Enhanced Aviation Weather DSS and synthetic vision systems that reduce the aviation fatal accident rate by a factor of 10 by 2022.

**Where we are now**

Discrete, stand-alone weather products with limited satellite data and imagery integration. Aircraft icing ironing of limited usefulness. Poor forecasts of turbulence, convection, ceiling/visibility, and oceanic weather.

**Where we plan to be**

Fully integrated graphical weather products featuring real-time, global weather information. Precise, continuously updating, short-term (24-hour) aviation weather models that greatly improve aviation safety, increase airline efficiency, and lower operating costs.

**Roadmap**

**Aviation**

**EARTH SCIENCE RESEARCH**

- GOES-R
- EOS, NPP, NPOESS and GOES-R
- Aqua and NPP fly the AIRS and CrIS sensors (Atmospheric Infrared Sounder and Crosstrack Infrared Sounder)

**DECISION-SUPPORT INPUTS**

- WX visualization systems: Fully integrated SVS, WARP and ITWS in-cockpit graphical WX displays featuring real-time weather information with global coverage
- WX visualization systems: Discrete, stand-alone WX products with little satellite-sounding data or imagery
- WX sensors/data sources: AIRS, CrIS and GIFTS fully integrated into NEXRAD and TDWR systems; prepared for seamless integration of ABS (GOES-R)
- WX sensors/data sources: AIRS, CrIS and GIFTS fly the AIRS and Crosstrack Infrared Sounder (CIRS) Experiments
- High-spectral (vertical), horizontal, and temporal resolution satellite measurements will render precise numerical weather forecasts and extremely high-resolution wind fields based on the tracking of atmospheric water vapor
- Airborne validation of NPOESS instruments provides DSS product development teams with experience in integrating hyperspectral data and information in preparation for subsequent GIFTS and GOES-R missions

**GOALS/PARTNERS**

- Enhanced Decision Support
- Geostationary satellite technology improvements will vastly improve remote measurement of altitude-resolved vector winds and temperatures, allowing for efficient flight planning, operations, and traffic management
- Nas-wide data link WX products provide severe weather location and movement data to controllers and aircrews to promote common situational awareness
- Geostationary satellite technology

**CURRENT TRAJECTORY**

**EARTH OBSERVING MISSIONS**

- Steady improvement in fielding and integration of hyperspectral LEO and GEO satellite data into NWS aviation weather products and AWRP visualization systems, resulting in fully integrated, real-time global aviation WX coverage

**Unfunded**

**Funded**

**Decision Support Tool**