

WORLD METEOROLOGICAL ORGANIZATION

AMDAR Panel-15/Doc.3.2

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**WMO AMDAR PANEL
(Fifteenth Session)**

(BOULDER, USA, 6-9 NOVEMBER 2012)

ITEM: 3.2

Original: ENGLISH ONLY

AMDAR PROGRAMME STATUS

Status of the AMDAR Panel and Transition of the AMDAR Observing System to WMO

(Submitted by the Secretariat and the Chairman of the AMDAR Panel)

SUMMARY AND PURPOSE OF DOCUMENT

To report on the status of the finalisation of the transition of the AMDAR programme to governance under the WMO Technical Commissions and the cessation of AMDAR Panel activities.

ACTION PROPOSED

1. The Panel is invited to note the information contained in the document.
 2. The Panel is invited to consider the recommendations made in the document.
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BACKGROUND ON THE AMDAR PANEL AND THE TRANSITION PROCESS

1. The AMDAR Programme was established in 1998 with the approval of the WMO Executive Council under the autonomous governance of the AMDAR Panel and with the administrative support of the WMO Secretariat. Since then it has successfully developed, enhanced and expanded the Global AMDAR Programme over the years towards an operational observing system. The financial support for coordination and technical expertise for the AMDAR Programme was made possible through Member contributions to the AMDAR Panel Trust Fund.
2. At WMO Cg-XVI (2003) Congress reaffirmed the importance of the AMDAR Programme including the work carried out by the AMDAR Panel, and the significant contribution AMDAR made to the GOS. It agreed with the recommendation of CBS that AMDAR should be more fully integrated into the WWW Programme and requested the Executive Council to consider the appropriate measures including the desirability of funding AMDAR activities in developing and coordinating the AMDAR Programme.
3. At its 15th Session in 2007, WMO Congress approved the transfer of the administration of the aircraft observations programme and the AMDAR observing system within the Secretariat from the Aeronautical Meteorology Programme to the World Weather Watch Programme, implicitly including the AMDAR observing system as an operational component of WIGOS subsequent to the WMO AMDAR Panel (11th Session, 2008) declaring the AMDAR system fully operational.
4. As of 1 January 2008, the AMDAR Technical Coordinator function was transferred into a WMO full staff position funded through the AMDAR Trust Fund, with full funding for the position to be later funded from the WMO Regular Budget (completed in January 2012).
5. The integration of AMDAR into WWW and WIGOS was discussed and further advanced by CBS at its 14th Session (Dubrovnik, Croatia, 25 March-2 April 2009) leading to the creation of the Expert Team on Aircraft-based Observations (ET-AIR). Also in 2009 the AMDAR Theme Leader on Aircraft Measurements was included within the CIMO working structure.
6. At the following two joint meetings of the AMDAR Panel and the ET-AIR the progress and the steps taken towards the integration and the future governance of the AMDAR Programme were reported to the Panel and considered by the participants.

AMDAR Panel Session 14

7. At the Joint Meeting of the WMO AMDAR Panel (14th Session) and the ET-AIR (3rd Session), Quebec, Canada, 2-4 November 2011, the proposal for the new governance necessary for the integration of the AMDAR Observing System into the WIGOS under the WWW was presented and extensively discussed. Although the Joint Meeting reaffirmed that ideally the roles and responsibilities of the AMDAR Panel and the ET-AIR would inevitably become unified under a single programmatic and governance structure within the WMO and WWW Programme framework, the Meeting also expressed concerns regarding the transition and integration process, in particular the inevitable cessation of the Panel activities, the use and management of the Trust Fund for continued support of AMDAR associated activities, the opportunity for members to meet in one forum on at least an annual basis and that there might be insufficient representation within CIMO. The AMDAR Panel therefore requested the AMDAR Panel Management Group (APMG) to consult with CBS and CIMO Management and the Secretariat to ensure that the issues raised by the Panel could be suitably addressed, thereby allowing the finalisation of the transition process.

AMDAR PANEL MANAGEMENT PROGRESS ON TRANSITION IN 2012

AMDAR Panel Management Group Session 3

8. As requested, the AMDAR Panel Management Group (APMG) at its 3rd Session (Silver Spring, USA, 27 February-2 March 2012) considered the issues raised by the Joint Meeting regarding the integration of AMDAR into WMO Technical Commissions and was able to discuss the issues directly with the President of CBS and the Chairman of the CBS OPAG ICT-IO (Open Programme Area Group, Implementation and Coordination Team on Integrated Observing Systems). Significant input and advice was received and assurance was given that the functions and roles as they were successfully employed by the AMDAR Panel would be continued under the WMO Technical Commission structure, including the maintenance of the AMDAR Trust Fund in support of the work programme. The APMG was also assured that the work programme and the wishes of the Panel members regarding meetings, membership and the established relationship with the aviation industry and other related bodies could be accommodated under the CBS and CIMO Technical Commissions, subject to CIMO Management consultation and agreement. The President of CBS urged that the Panel act decisively and advance the process towards finalisation by the end of 2012 so as to remove the issue as a distraction to the Aircraft Observations and AMDAR work programme and also to reduce the administrative burden on the Secretariat.

9. The APMG agreed to develop a proposal that would address the concerns of the Panel members and would further draft recommendations for adoption by CBS in the first instance, in relation to the CBS component of the governance structure, to first be presented for consideration at the 7th Session of the CBS OPAG ICT-IO (18-22 June 2012). The APMG would later consult with CIMO Management in relation to the CIMO component.

The Proposed Aircraft Observing System Programme and Governance Structure

10. The APMG worked together with the Secretariat to develop a proposed updated programmatic and governance structure that would address the issues identified by the Panel members and which is depicted in figure 1 below.

WMO Aircraft Observing System Governance and Programme

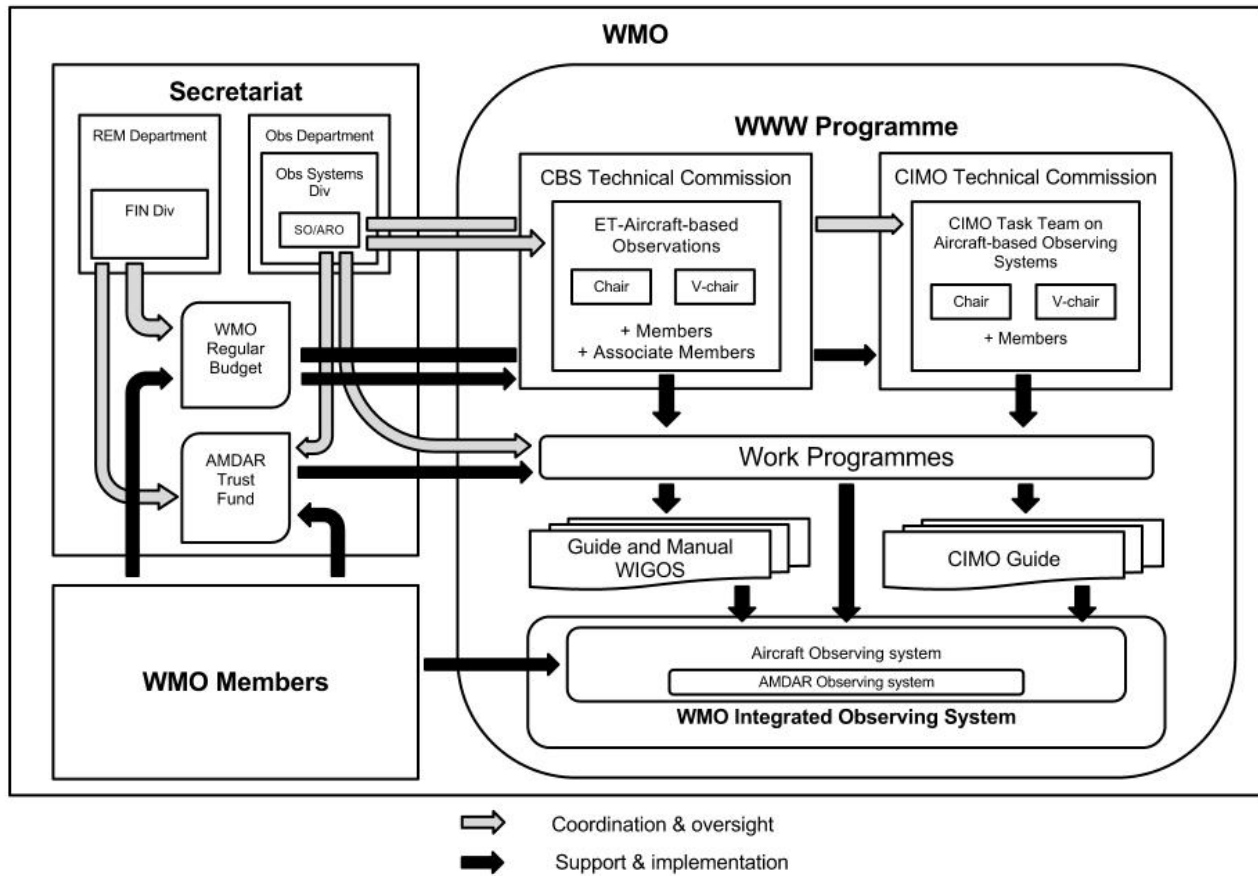


Figure 1 – Proposed new structure for governance of the AMDAR programme under the WWW Programme – reflects the initial proposed creation of a Task Team under CIMO, which may become an Expert Team subject to CIMO process and approval.

Proposal of an Additional Team under CIMO.

11. This proposed replacement of the Theme Leader on Aircraft Measurements would allow the role of the AMDAR Panel to be split between two Teams (either an Expert Team or Task Team), with the existing and ongoing CBS team (Expert Team on Aircraft-based Observations, ET-ABO) taking on the aircraft-based observations programme development role (see below), whilst the CIMO team should have responsibility for the instrument, technical and standards-related aspects.

12. Envisaging that the two teams would meet every 2nd year in alternative years, this will potentially allow those Members with an interest in meeting annually to attend both meetings. It is expected that, within the limitations of reasonable logistics and resources, Members will be able to continue to have representation in addition to the core membership at Team Meetings, at the expense of their own organization as is consistent with current arrangement for attending AMDAR Panel meetings. The structure also addresses the perceived imbalance in CIMO representation in relation to aircraft-based observations.

Management of the AMDAR Trust Fund.

13. The APMG has proposed updated Terms of Reference for the AMDAR Trust Fund that would ensure that the Trust Fund continued to be maintained in the future in support of the ongoing work of

the Aircraft-based Observations programme under the management of the chairs of the ET(s) and the Secretariat (SG through the Aircraft Observations Unit).

Work Programme under the CBS and CIMO Teams.

14. The existing work programme of the AMDAR Panel would be fully integrated into the formal Work Plans of the Teams. With a division of the work programme in this way and more formal responsibilities falling to a second (CIMO) Team, this arrangement would also cut down on the coordinative and administrative load of the Secretariat.

Outcomes from ICT-IOS-7, CBS-XV, APMG-4 and CIMO-MG-X

Outcome from ICT-IOS-7

15. The ICT-IOS supported [the recommendations made](#) in relation to the transition of AMDAR to the WMO Technical Commissions, subject to CIMO Management agreement, including the process to be followed, a timeline for implementation, and a draft-recommendation for adoption by CBS-XV for the CBS-related aspects.

16. In July 2012, the Panel Chairman wrote to AMDAR Panel Focal Points advising of the outcome from ICT-IOS-7, the intention to submit the proposal to CBS and of the implications for the AMDAR Programme.

Outcome from AMDAR Panel Management Group Session 4

17. The APMG (Session 4, August 2012) considered in depth the transition process and, based on a positive response to the proposal from all stakeholders:

The APMG recommended that the finalization of the transition process is accepted by the Panel members and that the Panel should therefore cease activities after the 15th Session of the AMDAR Panel and formally hand over full programmatic and governance management of the AMDAR Programme to WMO under the WWW Programme.

18. THE APMG also recommended the following practical basis for the joint management of the AMDAR Programme under CBS and CIMO:

- Until the CIMO Team is established, and subject to CBS-XV approval, ET-ABO should retain full responsibility for the work programme and budget supporting the Aircraft-based Observations programme.
- Upon formation of the CIMO Team, each Team should annually develop a separate work programme and budget under the direction and procedures of the relevant Technical Commission Management Group, which would (both) be approved by the Aircraft-based Observations Programme Management Group, ideally consisting of the Chairs of both Teams and the WMO SG's delegate from the Secretariat.
- The Chair of the CIMO Team should be a member of ET-ABO and the Chair of ET-ABO a member of the CIMO Team.
- Teams should be open to invitations from PRs to host the meeting at a location that is most economic and strategic from a budget and programme development standpoint respectively.

Outcome from CBS-XV

19. The Panel Chairman and the Secretariat then worked with ICT-IOS to ensure that proposal was submitted to CBS-XV via the agenda item: *4.2 Decisions for the Open Programme Area Group on Integrated Observing Systems, including the WMO Integrated Global Observing System and the WMO Space Programme.*

20. CBS agreed with the CBS related part of the proposal and the Expert Team on Aircraft-based Observations has been created with the Terms of Reference provided in Appendix I. The Chairperson of the ET is Mr Frank Grooters, the Netherlands and the Vice-chairperson Mr Gilles Fournier, Canada.

Outcome from CIMO Management Group Session 10

21. The Panel Chairman, the CIMO Theme Leaders on Aircraft Measurements (CIMO TL-AM) and the Secretariat also consulted with CIMO Management Group, making them aware of the proposed governance structure for aircraft-based observations and the anticipated role of CIMO within it, with all feedback being positive. CIMO MG requested that the Secretariat and the TL-AM provide a proposal to the upcoming CIMO Management Group meeting, 19 - 20 October 2012, Brussels (Belgium), which [has been done](#).

22. CIMO MG agreed that:

- Consideration would be given by CIMO (Session 16, 2014) to the creation of an Expert Team within the appropriate OPAG;
- In the interim, the CIMO MG will authorize the appointment of a CIMO Task Team on aircraft-based observations, upon and subject to agreed Terms of Reference, which can potentially be activated in 2013; and,
- CIMO MG will work with the WMO Secretariat and CBS to agree upon and finalise the Terms of Reference for operation of the Trust Fund (which will be discussed under agenda item 5.2 and are also provided within Appendix II) and joint management of the Aircraft-Based Observations programme.

COMPLETION OF THE TRANSITION PROCESS

23. It is recommended that the following steps are now required to complete the transition process:

- 1) AMDAR Panel to approve cessation of AMDAR Panel activities (AMDAR Panel Session 15);
- 2) Panel Chairman to write to Members to advise of the cessation of the AMDAR Panel;
- 3) The Secretariat to finalise the ToR for the AMDAR Trust Fund with CIMO MG and CBS MG and submit to WMO Secretary General for approval, which have been updated to reflect the new governance structure and also to ensure compliance with WMO regulations and guidelines;
- 4) The Secretariat, the CIMO TL-AM and CIMO MG to finalise and seek the approval of ToR for the CIMO Task Team on aircraft-based observations, the latest proposed version provided in Appendix III;
- 5) The Chair of ET-ABO to harmonise the ToR of ET-ABO with the approved ToR for the CIMO Task Team;
- 6) The Chairs of ET-ABO and the CIMO TT in consultation with the Secretariat to finalise their recommendations for team memberships and submit to CBS and CIMO respectively for approval;
- 7) A Joint Meeting of ET-ABO and the CIMO TT is held in the first half of 2013 to finalise the working arrangements for the operation of the aircraft-based observations programme; and,
- 8) The Chair of the CIMO Task Team to work with the Secretariat to make an appropriate submission to CIMO-XVI proposing the formation of a CIMO Expert Team to replace the Task Team after CIMO XVI.

APPENDIX I

Expert Team on Aircraft Based Observing Systems (ET-ABO)

Terms of Reference (as approved by CBS-XV)

- (a) Manage the programme for the aircraft observing system and the budget for the corresponding expenditure of the AMDAR Trust Fund in line with its ToR;
- (b) Oversee the development and maintenance of the aircraft observations Quality Management System;
- (c) Oversee the scientific and technical development and maintenance of the aircraft observing system;
- (d) Oversee and assist in the enhancement and optimization of the aircraft observing system in line with the requirements of Members and the recommendations and actions of the EGOS-IP;
- (e) Assist and provide support for training and outreach activities to support promotion and further development of the aircraft observing system;
- (f) Provide advice and support to the Chairperson of OPAG-IOS on the implementation of the WIGOS framework and its operational aspects.

APPENDIX II

Updated Terms of Reference for the AMDAR Trust Fund (Version: 8 October 2012)

1. The AMDAR Trust Fund will be administered in accordance with the these Terms of Reference (ToR) and WMO rules, regulations and policies;
2. The rate of WMO Programme Support Cost Recovery is 0 percent for funds prior to these ToR, and will be 7 percent for all income made under these ToR;
3. The unit of account for the Trust Fund shall be the Swiss Franc. When commitments of contribution are made, the appropriate funds will be converted, as necessary, to the currency of account in at least the amount of the commitment;
4. The income of the AMDAR Trust Fund will include:
 - a. Voluntary contributions from Members and WMO partners;
 - b. Interest on investments as may be made by the Secretary-General (SG) in accordance with the provisions of Financial Regulations; and
 - c. Miscellaneous income.
5. The AMDAR Trust Fund shall be managed according to an annual budget (Budget) developed in accordance with these Terms of Reference by the Aircraft-based Observations Programme Management Group (AOPMG), which shall consist of the SG or their delegate within the Secretariat and the Presidents of the relevant WMO Technical Commissions (nominally CBS and CIMO) or their respective delegate;
6. Expenditure of the Trust Fund shall be primarily based on the Budget supporting the aircraft-based observations related activities as defined under the work programmes of the relevant WMO Technical Commissions;
7. Requisitions for all expenditure from the AMDAR Trust Fund must be approved by the SG or their delegate within the Secretariat;
8. All expenditures of funds outside the Budget must be approved in writing by all Members of the AOPMG.
9. The expenditure of funds of the AMDAR Trust Fund will be used to:
 - a. Assist in the establishment and operation of programmes of automated meteorological reporting from aircraft;
 - b. Meet appropriate costs incurred by WMO in providing support to the aircraft-based observations work programme activities;
 - c. Meet other costs including such items as meetings and consultants;
 - d. Purchase specified items of equipment and software; and
 - e. Support other activities required to meet the ToR and work programme.
10. Any change to the terms of reference of the AMDAR Trust Fund shall require the approval in writing of all Member of the AOPMG.
11. In line with the request of Cg-XVI, the Secretariat should continue to seek contributions to the AMDAR Trust Fund from Members on an annual basis in support of technical developments and capacity-building related to the aircraft-based observations programme; and,
12. The AMDAR Trust Fund will be closed only at the discretion and direction of WMO Executive Council (EC). The use of the remaining balance at the closure of the Trust Fund should be determined in accordance with the EC decision.

APPENDIX III

**DRAFT PROPOSED TERMS OF REFERENCE, MEMBERSHIP AND ACTIVITIES FOR A CIMO
TASK TEAM ON AIRCRAFT-BASED OBSERVATIONS**

Suggested Title: Task Team on Aircraft-based Observing Systems, TT-AOS

TT-AOS TERMS OF REFERENCE

- (a) Together with CBS ET-Aircraft-Based Observations, manage and harmonize the work programme for the Aircraft-based Observations Programme and the budget for expenditure of the AMDAR Trust Fund in line with its ToR;
- (b) Oversee the scientific and technical development and maintenance of the Aircraft Observing System, including the AMDAR Observing System;
- (c) Work closely with ET-A1 and oversee the development and maintenance of scientific and technical standards associated with aircraft observations; and,
- (d) Liaise closely with ET-A3 for testing and validation of the AMDAR system and aircraft based humidity sensors.

TT-AOS Proposed Membership

1. Dr Axel Hoff, Germany, DWD (Chair)
2. Mr Stewart Taylor, UK, UK Met Office, E-AMDAR
3. Mr David Helms, USA, NOAA
4. Dr Jitze van der Meulen, Netherlands, KNMI
5. Gilles Fournier, Canada, Environment Canada
6. Yvan Lemaitre, France, Meteo France

APPENDIX III

PROPOSED WORK PROGRAMME (FRAMEWORK)

ToR	Activities and Tasks
Together with CBS ET-Aircraft-Based Observations, manage and harmonize the work programme for the Aircraft-based Observations Programme and the budget for expenditure of the AMDAR Trust Fund in line with its ToR.	<ul style="list-style-type: none"> • Develop and maintain annual work programmes; and, • Develop and maintain annual budgets for expenditure of the AMDAR Trust Fund in line with its ToR.
Oversee the scientific and technical development and maintenance of the Aircraft Observing System	<ul style="list-style-type: none"> • Oversee the technical development, standardisation and implementation of new and developing aircraft-based measurements, including: <ul style="list-style-type: none"> ○ water vapour sensing measurement; ○ turbulence measurement; ○ icing indication; ○ chemistry (IAGOS); ○ GNSS altitude; and ○ Others. • Specify and oversee the implementation of metrological quality control standards for aircraft-based observing systems, including AMDAR; • Review measurement physics developments associated with the aircraft-based observations system; • Manage risks and opportunities associated with new and developing technologies in avionics, communications and metrology; and, • Communicate to the Commission the latest developments in AMDAR and other aircraft based observational platforms.
Work closely with ET-A1* and oversee the development and maintenance of scientific and technical standards associated with aircraft observations.	<ul style="list-style-type: none"> • Develop and maintain regulatory material within the CIMO Guide.
Liaise closely with ET-A3* for testing and validation of the AMDAR system and aircraft based humidity sensors.	<ul style="list-style-type: none"> • Provide advise and coordinate comparisons and inter-comparisons with NWP (OSEs and OSSEs) and other upper air systems;

ET-A1 and ET-A3 are Expert Teams under the CIMO structure. See:

<http://www.wmo.int/pages/prog/www/CIMO/WorkingStructure/membership.html>