

FAA Aviation Weather Research Program (AWRP)



Friends and Partners in Aviation *Product Generation Panel*

October 23, 2002

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FAA AUA-430/SAIC

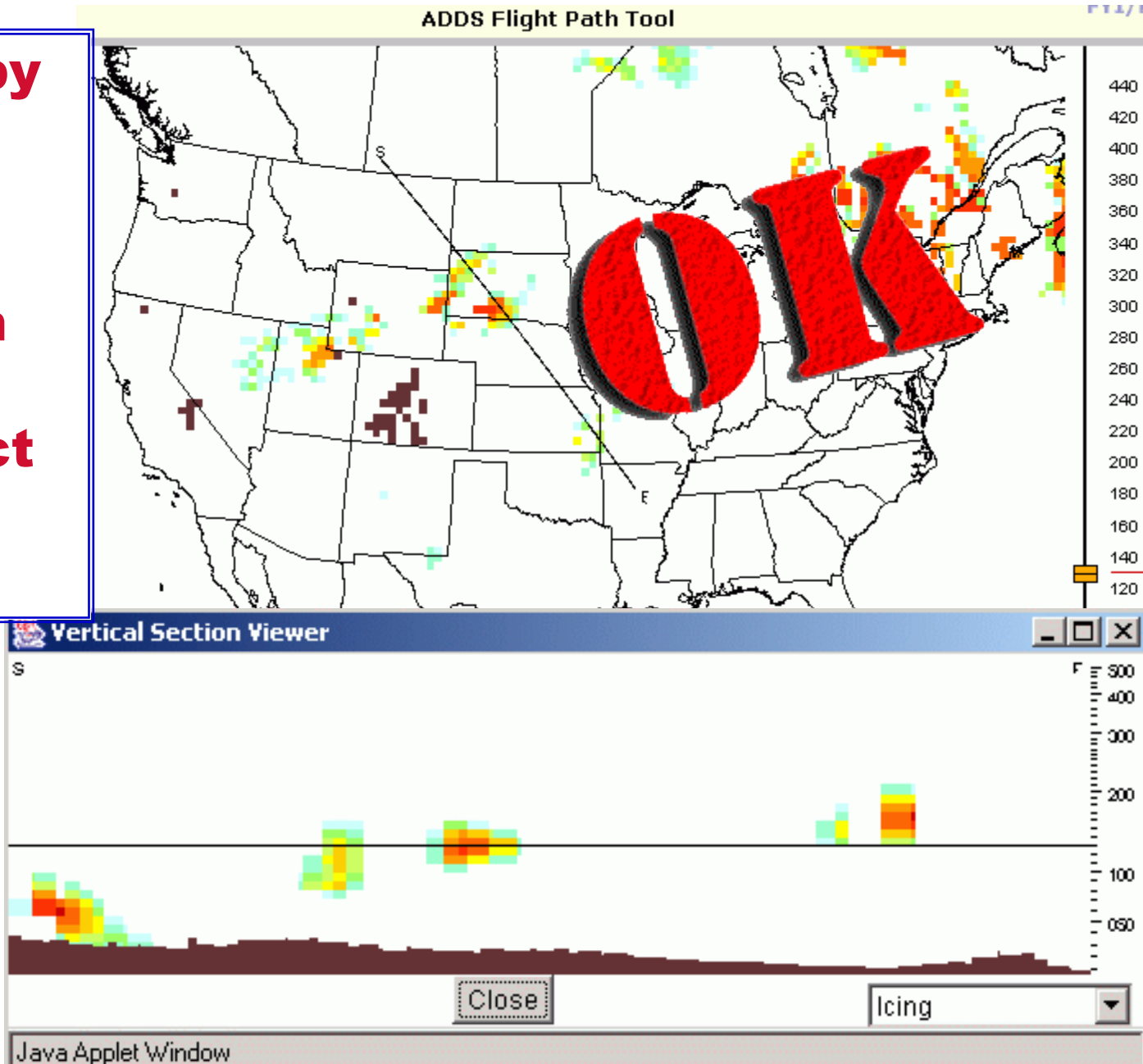
<http://www.faa.gov/aua/awr>

AWRP Progress in Product Generation

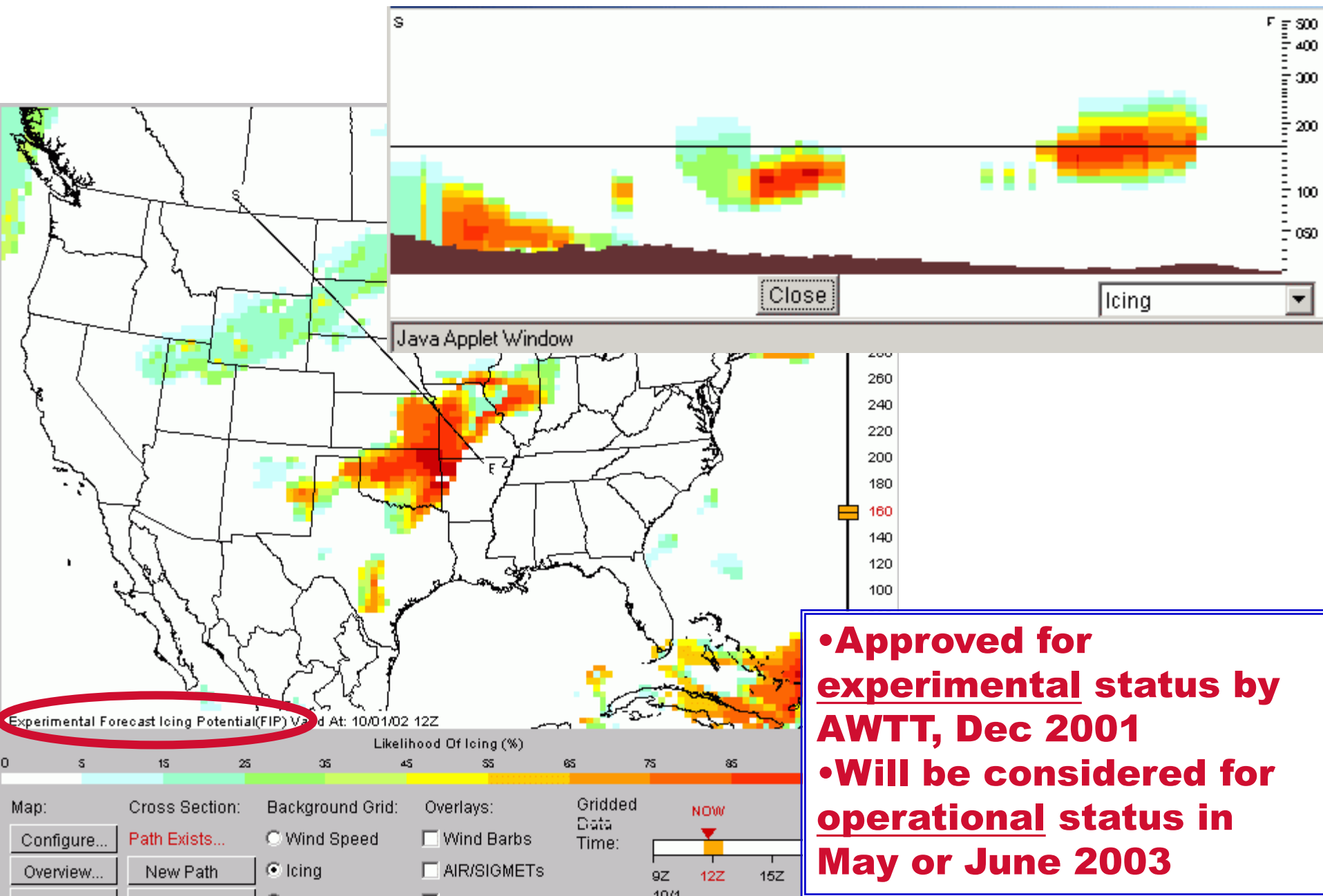
- Current Icing Potential (CIP)
- Forecast Icing Potential (FIP)
- National Convective Weather Forecast (NCWF), today and in the future
- Ceiling and Visibility Products
- Winter Weather Products

Current Icing Potential (CIP)

- Approved by AWTT Exec Board, Dec 2001
- Became an operational NWS product March 27 2002

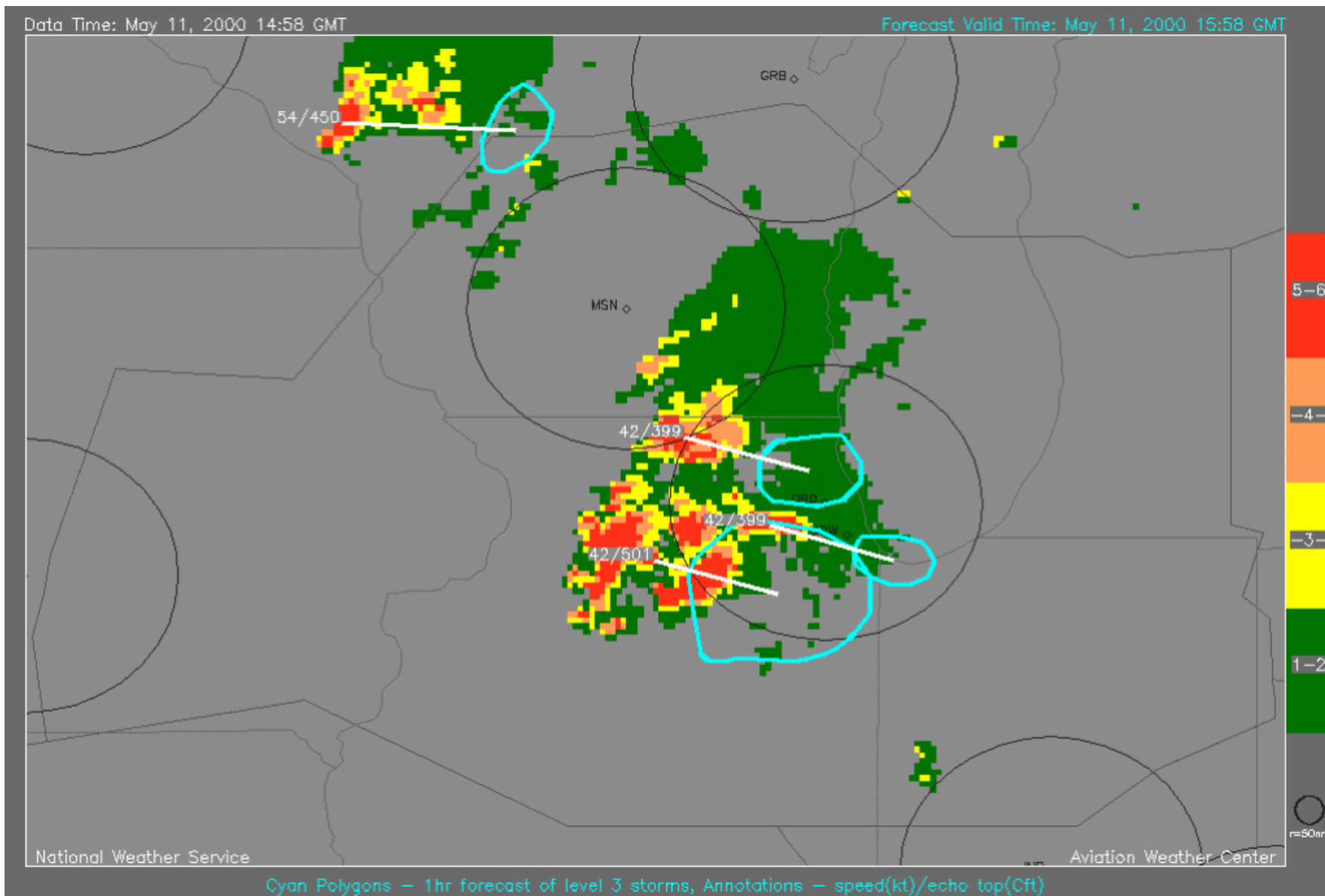


Forecast Icing Potential (FIP)

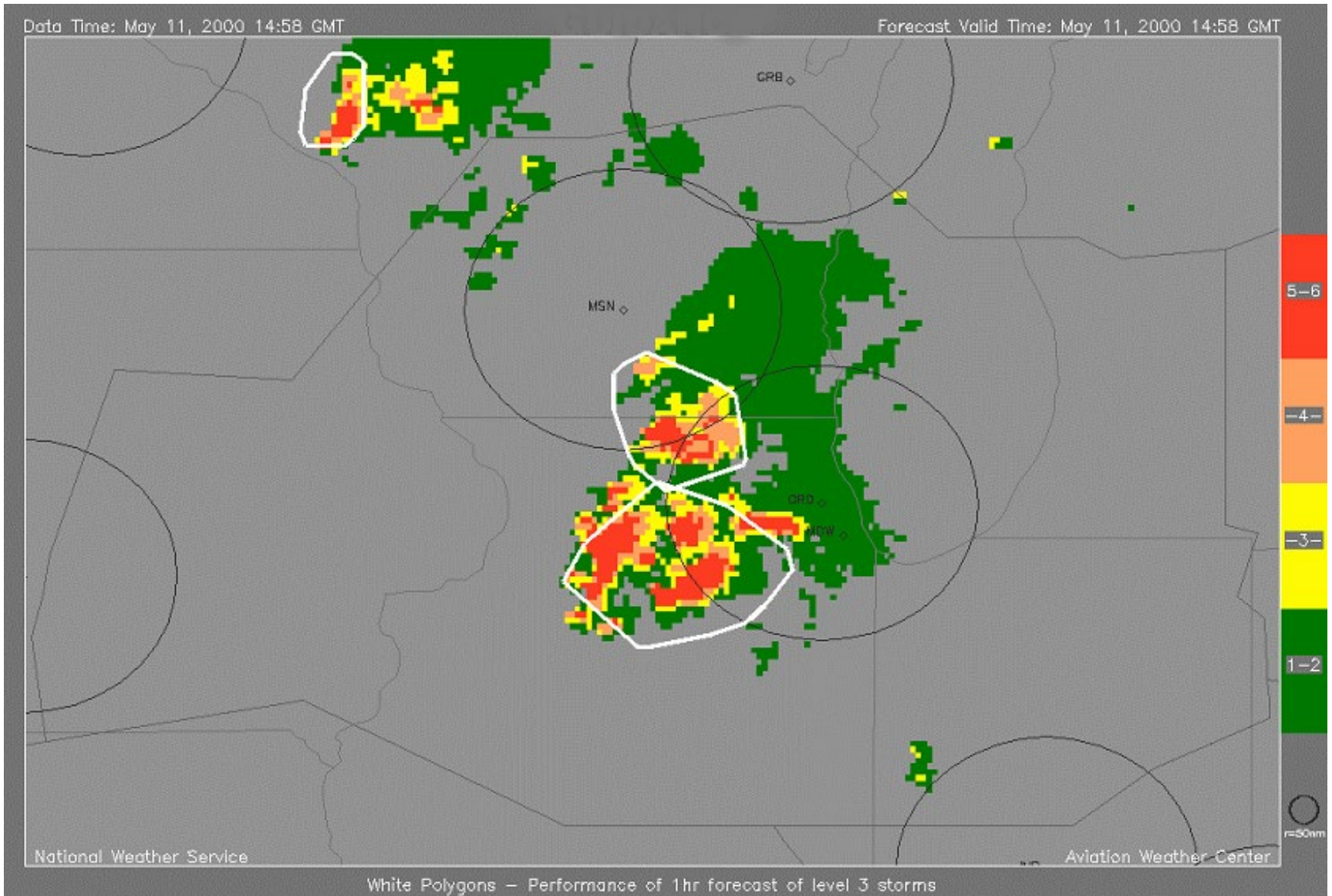


- **Approved for experimental status by AWTT, Dec 2001**
- **Will be considered for operational status in May or June 2003**

National Convective Weather Forecast (NCWF)

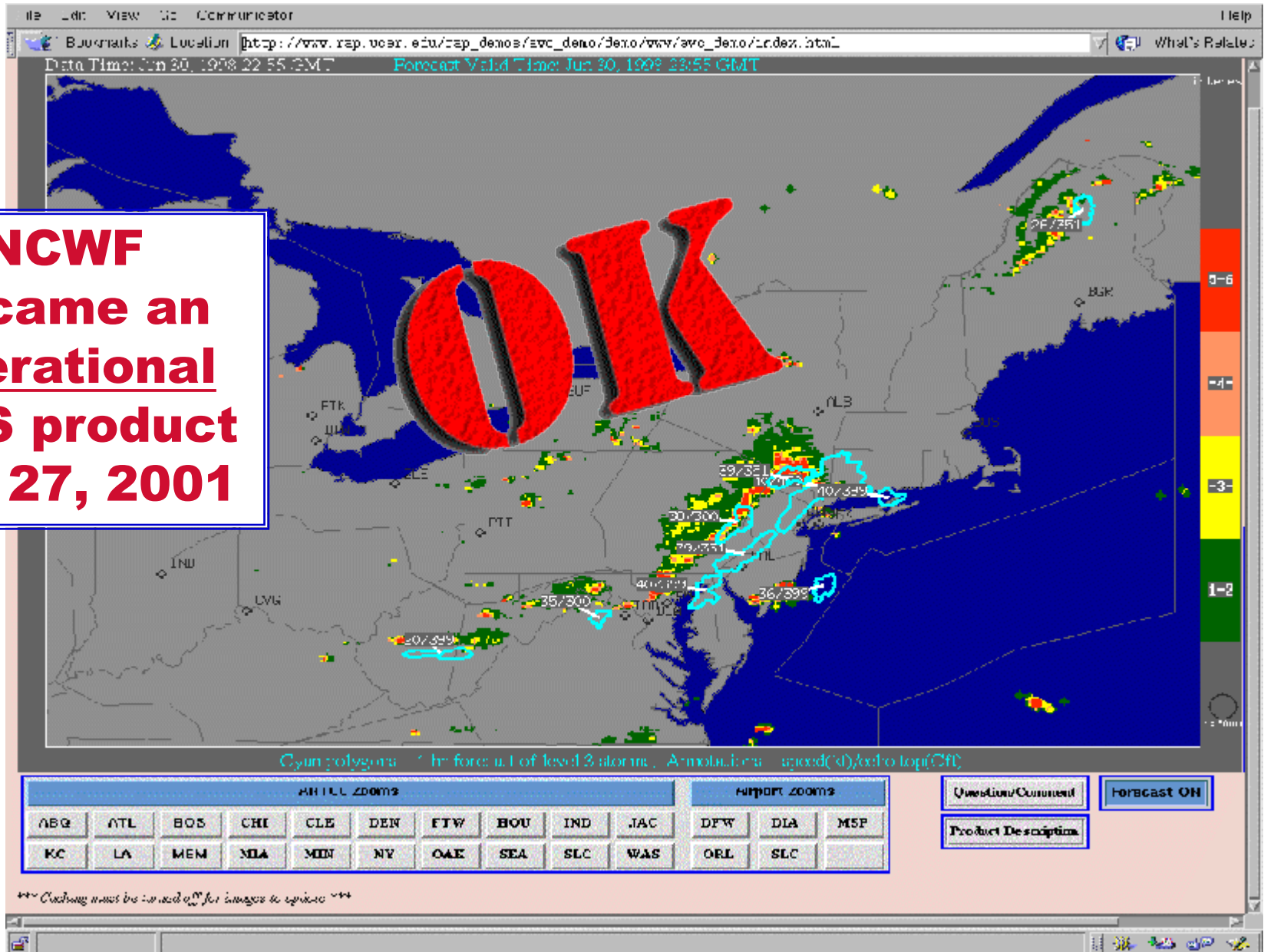


NCWF (Performance Image)



NCWF Operational

NCWF
became an
operational
NWS product
Sep 27, 2001



AWRP 2- to 6-hour Forecast Development

- Now testing 2-hour forecast
- Approach for longer-duration forecasts:
 - High-resolution multi-sensor inputs
 - Storm behavioral patterns
 - Models combined with statistics
 - Model ensembles
 - Boundary layer water vapor
 - Probabilistic decision tool
- Anticipate some advances within 5 years for convective storms that are forced by large-scale features
- Harder and farther down the road
 - Systems triggered by mesoscale features such as by gust-fronts
 - Convection driven by processes above the boundary layer, e.g. overrunning

Terminal Ceiling and Visibility

San Francisco
Stratus Problem

- Decision aid for traffic management and arrival/departure rates
- Goal — to enable 1 hour forecast in support of parallel runway operations

**Transition to
NWS: FY04**

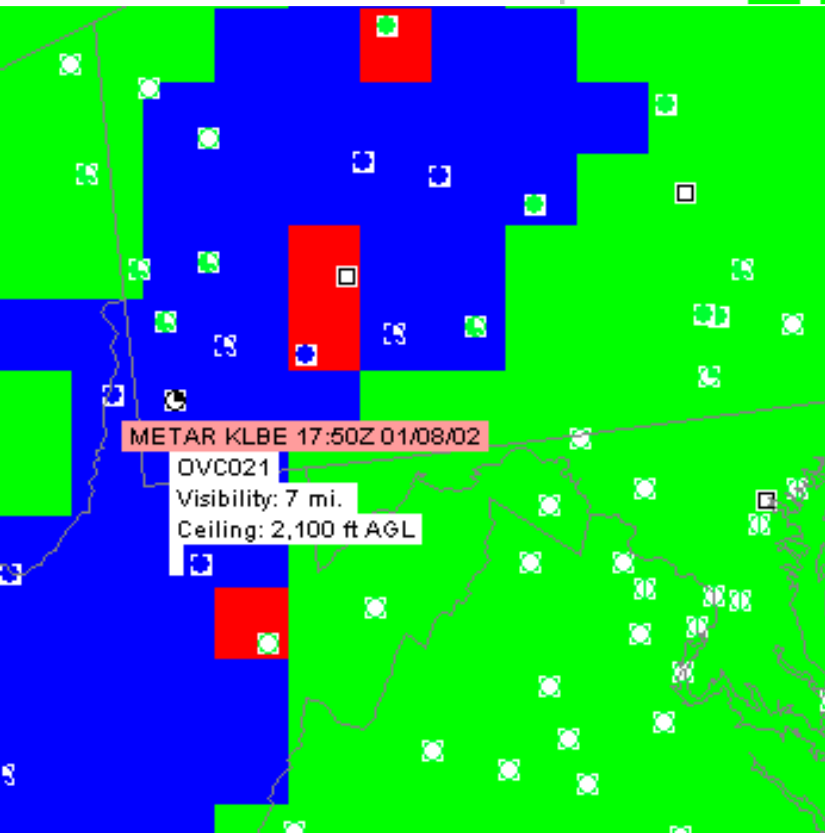
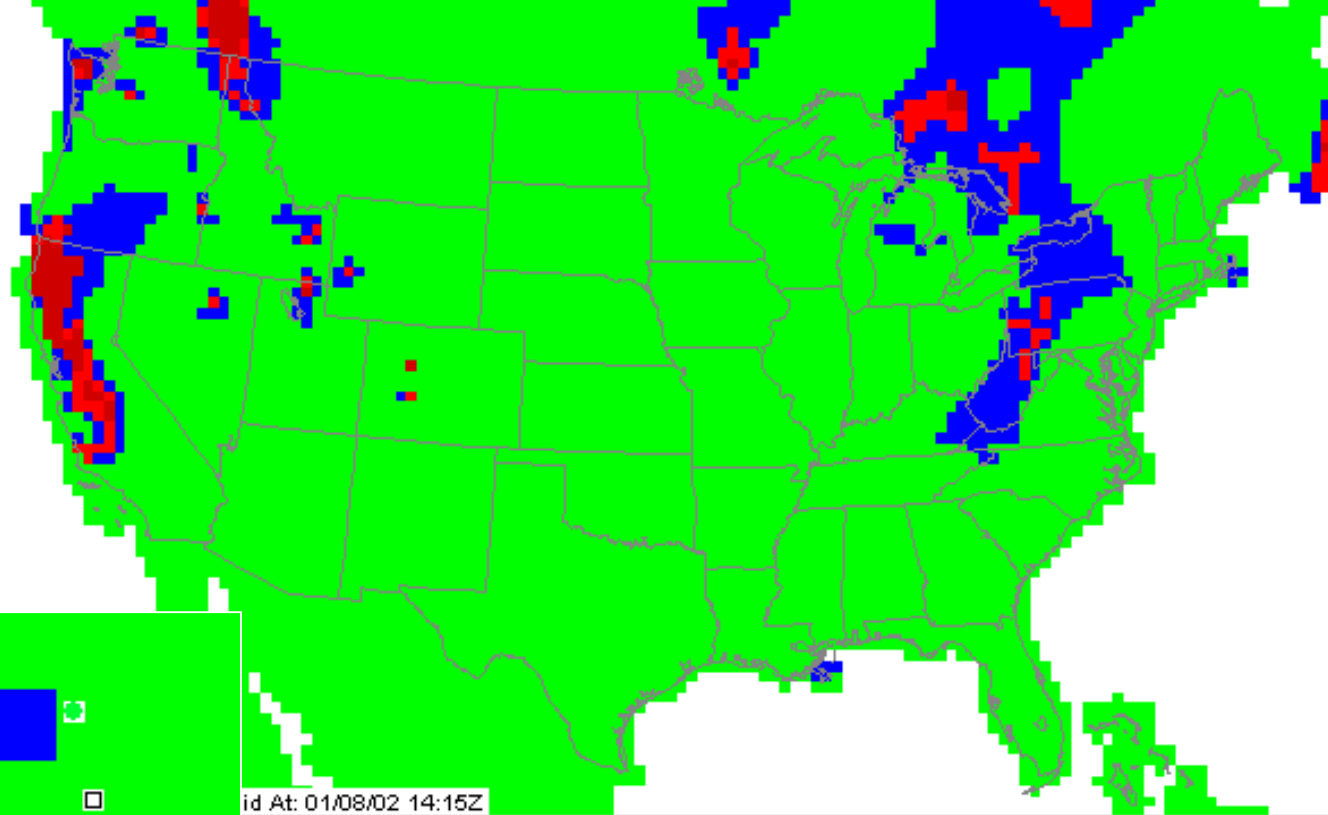
National Ceiling and Visibility

When adverse weather conditions cause loss of visual orientation, how long can a licensed VFR pilot who lacks instrument training expect to live...?

...less than three minutes.

- 1991, University of Illinois used simulated weather conditions to test twenty VFR rated pilots. When deprived of visual contact each pilot experienced loss of control. On average, it took approximately 178 seconds.....
- NTSB: Degraded Ceiling and Visibility (C&V) conditions played a role in almost 40% of all weather-related aviation accidents investigated over the period 1989-1998

Sample C&V Product:



id At: 01/08/02 14:15Z

Flight Category (None)

IFR

MVFR

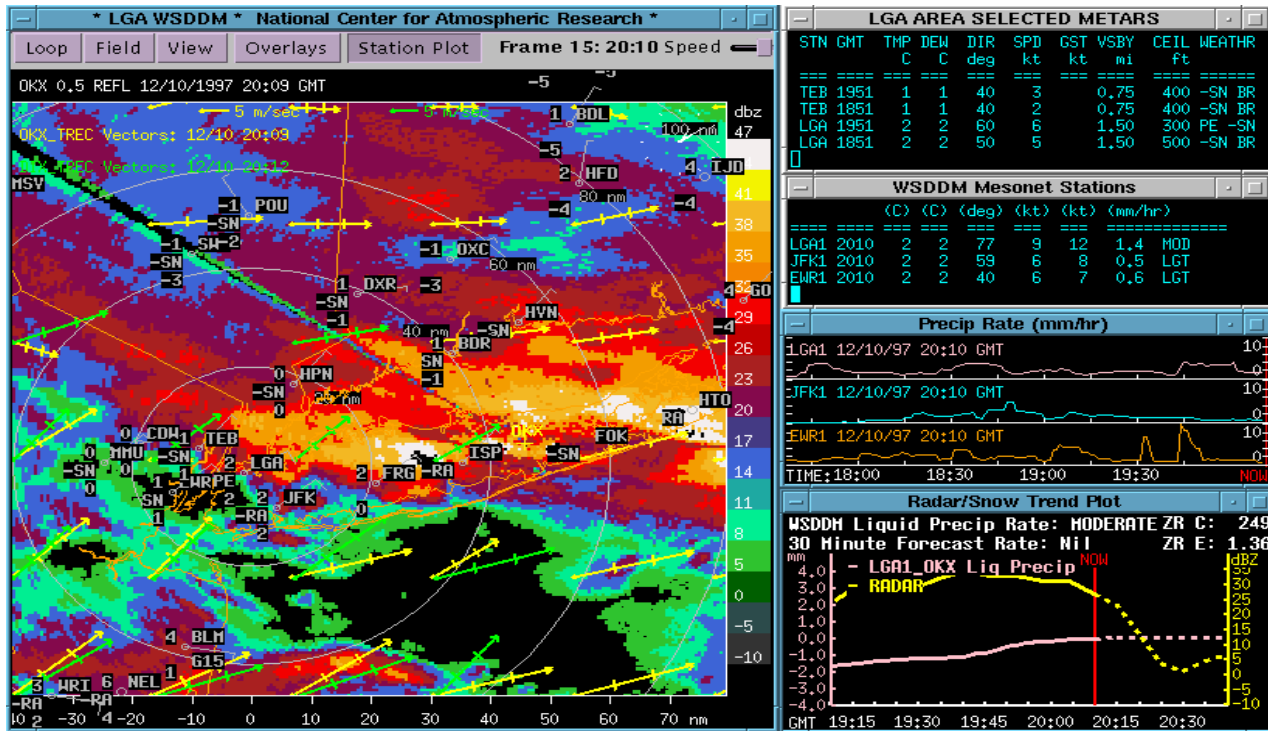
VFR

Previous Forecasts:

• Approved by AWTT for testing, Feb 2002
• Expect experimental release, FY04

Visibility TAFs Temperature More
 Ceiling METARs Altimeter Default

Winter Weather Research



WSDDM Used At All 3
 New York Airports and Denver

Northeast Winter Weather

- AWRP to begin investigating winter storms in the Northeast US in FY03
- A research collaboration among 3 PDTs
 - Winter Weather PDT
 - Terminal Ceiling and Visibility PDT
 - National Ceiling and Visibility PDT

Links

- AWRP web page
 - <http://www.faa.gov/aua/awr>
- ADDS
 - <http://adds.aviationweather.gov/>