

WORLD METEOROLOGICAL ORGANIZATION

AMDAR Panel-15/Doc.4.5.1

(24.X.2012)

**WMO AMDAR PANEL
(Fifteenth Session)**

(BOULDER, USA, 6-9 NOVEMBER 2012)

ITEM: 4.5

Original: ENGLISH ONLY

PROJECTS, PLANNING AND WORK PROGRAMME

Aircraft Observing System Training and Outreach

Report on activities by the Training and Outreach Sub-Group

(Submitted by Carl E. Weiss, Convenor, Training and Outreach Sub-Group)

SUMMARY AND PURPOSE OF DOCUMENT

Summarizes WMO AMDAR Panel outreach and training activities over the past 12 months

ACTION PROPOSED

The Panel is invited to note the information contained in the document.

2012 AMDAR PANEL OUTREACH PROGRESS / ACTIVITY REPORT

Current Status:

1. The WMO AMDAR Panel continues to promote AMDAR at various events and venues.
2. The WMO AMDAR Panel also continues to seek new opportunities to promote AMDAR.

Development and other Activities:

The AMDAR Panel Newsletter Social Media

1. As agreed at AMDAR Panel Session 14, quarterly AMDAR Panel Newsletters have been published and are available on the WMO Google web site that was established by the Secretariat to enable the compilation and publication of the Newsletters:
<https://sites.google.com/a/wmo.int/amdar-news-and-events/newsletters>.
2. Contributions have been made by AMDAR Panel Members and the articles cover a wide variety of topics including data usage, sensor testing, national program status and developments in reporting formats.
3. The Newsletters are distributed by email using a WMO Google Groups email list, which people with Google accounts can self-subscribe to, otherwise, recipients are directly subscribed by the Secretariat. The online WMO Aircraft Observations News Google Groups forum is at: <https://groups.google.com/a/wmo.int/forum/#!/forum/wmo-aircraft-observations-news>
4. The Newsletter provides an excellent AMDAR outreach tool that should be utilised by WMO Members to promote AMDAR both inside and outside their organizations and particularly to the Aviation Industry. The Panel encourages Members to on-forward the Newsletters or to promote the News & Events website & Google Group forum. Members should contact the Secretariat (Dean Lockett) for advice on the best way to subscribe their national colleagues and aviation partners or contacts.
5. **Recommendations:** The Aircraft-based Observations Programme should continue to produce the AMDAR Panel Newsletter, with the following considerations:
 - Given the changing governance structure, subsequent Newsletters should be published under the banner: WMO AMDAR Newsletter;
 - Articles should be accompanied by either a link or an email address to facilitate reader feedback or the seeking of further information; and,
 - Newsletters might be published on a less frequent basis, perhaps biannually in, say, April and October.
6. New technologies associated with social media outlets provide an effective and easy way to communicate and share information about AMDAR and WVSS-II, particularly with well credentialed and established social media online forums such as LinkedIn, Facebook and Twitter. For example, dialogue between Panel members and aviation industry experts was made possible through the LinkedIn ACARS Users Forum. LinkedIn can be described as a “professional and vocational networking Facebook” which, as well as supporting individual people networking, also supports a Group functionality enabling the contribution and “following” (notifications by email or via access to the LinkedIn website) of discussion forums

based on particular topics or interests (e.g. ACARS), as well as public or private organisational categories (e.g. WMO or NOAA).

7. **Recommendation:** The Panel should discuss appropriate ways of taking advantage of outreach opportunities associated with the use of social media such as LinkedIn and Facebook.

Other Outreach Activities

8. At the 2012 Experimental Aircraft Association's (EAA) AirVenture (July 23-29), the National Weather Service (NWS) again promoted AMDAR activities at its exhibit. An AMDAR poster was displayed at the NWS booth along with a WVSS-II unit. Response from the visitors was very supportive of the program and many pilots have knowledge of AMDAR data.
9. Bryce Ford (SpectraSensors, Inc.) promoted AMDAR and/or WVSS-II at the following events:
 - a. AMDAR workshop in Mexico City Nov. 8-10, 2011
 - b. Unmanned Aerial Systems (UAS) Technical Analysis and Applications Center (TAAC) Conference Dec 6-8, 2011
 - c. American Meteorological Society (AMS) 92nd Annual Meeting, January 22-26, 2012; New Orleans, LA
 - d. American Meteorological Society (AMS) Washington Forum, April 7-9, 2012; Washington, DC
 - e. National Business Aviation Association (NBAA) Annual Meeting, October 31 - November 1, 2012; Orlando, FL
10. Bryce Ford made an AMDAR and WVSS-II presentations at the Friends and Partners of Aviation Weather meeting October 31 - November 1, 2012; Orlando, FL
11. SpectraSensors, Inc. established a collaborative dialogue between the Panel and scientists studying WVSS-II data at the NASA Glenn Research Center
12. Stewart Taylor attended the Airlines Electronic Engineering Committee (AEEC) DataLink Users Forum (DLUF), September 19-20, 2012; Dublin, Ireland. He gave a presentation updating E-AMDAR news (network performance, developments, European collaboration, etc.) since the last DLUF meeting, WMO AMDAR activities, status of MDCRS and WVSS-II in the U.S. and collaboration with the FAA EDR Workgroup and RTCA SC-206. Stewart also took the opportunity to discuss a variety of AMDAR issues with meeting participants from UKNATS, Honeywell, Rockwell Collins, ARINC, FLYHT and Aer Lingus.
13. Carl Weiss represented NWS at the *United States Senate Office of the Sergeant at Arms National Preparedness Month Fair 2012*, September 28, 2012. The event was held at the Hart Senate Office Building in Washington, DC and attracted primarily U.S. Senate staff personnel. Internet capability allowed for live demonstrations of the GSD AMDAR web site. Also, SpectraSensors' WVSS-II brochures were distributed to the participants and an air sampler for the system was available for inspection.
14. On October 8, 2012, ARINC formally issued a press release stating the signing of a new 5-year contract with NOAA for the expansion of WVSS. The text of the release follows.

ARINC and Southwest Airlines Partner to Expand U.S. National Weather Service Data Collection Efforts

October 08, 2012

Annapolis—ARINC Incorporated announced today that they have won a third contract from the National Oceanic and Atmospheric Administration (NOAA) to provide continued support of the National Weather Service (NWS) Water Vapor Program by installing an additional 20 Water Vapor Sensor Systems (WVSS) on Southwest Airlines' Boeing 737-700 fleet. Once installation is completed, over 100 aircraft will be equipped with these high-resolution sensors providing near round-the-clock, coast-to-coast weather observations. These weather observations are used operationally to support a wide range of meteorological applications.

David Helms, NWS Office of Science and Technology, said "Experience has shown that the quality of data derived from these aircraft is extremely high and cost effective and contributes significantly to the improvements in forecasting applications, and are particularly useful for now-casting where conditions are changing rapidly."

Southwest Airlines Chief Meteorologist Rick Curtis concurs, "This technology has made a dramatic improvement in our ability to monitor atmospheric moisture and offers the ability for airlines to take advantage of this increased accuracy to operate more efficiently. In particular, we've seen marked improvements in surface and upper air forecasts; thunderstorm genesis, location and severity; wind-shear location and intensity; fog formation, location and duration, to name a few. This improvement has had a direct impact in our ability to safely dispatch aircraft and ultimately has provided us with financial savings".

"Accurately characterizing the availability and distribution of atmospheric moisture layers using the Water Vapor Sensor System has the potential to revolutionize weather forecasting and positively impact the aviation industry and the public at large," said Ron Hawkins, Vice President of Commercial Aviation Solutions. "As one of the biggest domestic carriers, Southwest Airlines was an ideal choice to ensure comprehensive data collection on behalf of the National Weather Service," concluded Hawkins

ARINC Incorporated, a portfolio company of The Carlyle Group, provides communications, engineering and integration solutions for commercial, defense and government customers worldwide. Headquartered in Annapolis, Maryland with regional headquarters in London and Singapore, ARINC is ISO 9001:2008 and AS9100:2009 Rev C certified. For more information, visit our website.

Future Plans:

1. As in 2012, NWS and the U.S. AMDAR program plan to continue promoting AMDAR, including WVSS-II, at the Experimental Aircraft Association (EAA) AirVenture and the National Business Aviation Association (NBAA) Convention and other appropriate events. Also, we hope take advantage of new outreach opportunities that present themselves during the upcoming year.
2. All ET members are encouraged to promote AMDAR and WVSS-II in their activities.

2012 AMDAR PANEL TRAINING PROGRESS / ACTIVITY REPORT

Current Status:

1. AMDAR observations continue as an important data source for case studies in the training modules developed for NWS by COMET.

Development and other Activities:

Collaboration with COMET on Development of an AMDAR Training & Outreach Module

2. The Panel is collaborating with the Cooperative Program for Operational Meteorology, Education and Training (COMET) to develop an AMDAR training module. The goal of this training is to demonstrate to a NMHS and national airlines the value and feasibility of implementing their own national or regional AMDAR program. Included in this module will be the steps required to partner with airlines, NMSs, avionics manufacturers and others to build a viable AMDAR program. This module would be made available on COMET's MetEd website, but it also could be delivered via CD-ROM or USB drive for the intended audiences. Such audiences may include:
 - weather forecasters
 - observational development groups
 - airlines operational staff and managers
 - national meteorological services managers
3. For this module, those who take this training will:
 - understand the characteristics, strengths, and limitations of AMDAR data.
 - have a general understanding of how AMDAR programs can be implemented, in terms of technological requirements and contractual agreements.
 - choose to support AMDAR program implementations based on their understanding of the value of AMDAR data and its cost benefits.
 - have a general framework for structuring a business case for an AMDAR program in their organization, country, or region.
4. COMET has prepared a proposal for the development of the training module along with an estimated cost.
5. **Recommendation:** The Panel should consider how best to proceed in relation to this activity, particularly taking into account the requirement to conform to WMO regulations associated with the procurement of goods and services.

Future Plans:

1. AMDAR data will continue to be a vital data set for training case studies. As the number of moisture observations increases, it is anticipated the role of WVSS-II data also will grow.
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