

Plan for the Aviation Winter Weather Experiment

February 11-22, 2013

Aviation Weather Testbed
Aviation Weather Center
Kansas City, Missouri

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Introduction

The Aviation Weather Center in Kansas City, Missouri, is hosting the Aviation Winter Weather Experiment February 11-22, 2013. The primary goals of the experiment are to enhance AWC forecasting operations, expose forecasters to new data sets and tools, evaluate new technologies for operational use, and gain valuable operations to research feedback. Given that this is the first winter weather experiment held at the AWC, the intent is to keep it ***small***, ***manageable***, and ***meaningful***.

Aviation Weather Testbed Configuration

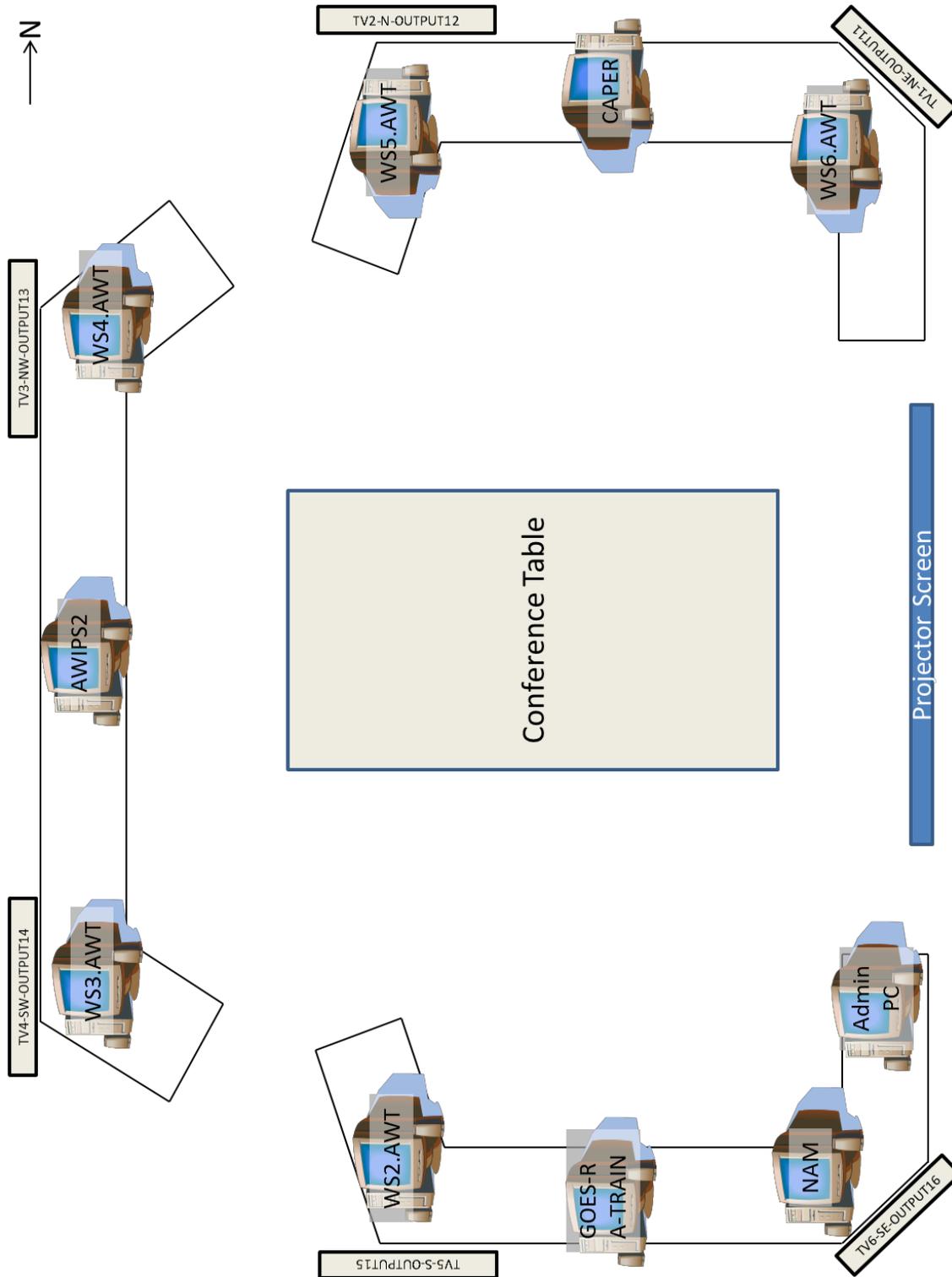
The experiment will focus on simulating the AWC forecasting environment while at the same time making new data sets, tools, and displays easily available for use (see Figure 1 for a schematic of the testbed configuration). The following testbed resources will be available for use:

- 5 Workstations configured for use as AWC forecast desks
- 1 Workstation configured for use as a National Aviation Meteorologist (NAM) desk
- 1 Administrative Windows PC for presentations and video control
- 1 Matrix Video Switch for displaying information on the projector and TV screens
- 1 Overhead Projector
- 1 3M Smartboard
- 1 MITRE CAASD Analysis Platform for En Route (CAPER)
- 1 Workstation configured for A-Train/GOES-R satellite-based product assessment

Collaboration with External Stakeholders/Partners

This experiment provides a unique opportunity to collaborate with external partners like the Hydrometeorological Prediction Center (HPC), the National Transportation Safety Board (NTSB), Lockheed Martin Flight Services, the National Center for Atmospheric Research (NCAR), the Air Force Weather Agency (AFWA), the NOAA Earth Systems Research Laboratory (ESRL), the NOAA NextGen Weather Program, the GOES-R Program Office, National Weather Service Central Region Headquarters, and the FAA Air Traffic Control System Command Center (ATCSCC). During the experiment there will be joint weather briefings, presentations by internal and external stakeholders, and many opportunities for open discussion. Our hope is that everyone will learn from each other through the sharing of knowledge, experience, best practices, and new ideas.

Figure 1. Aviation Weather Testbed Configuration



Daily Schedule

Mon	Feb 11
7:30 am	Testbed opens
8:00 am	Experiment kickoff, opening remarks
8:45 am	Analysis of current weather, identify target forecast areas
9:00 am	Weather briefing and team assignments
9:20 am	Break
9:30 am	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 21Z/00Z/03Z) and an Area Forecast (valid ~20Z today to 15Z tomorrow) for the selected area of interest. Issue SIGMETs as needed using new guidance when possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 12Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
11:30 am	Lunch Break (Teams can choose to finish forecasts then take lunch or vice versa)
12:30 pm	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 06Z/09Z). Amend the Area Forecast as needed and issue SIGMETs as needed using new guidance as much as possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 18Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
1:30 pm	Round table discussion lead by Christa Jacobs: Process for introducing new products into operations
2:30 pm	Break
2:40 pm	Forecast assessment
3:00 pm	Team presentations and group discussion
3:30 pm	Survey completion
4:00 pm	Adjourn

Tue	Feb 12
7:30 am	Testbed opens
8:00 am	Assessment of previous day's forecasts (model and human)
8:45 am	Analysis of current weather, identify target forecast areas
9:00 am	Weather briefing and team assignments
9:20 am	Break
9:30 am	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 21Z/00Z/03Z) and an Area Forecast (valid ~20Z today to 15Z tomorrow) for the selected area of interest. Issue SIGMETs as needed using new guidance when possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 12Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
11:30 am	<i>Brown Bag Lunch Presentation: NTSB (Order-in lunch available for cash purchase)</i>
12:30 pm	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 06Z/09Z). Amend the Area Forecast as needed and issue SIGMETs as needed using new guidance as much as possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 18Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
1:30 pm	Prepare for briefing
2:00 pm	<i>Collaborative transportation-focused briefing with HPC. AWC will provide enroute hazard information.</i>
2:30 pm	Break
2:40 pm	Forecast assessment
3:00 pm	Team presentations and group discussion
3:30 pm	Survey completion
4:00 pm	Adjourn

Wed	Feb 13
7:30 am	Testbed opens. Finish surveys from previous day.
8:00 am	Assessment of previous day's forecasts (model and human)
8:45 am	Analysis of current weather, identify target forecast areas
9:00 am	Weather briefing and team assignments
9:20 am	Break
9:30 am	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 21Z/00Z/03Z) and an Area Forecast (valid ~20Z today to 15Z tomorrow) for the selected area of interest. Issue SIGMETs as needed using new guidance when possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 12Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
11:30 am	<i>Brown Bag Lunch Presentation: "Lockheed Martin FS21 Pilot Briefing System", Joe Daniele and Tony Flynn (Order-in lunch available for cash purchase)</i>
12:30 pm	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 06Z/09Z). Amend the Area Forecast as needed and issue SIGMETs as needed using new guidance as much as possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 18Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
1:30 pm	Prepare for briefing
2:00 pm	<i>Collaborative transportation-focused briefing with HPC. AWC will provide enroute hazard information.</i>
2:30 pm	Break
2:40 pm	Forecast assessment
3:00 pm	Team presentations and group discussion
3:30 pm	Survey completion
4:00 pm	Adjourn

Thu	Feb 14
7:30 am	Testbed opens. Finish surveys from previous day.
8:00 am	Assessment of previous day's forecasts (model and human)
8:45 am	Analysis of current weather, identify target forecast areas
9:00 am	Weather briefing and team assignments
9:20 am	Break
9:30 am	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 21Z/00Z/03Z) and an Area Forecast (valid ~20Z today to 15Z tomorrow) for the selected area of interest. Issue SIGMETs as needed using new guidance when possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 12Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
11:30 am	Lunch Break (Teams can choose to finish forecasts then take lunch or vice versa)
12:30 pm	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 06Z/09Z). Amend the Area Forecast as needed and issue SIGMETs as needed using new guidance as much as possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 18Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
1:30 pm	Prepare for briefing
2:00 pm	<i>Collaborative transportation-focused briefing with HPC. AWC will provide enroute hazard information.</i>
2:30 pm	Break
2:40 pm	Forecast assessment
3:00 pm	Team presentations and group discussion
3:30 pm	Survey completion
4:00 pm	Adjourn

Fri	Feb 15
7:30 am	Testbed opens. Finish surveys from previous day.
8:00 am	Assessment of previous day's forecasts (model and human)
8:45 am	Analysis of current weather, identify target forecast areas
9:00 am	Weather briefing and team assignments
9:20 am	Break
9:30 am	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 21Z/00Z/03Z) and an Area Forecast (valid ~20Z today to 15Z tomorrow) for the selected area of interest. Issue SIGMETs as needed using new guidance when possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 12Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
11:30 am	<i>Brown Bag Lunch Presentation: "Winter Weather Aviation Hazard Research at NCAR", Cory Wolff (Order-in lunch available for cash purchase)</i>
12:30 pm	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 06Z/09Z). Amend the Area Forecast as needed and issue SIGMETs as needed using new guidance as much as possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 18Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
1:30 pm	Prepare for briefing
2:00 pm	<i>Collaborative transportation-focused briefing with HPC. AWC will provide enroute hazard information.</i>
2:30 pm	Break
2:40 pm	Forecast assessment
3:00 pm	Team presentations and group discussion
3:30 pm	Survey completion
4:00 pm	Adjourn

Tue	Feb 19
7:30 am	Testbed opens.
8:00 am	Opening remarks, take-aways from week 1.
8:45 am	Analysis of current weather, identify target forecast areas
9:00 am	Weather briefing and team assignments
9:20 am	Break
9:30 am	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 21Z/00Z/03Z) and an Area Forecast (valid ~20Z today to 15Z tomorrow) for the selected area of interest. Issue SIGMETs as needed using new guidance when possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 12Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
11:30 am	Lunch Break (Teams can choose to finish forecasts then take lunch or vice versa)
12:30 pm	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 06Z/09Z). Amend the Area Forecast as needed and issue SIGMETs as needed using new guidance as much as possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 18Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
1:30 pm	TBD
2:30 pm	Break
2:40 pm	Forecast assessment
3:00 pm	Team presentations and group discussion
3:30 pm	Survey completion
4:00 pm	Adjourn

Wed	Feb 20
7:30 am	Testbed opens. Finish surveys from previous day.
8:00 am	Assessment of previous day's forecasts (model and human)
8:45 am	Analysis of current weather, identify target forecast areas
9:00 am	Weather briefing and team assignments
9:20 am	Break
9:30 am	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 21Z/00Z/03Z) and an Area Forecast (valid ~20Z today to 15Z tomorrow) for the selected area of interest. Issue SIGMETs as needed using new guidance when possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 12Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
11:30 am	<i>Brown Bag Lunch Presentation: NextGen Program Update, Jason Levit (Order-in lunch available for cash purchase)</i>
12:30 pm	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 06Z/09Z). Amend the Area Forecast as needed and issue SIGMETs as needed using new guidance as much as possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 18Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
1:30 pm	TBD
2:30 pm	Break
2:40 pm	Forecast assessment
3:00 pm	Team presentations and group discussion
3:30 pm	Survey completion
4:00 pm	Adjourn

Thu	Feb 21
7:30 am	Testbed opens. Finish surveys from previous day.
8:00 am	Assessment of previous day's forecasts (model and human)
8:45 am	Analysis of current weather, identify target forecast areas
9:00 am	Weather briefing and team assignments
9:20 am	Break
9:30 am	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 21Z/00Z/03Z) and an Area Forecast (valid ~20Z today to 15Z tomorrow) for the selected area of interest. Issue SIGMETs as needed using new guidance when possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 12Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
11:30 am	Lunch Break (Teams can choose to finish forecasts then take lunch or vice versa)
12:30 pm	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 06Z/09Z). Amend the Area Forecast as needed and issue SIGMETs as needed using new guidance as much as possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 18Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
1:30 pm	<i>AWC Presentation: Initial thoughts on new AWC Ice algorithms and ensemble RAP Ice</i>
2:30 pm	Break
2:40 pm	Forecast assessment
3:00 pm	Team presentations and group discussion
3:30 pm	Survey completion
4:00 pm	Adjourn

Fri	Feb 22
7:30 am	Testbed opens. Finish surveys from previous day.
8:00 am	Assessment of previous day's forecasts (model and human)
8:45 am	Analysis of current weather, identify target forecast areas
9:00 am	Weather briefing and team assignments
9:20 am	Break
9:30 am	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 21Z/00Z/03Z) and an Area Forecast (valid ~20Z today to 15Z tomorrow) for the selected area of interest. Issue SIGMETs as needed using new guidance when possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 12Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
11:30 am	Lunch Break (Teams can choose to finish forecasts then take lunch or vice versa)
12:30 pm	<p>FA Desk(s): Produce snapshot G-AIRMET forecasts (valid at 06Z/09Z). Amend the Area Forecast as needed and issue SIGMETs as needed using new guidance as much as possible. Collaborate with the NAM and WFO via NWS Live chat.</p> <p>GG North: Create forecast for the North Atlantic Ocean Region valid at 18Z tomorrow.</p> <p>NAM: Evaluate performance of experimental data sets, especially the Ceiling and Visibility and AWWD products. Collaborate with the FA Desks and WFO desk via NWS Live chat. Issue Aviation Weather Statements as needed.</p>
1:30 pm	TBD
2:30 pm	Break
2:40 pm	Forecast assessment
3:00 pm	Team presentations and group discussion
3:30 pm	Survey completion
4:00 pm	Adjourn

Evaluation Products

The following evaluation products will be available for use during the experiment. Forecasters are encouraged to use these products when creating their forecasts. They will then provide feedback on their usefulness via online surveys. More detailed information is available on the web site at https://testbed.aviationweather.gov/page/public?name=2013_Winter_Experiment.

Turbulence

Name	Description	Spatial Resolution	Temporal Resolution
GTG Tops	Tops (kft) of turbulence areas as determined by the Graphical Turbulence Guidance (GTG) algorithm	13 km	0-12 hrs
GTG Bottoms	Bottoms (kft) of turbulence areas as determined by the Graphical Turbulence Guidance (GTG) algorithm	13 km	0-12 hrs
GOES-R Tropopause Folding Turbulence Product	Satellite derived tropopause folding turbulence product (TFTP); lowest layer of tropopause folding (kft)	4 km (same as GOES E/W)	Follows GOES scan strategies; roughly four/hour
In-situ EDR	Automated turbulence observations from in-situ sensors aboard aircraft.	n/a	event driven
SREF TKE	Mean, max, minimum, and	40 km	hourly 0-39

	probabilistic Turbulent Kinetic Energy forecasts. TKE is associated with eddies in turbulent flow.		
AFWA MEPS Turbulence	Probability of turbulence; hybrid product. Combines predictors for dynamic, thermodynamic, mountain wave, and trapped wave potential.	4 km	Hourly out to 60 hours
Synthetic Satellite - Water Vapor Channel	Synthetic imagery generated from the 0000 UTC run of the WRF-ARW	~4km	Hourly from F12 - F36
Global Grids Turbulence Guidance	Harmonized WAFS grids: Mean/Max Clear air turbulence and In-cloud turbulence	Global, 1.25deg x 1.25deg	3-hourly 0-36 hr
Global GTG	Global Graphical Turbulence Guidance	Global, 0.5deg x 0.5deg	Three hourly out to 48 hours

Icing

Name	Description	Spatial Resolution	Temporal Resolution
SREF RAP Ice	RAP ice algorithm applied to 40 km Short Range Ensemble Forecast (SREF). The algorithm is applied to	40 km	Hourly from 0-39; Three hourly from 42-87

	all 22 members individually. Then ...		
GEFS RAP Ice	RAP ice algorithm applied to the Global Ensemble Forecast System (GEFS). Domain: Northern Hemisphere	1x1 deg	6 hourly: F00, F06, F12, ... F90, F96
GOES-R Aircraft Icing Threat single layer (CIMSS and NASA version)	Icing Threat output based on satellite derived cloud properties. Threat is given on a scale of 8 (see details column for specifics)	4 km	Follows GOES scan strategies; roughly four/hour
GOES-R Aircraft Icing Threat - multilayer	Uses single layer derived cloud properties as well as additional optical properties to provide more solutions	4 km	Follows GOES scan strategies; roughly four/hour
GOES-R Supercooled Large Droplets	Uses GOES optical properties and IR brightness temperatures to key in on supercooled large droplets	4 km	Follows GOES scan strategies; roughly four/hour
FIP Tops	Tops (kft) of icing areas as determined by the Forecast Icing Potential (FIP) algorithm	13 km	0-18 hrs
FIP Bottoms	Bottoms (kft) of icing areas as determined by the Forecast Icing Potential (FIP) algorithm	13 km	0-18 hrs

AFWA Ensemble Icing Threat	Predicts location and severity of glaze/clear and rime ice--part of the 4 km MEPS suite	~ 4 km	00Z: Hourly out to 60 hours
AWC Icing Algo A (subsidence suppression)	Legacy RAP icing algorithm with vertical velocity filter (suppression of ice in areas of subsidence)	NAM 90km, RAP 40 km, GFS 1x1 deg	NAM/GFS ~ 3 hrly through F48 RAP ~ hrly through F18
AWC Icing Algo B (-25C top)	Legacy RAP icing algorithm with -25C top (vice -20C top)	NAM 90km, RAP 40 km, GFS 1x1 deg	NAM/GFS ~ 3 hrly through F48 RAP ~ hrly through F18
AWC Icing Algo AB (subsidence suppression plus -25C top)	Legacy RAP icing algorithm with both A and B enhancements	NAM 90km, RAP 40 km, GFS 1x1 deg	NAM/GFS ~ 3 hrly through F48 RAP ~ hrly through F18
AWC Icing Composite Icing Below 060	New NTRANS group available for each of the RAP Ice enhancements A, B, and AB listed above.	NAM 90km, RAP 40 km, GFS 1x1 deg	NAM/GFS ~ 3 hrly through F48 RAP ~ hrly through F18
AWC Icing Composite Icing FL180-240 (500-400mb)	New NTRANS group available for each of the RAP Ice enhancements A, B, and AB listed above.	NAM 90km, RAP 40 km, GFS 1x1 deg	NAM/GFS ~ 3 hrly through F48 RAP ~ hrly through F18
AWC Icing Composite Icing Above FL240 (400 mb)	New NTRANS group available for each of the RAP Ice enhancements A, B, and AB listed above.	NAM 90km, RAP 40 km, GFS 1x1 deg	NAM/GFS ~ 3 hrly through F48 RAP ~ hrly through F18
WRF Synthetic Satellite - IR	Synthetic imagery generated from the 0000 UTC WRF-ARW run of the	4km	Hourly from F12 - F36

NAM Synthetic Satellite	Synthetic imagery generated from the 0000 UTC run of the NAM Nest	4km	3 hourly through F36
Global Grids Icing Guidance	Harmonized WAFS grids: Mean/Max Icing threat	Global, 1.25deg x 1.25deg	
Global FIP	Global Forecast Icing Potential	Global, 0.5X0.5	6 hourly from F06-F36

Ceiling and Visibility

Name	Description	Spatial Resolution	Temporal Resolution
SREF CIG & VIS	Ceiling and Visibility guidance from the upgraded (16 km) SREF; available after Dec 4 2012 and from the 40 km (more information coming soon)	16 km	hrly out to 39 hrs; 3-hrly out to 87 hrs
Deterministic CIG and VIS	Ceiling and Visibility guidance from HRRR	3 km	hrly out to 15 hrs
Deterministic CIG and VIS	Ceiling and Visibility guidance from NSSL-WRF	~4 km	hrly out to 36 hours
Deterministic CIG and VIS	Ceiling and Visibility guidance from SPC-WRF	~4 km	hrly out to 36 hours
Deterministic VIS	Visibility from HIRES windows (ARW and NMM)	~5 km	hrly out 48 hours
Deterministic VIS	Visibility from NAM-NMMB	~4 km	hrly out to 36 hours; 3-hrly out to 60 hours

SREF Probabilistic Mountain Obscuration	Probabilistic mountain obscuration derived from the 40 km SREF.	40 km	
NCVA	National Ceiling and Visibility Analysis	NDFD	Analysis
LAMP C&V	Ceiling and visibility	2.5 km NDFD	hrly out to 25h
LAMP Flight Category	MVFR, IFR, LIFR	NDFD	hrly out to 25h
GOES-R Fog and Low Stratus	LIFR and IFR probabilities, cloud layer thickness, cloud top phase	~4km	Follows GOES satellite scans (~4/hr)
AFWA flight conditions probability	MVFR, IFR, LIFR	~4km	hrly out to 60 hours
AFWA Probability of total cloud cover	<20% and >80%	~4km	hrly out to 60 hours
Synthetic Satellite - CIRA Fog	WRF-ARW band difference (10.35 - 3.9) initialized at 0000 UTC	~4km	Hourly from F012 - F036
CIRA WRF Fog	WRF-ARW non-zero liquid water	~4km	Hourly from F012 - F036
VIIRS polar imagery	Bands 1 (VIS), 3-5 (IR), Day Night Band, and Fog	0.65 km	Varies - polar coverage

Other

Name	Description	Spatial Resolution	Temporal Resolution
AFWA MEPS	10 Member mesoscale ensemble prediction system	~4 km	00Z: hrly to 60 hrs

AFWA Probability of LLWS		~4km	hrly out to 60 hours
MRMS	Data available from FAA Tech Center	0.01 degree	2 minutes (30 sec avail)
FA Guidance	RAP/NAM/TAF guidance for FA text issuance	NA	0-18 hours
Global Grids Parameters		Global, 1.25km x 1.25km	
Global Grids - Web			
Aviation Winter Weather Dashboard	Experimental color-coded decision support dashboard displays potential winter weather impacts including snow, freezing rain, and reduced visibility at select airports.	NA	Three hourly out to 87 hours

Assessment and Verification

During the Winter Experiment, emphasis will be placed on assessing the skill of the automated forecasts and the human forecasts using the new experimental products. The assessment will include:

- Quantitative grid-to-grid comparisons between model forecast fields (e.g., the SREF has more areal coverage of icing in the 0-10 kft layer than does the NAM)
- Qualitative forecast assessment of operational forecasts (e.g., G-AIRMET overlaid on plots of icing/turbulence products and PIREPs)
- Qualitative forecast assessment of experimental forecasts

The observation data sets used as the basis for the assessment will be:

- Icing and turbulence PIREPs
- METARs and SPECIs (for Ceiling and Visibility)
- NCVA (for grid-to-grid Ceiling and Visibility diagnostics)

Outputs/Deliverables

1. Product Evaluation Report:
 - a. Detailed description of each new/enhanced product and tool evaluated during the experiment
 - b. Assessment of each product
 - c. Recommendations on whether or not it should be integrated into forecast operations.
2. 2013 Aviation Winter Weather Experiment Report
 - a. Participants
 - b. Schedule
 - c. Accomplishments
 - d. Highlights
 - e. Major findings and take-aways
 - f. Action items, ongoing work
 - g. Product Evaluation
 - i. Detailed description of each new/enhanced product and tool evaluated during the experiment
 - ii. Assessment of each product
 - iii. Recommendations on whether or not it should be integrated into forecast operations.
 - h. Recommendations for future experiments
 - i. Lessons Learned
 - j. Summary