CONDUIT and NAWIPS Migration to AWIPS II Status Updates

2013 Unidata Users Committee

NCEP Central Operations

April 18, 2013

CONDUIT

Cooperative Opportunity for NCEP Data Using IDD Technology

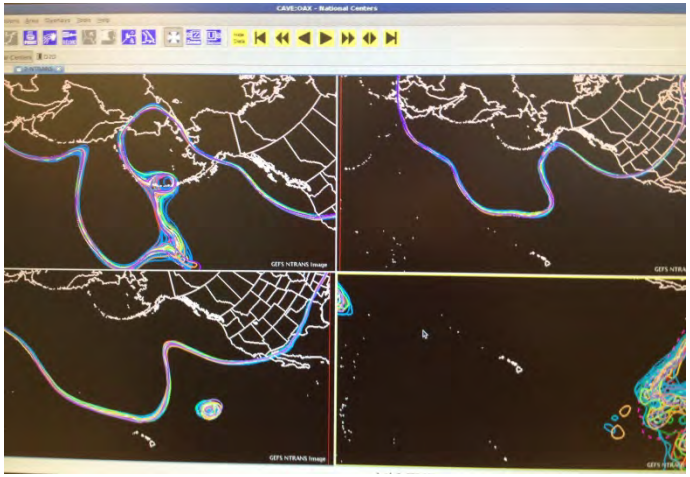
- No changes to CONDUIT content in the last 12 months
- Current infrastructure can not handle more data due to limited LDM queue size
- Upgrade put on hold due to re-evaluation of relationship with NOAA's Web Operations Center, where CONDUIT is currently hosted
- Current proposed plan is for NCO to take over CONDUIT infrastructure in the next year
  - Upgrades could, then, move forward and products could be added
- Request for RAP 13km and NAEFS 1 degree raw grids
  - RAP 13km is on NOAAPORT now to 18 hours for all cycles. Still need?

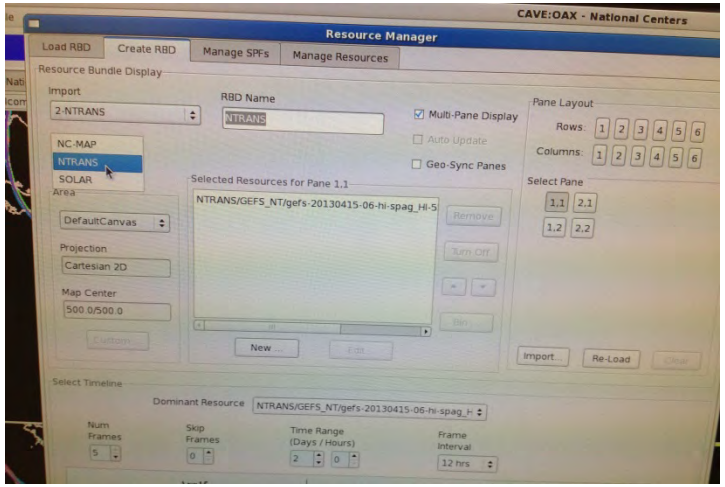
AWIPS II - NAWIPS Overview and Status

- NWS National Deployment of AWIPS II will be restarting in Q3FY13. Complete target is Q4FY15.
- National Center Perspective (NCP) performance issues in grid loading / data display were solved…. but new ones are cropping up with increased data ingest
- NCP baseline functionality expected to be completed late August for the OB13.6.1 release in early November
- Non-SBN operational dataflow has been turned on to some NCEP Centers
- Field Operational Test and Evaluation moved from September 2013 to January 2014 with intensive system and functional testing occurring now through the Fall
- NAWIPS V6.9 will be released at the end of April / V6.10 end of July
- …Yes … the project has been delayed … AND we are making progress

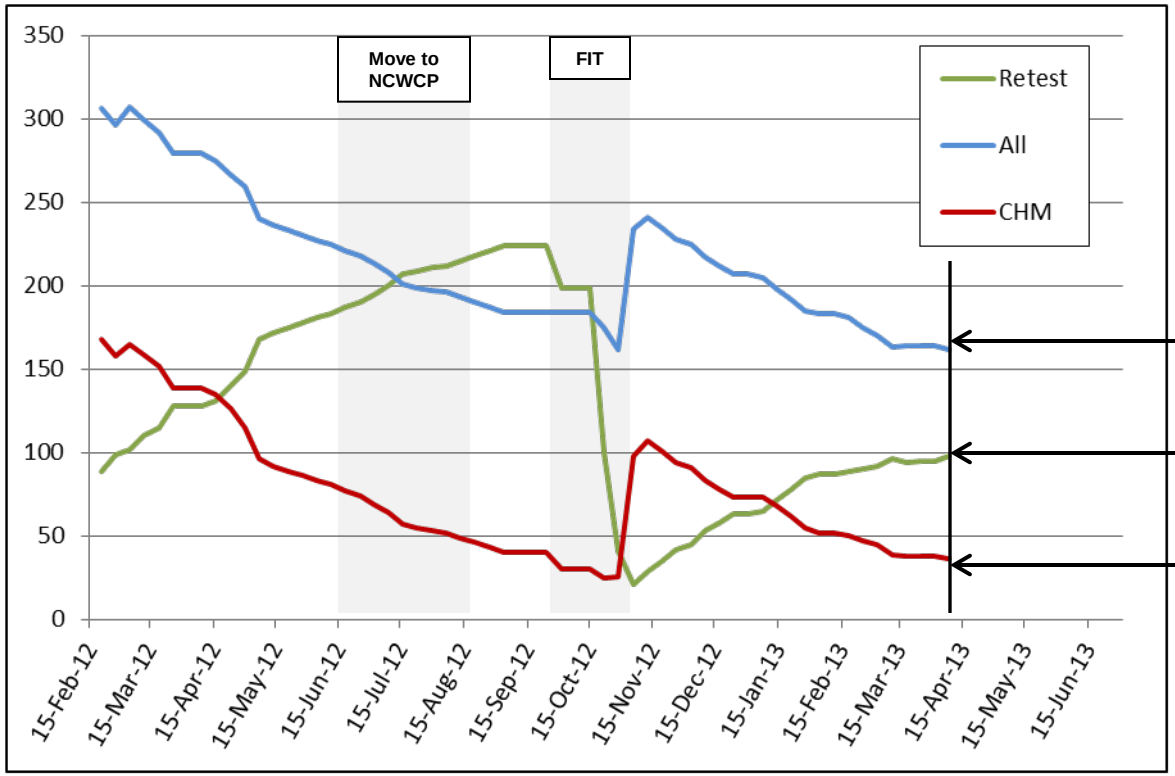
“Big Ticket” Functionality

- Ability to display solar imagery within NCP – May 2013 (13.3.1)
- Ability to save and extract PGEN xml file to/from A2DB – Apr / Jun 2013 (13.4.1)
- NTRANS-like functionality available in NCP – Apr / Jun 2013 (13.4.1)
- Baseline translation tables for NCP grid display – Apr / Jun 2013 (13.4.1)
- Ability to decode generic point data into A2DB – Jun / Sep 2013 (13.5.1)
- GEMPAK programs to read from AWIPS II Database – Aug / Nov 2013 (13.6.1)





Status of "known bugs" Trouble Ticket Reports



As of 12 April 2013

- 10 Not adjudicated

162 Open TTRs

98 Ready for Retest

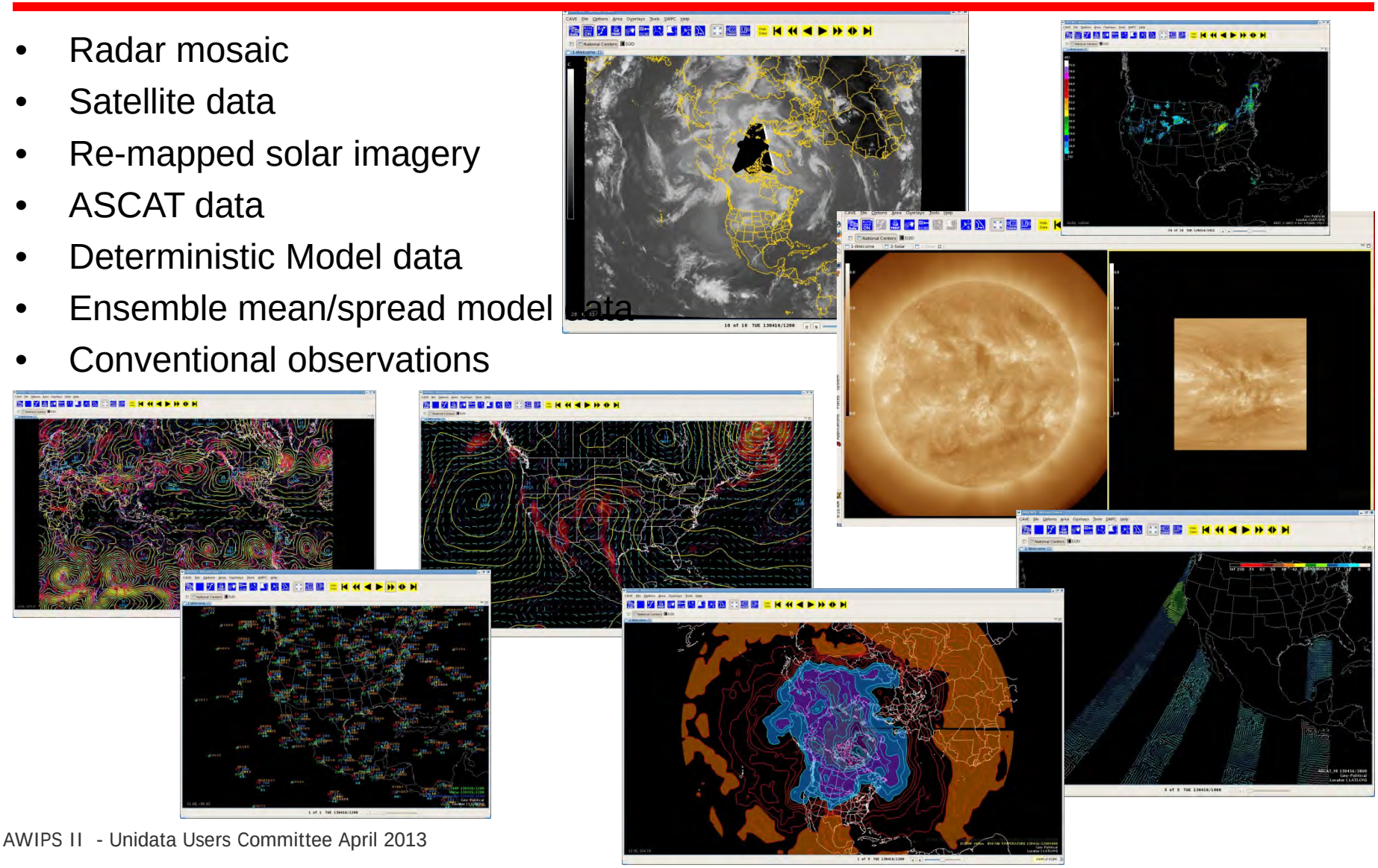
36 CHM – 13+7+16 CHM

TTRs Classified as Critical / High / Major (CHM)
Repeatable problem that prevents or compromises the delivery of products or services

Critical - No alternate solution is available.
High - A temporary workaround is available, but is too cumbersome or workload intensive to sustain operations.
Major - A workaround is available to allow continuation of operations; however, workaround not acceptable for software acceptance.

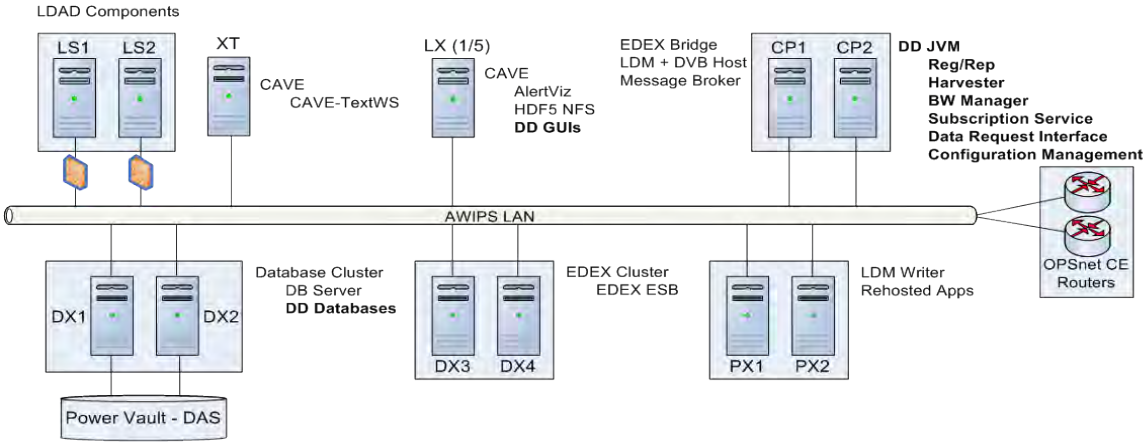
Current Products Displayable in AWIPS II

- Radar mosaic
- Satellite data
- Re-mapped solar imagery
- ASCAT data
- Deterministic Model data
- Ensemble mean/spread model data
- Conventional observations



Major Hardware/Software Planned AWIPS Upgrades

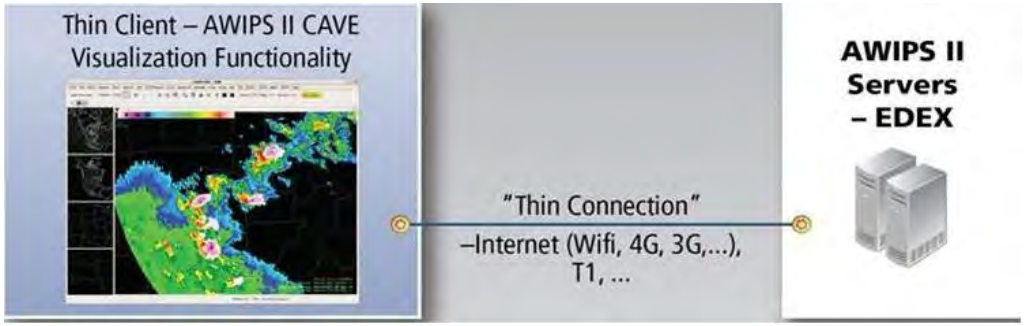
- Thin Client capability – Available in OB13.1.2 / January 2013
- Initial operating capability of Data Delivery / OpenDAP in OB13.3.1 / May 2013



- Upgrade to PostGres database and QPID in OB13.4.1 / July 2013
- Update to Apache Camel in OB13.5.1 / September 2013
- Upgrade to RHEL 6.0 in OB14.1.1 / January 2014
- Upgrade to 64-bit Servers in OB 14.4.1 / July 2014

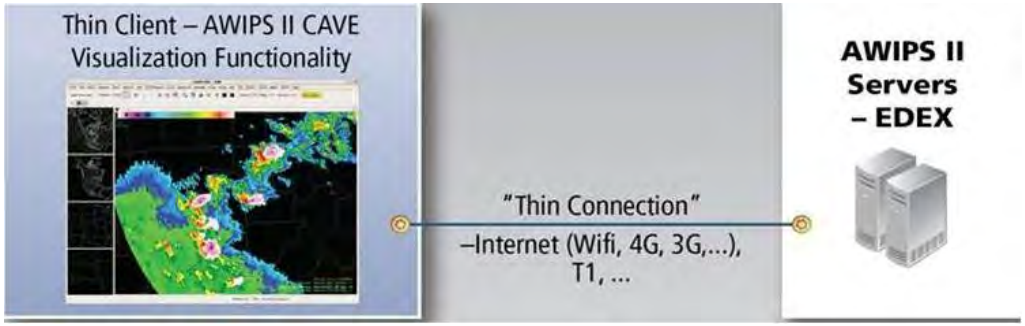
Thin Client Overview

- Thin Client is AWIPS II CAVE that runs in remote mode connected to an instance of EDEX via an Apache proxy server to access AWIPS II data
- Thin Client CAVE Attributes:
  - Runs on Linux or Windows platforms with appropriate graphics card and memory
  - Thin Client inherits all baseline CAVE features, enhancements and DRs
  - D2D perspective available by default, Other perspectives (GFE, NCP, Hydro, AVNFPS), have not been fully tested yet
- Provides features to improve performance over limited bandwidth scenarios:
  - Data and map lossless compression between CAVE and EDEX
  - Local data, map and localization caching on the client platform
- Provides for flexible user scenarios – selected EDEX site and localization can be modified by the user in TC CAVE Preferences GUI



Thin Client Data Access Methodologies

- Thin Client CAVE Data Access Attributes
  - Connects to an Apache proxy server that points to EDEX, AWIPS II server software, to access AWIPS II data
  - Supports LAN, Wireless internet access or dedicated connections
- CWSU Use Case
  - Thin Client runs on an ARD Linux Workstation with dedicated FAA circuit connection to parent WFO proxy server on pxf1
- Incident Meteorologist (IMET) Use Case
  - Thin Client run on Linux and/or Windows platform connected via internet to remote EDEX instance
  - Back-End Implementation Approach Supported by RTS
    - Proxy Server resides on refreshed LDAD servers at Regional HQ sites
    - Regional HQ EDEX used to serve data through the firewall via proxy requests

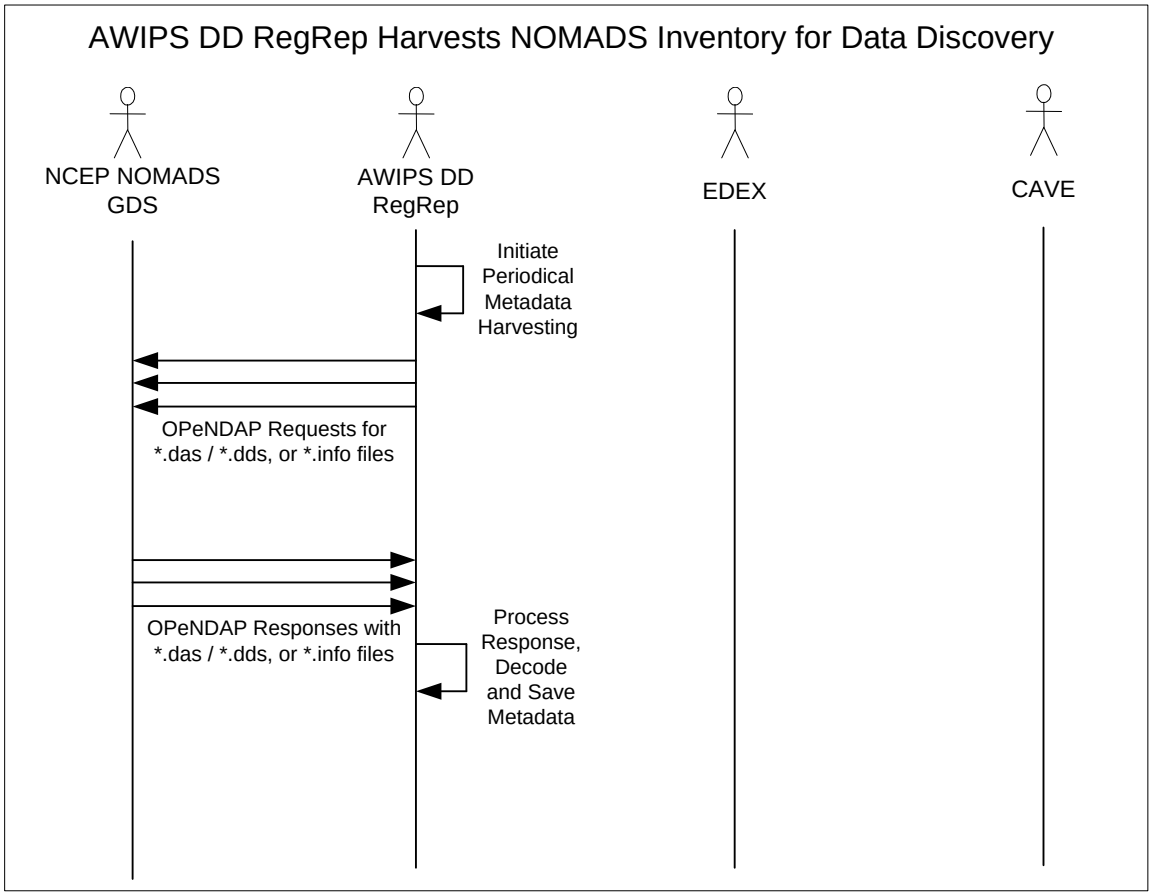


Data Delivery Overview

- The Data Delivery sub-system is designed to be a coordinated and distributed infrastructure for the collection and delivering of model data and observations
- Focus only on the data discovery, telecommunication and data access functions of the AWIPS-II system
- Does not affect the data-processing or any other function of AWIPS-II.
- The Data Delivery approach utilizes a network-centric paradigm and Service-oriented Architecture (SOA)
- Capabilities envisioned include: (via AWIPS VPN over OPSnet)
  - Data registry services
  - Data discovery services
  - “Smart” push/pull technologies either through ad-hoc request or pre-defined
- The NCEP instance of NOMADS will be accessed by using existing network infrastructure to connect to their public facing OPeNDAP GrADS server

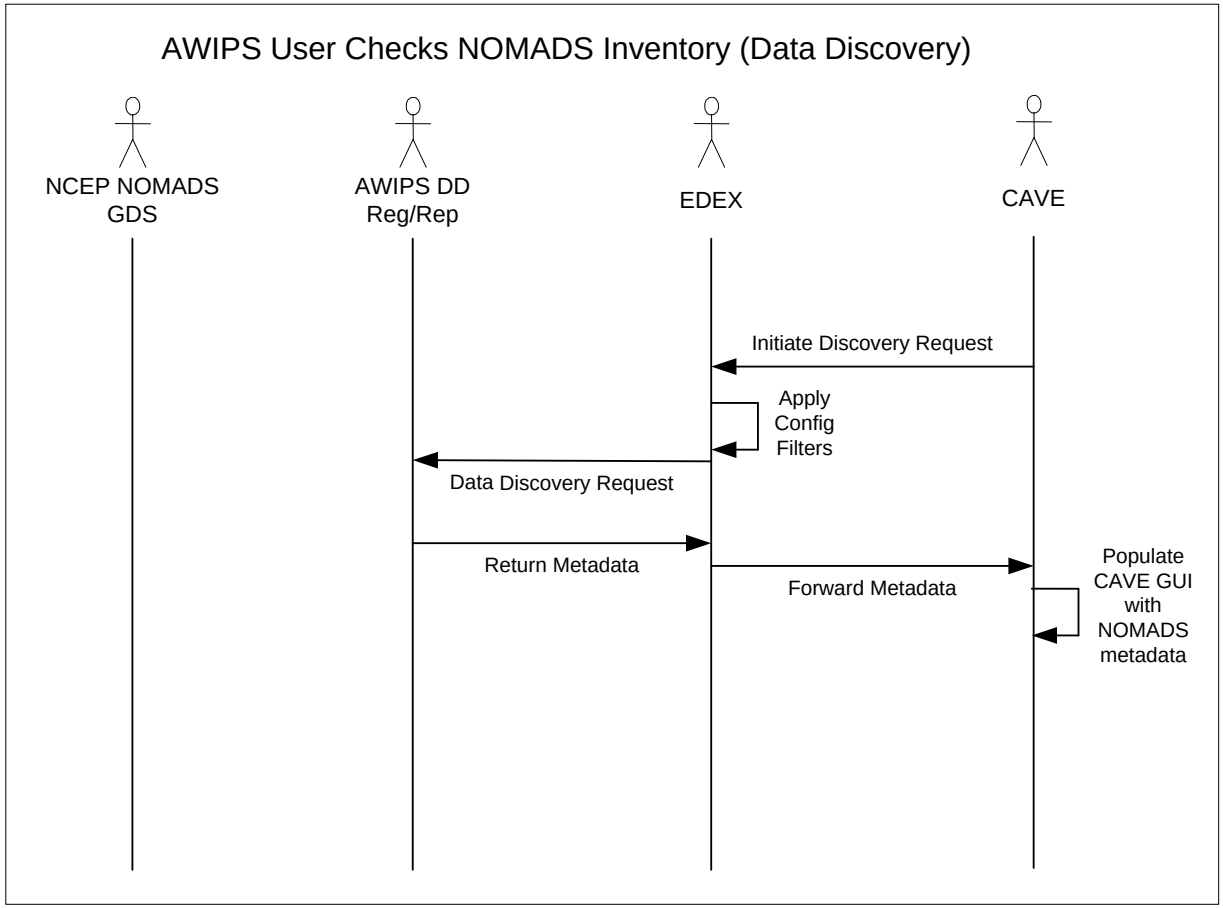
Data Delivery Use Case

- Goal: The AWIPS II Regional Rep collects metadata to ensure AWIPS User discovery of data available from NOMADS



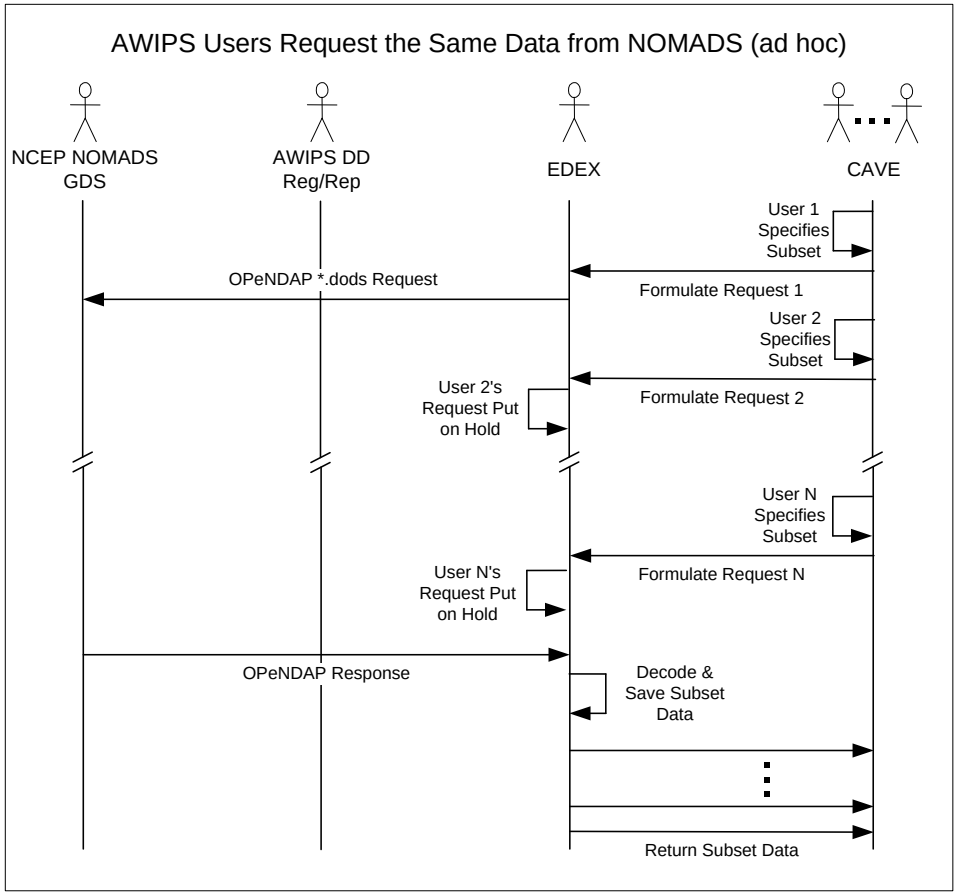
Data Delivery Use Case

- Goal: An AWIPS User discovers what data and services are currently available from the NOMADS.



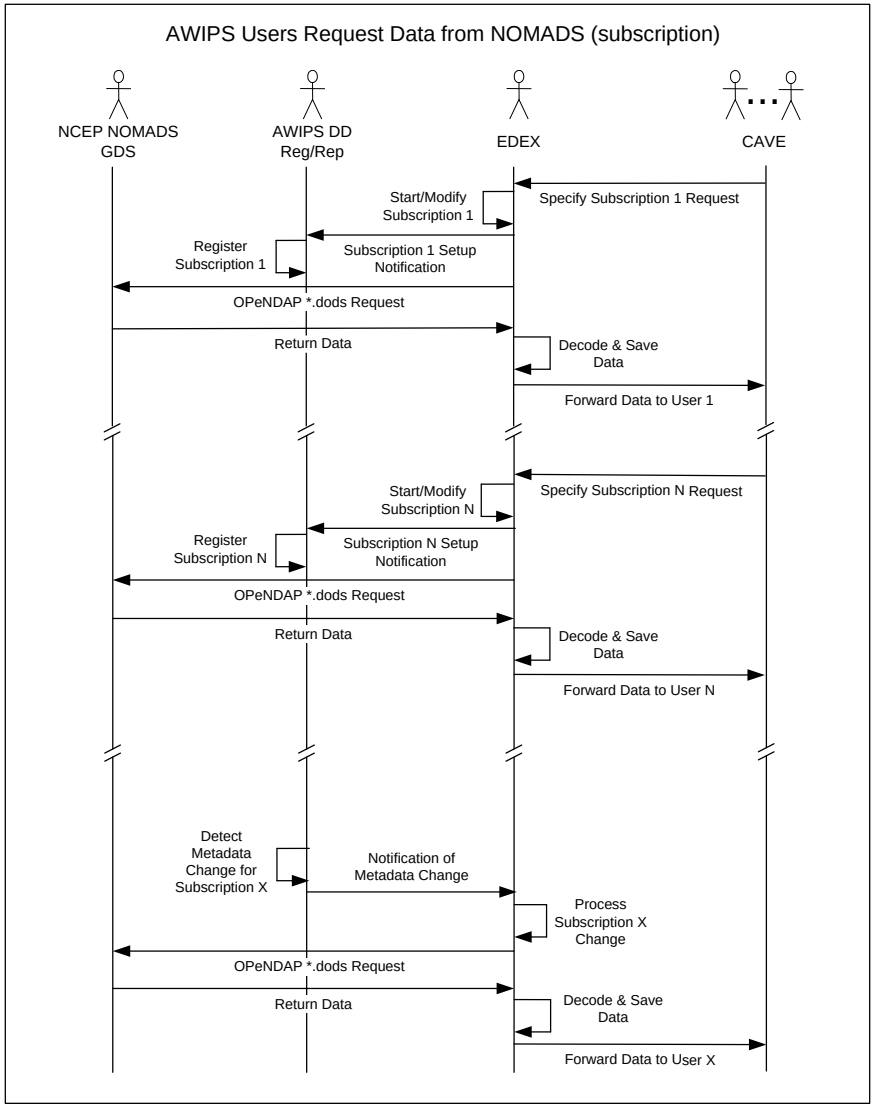
Data Delivery Use Case

- Goal: The goal of this use case is to obtain the data subset by geometry and time, and requested by multiple AWIPS Users from the NOMADS.



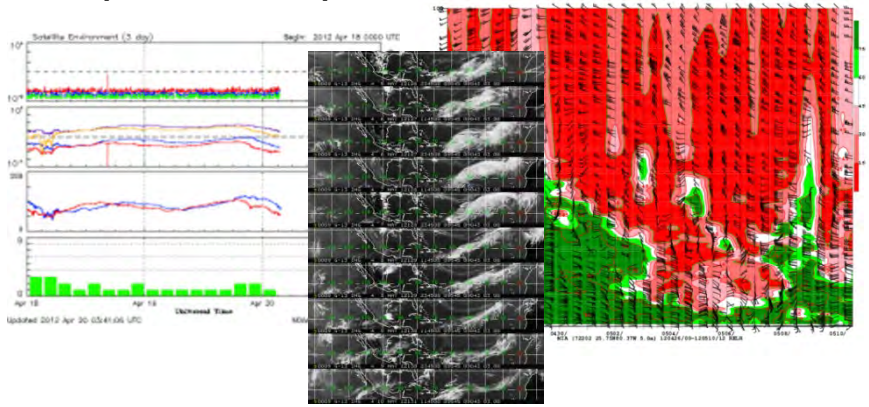
Data Delivery Use Case

- Goal: The goal of this use case is to enable AWIPS Users to receive NOMADS products on a routine basis for a certain period of time.

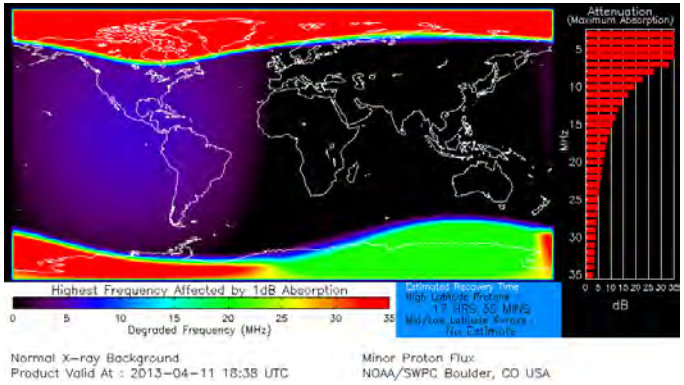


AWIPS Development in 2014

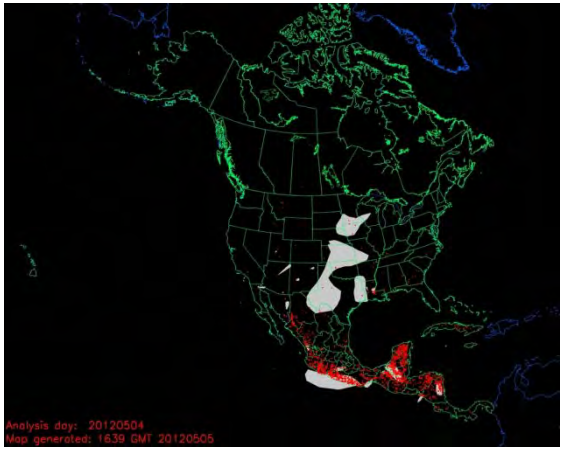
Spatial/Temporal Sections & Series



Space Weather Requirements

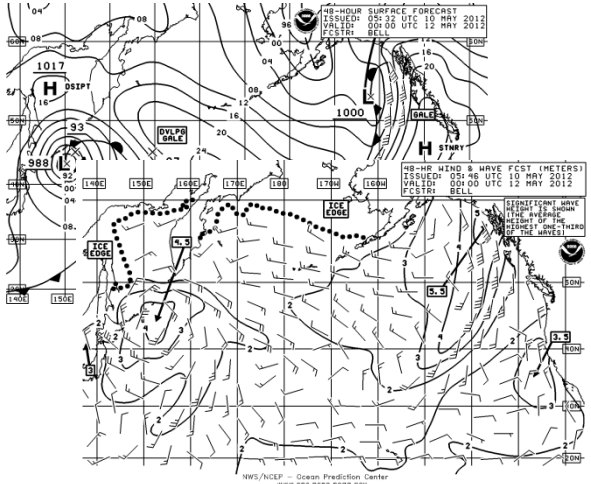


NOAA/NESDIS Hazard Mapping System



N-Flow

High Seas Graphic to Text



NCEP / Unidata Partnership

- For over 15 years NCEP has partnered with Unidata to provide and support NCEP software and data to the weather academia/research community
- Over the past five years, CONDUIT has expanded allowing for a more robust distribution of data – new model products – and higher resolution from existing models
- Unidata remains actively engaged with the AWIPS Program
- Weekly Migration Telecons have continued over the past year and Unidata participates on all monthly NCEP AWIPS II Status briefs
- AWIPS II migration efforts high priority of NWS through FY13 and FY14
- **NCEP continues to view Unidata as a critical partner for NCEP's total mission**