AWIPS II Activities

SPoRT Virtual Workshop

13 February 2014

Transitioning unique data and research technologies to operations

Outline

- ## Plug-ins
  - Lightning Mapping Array
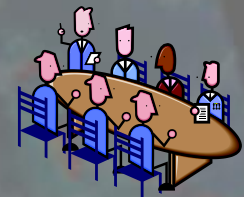 - Lightning Tracking Tool

- ## Data:
  - Land Information System
  - Convective Initiation (UAHCI)
  - Satellite data using Regionalsat plug-in

- ## EPDT
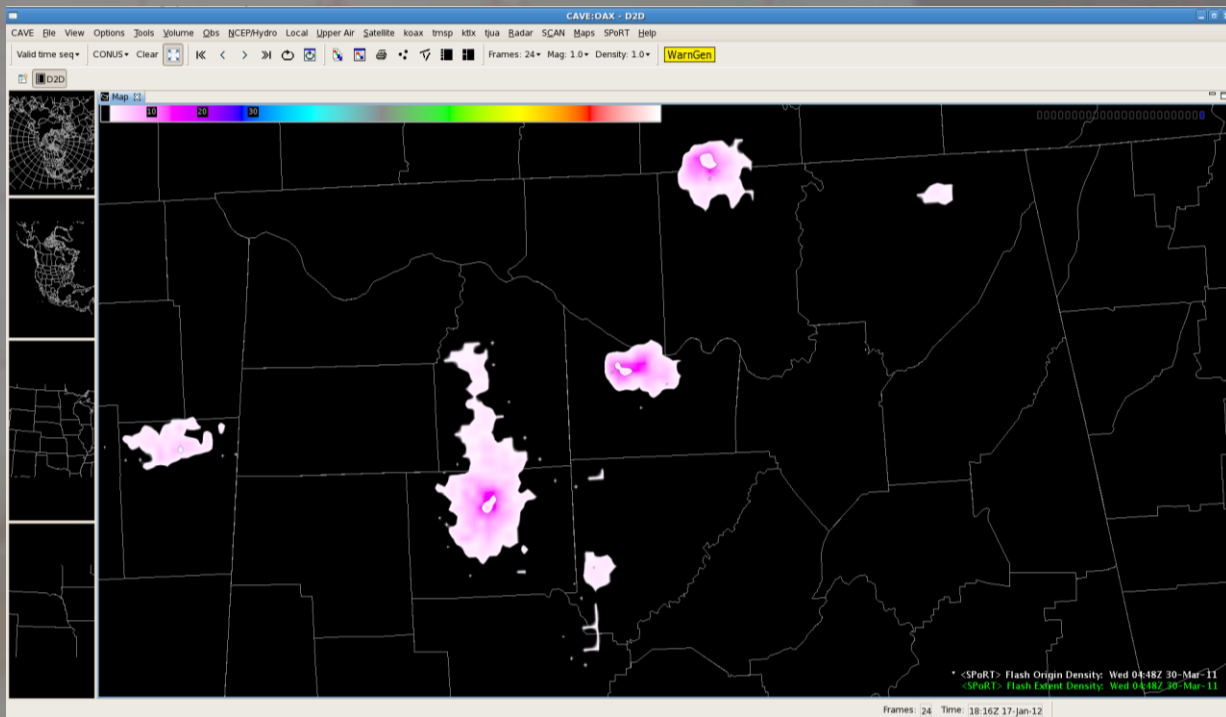 - Building a community of AWIPS II developers

Lightning Mapping Array

Total lightning data from Lightning Mapping Arrays (LMAs)

LMA data is generated as ASCII, but we write as unique NetCDF

Helps with assessment of severe storms

Works for ground based networks and large-domain satellite-based products, such as GLM


Flash extent and flash origin density

- Plug-in is currently in testing at several NWS Offices
- Base-lined in 2014

Lightning Tracking Tool

Total lightning *jumps* are at times related to severe weather. Forecasters need to quickly track several storms separately, tracking their intensity
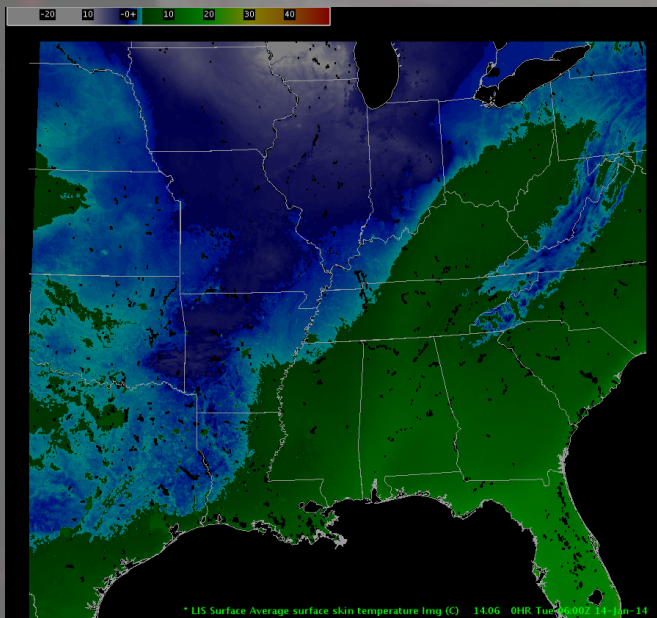
- Track multiple cells
- Variable radii
- Adjustable storm tracking
- Color-coded chart for each data layer
- Extrapolation for new data (frames)
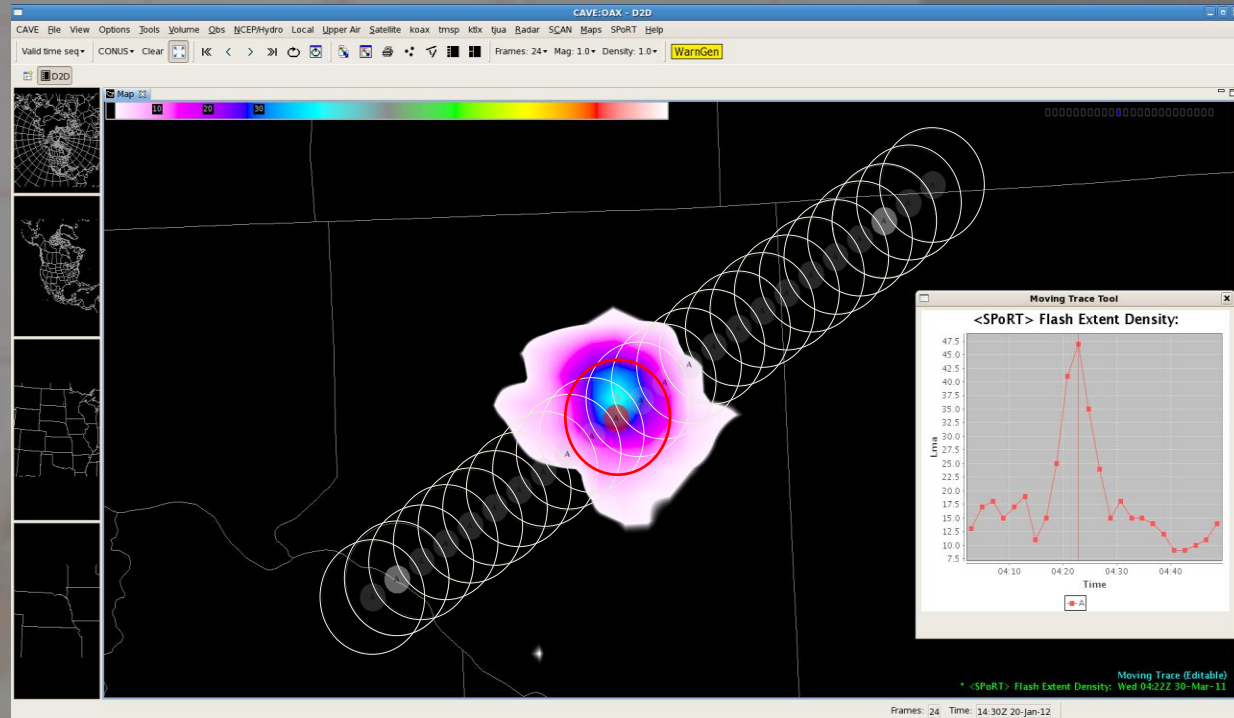
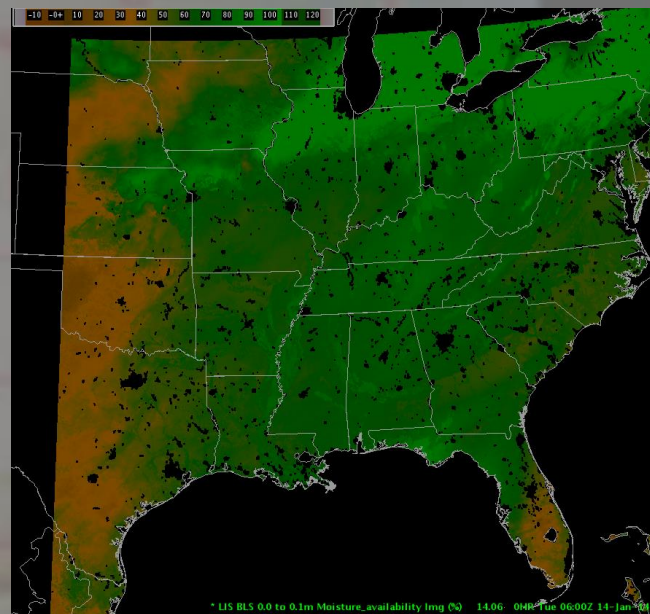- Adjustments after Hazardous Weather Testbed (HWT) feedback
- OPG testing May, 2014
- Base-lined in 2014

Land Information System(LIS)

Skin temperature

Soil Moisture Availability

- Land Surface Data Assimilation System run at NASA SPoRT
- Produces land information such as:
  - Skin temperature
  - Soil moisture availability
- Currently in place as WFO Huntsville, AL for testing
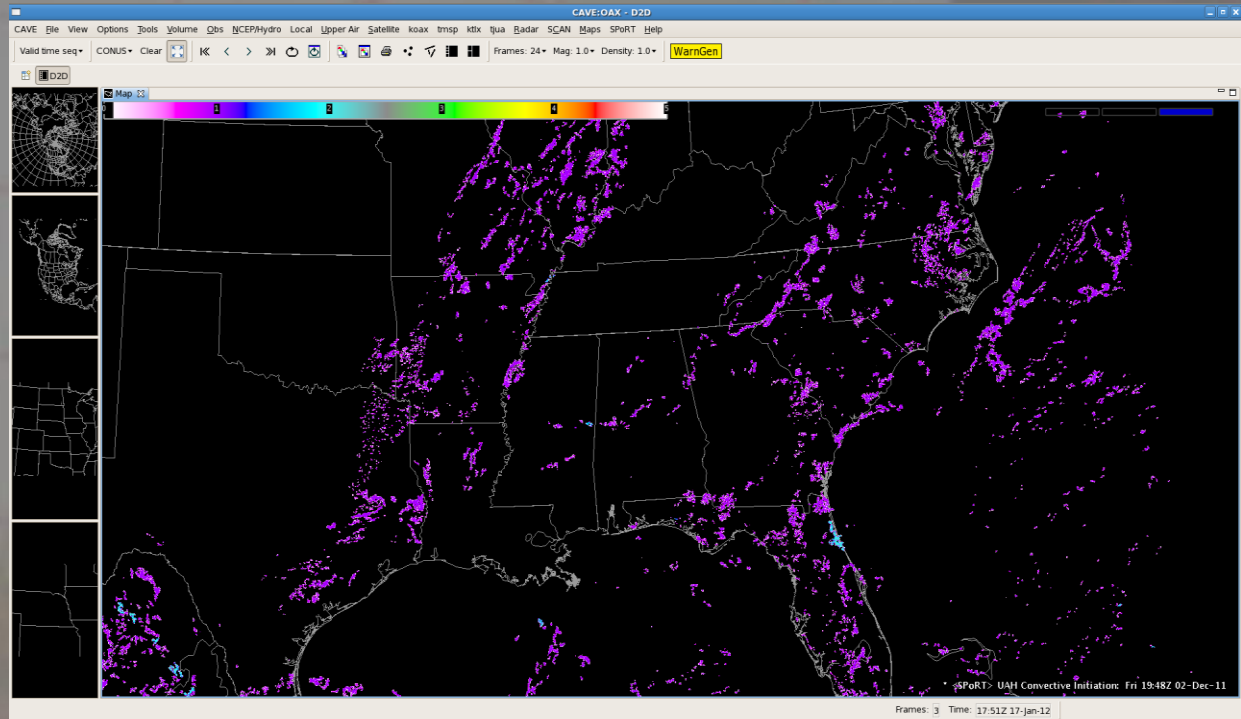- Ingested using the grib2 plug-in

Convective Initiation

GOES-based data set generated at University Alabama Huntsville for short-term forecasts of convection

Ingested using the grib2 plug-in

GOES-East & GOES-West versions

UAH Convective Initiation (GOES-East)

Satellite Data

Almost all SPoRT satellite data will be displayed in AWIPS II using the baselined plug-in, Regionalsat

Regionalsat works using the same netCDF files as AWIPS I

SPoRT is working to finalize all of its products

True 24-bit color will be supported

MODIS Nighttime Microphysics RGB
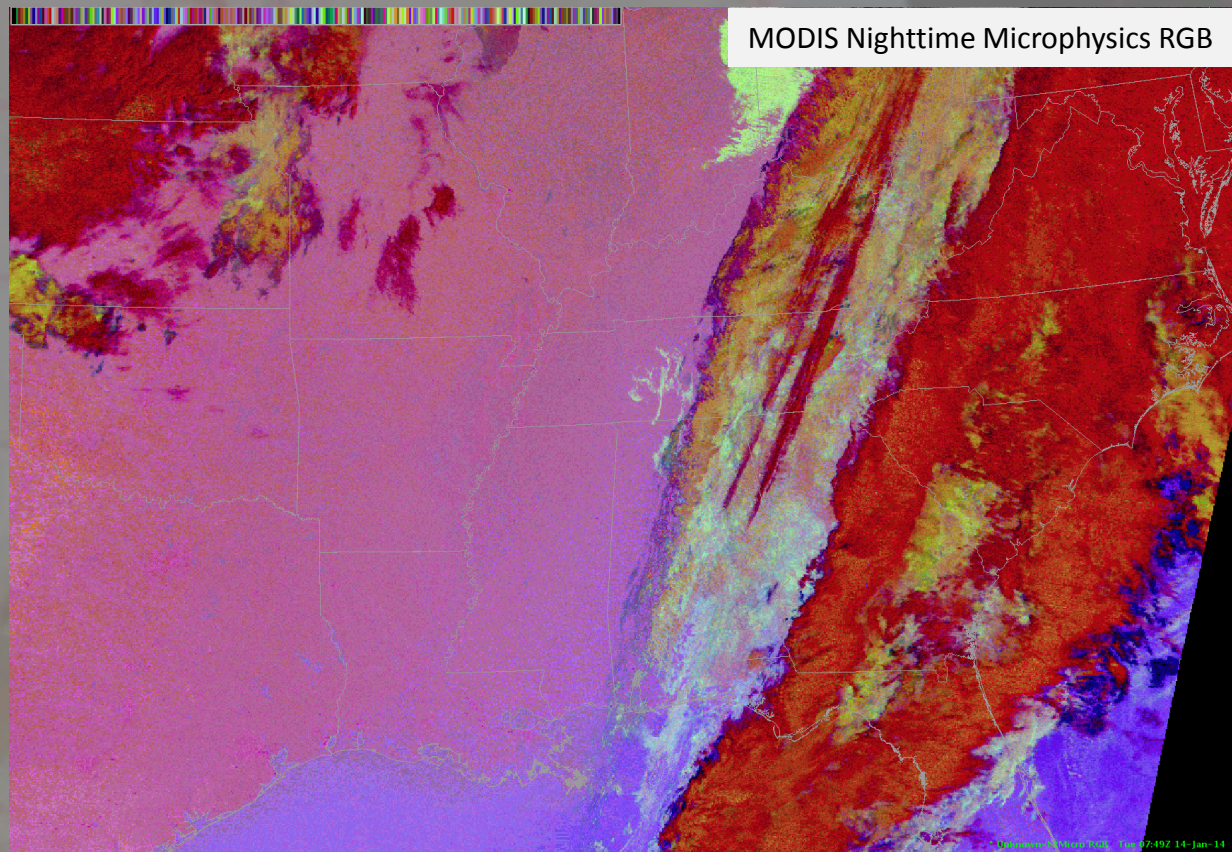
Currently WFO Huntsville is receiving:
-**MODIS & VIIRS:** Vis, LWIR, SWIR
-**MODIS only:** Water Vapor
-**VIIRS only:** DNB Rad., DNB Refl.

-**MODIS & VIIRS RGBs**: Nighttime Microphysics, True Color, Snow/Cloud
-**MODIS RGB:** Air Mass
-**VIIRS RGB:** DNB Rad., DNB Refl.

Experimental Products Development Team

- Originally SPoRT formed EPDT internally to focus on:
  - create advanced display capabilities for NASA research data in AWIPS II
  - create training for AWIPS II development

- Discovered broader need for AWIPS II development training within community

- Funded jointly by GOES-R and NASA SPoRT

- Bring together staff from NASA, NOAA's CIs, and NWS to develop a critical mass of technical expertise (outside of Raytheon's AWIPS II development team) which would focus on the development, demonstration, and transition of new plug-ins and tools to address the near-term needs of the GOES-R PG community

- provide feedback to NWS and Raytheon on the external development process, including governance of locally developed AWIPS II software

Experimental Products Development Team

Past Meetings

- Spring 2013 (Mar)– Group A – Hands-On Training

- Fall 2013 (Sep)– Group A – Code Sprint

  – Moving Meteogram, RGB, mPing, Mini-EDEX

Upcoming

- Spring 2014 (Apr)– Group B – Hands-On Training

- Fall 2014 (?)– Group B – Code Sprint

GOES-R Proving Ground

- Lightning
  - 8+ LMAs (more on the way)
  - Plug-ins (display and tracking) at 7 WFOs (via ATAN)
  - Baselined Fall 2014
  - In use Spring 2014 at HWT and OPG
- GEO/LEO Hybrids (ABI Proxy)
  - CONUS and Alaska partners and 2 NCs

JPSS Proving Ground

- VIIRS DNB
  - Evaluation completed with Front Range WFO partners
  - Training efforts continue
- Alaska
  - Virtual Machines in use
  - RGB Imagery for Aviation and Cloud Analysis Evaluation
  - AWIPS II at Fairbanks: Products beginning to flow
  - Training efforts continue
- Hawaii
  - Initial trip planned for Spring 2014

Questions

Future EPDT

- Second learning workshop as follow-on to training for Group A

- Merge Group A and Group B conference calls after Spring Meeting

- Code Sprint in Fall 2014 for:
  - Group A
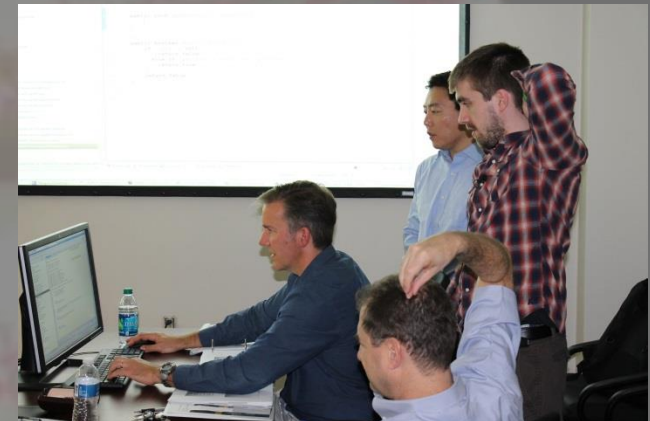 - Group B

Group B

- Group has been selected
  - 15 attendees
  - Groups involved include:
    - NWS SEC, NWS OH, NWS MDL, SSEC, CIRA, CIMMS/NSSL, NOAA GSD
- Meeting planned for Spring, 2014
- Conference calls have begun
- Spring Meeting planned with learning similar to Spring 2013 meeting for Group A

EPDT Fall 2013 Meeting

- Sept 24 - 26, 2013

- Code Sprint format

- EPDT subgroups worked on projects
  - Moving Meteogram
  - RGB Recipe
  - mPing ingest and display
  - Mini-EDEX

- Significant progress and furthered learning

EPDT Spring 2013 meeting

- Conference calls leading up to meeting.
- March 12th- 14th, 2013
- "Hands-on" Learning
- Topics covering plug-in development from EDEX to CAVE.
- Exercises
- 14 attendees
- Feedback indicated a very successful meeting.
- Training was recorded and provided back to NWS

Experimental Products Development Team

- **Hands-on team to learn by doing**

- **Limited in size to facilitate small group learning and development activities – develop into a "train the trainer" team**

- **One representative (each) from:**
    - *NWS Regions*
    - *NOAA Cooperative Institutes (and SPoRT)*
    - *MDL and GSD*
    - *Raytheon*
    - *NWS SEC*
    - *GOES-R PG AWIPS II developer*

- Organizational leads asked to nominate team member with appropriate qualifications

- **<u>Team Lead:</u>** Jason Burks (NASA scientist and decision support system expert), formerly HUN WFO ITO

- **<u>Advisor:</u>** Ed Mandel (NWS/OST SEC Development Branch Chief)
- **Bimonthly conference calls/ WebEx sessions**
- **Biannual workshops at SPoRT AWIPS2 Development Facility**

Experimental Products Development Team

Goal:

- Bring together staff from NASA, NOAA's CIs, and NWS to develop a critical mass of technical expertise (outside of Raytheon's AWIPS II development team) which would focus on the development, demonstration, and transition of new plug-ins and tools to address the near-term needs of the GOES-R PG community

Objectives:

- create a community environment to develop and share knowledge and expertise in the AWIPS Development Environment (ADE)

- generate non-standard AWIPS II plug-ins for the ingest, analysis, and display of GOES-R proxy data in AWIPS II

- provide feedback to NWS and Raytheon on the external development process, including governance of locally developed AWIPS II software