

WORLD METEOROLOGICAL ORGANIZATION

ET-AIR-3 and AMDAR Panel-14/Doc.4.7.3

(28.X.2011)

**JOINT MEETING:
CBS EXPERT TEAM ON AIRCRAFT BASED
OBSERVATIONS
(Third Session)
AND
AMDAR PANEL
(Fourteenth Session)**

ITEM: 4.7

Original: ENGLISH ONLY

(QUEBEC CITY, CANADA, 2-4 NOVEMBER 2011)

PROJECTS, PLANNING AND WORK PROGRAMME

AMDAR Planning

AMDAR 5 Year Plan to 2016 & AMDAR One Year Plan 2012

(Submitted by the Secretariat)

SUMMARY AND PURPOSE OF DOCUMENT

To provide guidance and background towards the development of a medium term plan for the AMDAR Programme.

ACTION PROPOSED

1. The Joint Meeting is invited to note the information contained in the document.
2. The Joint Meeting to consider the recommendations made in the document.

References:

MEDIUM-TERM AND 2012 WORK PROGRAMME PLANNING CONSIDERATIONS

Medium-term (5 year) Plan

1. **Recommendation 1:** The following activities are suggested for consideration by the Joint Meeting to be addressed in formulating a Medium-Term Plan and the Work Programmes for the AMDAR Panel and ET-AIR (Aircraft Observations Programme):

Core Activity	Long-term Activity	Panel Ref (App. 2)	Medium-term Activity (In Progress)	Resp.	Medium-term Activity (Possible)	Resp.	Possible Activity for 2012	Resp.	Deadline	TF Budget
1	1. Extend Global AMDAR coverage, particularly over upper air data sparse and developing areas.		1. Study on data coverage and airline capabilities (See 4.2.2)	AMDAR-MG, Contractor			1. Award SSA; 2. Manage SSA; 3. Review deliverables.	1. A-MG; 2. SO/ARO; 3. AP-FPs?		
		2 and 6			Development of AMDAR Programmes for: <ul style="list-style-type: none"> • Northern Africa; • South America; • Southwest Pacific • Eastern Europe; • Middle East • Central Africa. 					
		3	Improve and extend Targeted Data Activities	?						
					Develop guidelines for programme development.					
	2. Address the requirement for national, regional and global optimization.					1. Develop optimization systems for: <ul style="list-style-type: none"> • United States AMDAR Programme; • Asia; • Africa; • South America. 				

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					centralized optimization system; 3. Develop strategies for global optimization; 4. Develop strategies for targeting of AMDAR data for applications according to user requirements (as distinct from programme requirements).					
	3. Extend AMDAR Programme to GA aircraft and coverage of regional airports.				Undertake studies on GA aircraft capabilities towards AMDAR;					
2	1. Implement water vapour sensing measurement.				Ref Item 4.6.1 1. International project approach to WV implementation 2. Development of Project and Implementation Plans; 3. Development of business cases for NMHSs; 4. Development					

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					7. method for WVSS-II; WVSS-II implementation by national programmes.					
					Study and encourage development of new sensors and techniques.					
	2. Implement turbulence measurement.									
3	1. Manage risks and opportunities associated with new and developing technologies in avionics, communications and metrology.				<ol style="list-style-type: none"> 1. Studies on new and developing aviation technologies; 2. Studies on new and developing communications solutions; 3. Develop plans for use of new and developing technology. 4. Conduct a study under SSA into current and future technologies affecting Aircraft Observations Program; 					
4	1. Implement a Quality Management Framework for AMDAR that incorporates standardization across national programmes, taking into account: <ul style="list-style-type: none"> • Data management; • Metadata 	1	1. WIGOS-PP-AMDAR-1 Development of BUFR Template	David Helms, Stewart Taylor			<ol style="list-style-type: none"> 1. Coordinate validation; 2. Report to AMG; 3. Report to JM-4 	SO/ARO		
			2. WIGOS-PP-AMDAR-2 Metadata	PL-IDEQC	1. Incorporate final metadata set definitions	PL-IDEQC	1. Review Metadata sets;	PL-IDEQC		1. AP-FPs;

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	<ul style="list-style-type: none"> management; Quality control for metrological systems; Systems and data monitoring and evaluation. 		Development		into appropriate regulatory material. 2. Develop a strategy, in consultation with WIS, for the collection and maintenance of the metadata set for Global AMDAR Data Management		2. Define metadata categories;	2. PL-IDEQC;		
			3. WIGOS-PP-AMDAR-3 Develop AMDAR Data Management Procedures	Jitze van der Meulen			1.			
			4. WIGOS-PP-AMDAR-4 Validation and Inter-comparison of WVSS-II	David Holms, Axel Hoff	Ref 4.6.1: 1. Commission a paper that summarises the development, testing and result of the WVSS-II sensor making the case for the sensor's approval as an operational sensor and system by the Panel and by WMO.					

Core Activity	Long-term Activity	Panel Ref (App. 2)	Medium-term Activity (In Progress)	Resp.	Medium-term Activity (Possible)	Resp.	Possible Activity for 2012	Resp.	Deadline	TF Budget
					3. technique employed by the WVSS-II sensor should be appropriately integrated into the CIMO Guide and CBS guides. 4. Development of AMDAR Panel Statement of Support for WV implementation leading to WMO endorsement.					
			5. WIGOS-PP-AMDAR-5 Update of AMDAR Reference Manual	AP-Chair	1. SSA to be compiled for: i) Review of WMO and AMDAR regulatory material ii). Integrate AMDAR RM into WMO regulatory material. Iii). Conduct a regulatory material review process as necessary to finalise item ii. iv). Draft of a short document describing in general terms the (implementation of an) AMDAR Programme		1.			
			6. WIGOS-PP-AMDAR-6 Generic Software Spec.				1. Manage SSA; 2. Review deliverables.	1. SO/ARO; 2. A-MG, AP-FPs?	Q2 2012	
					Water Vapor Measurement: 1. Work with manufacturers					

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					to progress design issues including WVSS-II inlet; 2. With manufacturer and airlines, develop guidelines for quality management of water vapor sensors;					
	2. Develop a National and Global Aircraft Observations Data Management Framework.				1. Develop a National and Global Aircraft Observations Data Management Framework.	Jitze van der Meulen	1. Hold a conference of Data Management Experts.	Jitze van der Meulen, A-MG	Q1 2012	
			1. Update ARINC 620 specification to V5	SO/ARO, C-STSG						
	3. Standardise AMDAR software and sensors across avionics systems and aircraft manufacturers.	4			1. Develop software for avionics systems; 2. Develop agreements with Aircraft Manufacturers for software deployment at delivery; 3. Develop agreements with Aircraft Manufacturers for sensor deployment at delivery.					
	4. Manage sources of data (for GTS transmission) other than AMDAR, including ICAO (ADS), Mode S.				Develop strategies for the management of ADS and Mode S data;					

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5	1. Develop systems and material for promoting Aircraft Observations and the AMDAR Programme.	5	Aircraft Observations Website Development (Ref 4.5.1)		1. Review committee appointed; 2. Review website; 3. Technical contractor to update website.					
		7	Impacts and Benefits Document for Aviatoin (Ref 4.5.3)							
	2. Conduct training and outreach activities in support of Core Activities.									
6	1. Conduct meetings of members.				1. Conduct meetings of members and other stakeholders.		A-JM Meeting		Q4 2012	
	2. Coordinate planning activities.				1. Coordinate planning activities.		A-MG Meeting 3 rd Session	A-MG	Q1 2012	
							Completion of Aircraft Observation Programme Plans: 1. L-T Plan 2. M-T Plan 3. Work Programme	A-MG	1. Q1 2012 2. Q2 2012 3. Q1 2012	4.
					Production of Aircraft Observations Programme Newsletter	A-FPs, SO/ARO	1. AOPN Q1 2. AOPN Q2 3. AOPN Q3 4. AOPN Q4	A-FPs, SO/ARO	1. Jan 2012 2. Apr 2012 3. Jul 2012 4. Oct 2012	5.
3. Monitor and evaluate the Aircraft Observations Programme.				Develop and implement strategies for the monitoring and evaluation of the Aircraft Observations Programme						

A-MG = AMDAR Panel (Aircraft Observations) Management Group

AP-FPs = AMDAR Panel Focal Points

A-JM = AMDAR Panel and ET-Air Joint Meeting

AP-Chair = AMDAR Panel Chairman.

PL-IDEQC = Project Leader Improvement in Data Exchange and Quality Control (Stewart Taylor)

SO/ARO = Dean Lockett

WIS = WMO Information System

2. **Recommendation 2:** The table structure in Appendix 3 is used to define the Medium Term plan for the AMDAR Programme. An example of its use is provided.

Aircraft Observations Programme Work Programme 2012

3. **Recommendation 3:** The table structure in Appendix 1 is used to define the Work Programme for the AMDAR Programme for 2012 based on the input made by the Joint Meeting under Recommendation 1. An example of the use of the Work Programme Table is provided.

APPENDIX 2 – AMDAR PANEL ACTION ITEMS

WIGOS-PP-AMDAR-5 and AMDAR-MG-2, De Bilt, The Netherlands, 28 February - 04 March 2011

PRIORITY	PROGRAMS/ PROJECTS/ ACTIVITIES	OBJECTIVES/GOALS	RECENT ACTIVITIES	FUTURE ACTIVITIES	DEADLINE FOR ACTION	BUDGET (ESTIMATE) (CHF)	RESPONSIBLE
1	WIGOS PILOT PROJECT FOR AMDAR	Improve practices impacting AMDAR data collection, processing, archiving and dissemination	Meetings held: 1 st – ad hoc Steering Group 2 nd – Standardized BUFR Template for AMDAR & QM for AMDAR data 3 rd – Metadata 4 th – ARINC620 update 5 th WIGOS PP for AMDAR Meeting	Conduct testing and validation of the standardized BUFR template for AMDAR	4 th Quarter 2011		David Helms, Stewart Taylor
				Redraft current proposal based on airline input and then test with single airline within E-AMDAR Program for implementing the application of WMO Metadata relevant to AMDAR	3 rd Quarter 2011	3000	Stewart Taylor
				Develop a Strategy for the standardized Quality Management Framework for AMDAR data; and	4 th Quarter 2011	3000	Jitze van der Meulen
				Report on validation of the Water Vapor sensor performance (based on available research and commercial aircraft tests)	4 th Quarter 2011	5000	David Helms, Axel Hoff
				Proposal to AMDAR Panel on inclusion of the AMDAR Reference Manual WMO-No.958 into WMO regulatory material	4 th Quarter 2011	30000	WMO Secretariat in coordination with Frank Grooters
				Develop the framework for generic software specification for AMDAR	Pending Decision of the DataLink Systems Subcommittee (4 th Q 2012)	5000	Frank Grooters (& through the services of a contractor)

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2	POTENTIAL NEW NATIONAL & REGIONAL PROGRAMMES	The provision of effective assistance and coordination to potential AMDAR Programmes	AMDAR Panel members and the Technical Coordinator have continued to provide support for new and regional programs	Coordinate AMDAR Mexico workshop and national Programmes of the region	4 th Quarter 2011		USA AMDAR Programme & AMDAR Panel
				Review NMHSs activities in relation to AMDAR and report to next AMDAR Panel Meeting	4 th Quarter 2011		WMO Secretariat and AMDAR Panel Chairman
3	AMDAR DATA REQUEST	To provide the best possible global coverage of AMDAR data	E-AMDAR is now providing data for Singapore, Curacao, India and South Africa and has received requests for data from Malaysia	Explore opportunities in Africa and Central and South America	4th Quarter 2011		USA AMDAR Programme & AMDAR Panel
4	ONBOARD SOFTWARE DEVELOPMENT	Develop a standardized software package for AMDAR capable aircraft	See report from Australia, Netherlands and the Russian Federation	Full implementation of AAAv3 for the SAWS AMDAR program	3 rd Quarter 2011		SAWS AMDAR program
5	WEB SITE	To have an effective means of communicating AMDAR related information and activities	WMO AMDAR Webpage completed	Populate the new AMDAR Webpage	Ongoing		WMO Secretariat, STSG & TrOSG
6	NEW AMDAR PROGRAMMES - [Central & West Africa (ASECNA)]	The provision of effective assistance and coordination to new AMDAR programs	Ongoing monitoring and support provided by AMDAR TC and Panel Members	Monitor and provide technical support	Ongoing		WMO Secretariat and AMDAR Panel Members

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7	IMPACTS/BENEFITS DOCUMENT	To inform NMHSs, airlines and related industries on the benefits of AMDAR	Contractor employed under WMO SSA to undertake the development a AMDAR Manual for airlines	Contractor to develop AMDAR Manual to assist airlines in developing an AMDAR program	4 th Quarter 2011	25000	AMDAR Panel Chairman (& through the services of a contractor)

