

NWS Aviation Weather Center

Kansas City, MO

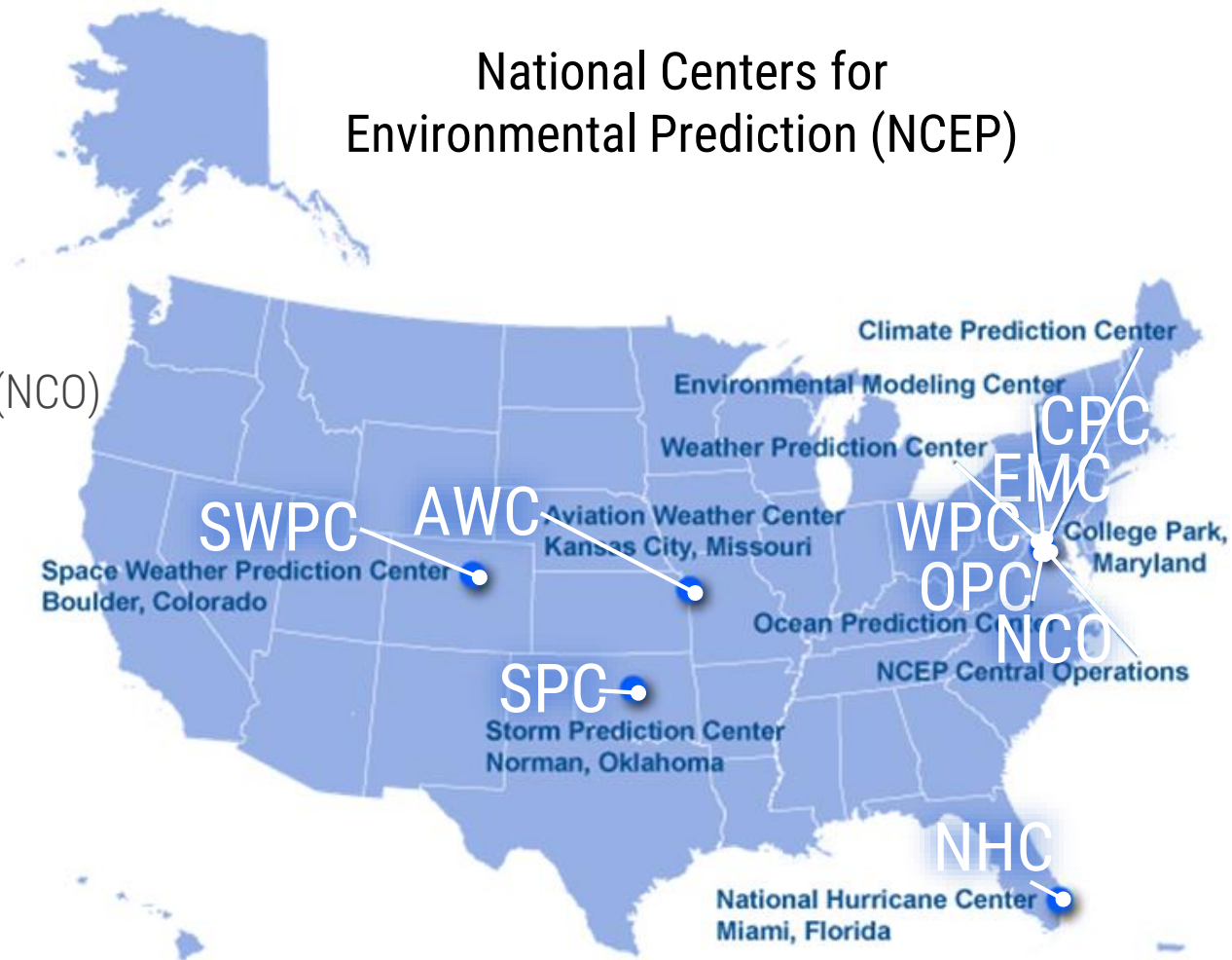
Stephanie Avey - Techniques Development Meteorologist



National Centers for Environmental Prediction (NCEP)

9 Specialization Centers

- Aviation (AWC)
- Climate (CPC)
- Modeling (EMC)
- Supercomputing & data flow (NCO)
- Hurricanes (NHC)
- Oceans (OPC)
- Severe storms (SPC)
- Space weather (SWPC)
- Hydrometeorology (WPC)





Aviation Weather Center

www.aviationweather.gov



OUR MISSION STATEMENT

The Aviation Weather Center delivers consistent, timely and accurate weather information for the world airspace system.

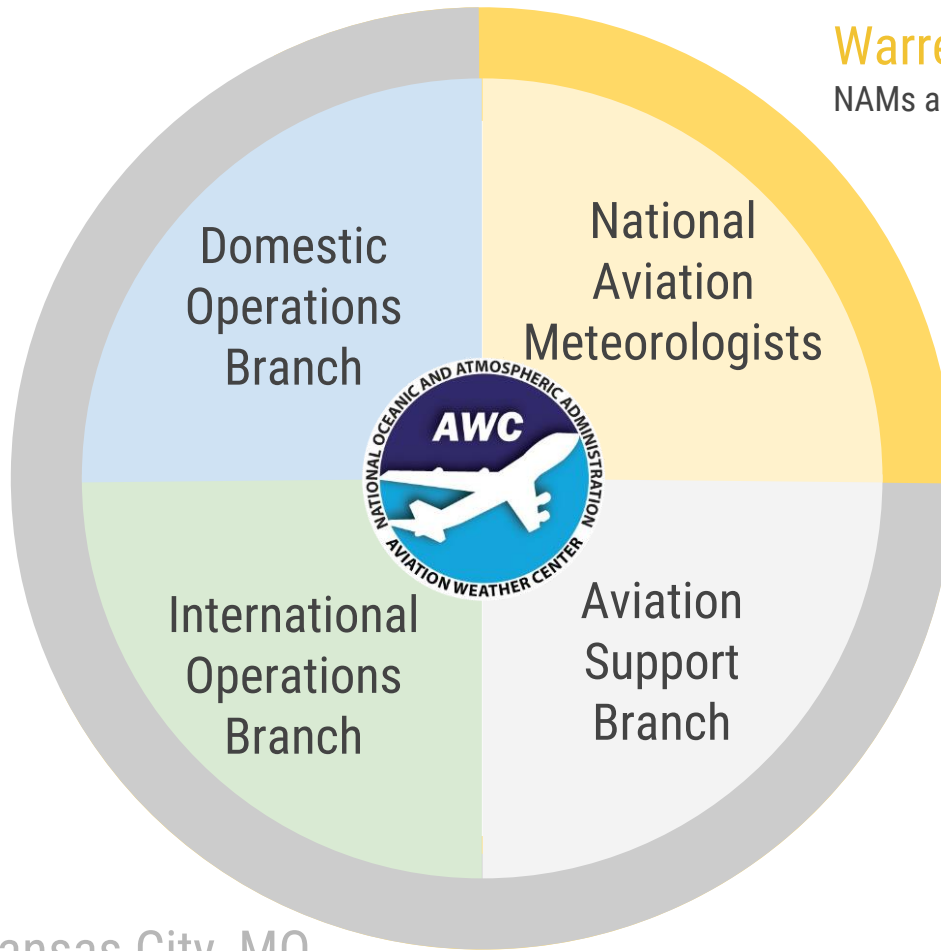
We are a team of highly skilled people dedicated to working with customers and partners to enhance safe and efficient flight.

OUR VISION

To be the trusted authority and leading innovator for aviation weather information.

Warrenton, VA

NAMs are embedded with the FAA at the ATCSCC



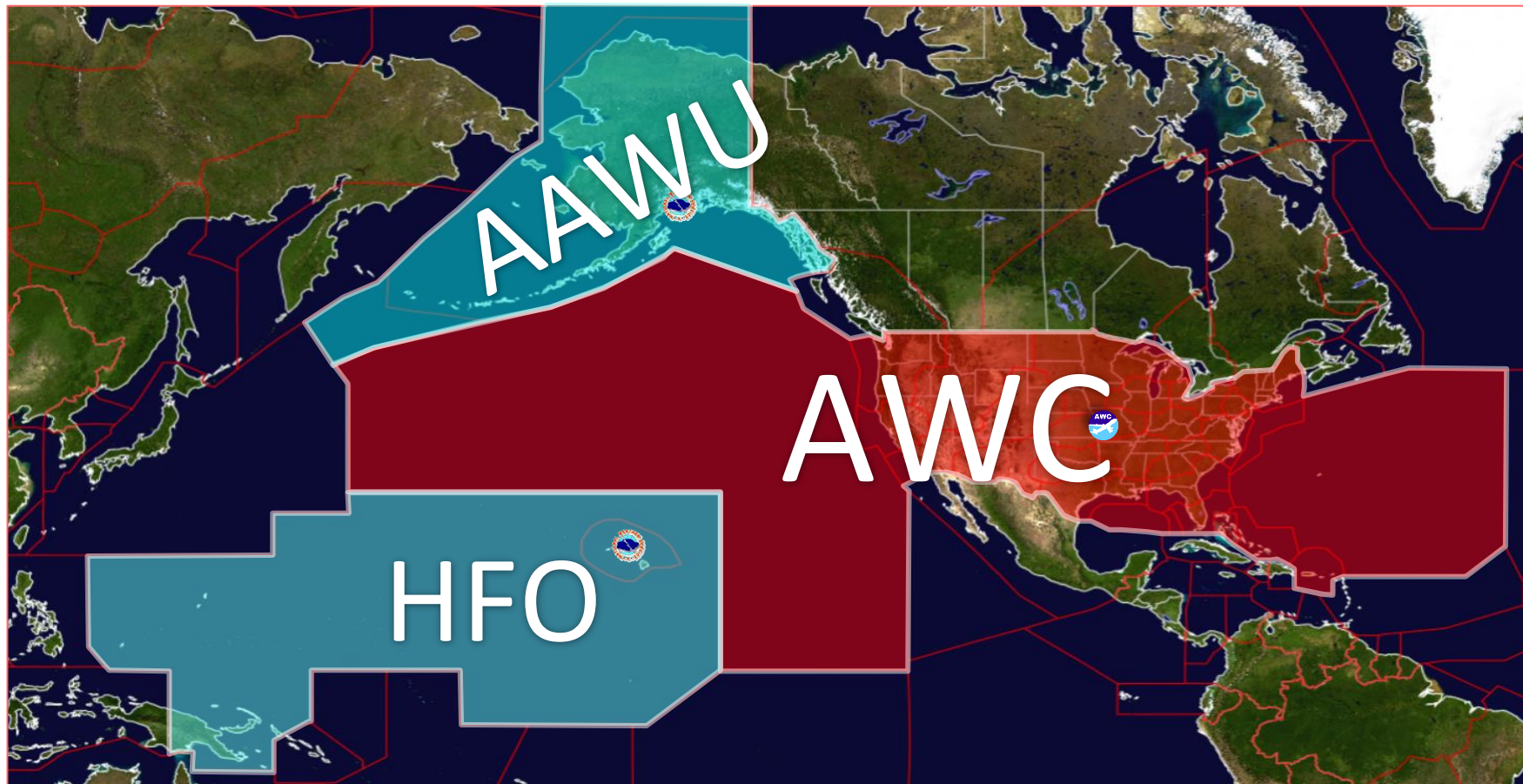
Kansas City, MO

Most AWC staff are based here

- 4 branches
- 2 locations
- ~80 people
 - Forecasters
 - Researchers/developers
 - IT staff
 - Administrative support staff
 - Managers & supervisors
 - NOAA Corps Officer

AWC Operations

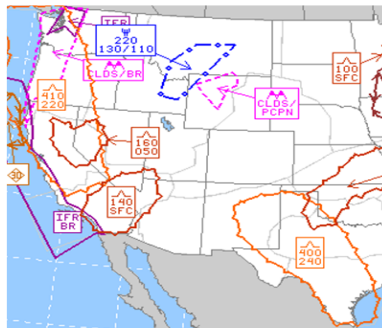
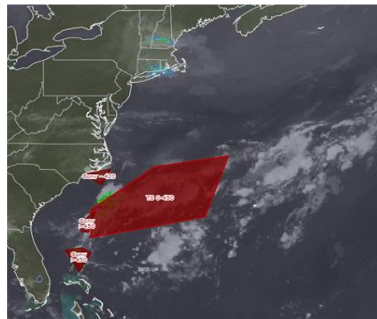




Domestic Operations



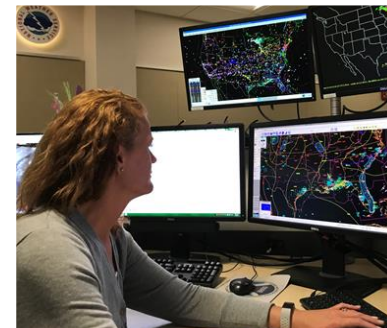
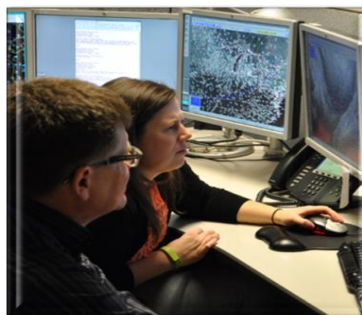
International Operations



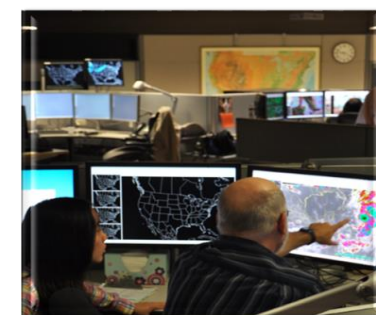
AIRMETs • TFM convective
forecast • Low-level SIGWX



CWSUs • Airlines • FAA



Convective SIGMET • TCF •
Turbulence • Icing •
Clouds & visibility



AVIATION WARNINGS

AVIATION FORECASTS

COLLABORATION

DESKS

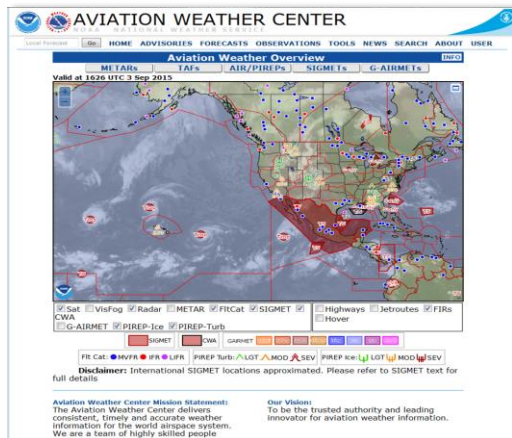
Atlantic • Pacific

Global Significant Weather
(SIGWX) · Area Forecasts for Gulf
of Mexico & Caribbean

International meteorological services

Tropical • SIGWX North • SIGWX
South

Aviation Weather Center Support Branch



PRODUCTS & SERVICES

Graphical Forecasts for Aviation (GFA) • WAFS Internet File Service (WIFS) • Computer models • Operational shift fill-in

DATA, TECHNOLOGY, & INFRASTRUCTURE

IT architecture & security • Production systems • Data management • Support for remote forecast operations

SCIENCE & TECHNOLOGY

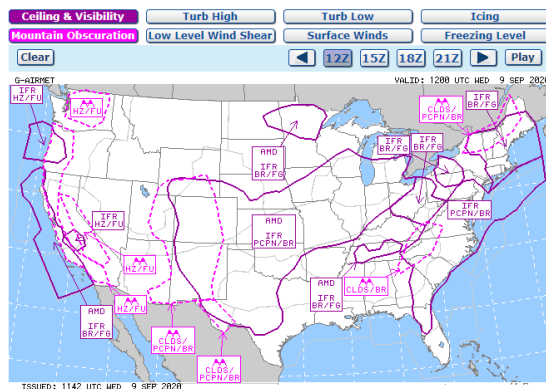
Aviation Weather Testbed (AWT) • Aviation Weather Research Program • Research initiatives

Aviation Weather Advisories and Warnings

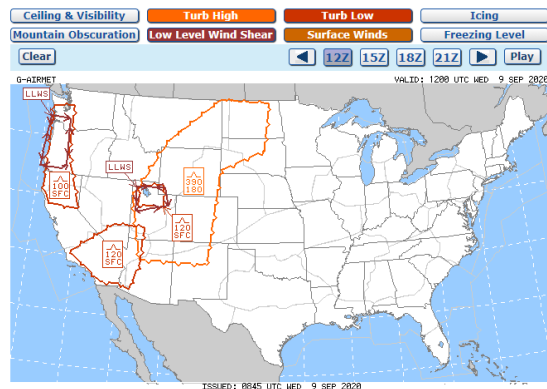


Aviation Weather Advisories and Warnings

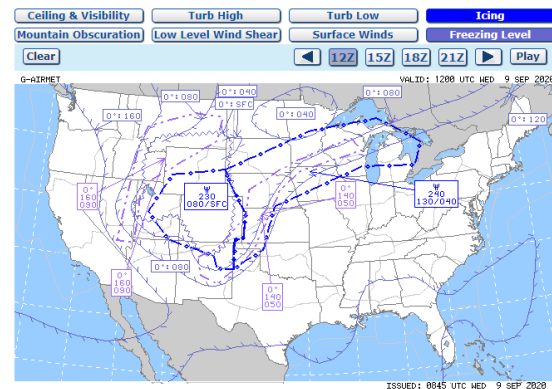
- G-AIRMETs (shown below) are advisories for hazardous weather
- Cig/Vis, Turb, Icing
- Issued every 6hrs, snapshots valid every 3hrs out 12hrs



Low clouds/visibility & mountain obscuration



Turbulence, strong winds & wind shear



Icing & freezing levels

Aviation Weather Advisories and Warnings

A SIGMET is a weather warning for aviation. SIGMET stands for Significant Meteorological Information.



SIGMETs are issued by the Aviation Weather Center. They're meant for aircraft in flight. SIGMETs tell pilots where to expect severe conditions such as:

Severe turbulence



Severe icing

Volcanic ash



Areas of widespread sandstorms or dust storms

Areas of thunderstorms



Tropical cyclones

Your local Weather Forecast Office will issue weather warnings for people on the ground. These warnings tell people where to expect large hail, very strong wind gusts, flash flooding, or tornadoes.

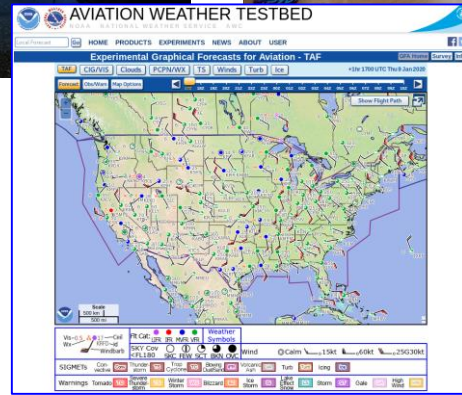
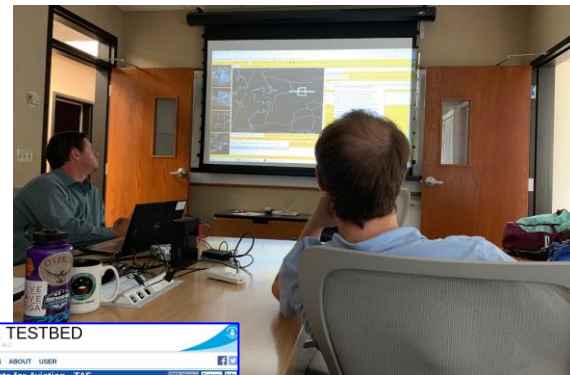
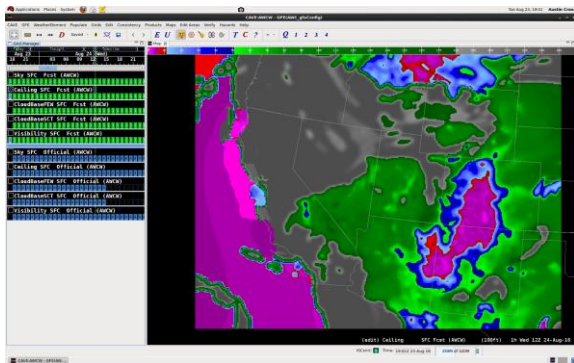
Diagram is not to scale

Aviation Weather Testbed





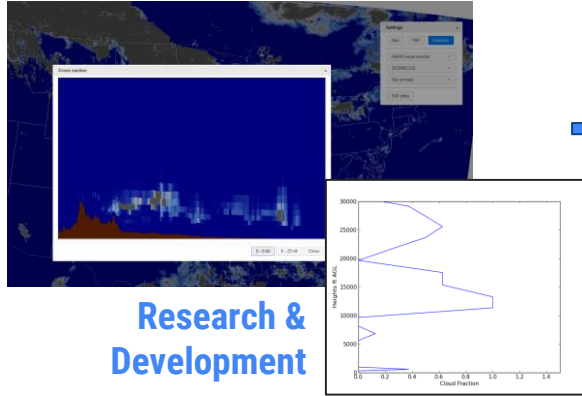
Aviation Weather Testbed



GENERAL DYNAMICS
Information Technology



Aviation Weather Testbed



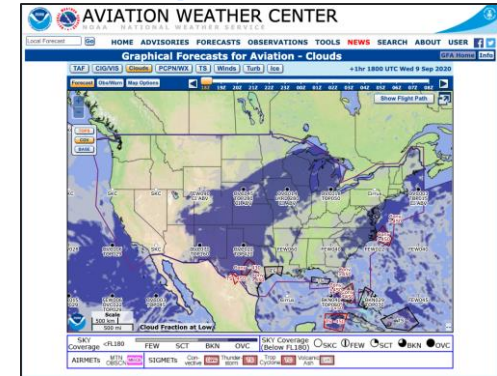
Vision: “A destination facility as the enterprise leader in realizing the best science, technology, and training for operational aviation meteorology.”



Evaluation



Operational Implementation



A continuous collaborative effort to develop, maintain, and integrate new products into operations.

Testbed Experiments



Goal: *To evaluate experimental and prototype products and services to support aviation planning in the National Airspace System (NAS).*



- Integral part of our Research- to-Operations (R2O) process
- Stakeholder engagement and collaboration
- Build relationships between multiple entities in the aviation weather enterprise

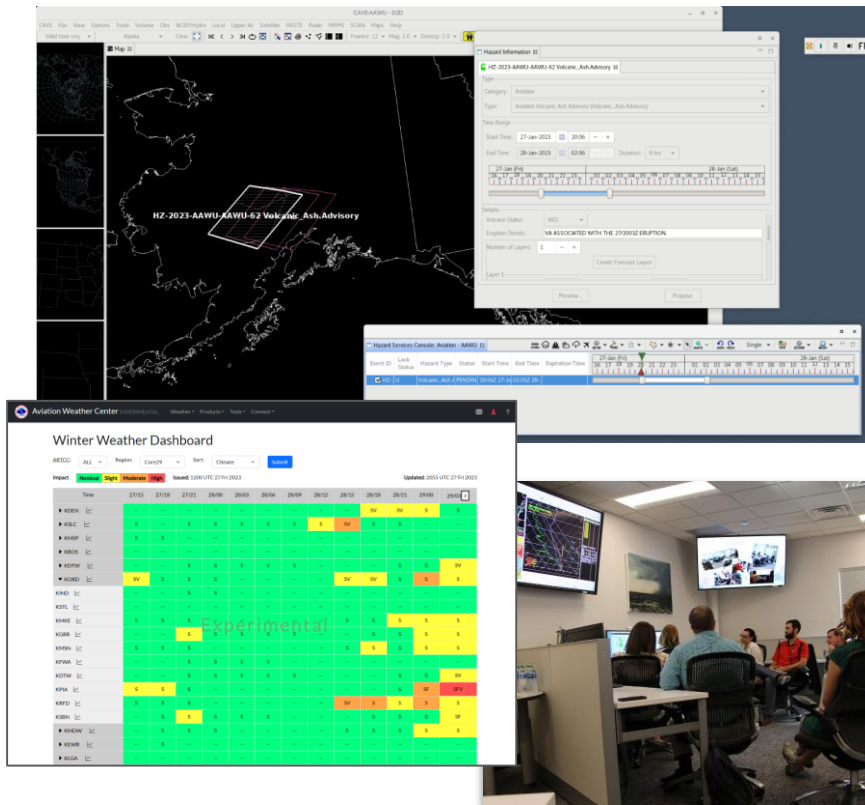
Annual Experiment Overview



- Typically focus on three major themes or “desks” with hands on involvement
- Participants are encouraged to migrate between desks throughout the week
- Lunchtime seminars given by various participants
- Daily debriefs encourage large group discussion and engagement
- Networking activities in the evening hours



Upcoming - May Experiment



- **May 15-19 (In-Person!)**
- Joint session with Friends and Partners in Aviation Weather (FPAW) meeting
- Partnering with FAA AWDE social science
- **Three Major Themes:**
 - Hazard Services for Aviation (w/ Arctic Testbed)
 - RRFs Evaluation (focus on 3D clouds)
 - Probabilistic Guidance: Usage & User Interpretation (w/ FAA's AWDE)

AviationWeather.gov



www.aviationweather.gov

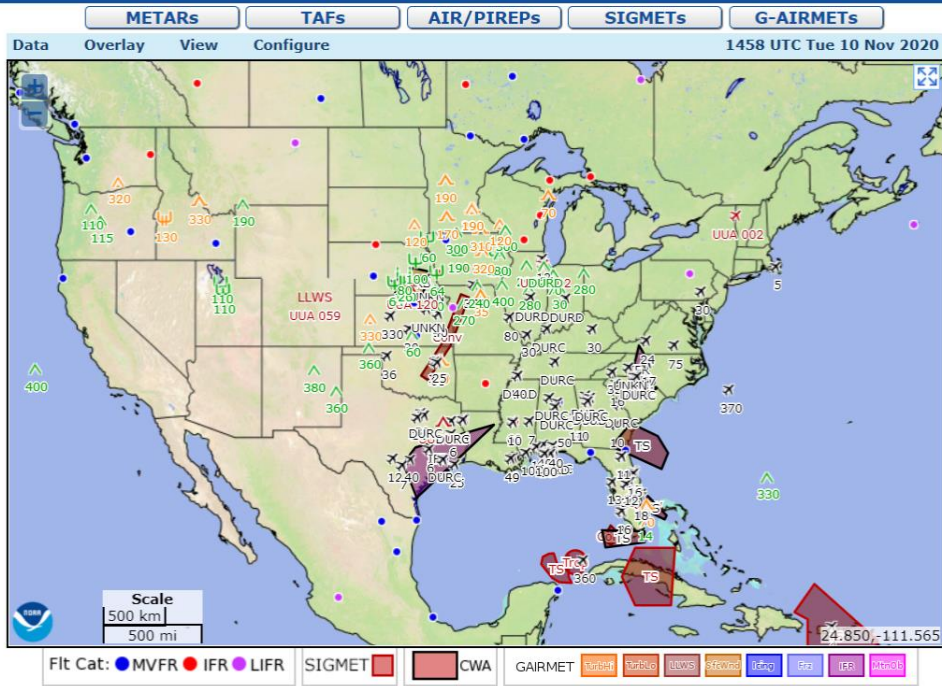


  **AVIATION WEATHER CENTER**
NOAA NATIONAL WEATHER SERVICE

Local Forecast

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Aviation Weather Overview



[ADVISORIES](#) [FORECASTS](#) [OBSERVATIONS](#) [TOOLS](#)

[HOME](#) [ADVISORIES](#) [FORECASTS](#)

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beta.aviationweather.gov



Aviation Weather Center Weather Products Tools Connect

What's new?
New look and feel for AWC! Try it on your phone or tablet!

Current Conditions

Graphical Forecasts for Aviation

Interactive maps of aviation observation

Decision Support System

Static Images to enhance

Get station data

IDs:

☒ Raw ☐ Decoded

KMCI 181853Z 310140213KT 10SM FEW0200 06/M09 A3046 RPK AO2 PK WND 20026/1836 SLP
KMCI 181753Z 320140213KT 10SM FEW0200 07/M10 A3048 RPK AO2 SLP328 T00671100 1007
KMCI 181653Z 31015024KT 10SM FEW0200 06/M10 A3049 RPK AO2 PK WND 20029/1624 SLP
KMCI 181553Z 31013026KT 10SM FEW0200 04/M09 A3049 RPK AO2 PK WND 30026/1551 SLP
KMCI 181453Z 30011KT 10SM FEW0200 03/M09 A3048 RPK AO2 SLP327 T00531009 51026
KMCI 181353Z 29004KT 10SM FEW0200 00/M09 A3046 RPK AO2 SLP320 T00001009
KMCI 181253Z 28007KT 10SM CLR M03/M09 A3043 RPK AO2 SLP310 T10111004

TAF:

Tweets by @NWSAWC

NWS AWC Retweeted
NOAA Satellites @NOAASatellites

Transporting a satellite is no easy feat. Last week, @NOAA's new #GOEST was launched by @LockheedMartin (where it was built) in conjunction with @NASAKennedy & @AstrotechCorp in Florida.

See this trip in this week's #EarthFromSpace

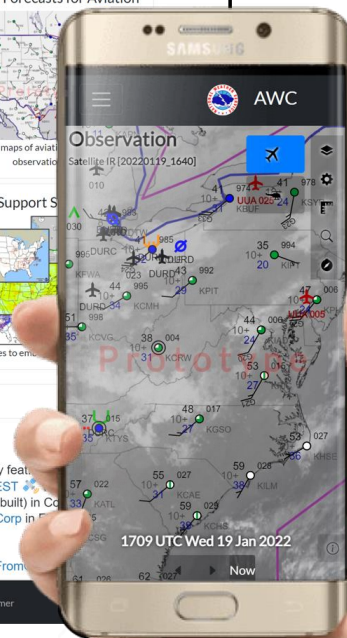
Observation

Satellite IR [20220119 1640]

1709 UTC Wed 19 Jan 2022

Now

Privacy Policy Freedom of Information Act NWS Glossary Information Quality Disclaimer



Motivation

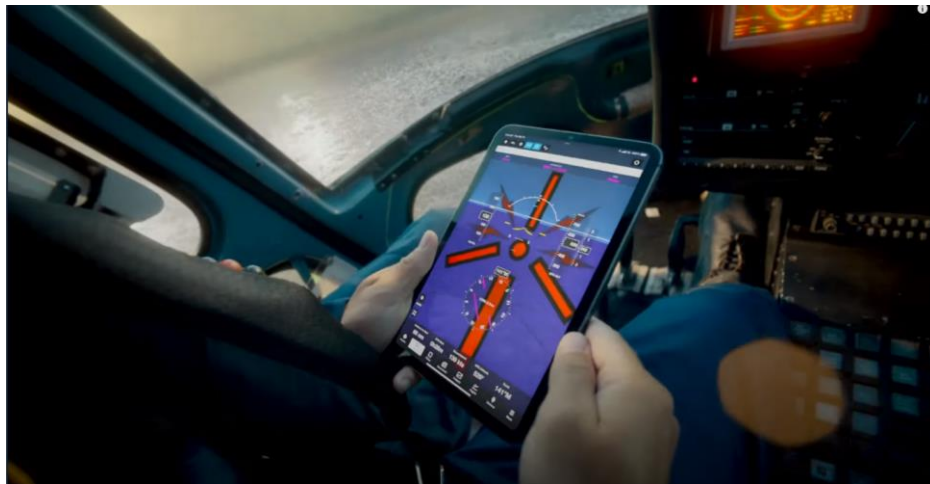


Site has come a long way over the years, however persistent issues have been identified:

- Intuitiveness
 - Duplication
 - Difficulties navigating
 - Undocumented functionality
- Poor mobile support
- User configurability
- Supportability
 - Complex, older code



Different Computing Platforms



iPad Mini in the cockpit at Apple Sept. 2021 event

- Mobile accounts for ~50% of all web traffic
- Site is used on-the-go:
 - on the tarmac
 - in the cockpit
 - in remote locations
- Developed as “mobile-first”

Aviation Weather Center EXPERIMENTAL Weather Products Tools Connect

Important information
Alerts and warnings will appear in popups at the top of the screen.

Current Conditions

Graphical Forecasts for Aviation
Interactive maps of aviation forecasts and observations

Decision Support Services (DSS)
Static Images to embed in briefing material

Station data
IDs: KMCI Most recent
Raw Decoded Remember Go

Tweets from @NWSAWC
Follow on Twitter

NWS AWC @NWSAWC · 1h
SIGMET PAPA 9 has been issued for Severe Turbulence until 1953 UTC 21 Feb 2023. #aviation

gov

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29x35x43

Navigation bar

Messages/news
(scrolling)

Quick view of
aviation weather
conditions (click
to go to GFA)

Quick access
to station data

Consolidated
footer info

Link to GFA (we
plan to rotate the
link here, possibly
seasonally)

Link to dedicated
DSS imagery

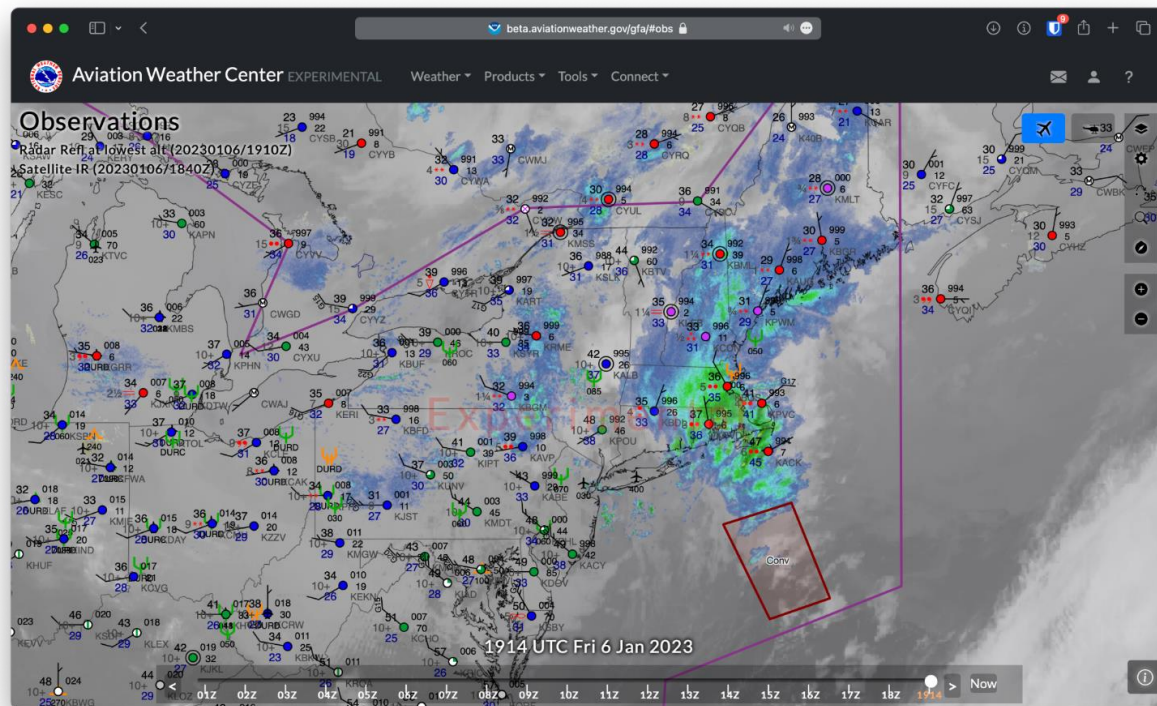
Recent tweets
from @NWSAWC

Key Features

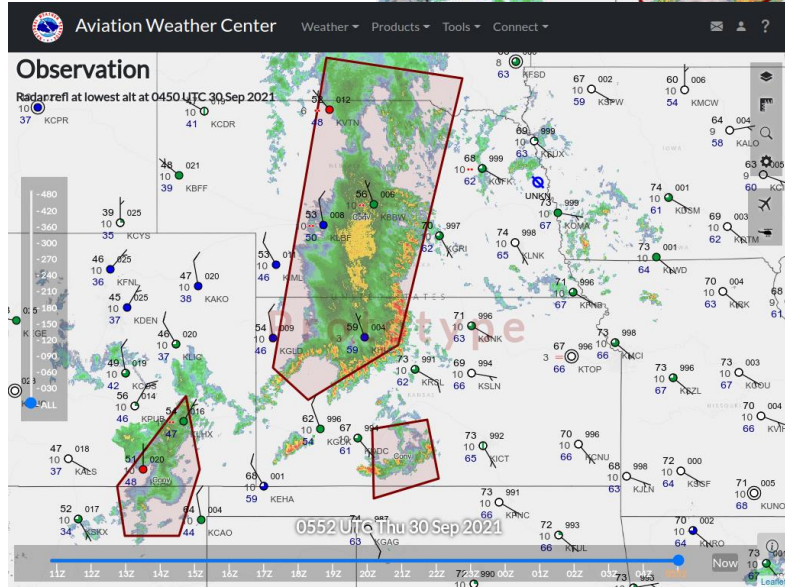
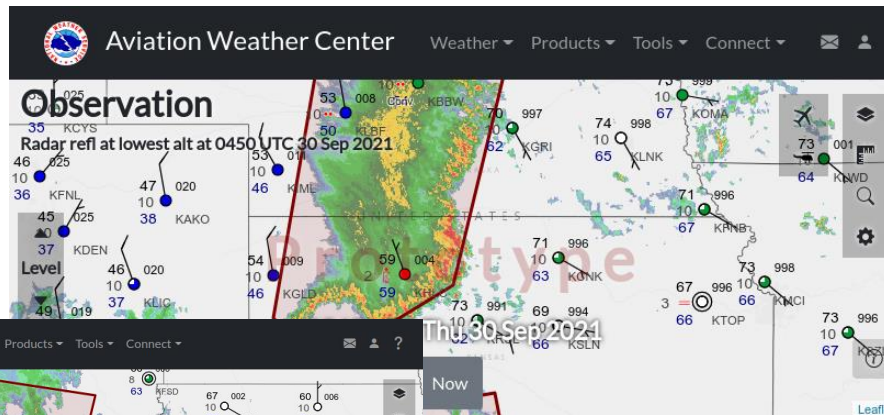
GFA Low Altitude (GFA-LA)



- All the best features of GFA & HEMS
- New, updated design
- Large, full window maps



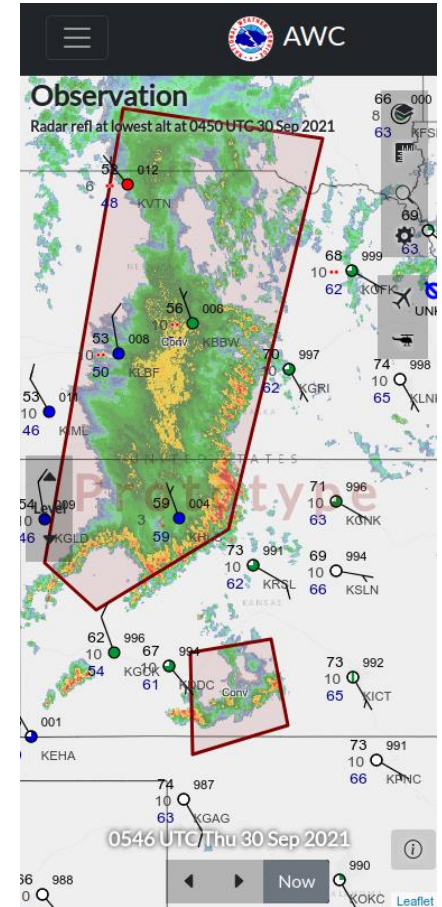
landscape
on a phone



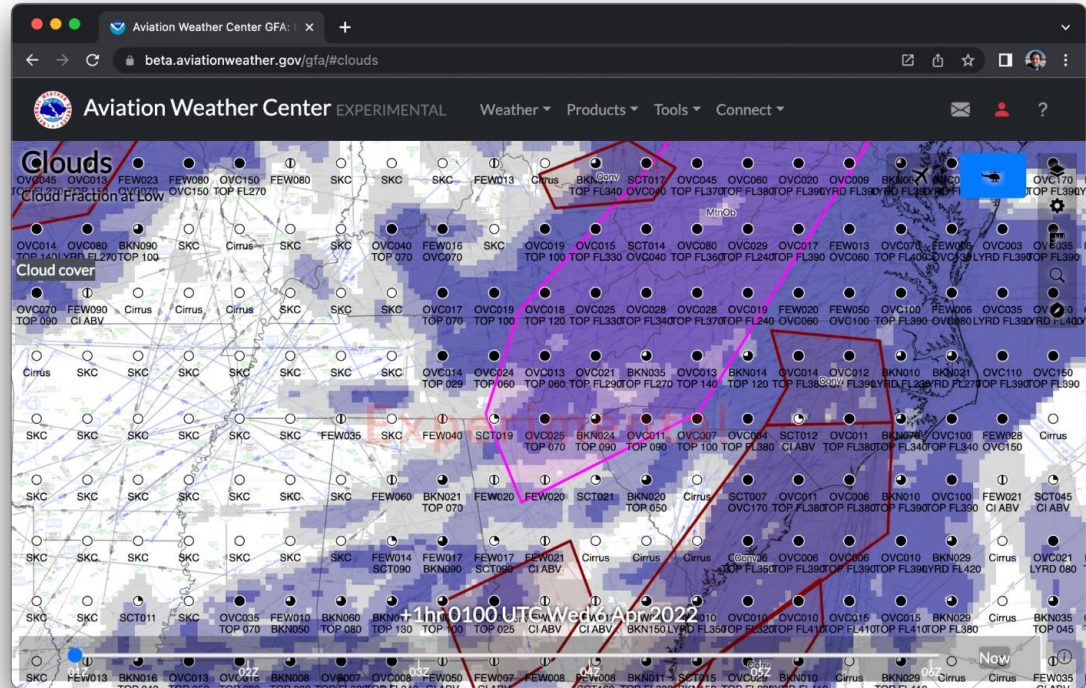
iPad

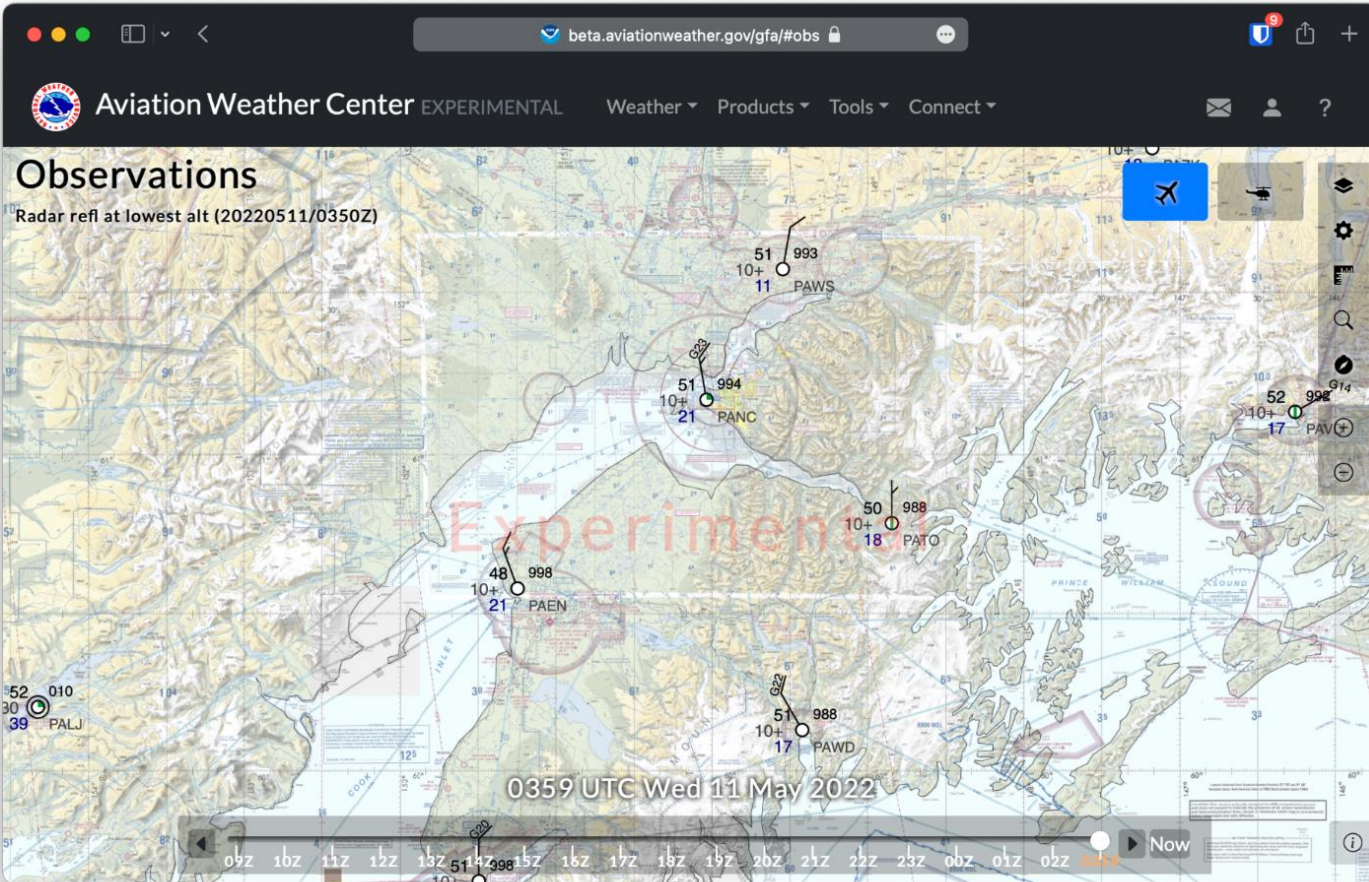
GFA-LA on
mobile
platforms

portrait on
a phone



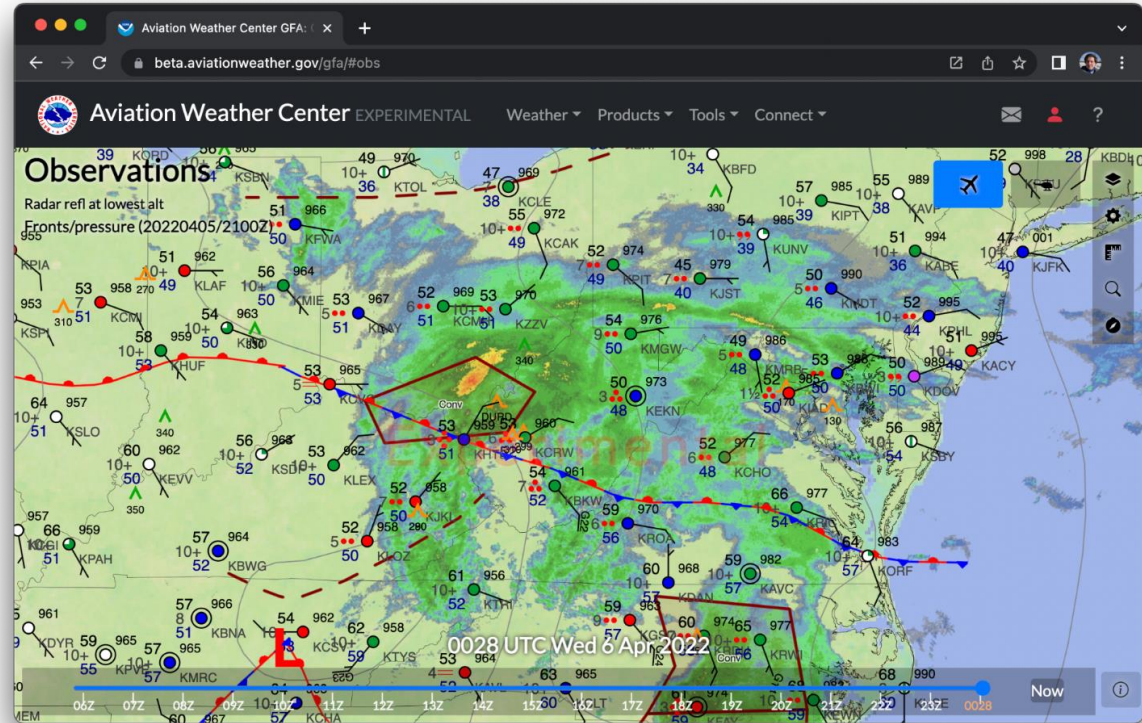
- Gridded forecast, weather icons, and warnings displayed together
- Data and map overlays available
- FAA nav chart backgrounds



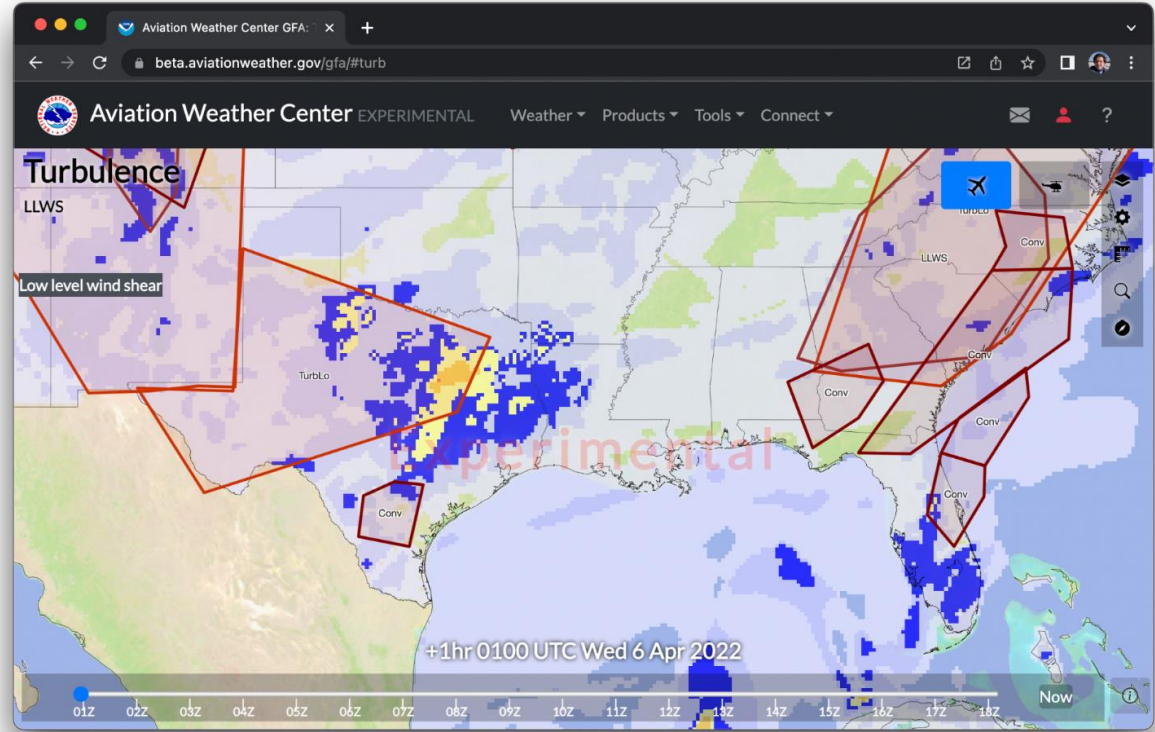




- Interactive analysis and forecast fronts
- Zoomable radar imagery (TDWR coming soon)



- New weather displays, including low level wind shear forecasts and observed lightning flash density





- Submit PIREPs from anywhere on the site
- Forms work great on mobile devices

Aviation Weather Center BETA

Aviation Weather Center Weather Products Tools Connect

Winds

Max Turb (data not available)

Altitude: -480 -420 -360 -300 -240 -180 -120 -60 0 60 120 180 240 300 360 420 480

Time: +1hr 2:00 AM Thu 30 Sep 2021

Now

Submit Close

PIREP Submit

/WX - Weather and Visibility

/TA - Air Temperature

/WV - Winds

/TB - Turbulence

Intensity: Light Type: CAT

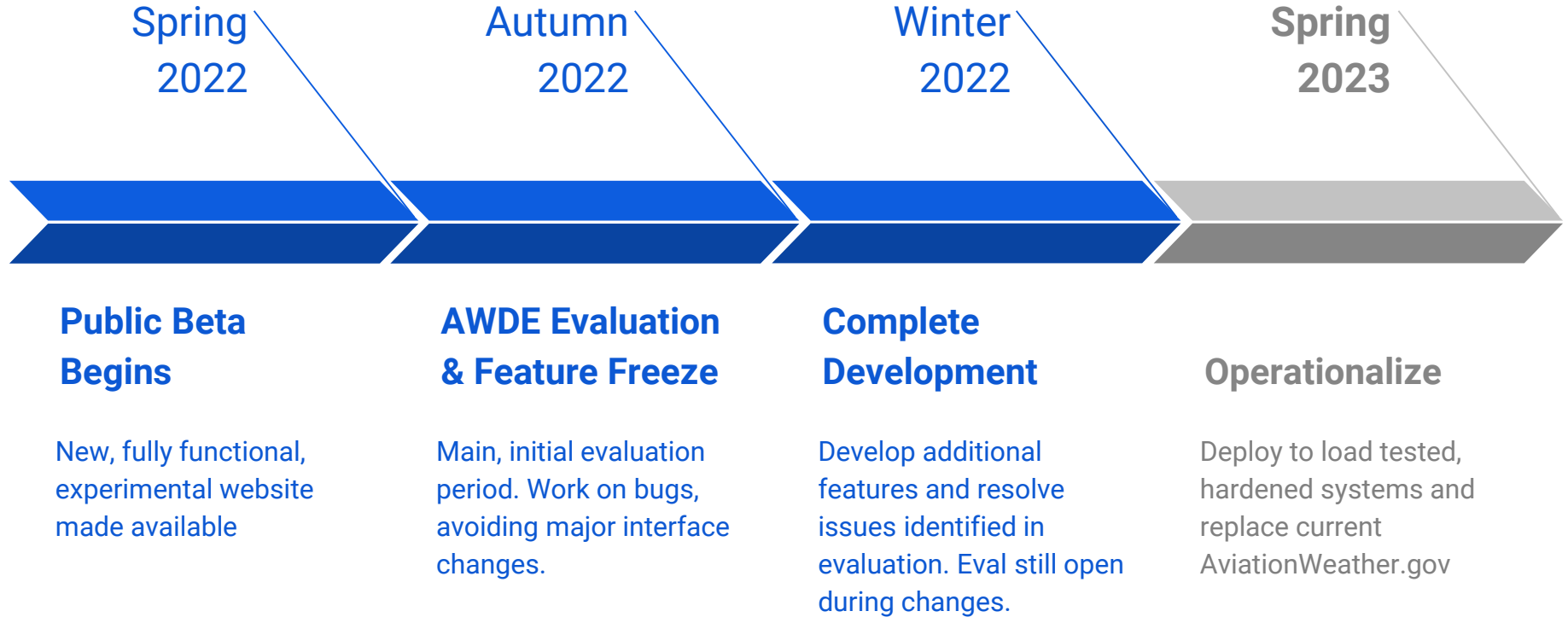
Frequency: Intermittent Type: In Clear

Altitude: 340 ☐ MTN WAVE ☐ LLWS

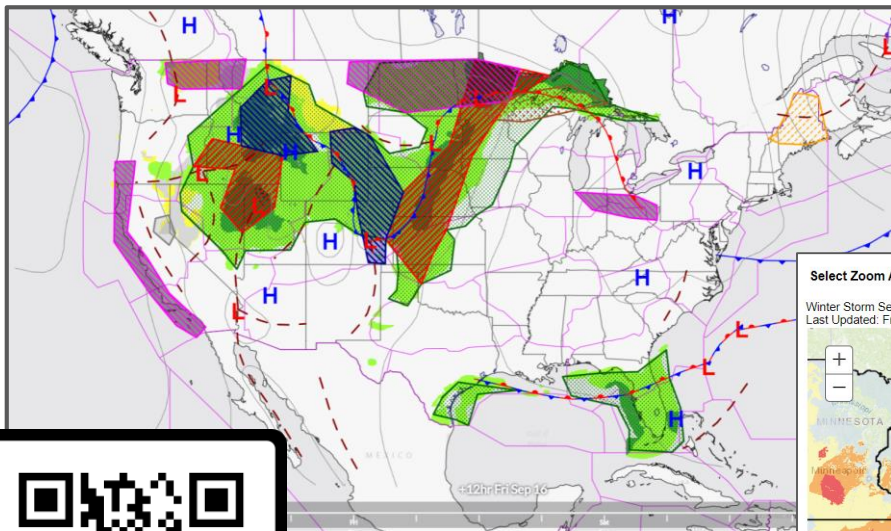
/IC - Icing

/RM Remarks

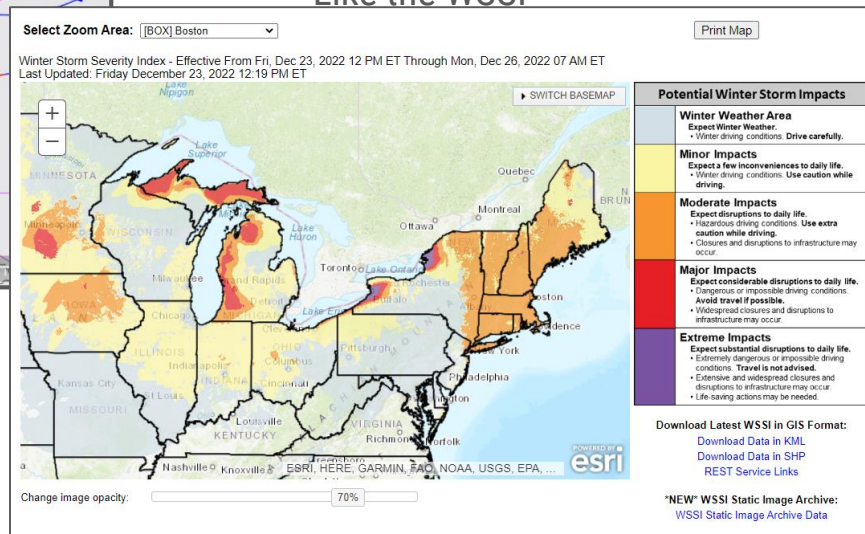
Timeline



What's next for AWC products?



- Outlook graphics for beyond Day1
- Incorporate probabilistic information into graphics/messaging
- Combined impacts vs single hazard
 - Like the WSSI



SCAN ME

New ideas and concepts
coming to a future AWT
Experiment near you!

Thank You!

Questions?

Stephanie Avey
stephanie.avey@noaa.gov

