

“Friends/Partners in Aviation Weather” Vision Forum Summary

July 22, 2009



Senior Executive Panel

Hank Krakowski – Chief Operating Officer, Federal Aviation Administration (FAA)

Bruce Carmichael – Weather Committee Chairman, National Center of Atmospheric Research (NCAR)

Tom Haueter – Director, Aviation Safety, National Transportation Safety Board (NTSB)

Vicki Cox –, Senior Vice President for NextGen and Operations Planning, FAA/Air Traffic Organization (ATO)

Jack Hayes – Director, National Weather Service (NWS)

Charlie Leader –Director, Joint Planning and Development Office (JPDO)

Karlin Toner – Senior Staff Advisor for NextGen Coordination, Department of Transportation (DOT)

Mark Andrews – Government Co-Chair, Weather Working Group, JPDO

Opening Statements

Bruce Carmichael opened the meeting by welcoming attendees to the 5th Annual Friends and Partners of Aviation Weather (FPAW) Vision Forum, and noting that the first forum was held nearly four years ago, on September 12, 2005. After introducing the members on the panel, Mr. Carmichael gave Vicki Cox the floor.

Vicki Cox commented that NextGen Weather has the attention of Congress. Excellent progress has been made inside FAA NextGen Weather programs and through activities of the Joint Planning Development Office (JPDO) Weather Working Group (WG).

Jack Hayes emphasized the importance of continuing close interagency and industry partnerships. He noted that progress has been made, but there are challenges ahead that are dependent on the success of NextGen. The NextGen Executive Weather Panel (NEWP) has been developed to resolve these challenges. Dr. Hayes confirmed the National Oceanic Atmospheric Administration (NOAA) is fully committed to developing and implementing the 4-D Weather Cube and the FAA will be responsible for employing the Cube in weather decision-making.

Charlie Leader was in full agreement with the comments made by Dr. Hayes and Ms. Cox. He commented that the JPDO Weather WG has accomplished a lot and is continually breaking new ground. In addition, he remarked that the NEWP provides valuable oversight, while ensuring that agency budgets are aligned.

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Karlin Toner stated that NextGen continues to be a national priority as it receives high visibility by the Senior Policy Committee (SPC). The JPDO Weather WG is a great example of successful integration between departments and agencies. The accomplishments of the Weather WG will help support the many needs of NextGen.

Mark Andrews commented that although the pace is not always as fast as people may like, the progress being made in NextGen Weather is a “good news” story. He elaborated on the purpose of the NEWP, stating that it was created to allow agency executives to identify, discuss, and resolve key impediments and issues. Mr. Andrews noted that a culture change is needed in order to make NextGen a success. It is imperative to work with real operators throughout the development and implementation of the 4-D Weather Cube.

Question – Conference Attendee

The user community would like access to updated Automated Surface Observing System (ASOS)/Automated Weather Observation System (AWOS) information, Aviation Digital Data Service (ADDs) products, and better automated dissemination of Pilot Weather Reports (PIREPs) When can end users expect this information to be available?

Answer – Jack Hayes- NWS, Jason Tuell NOAA, Tom Ryan FAA

New concepts and work partnerships must be examined. The Initial Operating Capability (IOC) of the 4-D Weather Cube will address how information is delivered to the cockpit. In addition, formats are currently being worked.

Segment One – Why is Weather Critical to NextGen? Realignment of Weather Acquisition Programs in ATO
Presenter: Hank Krakowski, FAA COO
User Panel: Rocky Stone, United Airlines

Following the opening panel, Hank Krakowski provided a timely overview of FAA developments affecting NextGen—energized by the fresh focus of new FAA Administrator Randy Babbitt, and a revised staff composition. He spoke of updated FAA approaches to funding, training, Air Traffic Controller (ATC) staff, and the environment tailored to support NextGen in all areas.

Additionally, he advocated RTCA Task Force 5 (whose Final Report will be delivered in August) as a vehicle for government and industry cooperation that should help achieve some near-term benefits. Mr. Krakowski admitted that, even with a temporary drop in aviation demand, two major problems remain: 1) traffic in the New York Metroplex, responsible for 60-70 percent of entire system delay; and 2) severe weather. These problems point to the need for NextGen demonstrations and early-stage implementation (e.g., installation of Required Navigation Performance (RNP) technologies) in the New

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York region to reduce congestion, as well as accelerated improvements in ATM-weather operations to circumvent storms.

Comment – Rocky Stone, United Airlines

PIREPs are very valuable to pilots by providing real-time weather and turbulence information. A better system is needed to help controllers receive and disseminate information.

Comment – Conference Attendee

The National Environmental Policy Act (NEPA) requires federal agencies to consider the environmental impacts of proposed federal projects, which could significantly affect the environment. The Weather WG will need to continue to have close coordination with the Environment WG during the development and implementation of the 4-D Weather Cube.

Segment Two – Elephants in the Room

Presenters: Al Kaehn, United States Air Force Ret.

Nick Stoer, FAA Chief Financial Officer Ret.

User Panel: Tom Fahey, Delta Airlines

John White, Airline Pilots Association (ALPA)

You may access this presentation on the Weather WG Knowledge Service Network (KSN) page by clicking [here](#).

The Elephants in the Room briefing contains issues and concerns raised by industry on NextGen Weather. The Elephants in the Room briefed at the FPAW Vision meeting in 2008 have been reviewed for progress and given a grade accordingly.

Elephants in the Room Report Card for 2008

Grade	Identifier	Description	Progress Report
B	E-1	Weather Architecture 6.0 doesn't mesh with NextGen	Progress. Collaboration
C	E-2	DoD Weather lessons learned not exploited by FAA, NOAA	Some evidence of NNEW, 4-D Weather Cube discussions underway
D+	E-3	Lack of controller/user input to NextGen, NextGen Weather	Strategic Planning Advisory Review Cadre (SPARC) holds promise
B+	E-4	Weather /ATM Integration on Back Burner	Very good progress by Integration Team lead by David Pace

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Grade	Identifier	Description	Progress Report
D+/C	E-5	Management Uncertainties/Gaps	Too early to tell if consolidating weather acquisition staff will work. Realignment of Aviation Weather Office under R&D perceived as a loss. FAA still lacks a single weather czar.
B-	E-6	NextGen focus on 2025 leaves 2012-2016 gaps	Overall thrust of FY09 changes taking hold
B-	E-7	Executing Joint Agency Initiatives (Who's in charge?)	NEWP has potential; is a model. FAA/NASA/NOAA program collaboration; budget coordination needs work.

New Elephants in the Room for 2009

Identifier	Description
2009-E-1	Research to Operations (RTO)
2009-E-2	Weather Cube - Role for Industry
2009-E-3	FAA Weather Reorganizations
2009-E-4	Weather Strategies and Training
2009-E-5	Additional illustrative issues

Segment Three – Requirements and Concept of Operations (ConOps)
Presenters: Rick Heuwinkel, FAA, Joe Sherry, MITRE, and Kevin Johnston, FAA
User Panel: Leo Prusak-FAA

You may access this presentation on the Weather WG KSN page by clicking [here](#).

Segment Four – 4-D Weather Cube, Single Authoritative Source, Net-Centric Operations
Presenters: Tom Ryan, FAA, Jason Tuell, NWS, and Doug Wreath, DoD
User Panel: Randy Baker, UPS and Bruce Landsberg, Aircraft Owners and Pilots Association (AOPA)

You may access this presentation on the Weather WG KSN Page by clicking [here](#).

NWS will schedule an Industry Day within the first six months of FY10. This event is intended to lay out key plans and milestones for members of the weather industry to view.

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Additional participation from the weather data products community is needed. The 4-D Weather Cube will deliver an optimal product, whether that product is generated by National Weather Service (NWS) or industry is unknown.

The Information Technology (IT) Architecture of the 4-D Weather Cube will be flexible enough to allow operation of industry products while providing protection of those products.

Question – Conference Attendee

Who makes the decision on which model to use? (In reference to the elements of the 4-D Weather Cube)

Answer – Jason Tuell, NOAA – Tom Ryan, FAA

Processes are currently being defined, with equal contributions from industry, DoD, FAA, and NOAA. The SAS ConOps will identify these processes and a plan will be in place by 2012.

Two forms of governance are necessary: IT governance and content governance. Discussions on both are underway and industry participation is welcome.

Question – Conference Attendee

Will airborne sensor information be part of the 4-D Weather Cube?

Answer - Jason Tuell, NOAA – Tom Ryan, FAA

Yes. Networking capabilities are being examined, with concern over the accuracy of airborne radar sensors. Resources are being invested on best uses of the information.

Question – Conference Attendee

Are you working with aircraft and engine manufactures to see what weather information they may require?

Answer- Conference Panelist

Yes. This is part of the FAA requirements process and will be part of aircraft certification.

Question –Conference Attendee

Different tools are better in some areas. Will the system be able to accommodate this?

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Answer- Jason Tuell, NOAA – Tom Ryan, FAA

Yes. There will be a verification system that will pick optimal contents based on real-time performance and science.

Segment Five – Weather Integration Efforts

Presenters: Steve Bradford, FAA and Mark Huberdeau, MITRE

User Panel: Jim Stobie, ENSCO

You may access this presentation on the Weather WG KSN Page by clicking [here](#).

Question – Gene Wilhelm, MITRE

When the 4-D Weather Cube is operational, will there be applications that use the Cube to receive weather information?

Answer – Conference Panelist

Yes. Existing operations will receive weather from the 4-D Weather Cube. The ATM-Weather Integration Plan is aligned with the IOC of the Cube for that reason.

Question - Conference Attendee

Will user manuals and new training tools be available for controllers, pilots, dispatchers, etc?

Answer –Conference Panelist

Yes. Training will be evolutionary and continuous. The new generation of users like technology and are receptive to the benefits it provides.

Question- Conference Attendee

Will flight planning systems be required to use weather information from the 4-D Weather Cube in the future?

Answer – Conference Panelist

There will be no requirement to use weather contained in the 4-D Weather Cube. Weather contained in the Cube allows users to know what weather information the government is using to make decisions.

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Segment Six – Weather Research Plan

Presenters: Ray Moy, FAA, Darien Davis, NOAA

User Panel: Matt Fronzak, MITRE

You may access this presentation on the Weather WG KSN Page by clicking [here](#).

Segment Seven – Weather Demonstration Plan

Presenters: Paul Strande, FAA, Steve Abelman, NOAA

User Panel: Joe Burns, United Airlines

You may access this presentation on the Weather WG KSN Page by clicking [here](#).

Segment Eight – What the Weather WG Heard You Say Today

Presenters: Mark Andrews, JPDO Weather WG Government Co-Chair

Mark Andrews closed the meeting with a summary of the discussions of the FPAW Conference. Mark will be using these topics to help frame the direction and activities as the Weather WG moves forward.

Mark Andrews’ Takeaway Points

- Want to see more evidence of involvement by the end-users (i.e., the controller, dispatchers, pilots, etc.) in the formation and evaluation of future weather requirements
- While the parameters inside the SAS may be fairly well understood, who will decide how those fields are populated? NOAA has been the designated lead for the effort, but how do others, including industry, participate?
- The NWS will host an industry day within first two quarters of fiscal year 2010.
- There was significant discussion about the need for better aviation weather training across the board for all actors in the system, including meteorologists who support the system. Shawn Clark, FAA Vice President for Training, was identified by Hank Krakowski as someone to invite to future FPAW events. The participants in the discussion recognize that the transition to NextGen will be evolutionary. Krakowski also warned against making NextGen concepts “sterile” or “digital only”. National Air Traffic Controllers Association (NATCA) commented on the need to gain better controller trust in weather displays.
- FAA recognizes the need to perform better portfolio management of their weather enterprise
- There were a number of comments which indicate that there is still a lack of awareness about the 4-D Weather Cube. The following are examples of the comments noted:
 - Faster, better, and cheaper observations/forecasts to the users

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- Increased availability of PIREPs and automated observations
- “I’m a general aviation (GA) pilot and, for the life of me, I still can’t tell what the Cube is.”
- Generally positive comments regarding weather integration:
 - Yes weather integration will be combined with 4-D Cube Planning.
- There were industry concerns regarding future aviation weather planning
 - How and when will industry know if planning is sufficiently stabilized so that they may plan on whether to use internal funding against opportunity targets?
- IT standards should be identified early
- Data storage/recovery of the Cube information
 - Methodologies to archive and recover information
- There is a need to bring Flight Standards into NextGen Weather activities.
- SAS in 2013 will have applications against it (FAA)
- If New York is really the problem should we focus on that area for testing/prototyping?
- Implications of the SAS on international agreements/arrangements are not clear.
- Do the users of the weather system realize that we are asking them to change their business models as well?

Schedule – FPAW Forum at NBAA Conference

The next FPAW Forum will take place on Thursday, October 22, 2009, in Orlando, Florida at the Orlando Convention Center.

The scope of the FPAW Forum will be the short-term (12-36 months) with an emphasis on operational issues and resultant solutions.