



NWS Operations Proving Ground Overview

Satellite Proving Ground User Readiness Meeting

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June 4, 2014

Background

Defined in Weather Ready Nation Services Roadmap

- ▶ Estab. 2012
- ▶ GOES-R FLS
- ▶ DSS Boot Camps
- ▶ ERS PDS Team
- ▶ System Design, Installation, Config.
- ▶ First Operational Readiness Evaluation



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Mission Scope

“Last mile” of R2O – BOTH Science AND Services

- ▶ Human Factors
- ▶ Realistic Simulation
- ▶ All Office Types
- ▶ All Service Sectors
- ▶ Partner Involvement



Dual Focus

- ▶ Services Arm: Effectiveness for DSS
 - *Communication of Hazards, Risk, Vulnerability; Other Social Science Considerations*
- ▶ R2O Arm: Operational Readiness Evaluations
 - *Forecaster Endorsement, Validation of Usability, Usefulness for Decision Making, Workflow Impact*



Connection to Recent Service Assessments

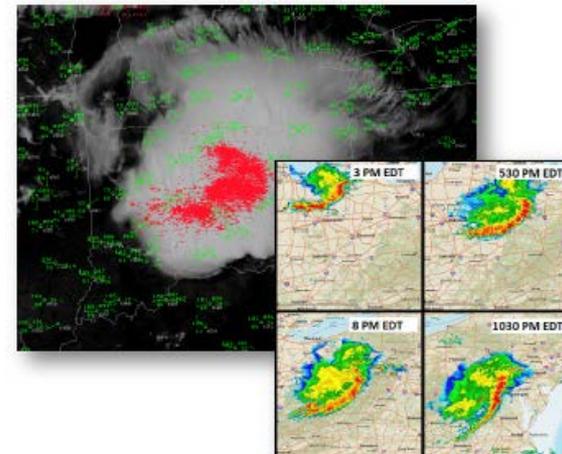
Ongoing OPG projects relate directly to at least 14 recommendations and 3 best practices.

Hurricane/Post-Tropical Cyclone Sandy, October 22–29, 2012

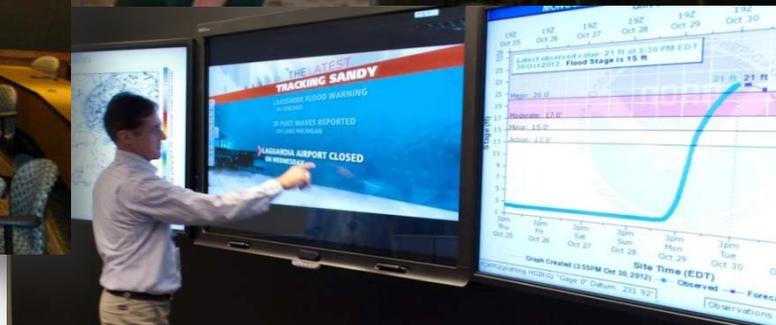
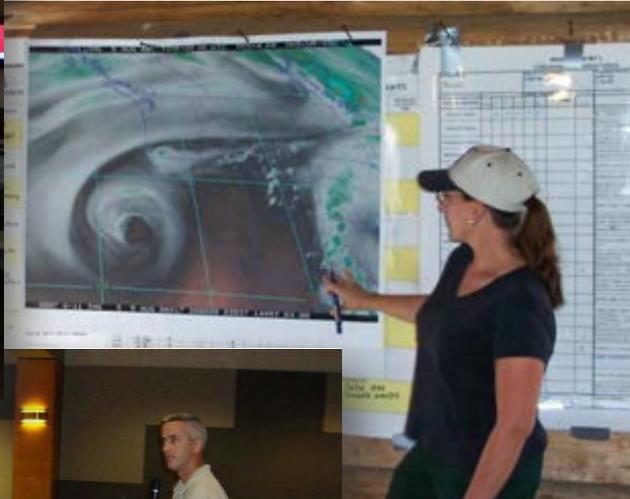


Service Assessment

The Historic Derecho of June 29, 2012

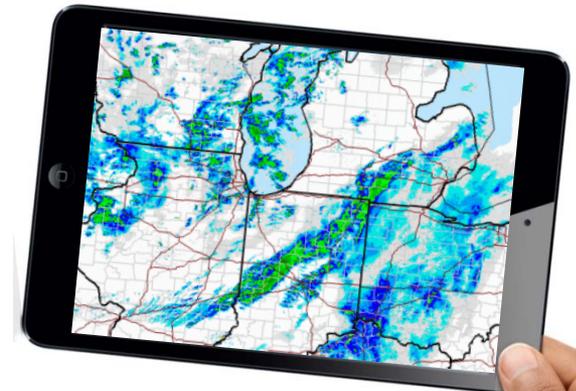


DeFacto DSS Testbed



Systems

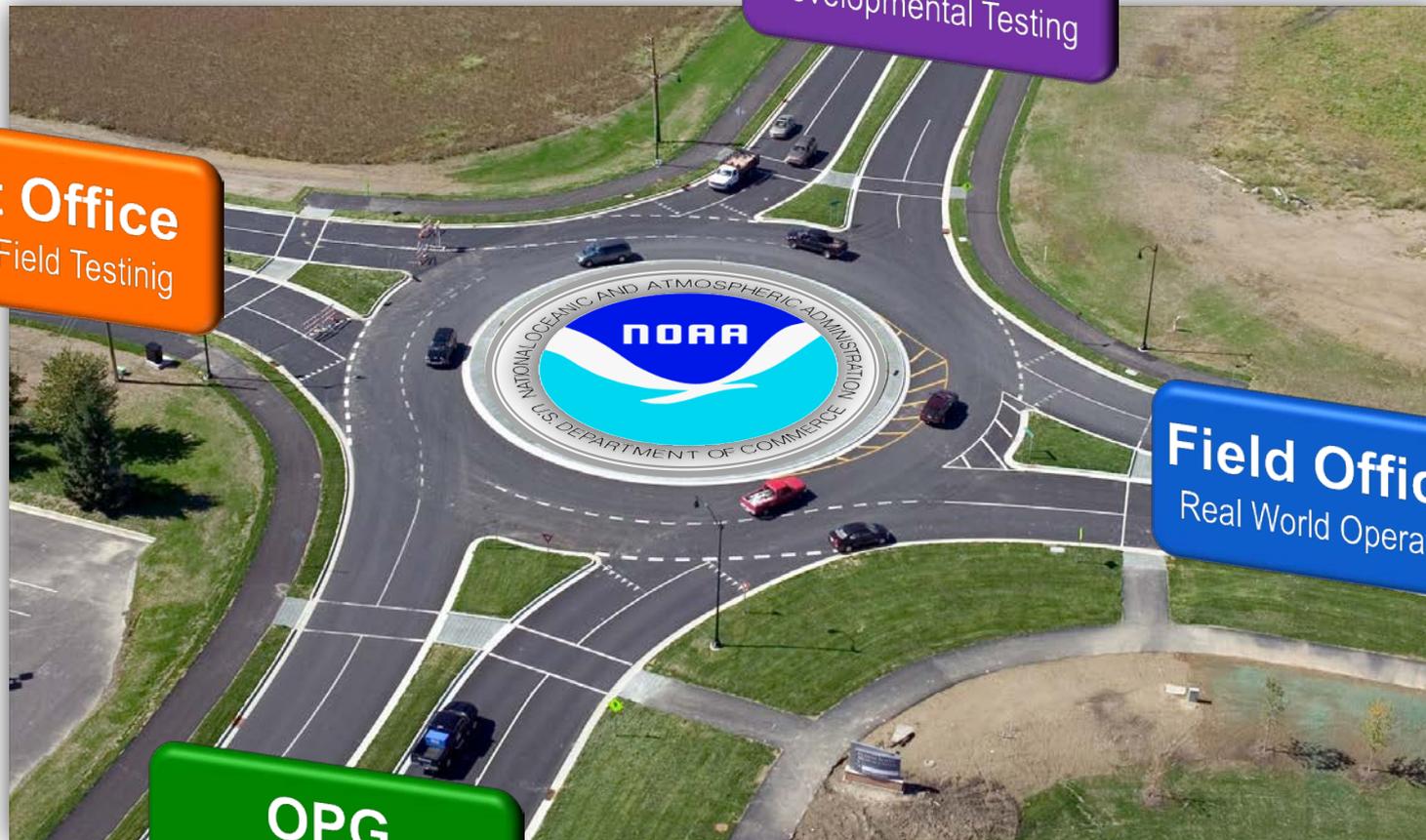
- ▶ Baseline AWIPS-2 to support OREs
- ▶ Prototype cloud solutions and virtualization options



Goals:

- *Enhance ops flexibility*
- *Reduce refresh costs*
- *Fewer processing centers*

The Concept



Pilot Office
Limited Field Testing

HWT
Developmental Testing

Field Offices
Real World Operations

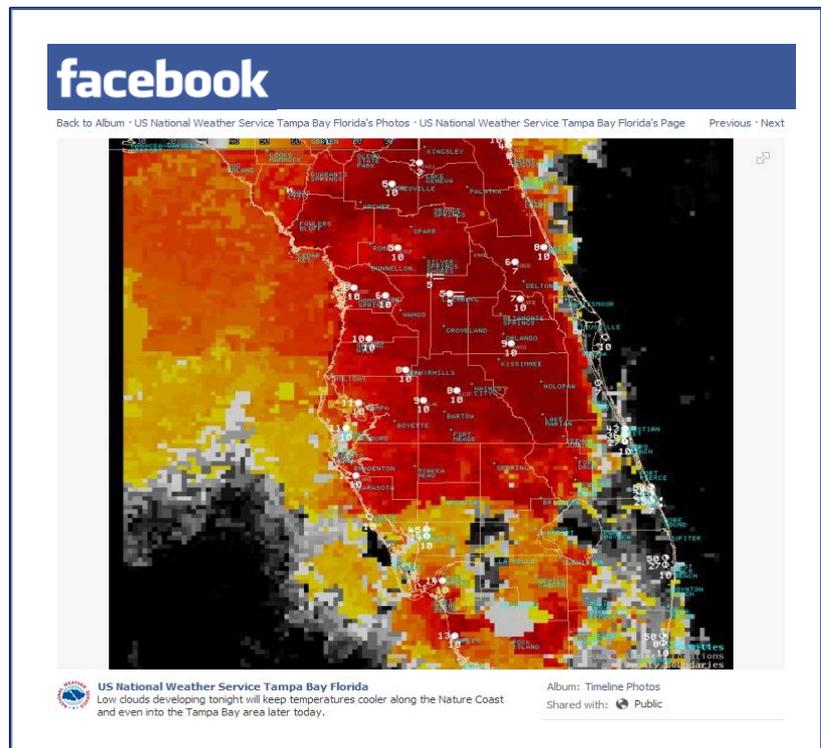
OPG
Ops-Like Simulation

HT to Lans Rothfus for Roundabout Metaphor

Early R2O Transition Project

GOES-R Fog/Low Stratus Products

- ▶ Initial testing conducted at 18 NWS offices
- ▶ Assisted NWS Tampa Bay Pilot Project
- ▶ Feedback to GOES-R to improve products
- ▶ Project expanding to 30+ offices this year
- ▶ Field implementation targeted FY15

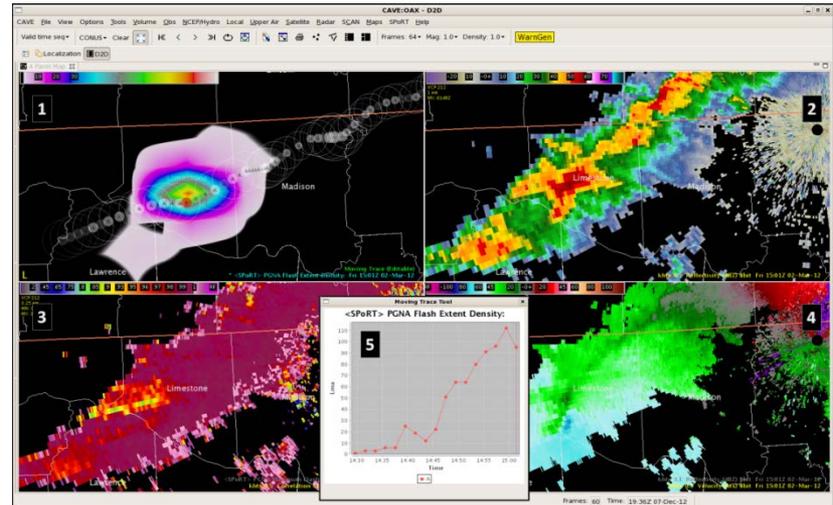


First Formal ORE – May 2014



NASA SPoRT / MDL Meteogram Tracking Tool

- ▶ Early versions tested at four NWS WFOs
 - Primary focus = total lightning trends
- ▶ One of several tools featured in Spring Experiments at HWT (2013 & 2014)
 - Initial criticisms
 - ▶ *software maturity*
 - ▶ *functionality*
 - ▶ *display options*
 - ▶ *different versions in simultaneous evals*



(Image courtesy of NASA SPoRT)

Meteogram Tracking Tool



Operational Evaluation – Participants



- ▶ Forecasters from four CONUS Regions
- ▶ SMEs, Developers, Trainers, OPG Staff

Meteogram Tracking Tool

Operational Evaluation – Process



Mon: Familiarization Training

Tue-Thu: Weather Scenarios

- Varying Complexity
- Several Locations
- Multiple Forecast Challenges

Fri: Final Case, Debrief

- 7 Archived Cases, 1 Live Data Case

- Team Stress Test

- Feedback Sessions

Supplemental eval:
prototype monitor array

Meteogram Tracking Tool

Operational Evaluation – Outcomes

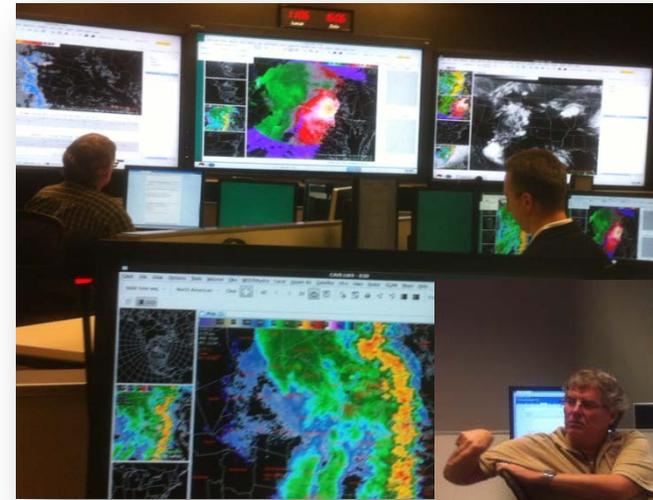
- ▶ VLab Development Community
 - *Direct ticket entry into dev data base*
 - *Bug fixes, new features coded “on the fly”*
- ▶ Forecasters ID'd several best practices
- ▶ Alternative uses
- ▶ Training plans
- ▶ Drafting report to NWS Leadership



Operational Evaluation

Lessons Learned for Future Experiments

- ✓ VLab Dev Environment
- ✓ Diversity/Realism of Cases
- ✓ Emphasis on Unique Value and Human Factors
- ✓ Right Combination of Participants

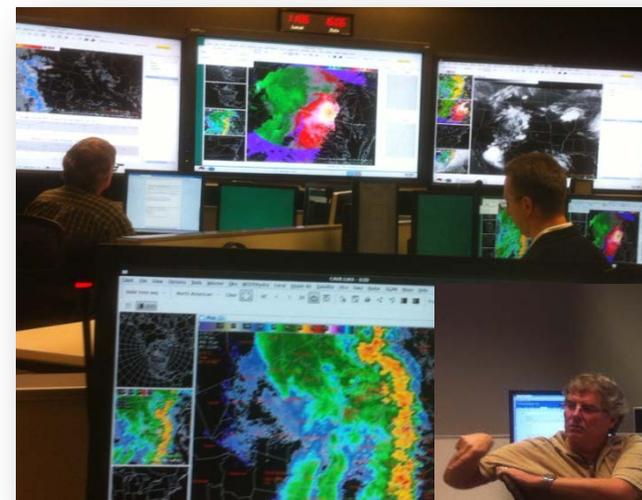


Operational Evaluation

Key Forecaster Take-Aways

VLab Development Site

“The VLab environment really streamlined the process of reporting issues. Developers were very responsive to suggestions for adding new features, and to fixing minor bugs in time for the next case.”

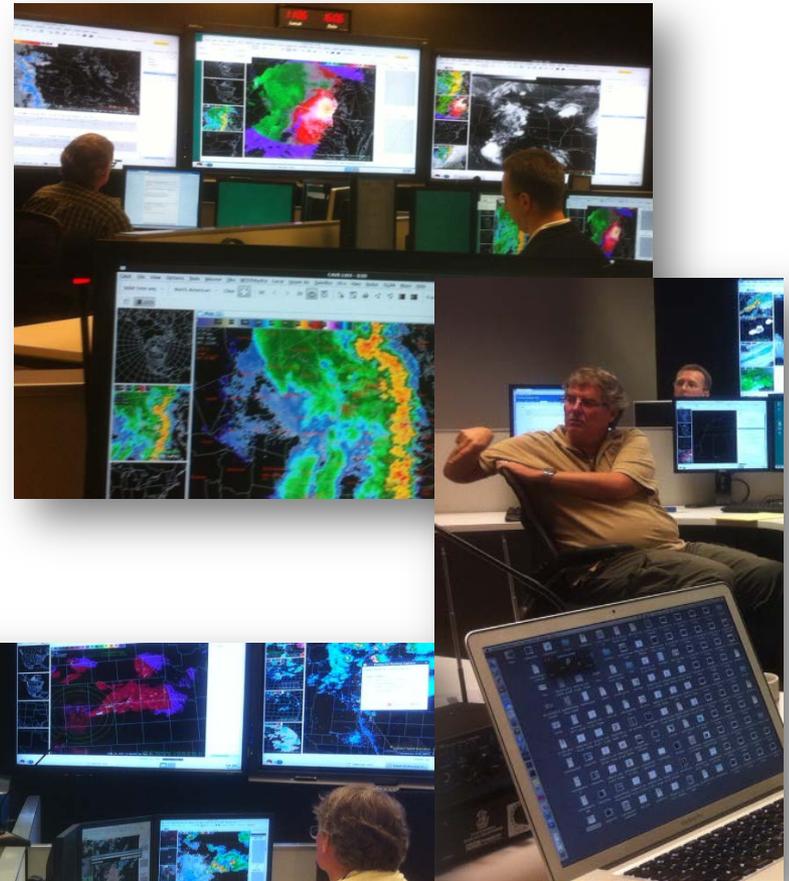


Operational Evaluation

Key Forecaster Take-Aways

Diversity of Cases

“I was impressed with the diversity of scenarios we worked and the overall setup of the OPG. It simulated a real operational environment fairly well, and allowed us to explore a variety of uses for the tool.”



Operational Evaluation

Key Forecaster Take-Aways

Human Factor Emphasis

“Evaluating whether a tool provides some unique value compared to existing tools is really important.

So is ensuring the tool doesn't create a workload problem.

You break trust if you promise something cool, and then forecasters discover it's just another way to do something they already do, with no clear benefit.”



Operational Evaluation

Key Forecaster Take-Aways

Combination of Participants

“The cross-section of people involved was fantastic. Having forecasters interact with leaders, developers, researchers, and trainers – who together demonstrated genuine collaboration – that was powerful.”

“Our organization preaches collaborative innovation. This experience nailed it. Every NWS forecaster needs to experience something like this.”



Plans for FY2015

- ▶ Optimal Balance Experiments
 - Comparative 1-minute vs. 5-minute imagery evaluations for diverse tasks
- ▶ At Least One Additional Major ORE
- ▶ Clarify NWSEO Role in ORE Process
- ▶ Transition DSS Training Curriculum



Key Sustainment Issues

- ▶ Expand Stakeholder Involvement
- ▶ Strengthen Linkage to Other Testbeds and V-Lab Development Environment*
- ▶ Resolve Staffing and Resource Issues
- ▶ Long-term Organizational Structure

** Necessitates revising governance model*



