

Weather Community of Interest (COI) Update

Presented to: Friends and Partners of Aviation Weather

By: Randy Bass

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**Federal Aviation
Administration**

You Know Why There's a Wx COI...

Silos of Excellence



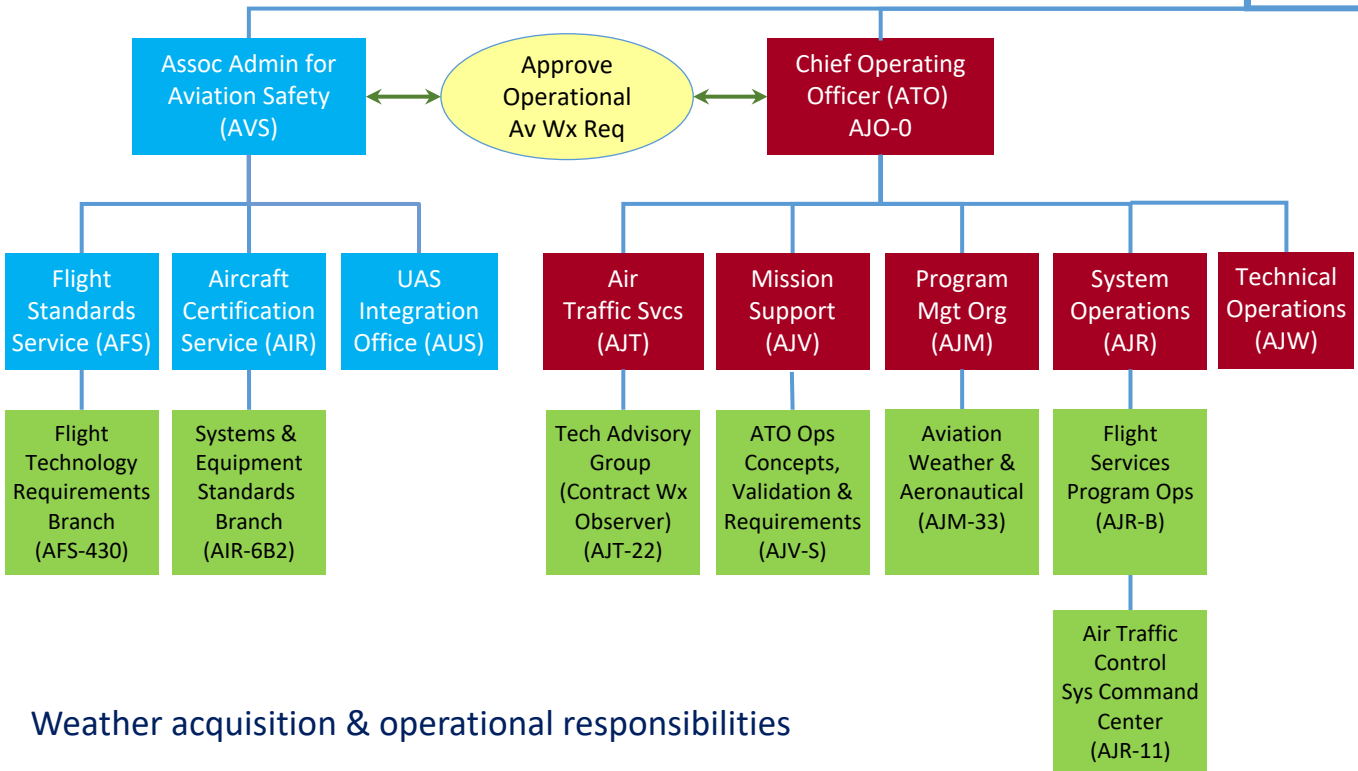
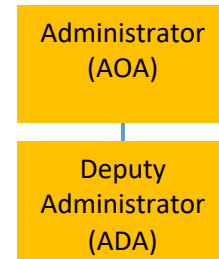
FAA Organizations that Research, Produce, and/or Consume Weather Data
and/or Information



Weather Across the FAA

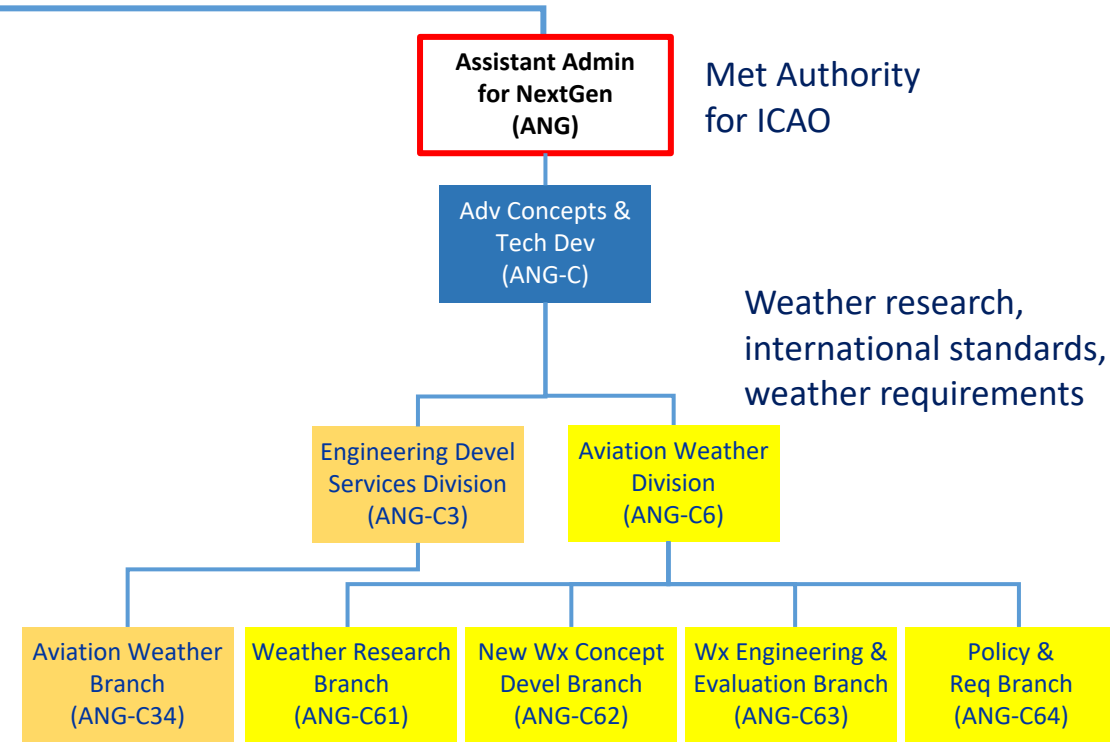
- Red outline box: Meteorological Authority for ICAO
- Yellow boxes: Weather research, international standards, and NextGen weather requirements
- Green boxes: Weather acquisition & O&M responsibilities

Operations



Weather acquisition & operational responsibilities

Research



Met Authority for ICAO

Weather research, international standards, weather requirements



You Know What the Wx COI Does...

- Promotes collaboration, communication, and sharing of weather data and information among FAA organizations, and with other Federal agencies, **industry**, and international partners
- Resolves and/or mitigates mission-specific, data and information sharing challenges across the weather enterprise
- Ensures appropriate access to, along with availability and consistency of, weather data and information
- Identifies and assimilates operational and business needs for weather data and information in the NAS



You Know How the Wx COI is Structured...

- Chartered under Enterprise Architecture Board and Enterprise Information Management Steering Committee (EIMSC) per FAA Order 1375.1F
- Executive Sponsor
 - Paul Fontaine, Assistant Administrator for NextGen (A)
- Co-chairs
 - Randy Bass, NextGen, Aviation Weather Division
 - Alfred Moosakhanian, Program Management Organization
- Secretariat/Contract Support
 - David Strand and Matt Fronzak, MITRE
- 50-60 persons from across the FAA attend the near-monthly plenary meetings
- 75+ persons from the FAA, other government agencies, FFRDCs and FAA contractors actively participate in Wx COI working groups

Federal Aviation Administration

Federal Aviation Administration
Weather Community

Enterprise Information Management

Weather COI Executive Sponsor

Weather COI Co-Chair

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and You Know How the Wx COI Works.

- Problem Statement: a concise description of an issue to be addressed or a condition to be improved upon
- Identifies gap between the current (problem) state and desired (goal) state of a process or product
- Assigned by Wx COI for resolution to a working group known as a Special Weather Action Team (SWAT)

**Weather Community of Interest
Problem Statement Form**

Email this form to: dststrand@mitre.org

A problem statement is a **concise** description of an issue to be addressed or a condition to be improved upon. It identifies the **gap** between the current (problem) state and desired (goal) state of a process or product. The problem statement **does not** define the solution or methods of reaching the solution.

A problem statement should be concise and include the following when possible:

- A **brief** description of the problem and the metric used to describe the problem
- Where the problem is occurring by process name and location
- The time frame over which the problem has been occurring
- The size or magnitude of the problem

Poor Problem Statement: Human resources is taking too long to fill personnel requests

Better Problem Statement: Recruiting time for software engineers for the flight systems design department in San Jose is missing the goal of 70 days 91 percent of the time. The average time to fill a request is 155 days in the human resources employee recruitment process over the past 15 months. This delay is adding costs of \$145,000 per month in overtime, contractor labor, and rework costs

*Name:

*Email:

*Organization:

*In a few sentences, describe the problem you are trying to solve:

(Optional) Existing operational gaps:

(Optional) List proposed solution(s):

(Optional) Other background information:

So what?
Ah, now we understand

Current Special Weather Action Teams (SWATs)

1. Alaska Infrastructure
2. Ops in Winter Weather
3. PIREPS
4. Standards & Policy
5. Systems: Data Flow & Communications
6. UAS
7. Volcanic Ash (in hibernation)
8. Wind Forecasts
9. Weather Impact Metrics



What the Wx COI has been up to since the last FPAW Meeting...

- December 2022
 - Briefing from ALPA on FAA Pilot Survey
 - Closed five Problem Statements
- January 2023
 - Briefing from NBAA on business aircraft top weather issues
 - Disbanded fast-track AWC Beta Website Feedback SWAT
- March 2023
 - Briefing from Aircraft Dispatcher Federation (ADF) concerning aircraft dispatcher's role and top weather issues
 - One new Problem Statement (JAWS)
- April 2023
 - Briefing on Portable Aircraft Derived Weather Observation System (PADWOS)
 - Briefing on use of ONA Intake Process for Wx COI Problem Statements
 - Closed six Problem Statements



Summary: FAA Wx COI So Far

- First plenary meeting: **July 21, 2020**
- Number of plenary meetings since then: **28**
- Average number of participants/plenary meeting: **50-60**
- Number of Problem Statements submitted: **55**
- Number of SWATs created: **11**
- Number of SWATs currently active: **8 (plus 1 in hibernation)**
- Number of Problem Statements closed: **25**
- Number of briefings given by external organizations: **10** (ICAMS, NOAA/NWS, MIT LL, NCAR, A4A, AOPA, MITRE, ALPA, NBAA, ADF)
- Number of briefings given by internal organizations: **8** (ICN [ANG-3], PS Lifecycle [Wind SWAT], Analyzed Weather [Standards & Policy SWAT], SFO MSFS [ANG-C6], Flight Service [AJR-B1], PIREP Research [CAMI], PADWOS [Wind SWAT], ONA Intake Process [Standards and Policy SWAT])



Providing status of problem statements to stakeholders

- ANG has a [NextGen Aviation Weather Request Form](https://www.faa.gov/nextgen/programs/weather/suggestions) on the public-facing NextGen Weather webpage at: <https://www.faa.gov/nextgen/programs/weather/suggestions>
 - Allows stakeholders to submit aviation weather-related problems to the Aviation Weather Division Policy and Requirements Branch
 - ANG-C6 is working on adding a status page
- Our stakeholders have asked if we can provide a public-facing list + status of Weather COI problem statements
 - Would mitigate submitting repetitive problems
 - Would provide a current state of the problem statement process



FAA Weather Portal Requests

1. ASOS Improved Present Weather Sensor

- Automated ASOS systems are not capable of detecting any drizzle, freezing drizzle, ice pellets, or hail (small or large). Freezing drizzle, ice pellets, and small hail are important for aircraft deicing/anti-icing operations. An improved automated present weather sensor would help at all ASOS airports.

2. ASOS Cloud Ceilings up to 25,000 feet

- There is a need for more complete observations to support both frost and fog forecasting for aviation. ASOS currently reports “CLR” when no clouds are visible up to 12,000 feet. ASOS ceilometer originally had a 12,000-foot limit, but those have been replaced with units that read up to 25,000 feet. At night, low clouds and fog are highly dependent on the strength of the outgoing longwave radiation. Mid-level clouds between 12,000 feet and 18,000 feet are often warm enough to prevent frost, and in the case of fog will improve visibility and even dissipate the fog. This reporting needs to occur at all ASOS locations with ceilometers to allow tracking of cloud layers moving in from upwind locations.

3. METAR Snow Intensities based on LWE

- There is a need for more accurate Meteorological Aerodrome Reports (METAR) snowfall intensities using liquid water equivalent (LWE). Visibility for snow intensity is deeply flawed since day to night visibility will almost double in identical snow conditions. For aviation aircraft deicing/anti-icing, LWE is a more accurate measure of snow intensity for determining holdover times.



FAA Weather Portal Requests

4. Removal of Tower Visibility from METAR/SPECI

- Major airports have category I, II, and III approaches which only require Required Visual Range to begin the approach. Tower visibility, especially at tall tower airports, often leads to confusion when tower visibility is reported as 0 SM, but visibility is fine under the ceiling—the submission requests to remove Tower Visibility from the METAR/Special Report (SPECI).

5. Operational Assimilation of Disparate Automated In Situ Turbulence Sensing Applications

- Several new and emerging automated turbulence sensing technologies are rapidly gaining in popularity and geographic coverage. The applications are largely designed to provide commercial pilots with real-time aircraft-relevant turbulence reports calibrated to traditional intensity descriptors. These implementations incorporate a range of different inputs, sensing criteria, and proprietary algorithms to derive an objective measure of turbulence that may or may not be comparable to EDR, the ICAO standard unit for turbulence reporting and forecasting. Research is needed to identify objective calibration criteria that enable any detection methodology to contribute real-time turbulence data to a standardized measure of atmospheric state.
- **Two other requests have been received: One was internal to the FAA and moved off the portal. Another one was determined to be out of scope for the FAA.**



Can FPAW Make the FAA Wx COI Even Better?

- The FAA Wx COI does not have a budget to carry out actions
 - Likely the FAA Wx COI will never be given a budget to execute weather programs
- The FAA Wx COI does not have the authority to unilaterally affect changes
 - Unlikely the FAA Wx COI will ever be designated as the "FAA Weather Czar"
 - Read Aviation Weather Services: A Call for Federal Leadership and Action [1995] at <https://nap.nationalacademies.org/read/5037/chapter/1> and see FPAW meeting minutes from ~10-15 years ago for deep historical context
- Can the FAA Wx COI establish a formal relationship with an external (non-FAA) body of aviation weather users?
 - FPAW?
- There is precedent -- the FAA Aeronautical Information Products and Services (AIPS) COI and its ongoing relationship with the Aeronautical Charting Meeting
 - See [FAA Order 7910.5E](#), and [Charting Group](#) and [Instrument Procedures Group](#) Web Pages



What Might a Formal Relationship between FPAW and the FAA Wx COI Look Like?

- A standing session during the FPAW Meeting for a public Weather Data/Information Exchange and Coordination Meeting between FPAW and the FAA Wx COI?
- The FPAW Steering Committee meets with the FAA Wx COI twice yearly at an open public Weather Data/Information Exchange and Coordination Meeting?
 - After being informed by its constituencies about important aviation issues at the previous FPAW Plenary meeting
- Thoughts and discussion?





QUESTIONS

