Importance of Technology as part of the NWS New Orleans/Baton Rouge Impact-Based Decision Support Pilot Project

NWS New Orleans Meteorologist-In-Charge:
Ken Graham

Emergency Response Specialist Team:
Matthew J. Moreland, Angel Montanez, Tim Erickson

National Weather Service Forecast Office
New Orleans/Baton Rouge

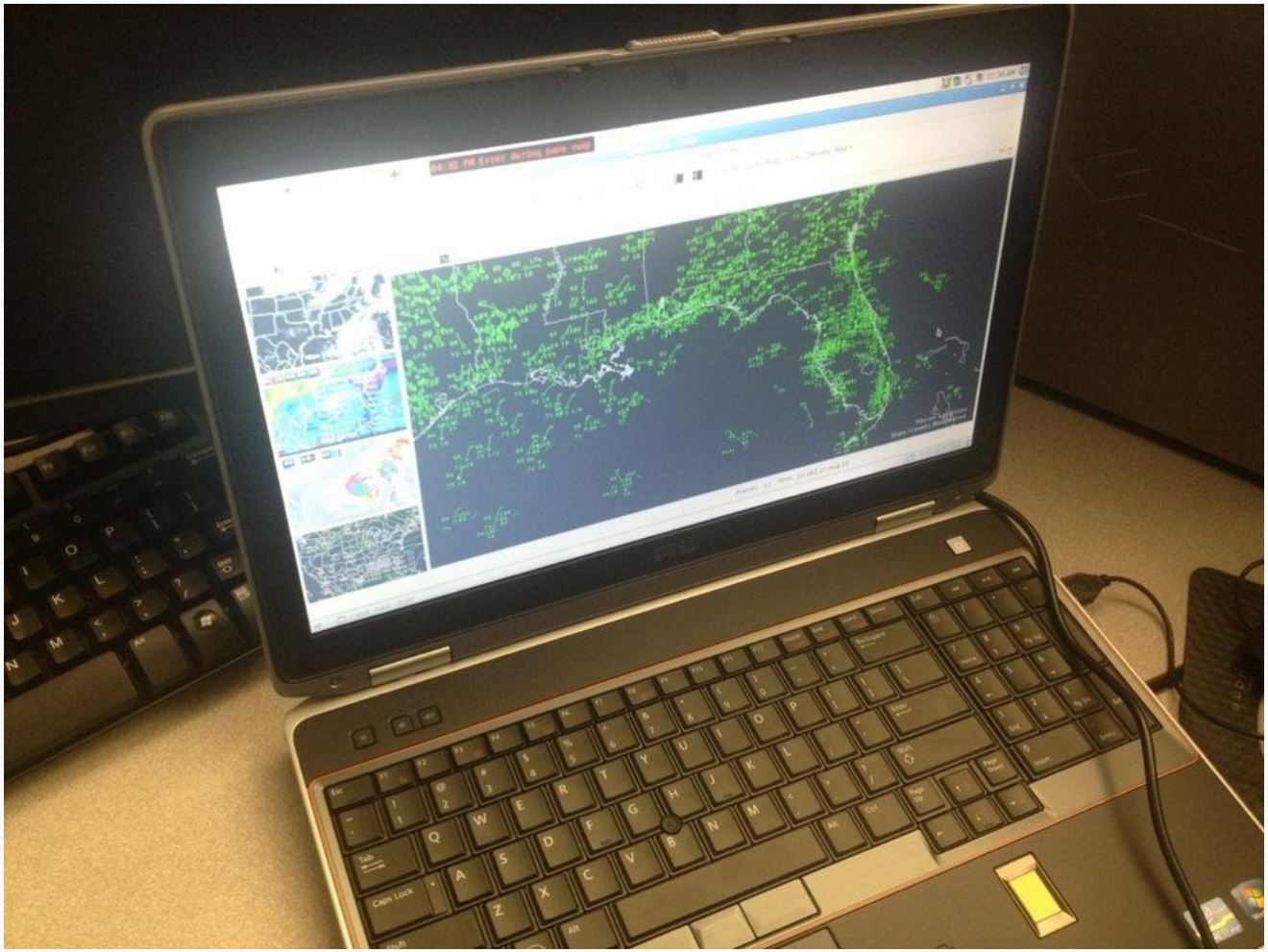
Decision Support Pilot Project Background

- Stemmed from need for more agility to meet with Partner needs and better support the mission of life and property following major events like Hurricane Katrina (2005) and the Deepwater Horizon oil spill (2010)
- One of six Decision Support Pilot Projects in the NWS
- NWS New Orleans/Baton Rouge Pilot Project has a special focus toward decision support in a marine environment
- Technology aids major deployments like Hurricane Isaac, Super Bowl, and Navy Week

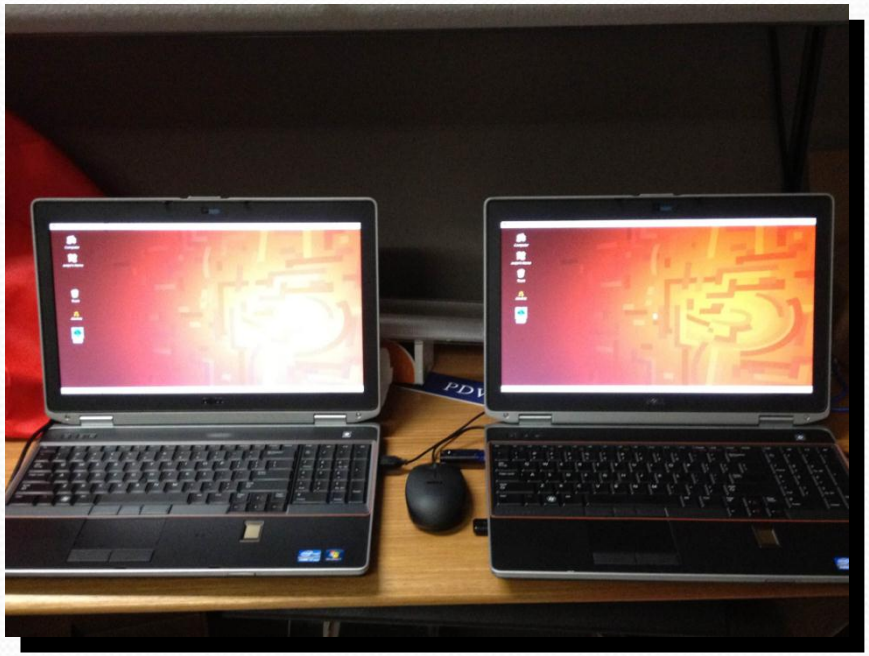
Technology Goals

- Testing out new technology
- Using AWIPS2 Thin Client on deployments
- Developing new delivery methods for our products to our partners
- Achieve all of this in the most cost effective way
- Local Hysplit plume modeling
- HPAC (Hazardous Prediction and Assessment Capability) Plume Modeling software
- Emergency Response Support Mobile Tool
- Mississippi River Mile Marker Forecast

ERS Deployment Laptops



ERS Deployment Laptops

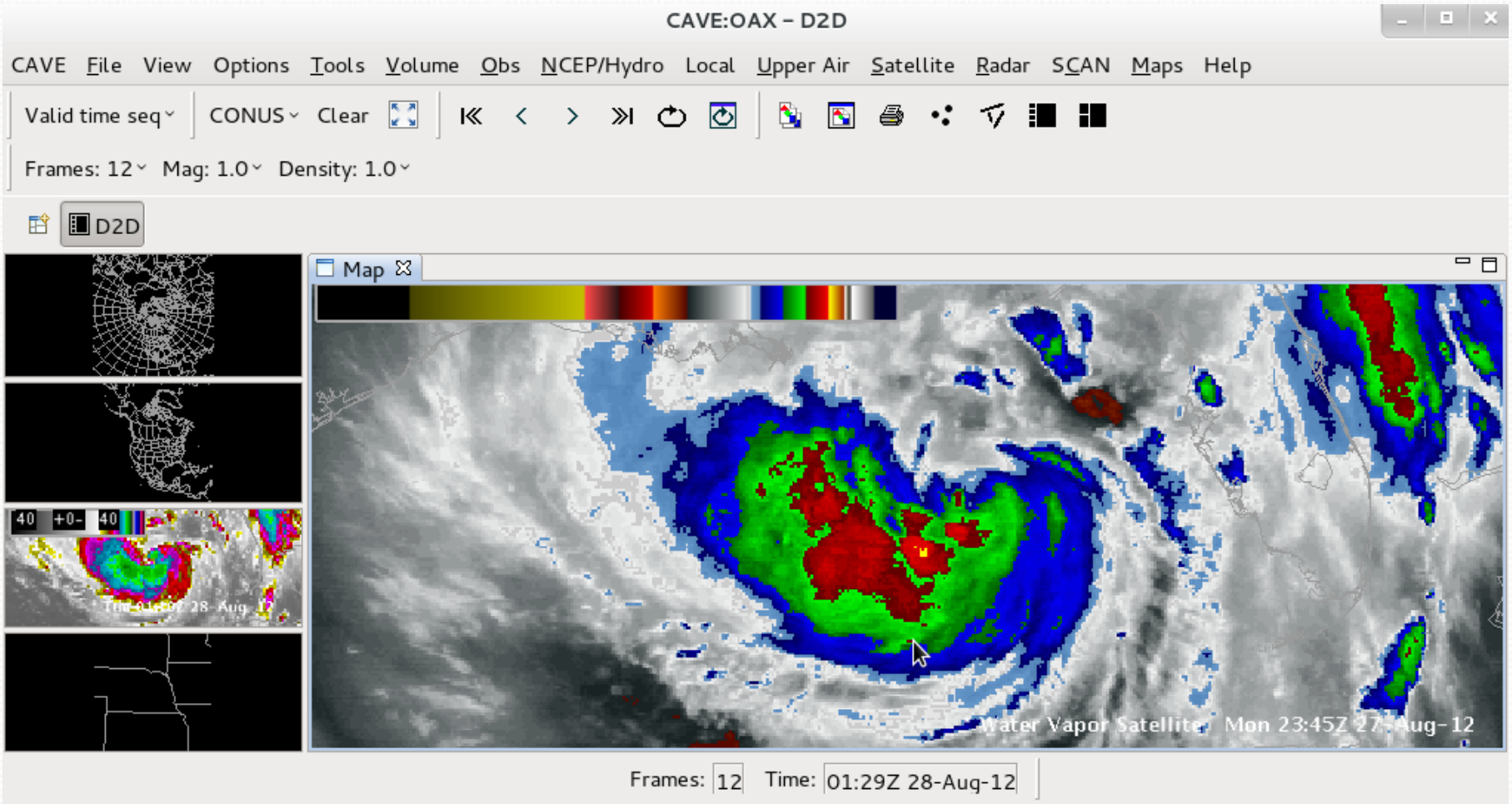


- They are the office away from the office.
- Idea is to have as much of the same tools that are provided in the office available in the field.

The Laptops

- Utilized during Hurricane Isaac deployments
- Running Red Hat Enterprise Linux 5 32 bit
- Latest version of the AWIPS2 thin client
- VMPlayer to run the Windows Operating System virtually
- GRLevel2/GREarth, Hurrevac, SLOSH run virtually

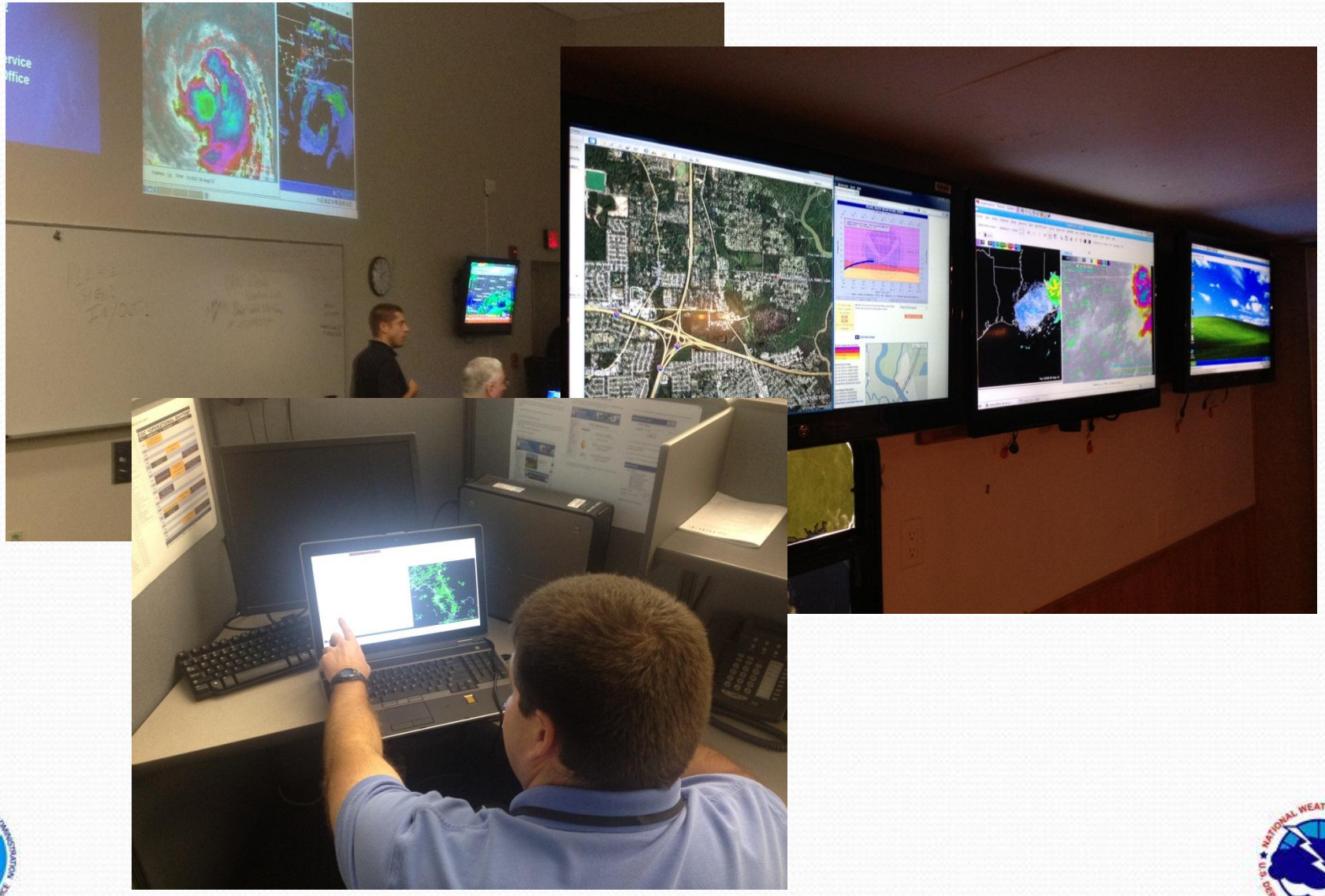
AWIPS-II Thin Client



AWIPS-II Thin Client

- AWIPS-II on station not required
- Works much better on Linux platform vs. Windows
- Successful test of thin client during Hurricane Isaac deployments
  - Localization constructed for WFO New Orleans
  - Observations, satellite, model data, local radar were available
- Planning Thin Client “TIM” (Technology Infusion and Migration) testing session at NWSHQ for Spring/Summer 2013

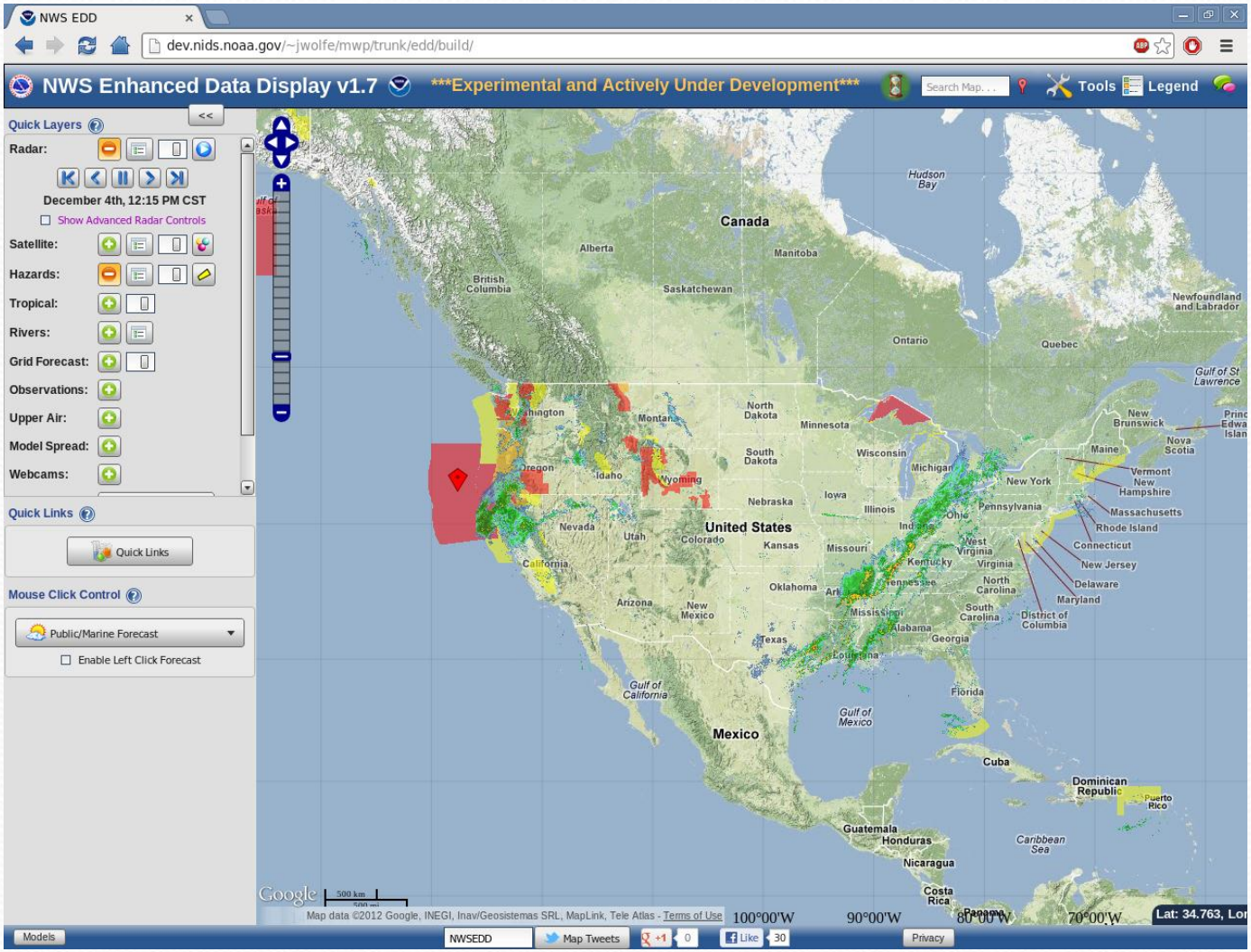
Thin Client and the Hurricane Isaac Deployments



Pitfalls to the Laptops

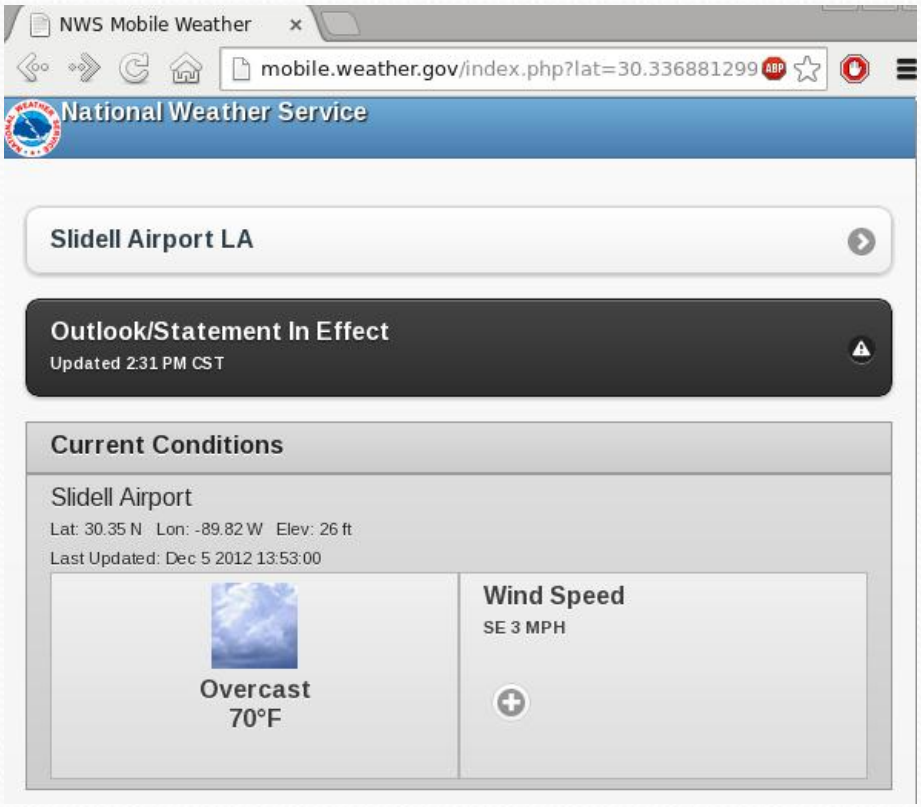
- In the world of open source, RHEL5 is considered ancient.
- On servers, this is good. On new laptops, this is a problem due to lack of support for new hardware.
- Mediocre support for wireless adapters and required extensive search to find something that worked.
- In order for thin client to work best, a move to RHEL6 needs to be considered.

Enhanced Data Display (EDD) Web Interface



Emergency Response Support Mobile Tool

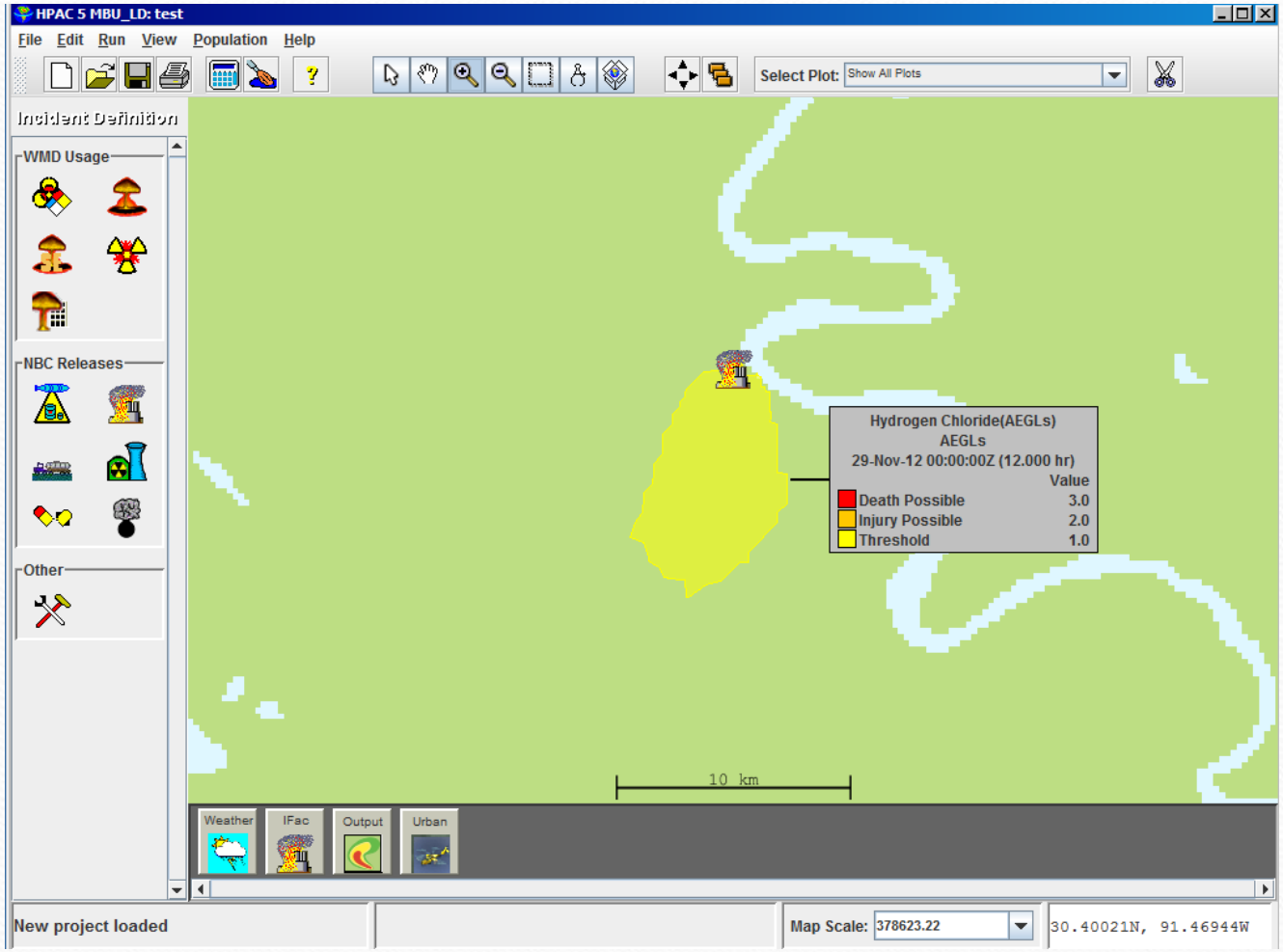
Emergency Response Support Mobile Tool



Emergency Response Support Mobile Tool

- "One stop shop" on smart phones for weather information
- Links/Information:
  - Emergency management briefings
  - Point-and-click forecast
  - Hourly weather graph
  - Radar data
  - Marine data: buoys and tides
  - River gauge information
  - Links to tropical weather, forecast discussion, and other sites/products

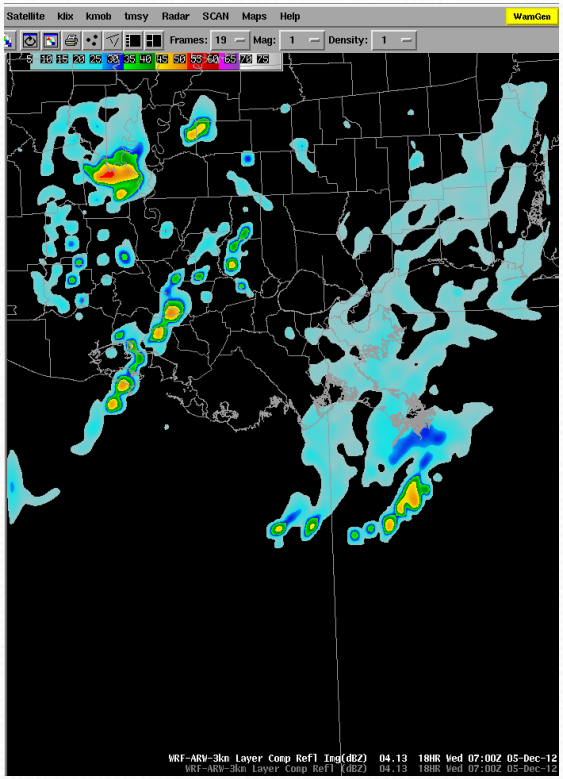
Hazard Prediction and Assessment Capability (HPAC) Software



Hazard Prediction and Assessment Capability (HPAC) Software

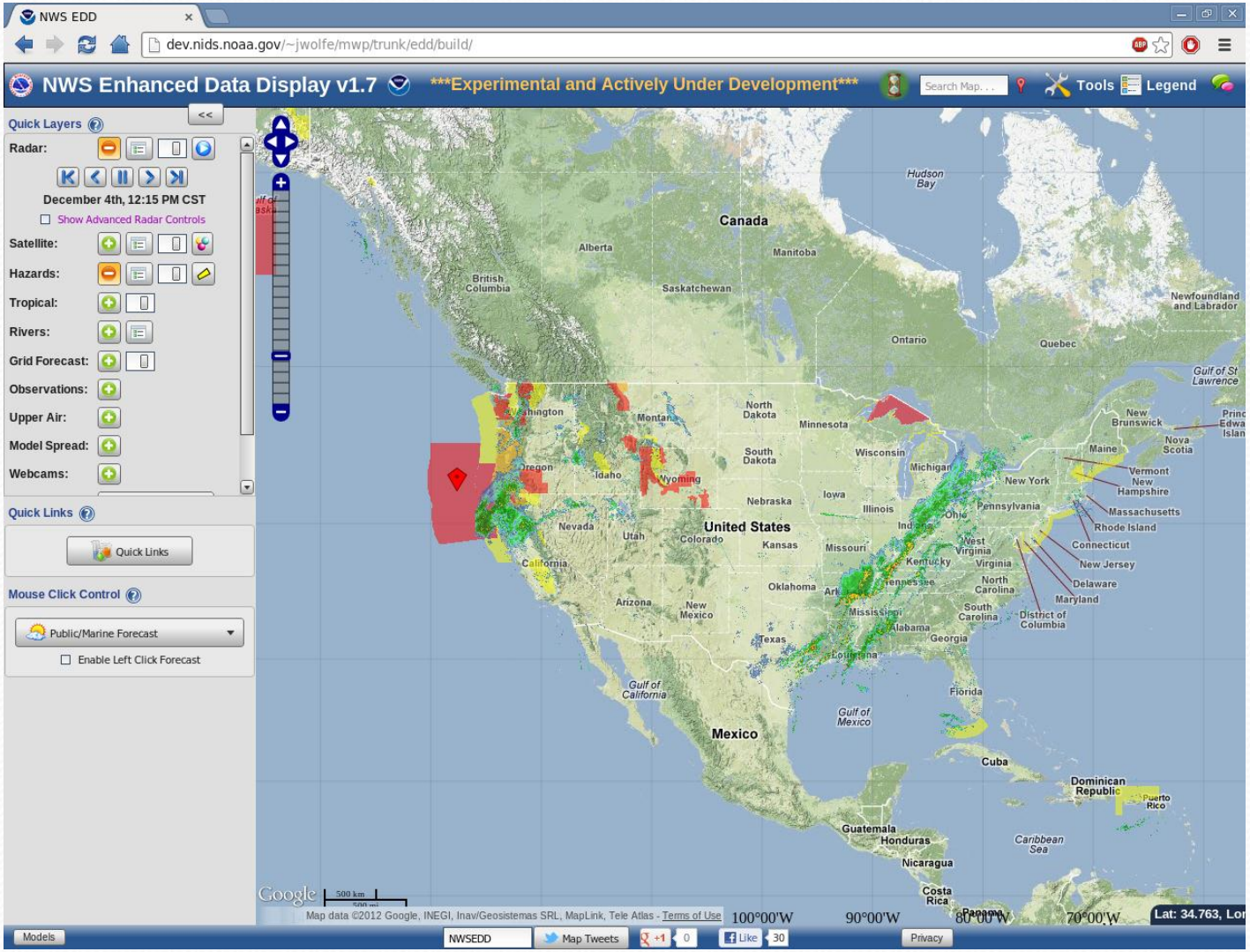
- Military/Civilian collaboration
- Plume modeling software for use in chemical releases, industrial releases, or warfare
- Training provided to Emergency Response Team at NWS New Orleans/Baton Rouge by the U.S. Defense Threat Reduction Agency
- Provides enhancements over traditional Hysplit modeling
- Weather inputs include NAM/GFS/WRF models and sounding information

3km Resolution Local WRF



- Physics altered as needed locally
- Soil conditions initialized with NASA LIS data
- Short-term convective trends to aid in decision support
- Simulated composite radar “forecasts” every 2 hours out 18 hours

Enhanced Data Display (EDD) Web Interface



Enhanced Data Display (EDD) Web Interface

- Internal agency use for Decision Support Services
- Observational and model data overlaid over a Google Maps background
- Overlays:
  - NWS official gridded forecasts
  - NWS official Hazards
  - Radar data
  - Satellite data
  - River gauges
  - Observations, including marine
  - Tide gauges (planned)

Technology Plans for Pilot Project FY 2013-2014

- Full test of technological capabilities for Super Bowl: January/February 2013
- Mile marker forecast for the Mississippi River: point-and-click capabilities and hazard threat table
- Further testing and refinement of AWIPS-II thin client
- Enhanced Data Display web interface: add tide information and other marine-oriented data
- Emergency Response Support Mobile Tool: add capabilities per government partner requests

Questions?

Ken.Graham@noaa.gov
Matthew.Moreland@noaa.gov
Angel.Montanez@noaa.gov
Tim.Erickson@noaa.gov

National Weather Service
New Orleans/Baton Rouge
504-522-7330 ext. 4