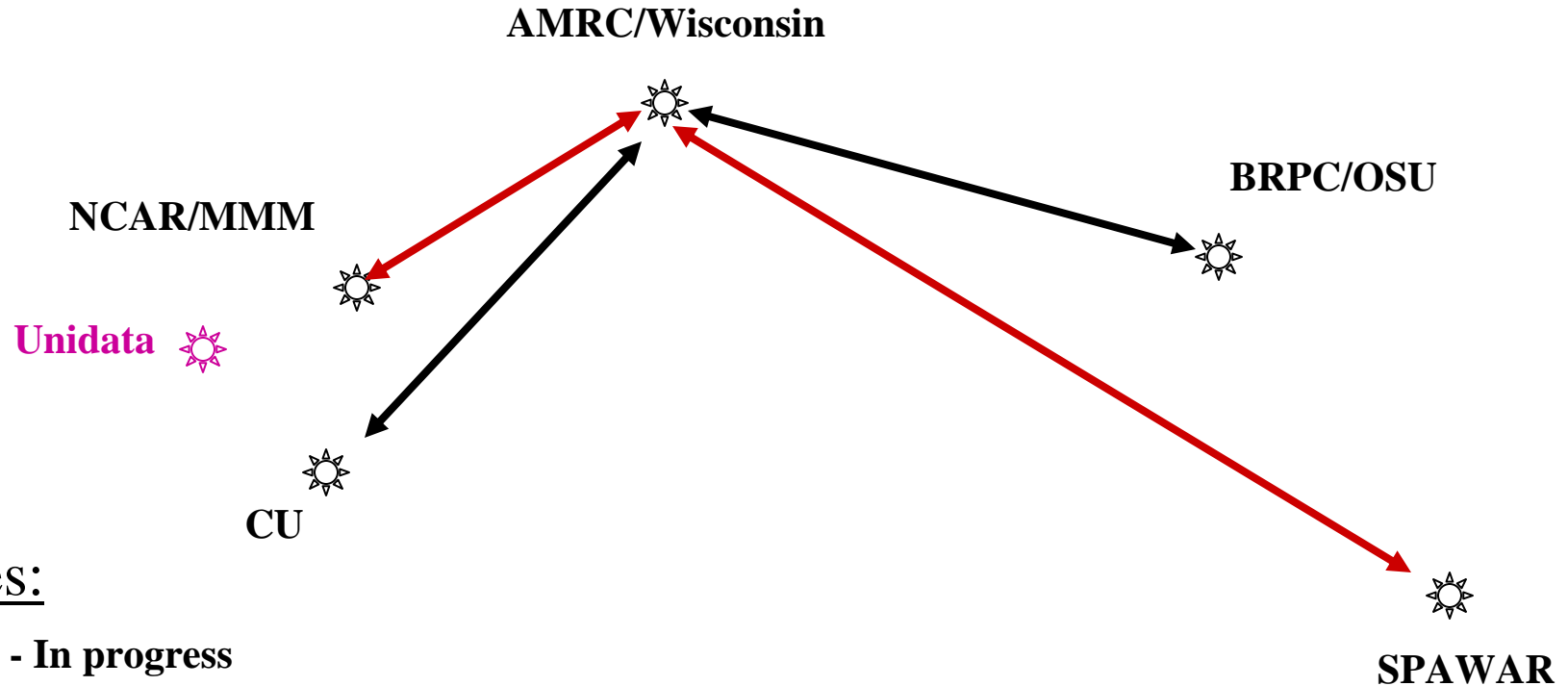
Antarctic-IDD

Original Design



Antarctic-IDD

Status as of June 1 2005






Phases:

Phase I - In progress

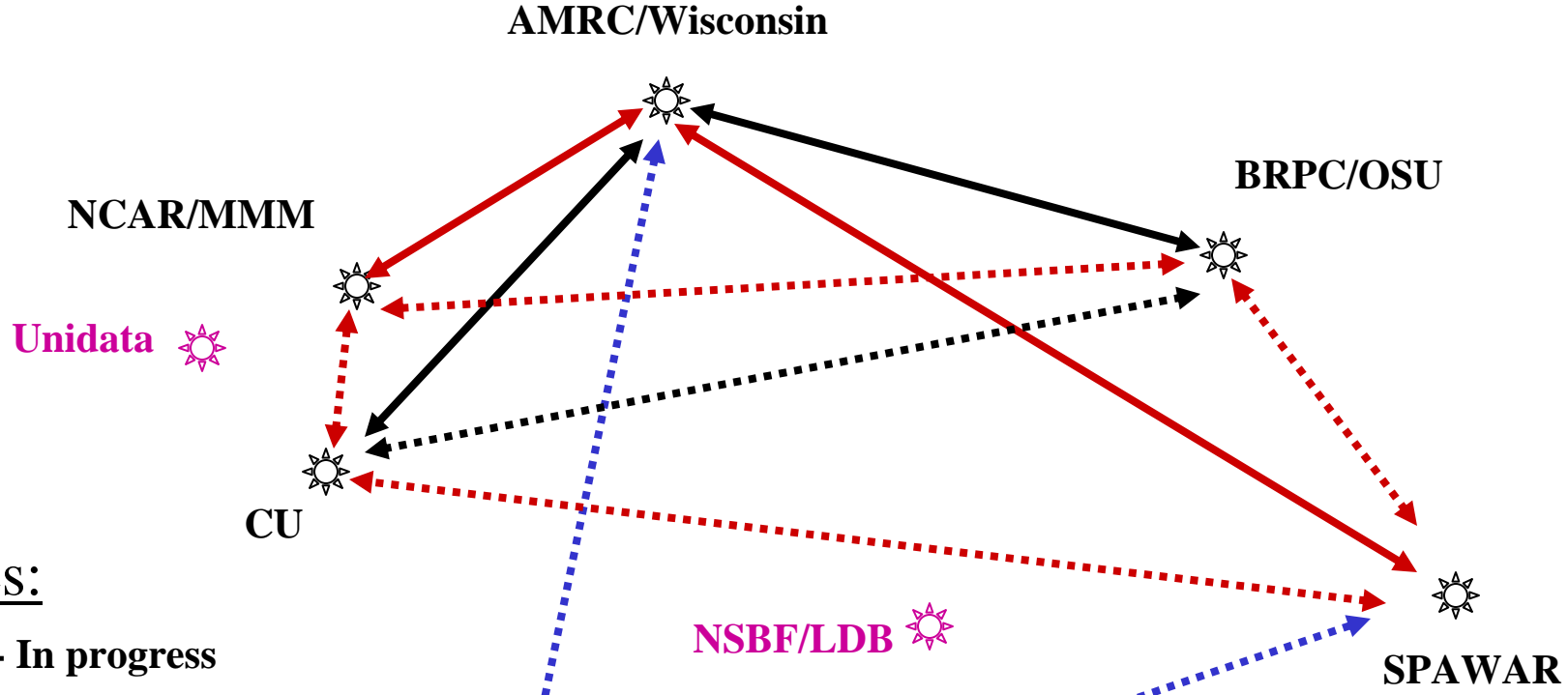
Unknown Status

Key:

-  Two-way, full data stream (Possible)
-  One-way, full data stream & Firewall limited data insert return
-  Limited two-way data stream

Antarctic-IDD

Planned by 2006



Phases:

Phase I - In progress

Phase II – Field Season 2005-2006

Phase III - Unknown

Key:

- Two-way, full data stream (Possible)
- One-way, full data stream & Firewall limited data insert return
- Limited two-way data stream
- Future/Planned – dates TBD
- Future/Planned – dates TBD
- Future/Planned – dates TBD

NSBF/LDB
At Willie?

McMurdo
SPAWAR
& AMRC

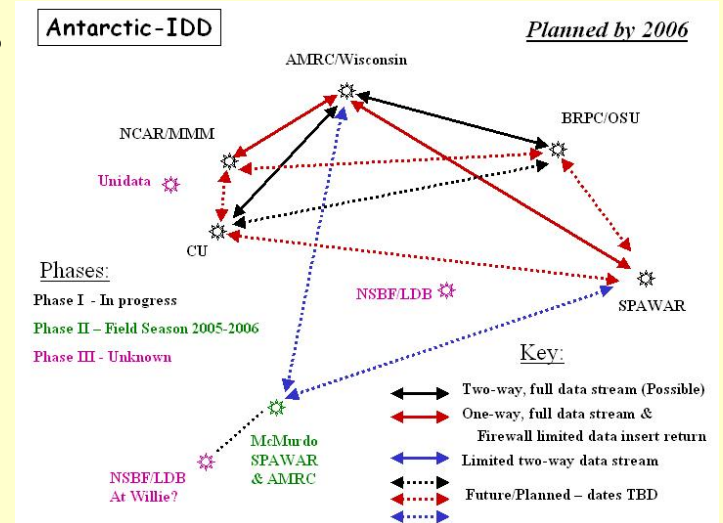
Issues

- Reducing duplication of moved data...
- Data Format
 - Satellite Data, primarily
 - McIDAS
 - GeoTIFF
 - TDF
 - Costs
- Bandwidth & Compression
 - Making use of the exiting T1/USES
 - Test out compression methods
 - Unix Compress
 - GZIP
 - JPEG2000 ??
 - Wavelet ??
 - Others ??
- *(Discussion to follow during Lunch!)*



Future Plans

- Continue implementation
 - Especially to/from McMurdo
 - AMRC to convert some items from ADDE to Antarctic-IDD/LDM
 - Share/complement SPAWAR's efforts
 - Share/complement data for NIC/RSPC ?
- Add users/relay sites
 - NSBF?
 - Domestic, and perhaps International
- Strengthen the network topology!!
- Add data
 - OSU/BPRC's Polar MM5 output?
 - Anything special from Colorado?
 - Anyone else?
- Paper at the next AMS IIPS meeting Atlanta, GA Jan 2006.



"Scientific endeavor in Antarctica distinguishes itself from similar activities in other parts of the world by the auspicious development of friendly and fruitful international cooperation on a broad base...international understanding again and again has been an important stimulus as well as a fortunate by-product of scientific work of Antarctica.

May it continue to be so."

W. Schwerdtfeger, 1970

World Survey of Climatology

Discussion Topic:
Next Synergistic Idea

Joint-Collaborative
Antarctic Meteorological
Educational Experience