

Probabilistic Forecasting of Ceiling and Visibility (PFCV)

PROGRAM/PROJECT: Center for Analysis and Prediction of Storms (CAPS)

LEAD AGENCY/COLLABORATING AGENCIES: University of Oklahoma (OU) Center for Analysis and Prediction of Storms (CAPS)

PROGRAM POINT OF CONTACT: Dr. Kelvin Droegemeier, Director, Center for Analysis and Prediction of Storms, 405-325-0453, kkd@ou.edu

SERVICE AREA(S)/INITIATIVE(S)

- *National Aviation Weather Initiatives:*
1: 8, 11

FUNDING

- *Programmed/Planned (\$'s/FY):*

TYPE OF PROGRAM/APPLICATION

Product Development

SCOPE OF PROGRAM/PROJECT

- *What's being developed, procured, etc:* an automated statistical system that utilizes surface weather observations to forecast ceiling and visibility at specific sites. Using past data to identify a set of predictors and consequently a set of forecast equations, the system may be engineered to produce probabilistic forecasts of ceiling and visibility at arbitrary initialization times and over various forecast lead times.
- *How operations will be changed/improved:* According to the results of preliminary studies, this technology will provide a significant improvement in the near-term (< 6 hrs.) prediction of ceiling and visibility over what is available using numerical weather forecasts.

PROGRAM/PROJECT MANAGEMENT

- *Basic guidance document for this program:* The initial methodology is outlined in a Master's thesis by Stephen Leyton during his tenure as a graduate student at Pennsylvania State University: "Short-term probabilistic forecasts of ceiling and visibility utilizing high-density and high-frequency surface weather observations." Ongoing development and application at OU will be defined according to the dictates of pending collaborations with partners from academia and industry.
- *Program/Project verification process:*
- *Method used for product validation:*
- *Operational training for the user:*

SCHEDULE/IMPLEMENTATION

- *Next major program milestone:* To implement and evaluate the use of this technology to produce forecasts of ceiling and visibility for chosen sites.
- *Program becomes operational:* TBD
- *Plans for further improvements:* To base probabilistic forecasting of ceiling and visibility on more than just surface-based observations.