SOCIO-ECONOMIC BENEFITS OF METEOROLOGICAL AND HYDROLOGICAL SERVICES

INVENTORY OF DECISION SUPPORT TOOLS

ITEM	DESCRIPTION
Source	Marcia Politovich – NCAR, USA c/o Jeff Lazo – NCAR – lazo@ucar.edu
Sector	Aviation
Sub-sector	General and commercial aviation
Tool Name	**Current and Forecast Icing Products (CIP and FIP)**
Tool Description	CIP and FIP ingest numerical weather model output, and for CIP observational sensor data, combine the information intelligently, and produce a 4D depiction of expected icing severity and probability.
Weather, Climate or Water inputs	NCEP Rapid Update Cycle model, METARs, GOES imagery, NEXRAD vendor mosaic, voice pilot reports.
Specific weather, climate, water data required	Location of clouds in 3D, precipitation rate and type, vertical temperature and humidity structure, reports of icing
Spatial resolution	No specific requirements since sensor data are available on a variety of resolutions; data are placed onto a common grid
Temporal resolution	At least hourly for current version of CIP. Hourly output with 1-h granularity to 3 h for FIP, plus a forecast out to 12 h (with 3-h granularity) every three hours.
Delivery methodology	Real-time
Frequency of data requirement	Currently all are required hourly
Detailed Tool Description	Output is a grib file of 3D icing severity, probability and SLD potential
Spatial resolution	20 km horizontal, 1000 ft vertical
Temporal resolution	1 h
Delivery methodology	Graphics on ADDS and Ex-ADDS; grids (grib formatted files) on NOAAPort
Frequency of provision	Hourly
Benefits of tool application	Tool allows both pre-flight and in-flight route planning for safe (avoiding hazardous icing areas) and efficient (allowing flight in previously restricted areas due to over-forecasting) operations.
Possible future advances	Increased temporal and spatial resolution; confidence field; incorporation of new data sets for increased accuracy; improved data sets that allow for aircraft-specific severity estimation.
Comments	
URL	http://www.aviationweather.gov/adds/icing/ http://weather.aero/icing