



# Tracking Meteogram

A Collaborative R2O Transition into the AWIPS Baseline

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*April 15, 2015*

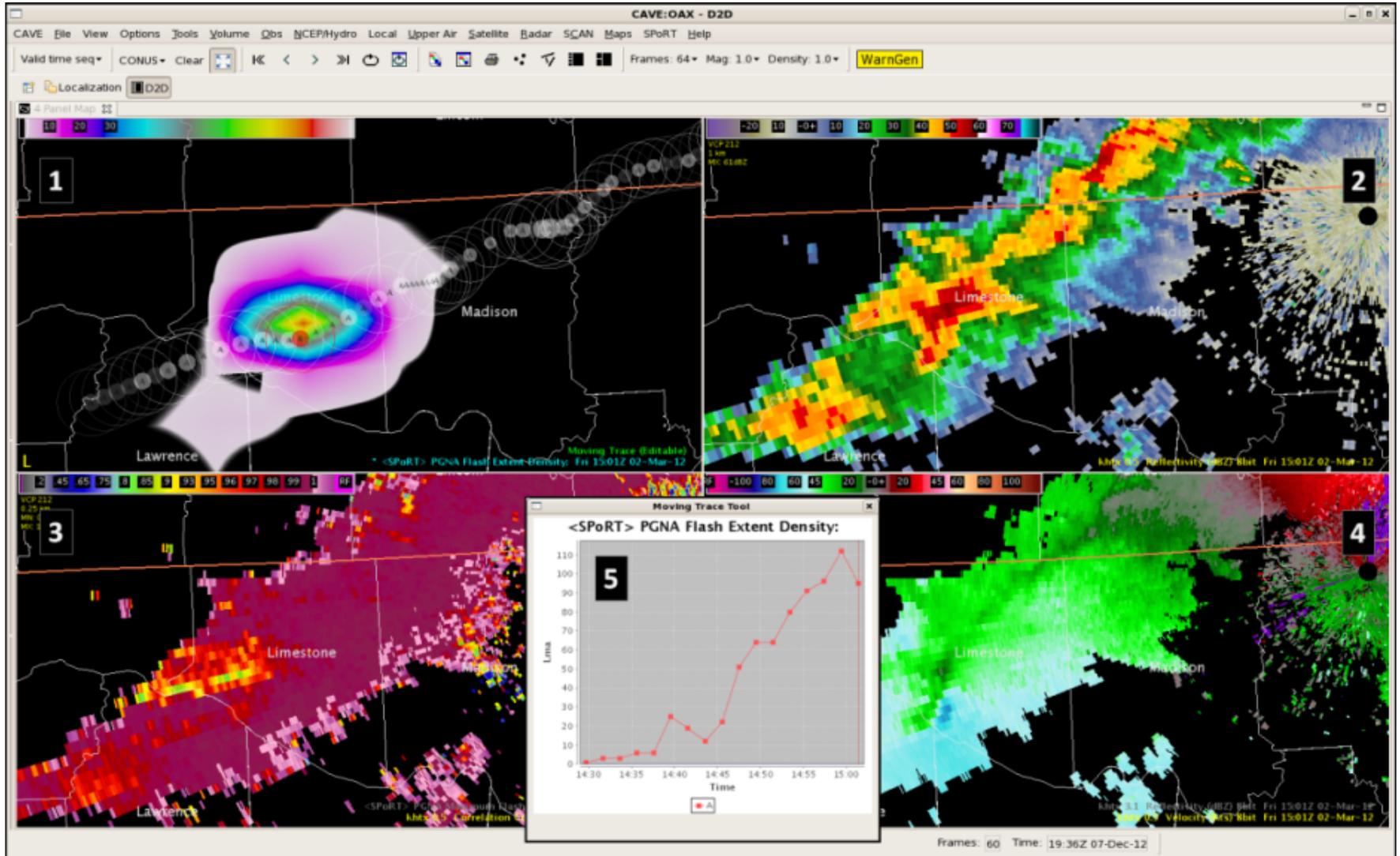


realistic operational setting

human factors testing



# Tracking Meteogram ORE



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*Operational Readiness Evaluation - Participants*

# Tracking Meteogram ORE



Mon: Familiarization Training

Tue-Thu: Weather Scenarios

- Varying Complexity
- Several Locations
- Multiple Forecast Challenges

Fri: Final Case, Debrief

- 6 Archived Cases, 1 Live Data Case

- Team Stress Test

- Feedback Sessions

Supplemental Eval:  
prototype monitor array

# Simulation Scenarios

- ✔ Cases 1, 2: West TX LMA, Dryline Supercells
- ✔ Case 3: Central OK LMA, Moore Tornado
- ✔ Case 4: Northern AL LMA, State Fair DSS
- ✔ Case 5: Wash DC LMA, Derecho Event
- ✔ Case 6: Northern AL LMA, Team Stress Test
- ✔ Live Weather: Self-Directed Evaluation



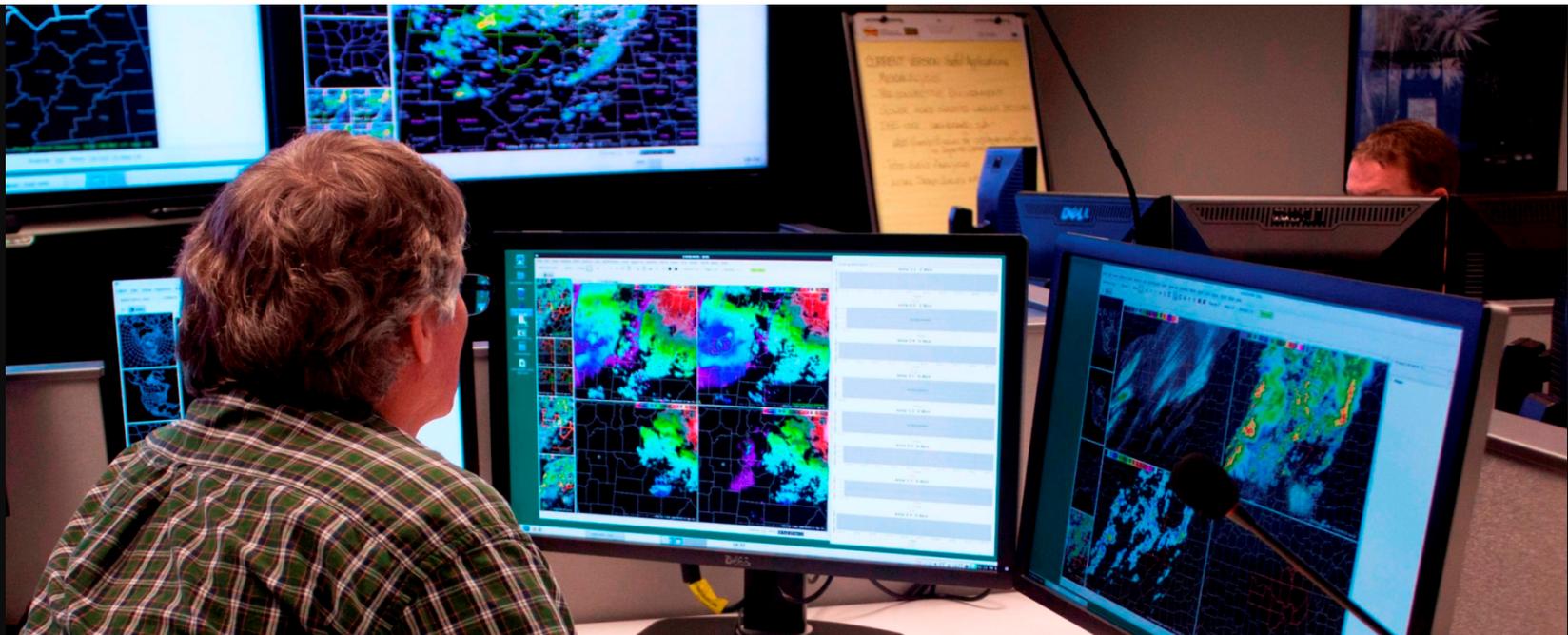
# Participant Surveys

- ✔ Technical Functionality
- ✔ Ease/Practicality of Use
- ✔ Diagnostic Value
- ✔ Impact on Decision Making
- ✔ Application to DSS/Risk Comm
- ✔ Impact on Workload, Workflow



# Deemed most useful for...

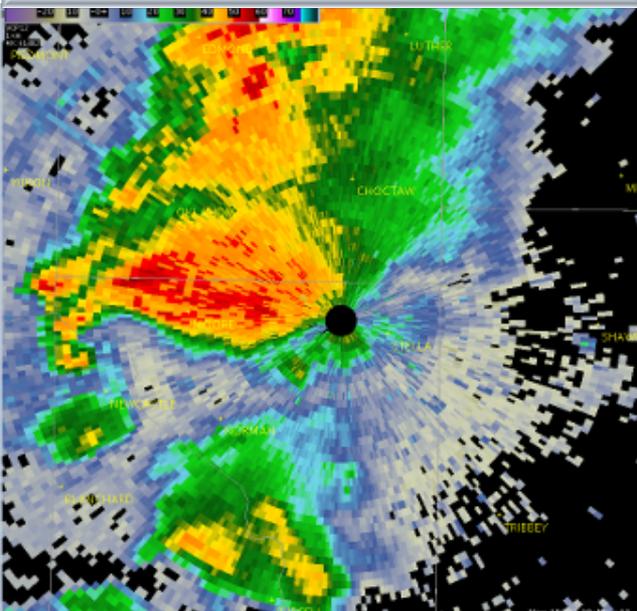
- ✔ ...tracking and displaying trends
- ✔ ...interrogating gridded model output
- ✔ ...mesoanalysis/post-event analysis
- ✔ ...extracting info of value to core partners



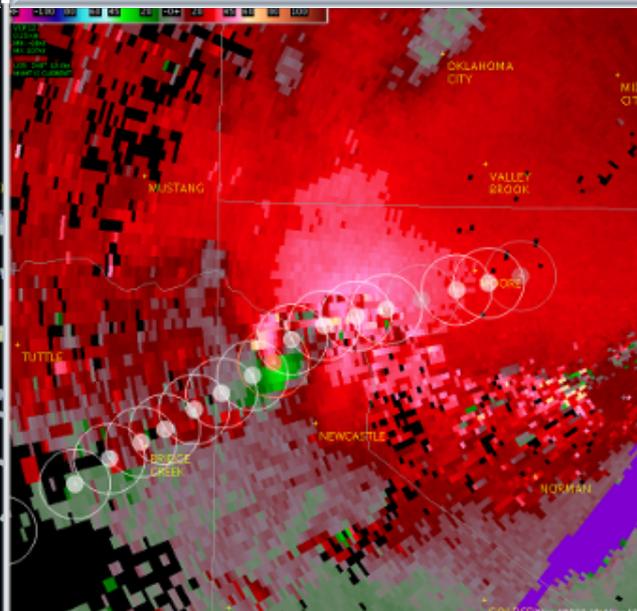
# Effective Practices

## Tracking and Visualizing Trends of Meteorological Features

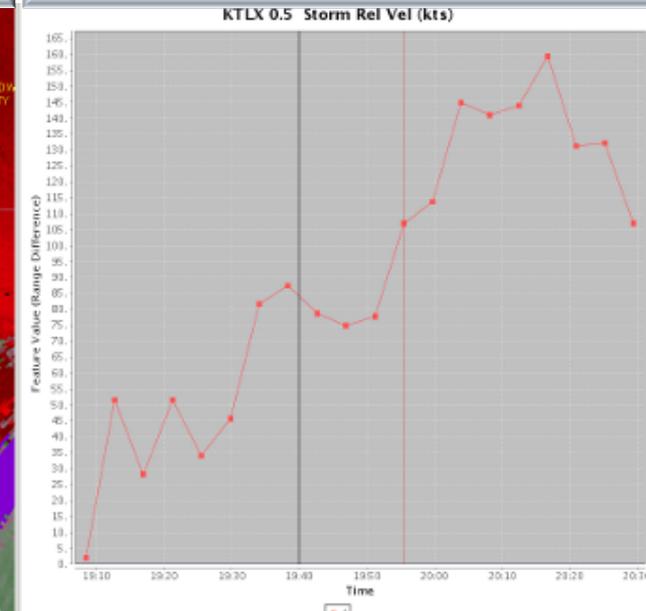
0.5 deg Z – 1955 UTC



0.5 deg SRM – 1955 UTC



TM Trend 1909–2029 UTC

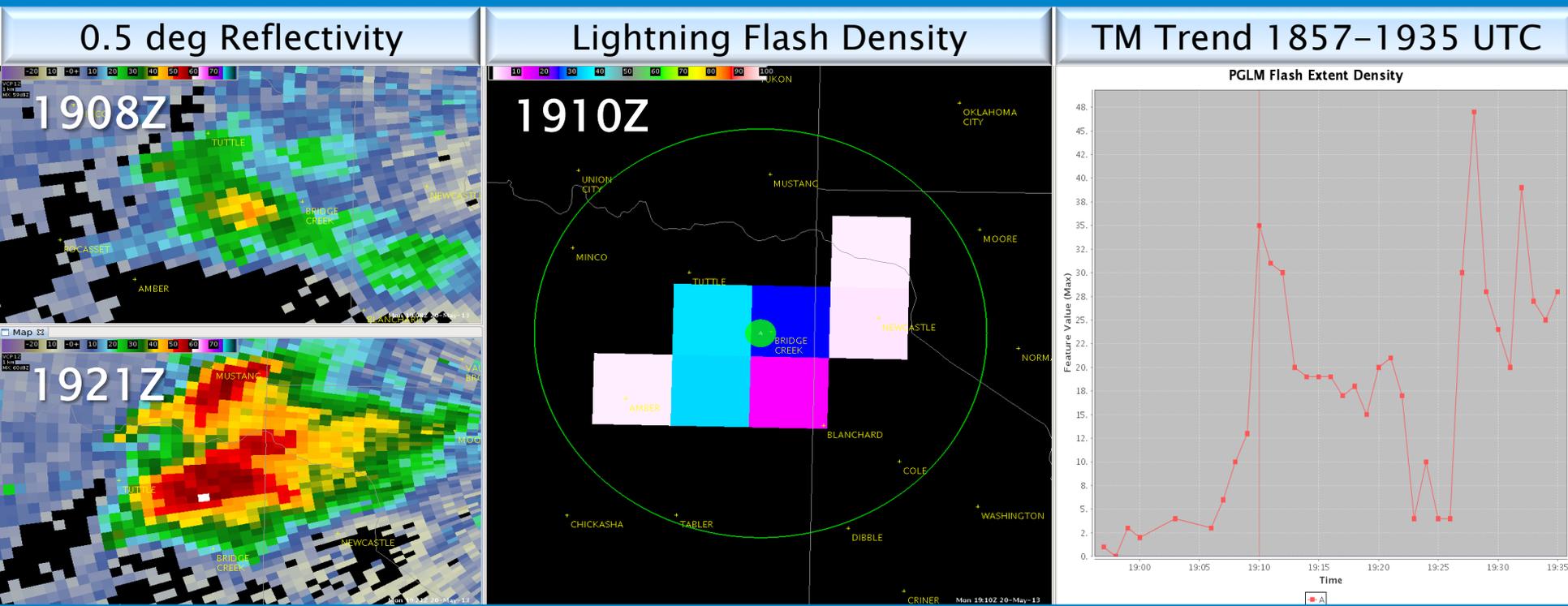


**Example 1**

*Vertical gray line: TOR issued*  
*Vertical red line: tornado obs.*

# Effective Practices

## Efficiently Extract and Communicate Critical Weather Info



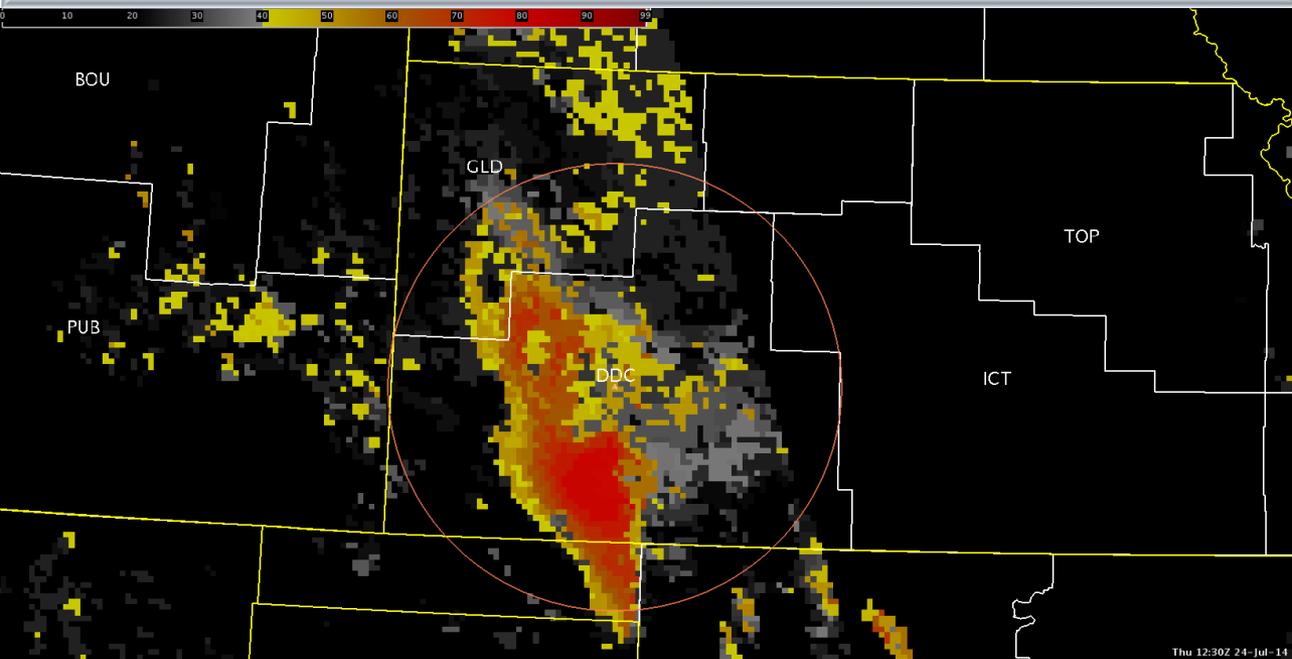
**Example 2**

*Vertical red line: 1910Z*

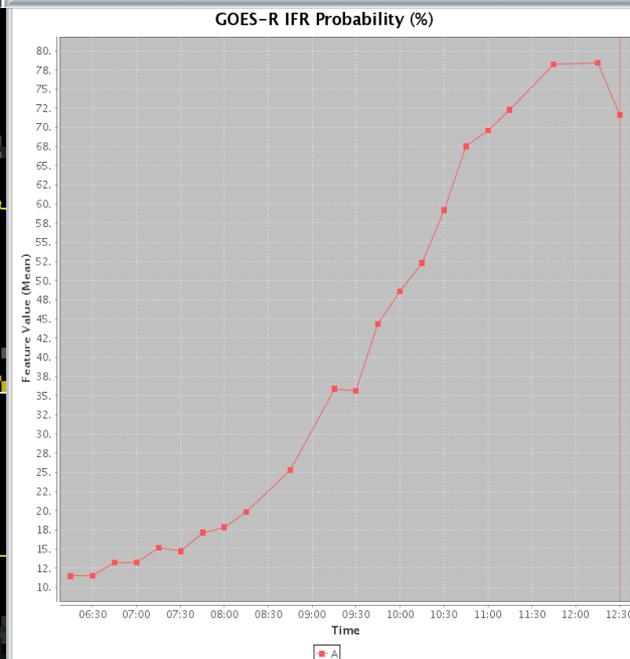
# Effective Practices

## Stationary Mode to Monitor Changes Over a Fixed Location

GOES-R IFR Probabilities Algorithm - Valid 1230 UTC



TM Trend 0615-1230 UTC



**Example 3**

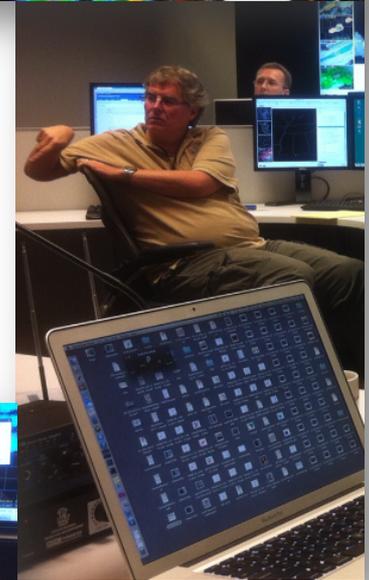
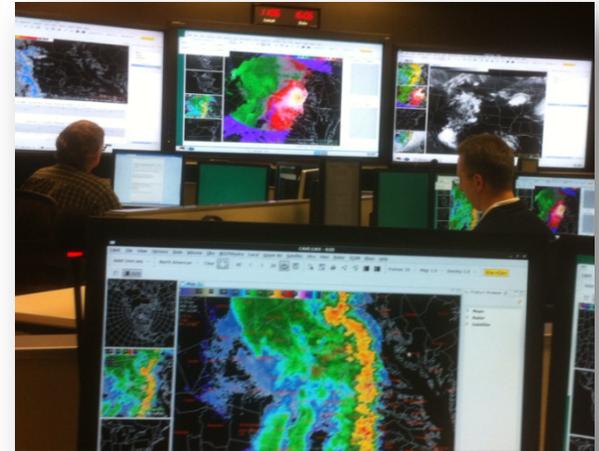
# Summary of Results

- ✔ 6 on-site upgrades; 3 enhancement requests
- ✔ New functionality identified (stationary mode)
- ✔ Unanimous forecaster endorsement (caveat)
- ✔ Implementation into AWIPS baseline 2015



# Key Process Take-Aways

- ✔ VLab Dev Environment
- ✔ Diversity/Realism of Cases
- ✔ Human Factors Emphasis
- ✔ NASA SPoRT Training “1-Pagers”
- ✔ Right Combination of Participants



# Key Process Take-Aways

## VLab Development Site

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

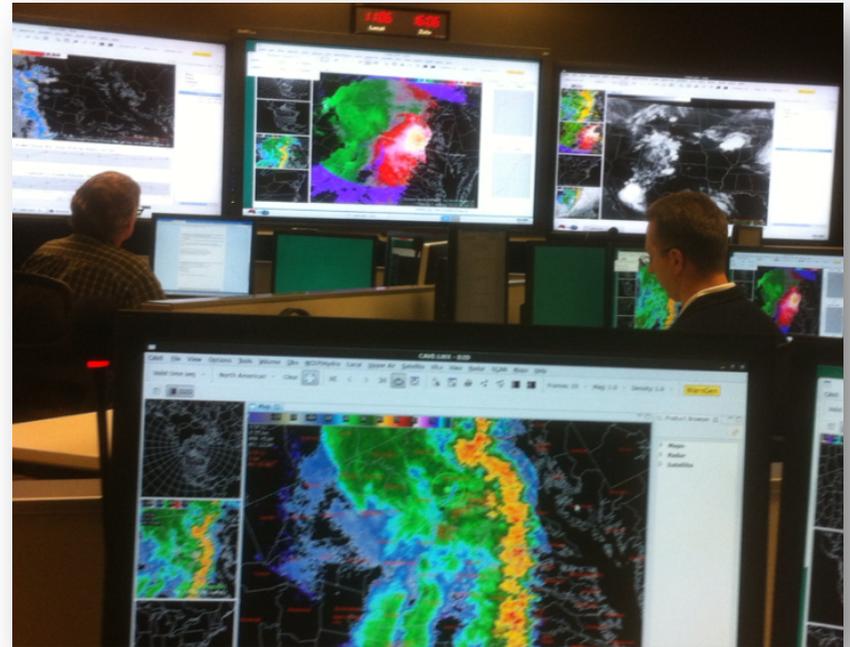


# Key Process Take-Aways

## Diversity of Cases

*“I was impressed with the diversity of scenarios we worked and the overall setup of the OPG.”*

*It simulated the operational environment fairly well, and allowed us to explore a variety of uses for the tool.”*



# Key Process 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.”*



# Key Process 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.”*



# Innovation/Collaboration



## Innovation in Test Environment and Process

- Developed breakthrough playback capability
- Diverse cases/tasks to assess variety of applications
- Use of VLab for on-site development tracking

## Collaborative Aspects of Testing

- NASA SPoRT, MDL, OPG developers
- Follow-up work on HWT critiques
- Field Forecasters, WDTB, OPG



