



Network-Enabled Verification Service (NEVS)

Improving the Quality of Weather Forecasts for Operational Decisions

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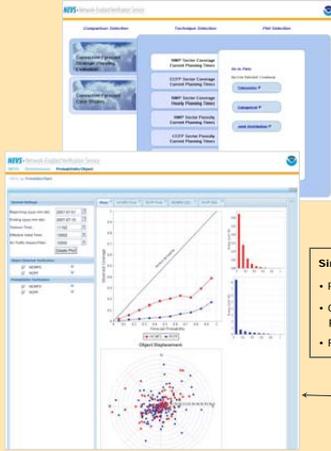
NOAA – Earth System Research Laboratory



NOAA Strategic Plan

- Increase lead-time and accuracy of weather warnings and forecasts
- Support user decisions in aviation
- Deploy more accurate and timely weather forecasts
- Improve predictability of onset, duration, and impact of hazardous weather events

Solution: NEVS



- On-demand delivery mechanism for user-specific performance information
- Utilizes relational database technology to integrate weather data with operational decision criteria to produce user-specific performance metrics

Single-display integration:

- Probabilistic analysis via reliability diagram
- Object-oriented analysis via polar scatter plot of object displacements
- Filtering for high impact aviation conditions

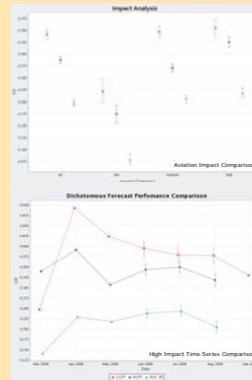
An Aviation Traffic Planner's View of Performance

Better forecasts when and where it matters most is the ultimate goal of aviation forecasting

Strategic Planning Context

NEVS integrates impact information with forecast quality to present results from a user's perspective.

- **Top figure** - air traffic impact integrated with forecast quality for three forecasts
- **Bottom figure** - time series presenting skill of high impact cases
- Confidence intervals included on both figures to facilitate interpretation of measures
- Balanced comparison constructed via event equalization, accounting for issues of data availability

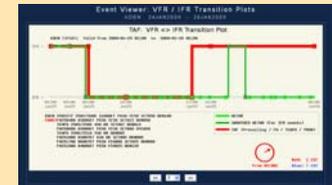


Increasing Lead-time and Accuracy

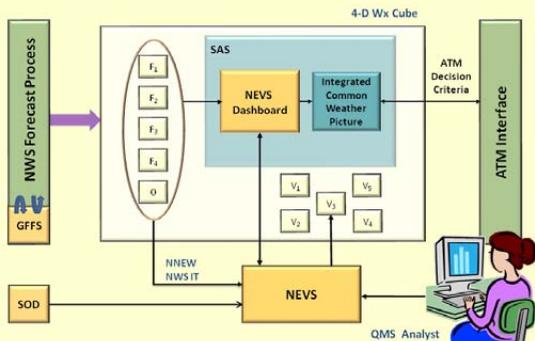
NEVS provides:

- Real-time warnings to ATM decision tools regarding performance of weather forecasts used in operational decision making
- Historical performance record in the context of a user's application
- Net-enabled engineering technology

Forecast accuracy in the context of blockage potential as derived from the mincut bottleneck technique



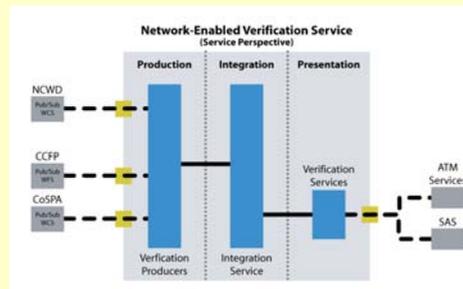
NEVS Relationship to Other NWS Verification Systems



NEVS Transition to the NWS

Aviation Impacts

- Machine-to-machine delivery of forecast quality information
- Improved forecast quality for better operational decision making
- On-the-fly forecast adjustments for operational aviation integration



Collaborations

- Federal Aviation Administration Research and Operations
- National Weather Service
- National Center for Environmental Prediction / Aviation Weather Center
- Federal Aviation Administration William J. Hughes Technical Center
- Industry partners

