

Weather and Research Forecast (WRF) Model

PROGRAM/PROJECT: Model Development & Enhancement Product Development Team [http://www.wrf-model.org/]

LEAD AGENCY/COLLABORATING AGENCIES: National Oceanic and Atmospheric Administration (NOAA), Federal Aviation Administration (FAA), Air Force Weather Agency (AFWA), National Science Foundation (NSF), National Center for Atmospheric Research (NCAR), Oklahoma University Center for the Analysis and Prediction of Storms (CAPS), Forecast Systems Laboratory (FSL), National Center for Environmental Prediction (NCEP)

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SERVICE AREA (S)/INITIATIVE (S)

- ***National Aviation Weather Initiatives:***
1: 8,10,11,13 2: 7,10,11,12 3: 7 5: 8, 10 6: 9, 10, 11 7: 8, 10

FUNDING

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

TYPE OF PROGRAM/APPLICATION

Product Development

SCOPE OF PROGRAM/PROJECT

- ***What's being developed, procured, etc:*** a next-generation mesoscale forecast model and assimilation system that will advance both the understanding and prediction of mesoscale precipitation systems and promote closer ties between the research and operational forecasting communities. The model is being developed as a collaborative effort among several government agencies together with the participation of a number of university scientists.
- ***How operations will be changed/improved:*** better forecasts of weather related aviation impact variables will improve the safety and efficiency of aviation operations.

PROGRAM/PROJECT MANAGEMENT

- ***Basic guidance document for this program:*** WRF Management Plan that defines the responsibilities of an Oversight Board, a Science Board, a WRF Coordinator, Development Teams, and Working Groups. There is also a Project Development Plan and a Joint NSF/NOAA WRF Model Development Proposal.
- ***Program/Project verification process:*** Progress reports to the funding sponsors; periodic design review workshops; input from the Oversight Board and Science Board; internal reviews within the participating organizations.
- ***Method used for end product validation:*** Idealized model testing against known solutions; extensive model evaluation using selected case studies; side-by-side comparison with other research and operations models; real-time experimental forecasting/verification.
- ***Operational training for the user:*** Annual user workshops; web-based tutorials; online user documentation.

SCHEDULE/IMPLEMENTATION

- ***Next major program milestone:*** Conclude real-time parallel testing of the WRF model at NCEP.
- ***Program becomes operational:*** Operational use at NCEP, FSL, & AFWA-2004.
- ***Plans for further improvements:*** Incorporate advanced model physics and advanced data assimilation schemes.