

Aviation Weather Programs/Projects
(Tier 3/4 Baseline Update)

Introduction

In a memorandum to the National Aviation Weather Program Council dated April 16, 2001, the Federal Coordinator issued the National Aviation Weather Initiatives Final Baseline Tier 3/4 Report. Tiers 3 and 4 are the final two tiers in a four tier planning process that address program definition and program funding to satisfy the National Aviation Weather Initiatives. Tier 1 was the National Aviation Weather Strategic Plan and Tier 2 was the National Aviation Weather Initiatives. The April 2001 Baseline Report was the first assessment of how the various agency programs aligned with the Initiatives and showed that 88 percent of the eighty six initiatives could be matched to agency programs. The following table summarizes the results of the April 2001 assessment:

Match	3 & 4 Star Initiatives	1 & 2 Star Initiatives	TOTAL
No Agency	3	7	10
Single Agency	10	13	23
Multiple Agencies	32	21	53
TOTAL	45	41	86

From this table we see that there was no agency match for ten initiatives; there were single agency matches for 23 initiatives; and there were multiple agency matches for 53 initiatives. The star headings refer to the relative ranking of the initiatives with 3 and 4 Star initiatives being relatively higher ranked than 1 and 2 Star initiatives. From this table it can be seen that all but three of the higher ranked initiatives were matched to agency programs. The same can be said for the lower ranked initiatives where all but seven were matched to agency programs. The matching of programs to initiatives was done subjectively based on information provided by the agencies. There was no attempt made to determine how well the agency work was satisfying a particular initiative or whether a single agency match represented sufficient effort or whether multiple agency matches were an overkill. It was pointed out that the single agency matches might provide an opportunity for additional collaboration to bring the work to completion and that the multiple agency matches may require further evaluation to ensure the optimum use of resources.

Baseline Update

Since it has been over two years since the original baseline report and many new programs have been identified as part of the National Aviation Weather Program, the time is right for a baseline update. All the program fact sheets in the April 2001 Report have been reviewed and updated as appropriate based on current information. Additionally, new fact sheets have been added for those programs that have come to our

attention since the original report. As a minimum, the fact sheets contain contact information and information about the scope of the program. Other information is included if available. As was done in the first report, the programs have been mapped against the initiatives and the results presented. Additionally, as a separate activity, the agencies were asked to review the original initiatives and provide deletions, additions, changes, etc., as they deemed necessary. Those results will also be included in this report. However, nothing submitted by the agencies with respect to the initiatives affects the baseline update.

The baseline update contains 140 programs/projects and they are distributed among the stakeholders as shown in the following table:

STAKEHOLDERS	# PROGRAMS/PROJECTS
Department of Defense	40
Department of Transportation - Federal Aviation Administration	43
National Aeronautics and Space Administration	15
Department of Commerce National Oceanic and Atmospheric Administration	19
Industry/University/Association Partners	23
TOTAL	140

This represents nearly a 60 percent increase from the number of programs/projects contained in the April 2001 report. With time and our continued interaction with the agencies, a number of new efforts have come to our attention. Also, in some cases, programs in the 2001 report have been subdivided into projects. By the same token, some programs/projects in the earlier report have ended or been redirected to meet new requirements. Fact sheets for each program/project are in Appendix A. It should also be noted that not all of the programs/projects in Attachment A have been matched to initiatives.

The matrix showing the matching of updated programs/projects to the initiatives is in Appendix B. The matching results are shown in the following table:

Match	3 & 4 Star Initiatives	1 & 2 Star Initiatives	TOTAL
No Agency	1	4	5
Single Agency	7	10	17
Multiple Agencies	37	27	64
TOTAL	45	41	86

As mentioned earlier, this is a subjective match based on information provided and there has been no attempt to determine how well the initiative is being satisfied or whether there is sufficient effort being applied. The same comments apply here as in the earlier

work; given the number of programs/projects identified, opportunities may exist for collaboration and for vigilance to ensure that resources are being used wisely for the highest priority requirements.

Comparing the recent matches to the earlier work shows a decrease in the number of initiatives with either no agency match or a single agency match and a corresponding increase in the number of initiatives with multiple matches. This is not surprising given the increased number of programs/projects included in this update. The one 3-Star initiative with no agency match is in the convective hazards service area and deals with establishing a standard for characterizing hazards associated with convective storms. Information from the FAA indicates that efforts in this area have been redirected and that this initiative no longer carries a relatively high ranking. Two of the four 1 & 2 Star initiatives with no agency match deal with establishing standards for objectively characterizing aircraft icing and for describing airborne hazards from erupting volcanoes. The other two deal with the onboard detection of ash clouds and the onboard detection of microbursts, windshear, and wake turbulence events.

Initiatives Review

In a memorandum to the members of the Committee for Aviation Services and Research (CASR) dated January 27, 2003, the Federal Coordinator asked the agencies to review and update the National Aviation Weather Initiatives as appropriate. Based on input from the agencies, no major changes to the initiatives were proposed. There was general agreement that the current service areas sufficiently cover the weather hazards with Convection, In-Flight Icing, Ceiling & Visibility, Turbulence, and Terminal Winds having the highest priority. The agencies made no changes to the relative rankings. There were two new focus areas proposed; verification and base-lining national performance standards by the National Weather Service and stratospheric operations by the U.S. Air Force. NASA mentioned the need to focus on the weather hazards peculiar to Alaska. The FAA's Capstone Program which is focusing on the Alaska problem has been added. Even though the initiatives don't focus on regional weather issues, by adding the Capstone program, we are recognizing the work being done to address the high weather-related accident rate in the Alaska region.

Conclusion

As was true with the April 2001 baseline report, this updated report is intended to provide a reasonably complete inventory of work in progress and to provide an assessment of how the programs/projects align with the National Aviation Weather Initiatives. As priorities change, programs are completed, and new programs initiated, there is a continuous need to make the information available to the aviation community. Given the number of programs, there is also a continuous need for vigilance to ensure that resources are being used effectively and that duplication of effort is avoided. This update provides a snapshot of work reported by the agencies but does not attempt to draw conclusions as to how well work is being coordinated or how well the work is meeting the requirements of users. However, it is apparent that many of the initiatives are well in hand. Included in this category is the dissemination of both textual and graphical weather information. Both the communications links and the display technology are available to get the

weather information into the cockpit. What isn't so well in hand is the type of information best suited for improved decision making. There needs to be more work done on the graphical presentation of weather information to the pilot and on ensuring the pilot is trained in the interpretation of what is presented.

There does not appear to be any significant gaps where new work needs to be initiated. The continued improvement in numerical models, including making use of the observations available from ground sensors as well as from aircraft and space-based sensors, and the continued improvement in how this information is presented to the users, should continue the downward trend in weather-related accidents.