

WORLD METEOROLOGICAL ORGANIZATION

ET-AIR-3 and AMDAR Panel-14/Doc.5.4

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

ITEM: 5.4

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AMDAR PANEL FINANCIAL AND ADMINISTRATIVE MATTERS

Review of Established Rules and Procedures

(Submitted by the AMDAR Panel Chairman)

Summary and purpose of document

This document presents, for consideration by the Panel, the updated Terms of Reference (ToR) for the AMDAR Panel: the Membership and the Operating Procedures, the ToR for the AMDAR Trust Fund, the ToR for the Training Sub-Group, the ToR for the Science and Technical Sub-Group, the ToR for the Coordinator for the Improvement in Data Exchange and Quality Control, the Duties and Responsibilities of the WMO AMDAR Technical Coordinator and the inclusion of the AMDAR Workshop Guidelines and Procedures in the ToR.

ACTION PROPOSED

The Panel is invited to:

1. Review the attached documents; and
 2. Endorse the updates as proposed by the AMDAR Panel Management Group
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1. At the Joint Meeting of the CBS Expert Team on Aircraft-based Observations (second session) and the AMDAR Panel (thirteenth session), Geneva, Switzerland, 5-7 October 2010, the Meeting agreed on the updated basic Rules and Procedures of the WMO AMDAR Panel.
2. The AMDAR Panel Management Group at its Second Meeting (De Bilt, The Netherlands, 28 February-4 March 2011) reviewed the Rules and Procedures and agreed on a number of proposed changes.
3. The Management group further agreed on a number of changes to the AMDAR Workshop Guidelines and Procedures and recommended that these guidelines and procedures should be included in the Terms of Reference for the AMDAR Panel.
4. The Meeting reviewed the proposals made by the Management Group and endorsed the recommendations.

Background

5. It was identified that the current ToR for the AMDAR Panel was not covering the role and responsibilities of industrial partners in the AMDAR programme.
6. Furthermore the need was expressed for more detailed and well-described AMDAR Workshop Guidelines and Procedures, based on the experiences learned from the developments in the preparation of the Mexico City AMDAR Workshop Programme.
7. The AMDAR Panel Management Group has discussed these issues and has made proposals for updating the ToR for the AMDAR Panel for consideration and adoption by the Meeting.

Recommendations

8. **Recommendation 1:** The Meeting is invited to adopt the updates and changes (in *Italic*) to the Established Rules and Procedures;
9. **Recommendation 2:** The Meeting is invited to agree to the amended AMDAR Workshop Guidelines and Procedures (Annex XII) and to adopt the recommendation made by the Management Group to include these guidelines and procedures in the Terms of Reference for the AMDAR Panel.

**PURPOSE AND TERMS OF REFERENCE FOR THE WMO PANEL
ON AIRCRAFT METEOROLOGICAL DATA RELAY (AMDAR PANEL)**

I. GENERAL

The purpose of the Panel shall be to enhance the upper-air component of the Global Observing System of the World Weather Watch through cooperation among Members in the acquisition, exchange and quality control of meteorological observations from aircraft using automated reporting systems.

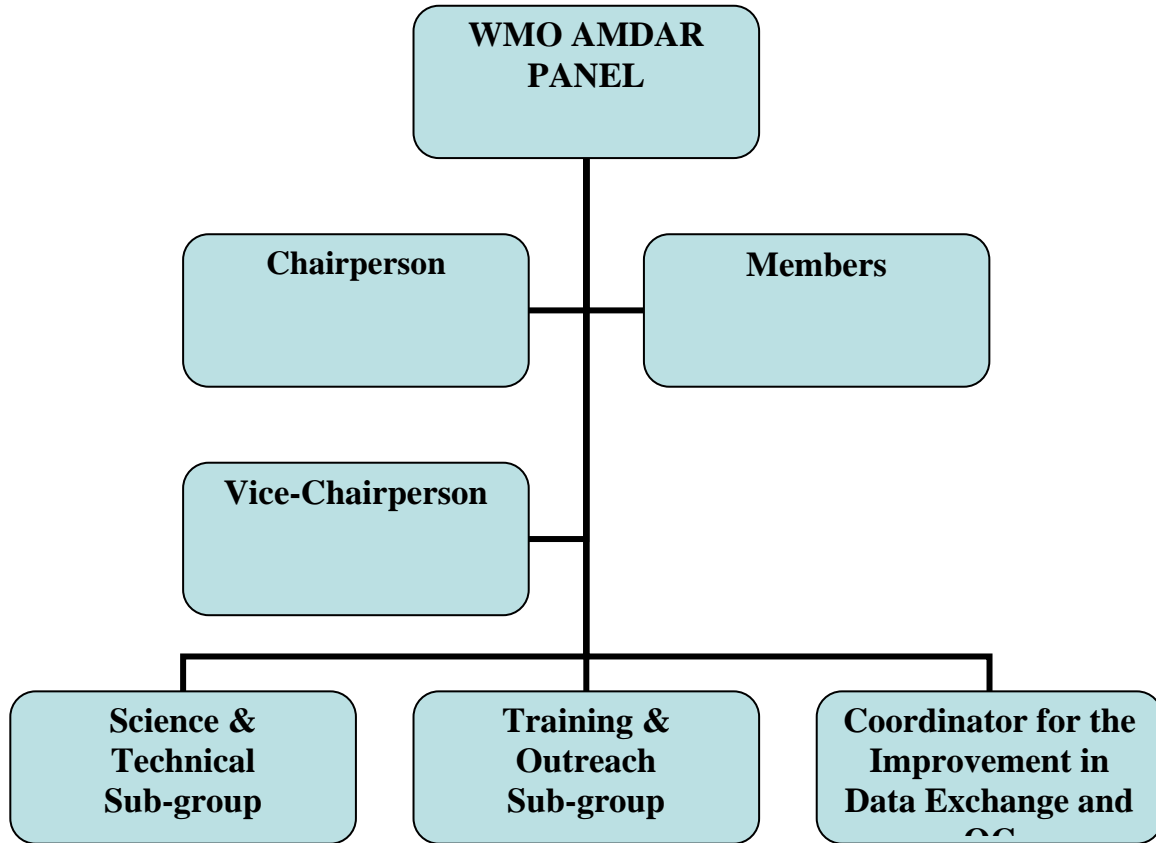
Recognizing a fundamental principle of WMO to broaden and enhance the free and unrestricted international exchange of data and noting the increasing availability of aircraft platforms with suitable sensors, avionics and communication systems, the Panel is established to take advantage of the opportunity to use these new cost-effective global data sources to better respond to the needs of WMO, WMO-sponsored programmes such as the WWW, WCRP, GCOS and GOOS, other global programmes such as GEOSS, and to bring potential benefits to end-users in aviation and other communities. The Panel is considered necessary to ensure a coordinated approach to the development of AMDAR as an operational global programme with particular benefits in data-sparse areas of the world.

To achieve the purpose, the Panel on Aircraft Meteorological Data Relay shall:

1. Consider the expressed needs of the international meteorological and climatological communities for data from automated meteorological reports from aircraft and initiate action from its members, or others as appropriate, to meet these needs;
2. Facilitate the coordination of existing national and international programmes of automated meteorological reporting from aircraft so as to optimize the provision and timely exchange of high-quality data at minimum cost;
3. Propose, organize and implement through the coordination of national and regional efforts, the expansion of the current and future Aircraft Meteorological Data Relay (AMDAR) Programme, to obtain such data particularly in data-sparse areas of the world;
4. Promote the exchange and dissemination of all appropriate automated meteorological reports from aircraft through the Global Telecommunication System and other systems as appropriate;
5. Promote the dissemination, exchange and use of information on AMDAR data availability and quality among Members and data providers with a view to initiating appropriate corrective action;
6. Promote the exchange of information on AMDAR and encourage the development and transfer of appropriate technology;
7. Ensure that other bodies actively involved in automated meteorological reporting from aircraft are informed of the workings of the Panel and encourage, as appropriate, their participation in the Panel's deliberations;
8. Make and regularly review administrative arrangements as necessary, including securing the services of a Technical Coordinator when necessary;

9. Promote joint funding arrangements, as appropriate, for the development, implementation and operation of the AMDAR Programme;
10. Liaise and interact with the Commission for Basic Systems (CBS) regarding further integration of AMDAR into GOS and WMO Integrated Global Observing System (WIGOS);
11. Liaise and interact as appropriate with the relevant sections of the aviation community on issues of common concern such as data acquisition, data management, communications and costs; and
12. Submit annual progress reports to the relevant WMO constituent body sessions and/or their subsidiary bodies.

II. WORKING STRUCTURE OF THE AMDAR PANEL



III. MANAGEMENT GROUP:

1. *The Management Group is created to steer the AMDAR Panel activities between AMDAR Panel sessions.*
2. *The Management Group is composed of:*
 - a. *the AMDAR Panel Chairperson*
 - b. *Vice-Chairperson of the AMDAR Panel*
 - c. *Science and Technical Subgroup Coordinator*
 - d. *Training and Outreach Sub-Group Coordinator*
 - e. *Coordinator for the Improvement in Data Exchange and Quality Control*
 - f. *Representative from CBS ET-AIR*
3. *The AMDAR Panel Management Group may call representatives of national and/or regional AMDAR programs for specific agenda items.*
4. *The work of the AMDAR Panel Management Group is supported by the WMO Secretariat.*
5. *The AMDAR Panel Management Group will normally meet once per year.*

IV. SUB_GROUP AND COORDINATORS:

1. *Sub-groups have been established to deal with specific issues related to scientific, technical, training, Outreach and the improvement in data exchange and quality control activities of the Panel.*
2. *The Panel agreed on terms of reference for the sub-groups and coordinators.*

V. MEMBERSHIP FOR THE WMO PANEL ON AIRCRAFT METEOROLOGICAL DATA RELAY (AMDAR PANEL)

The Panel is recognized as a body within the WMO structure, with the endorsement of the WMO Executive Council and anchored to the Commission for Basic Systems (CBS), fostering active cooperation among Members in the implementation and operation of AMDAR as a component of the WWW Composite Observing System.

Because industry organizations are not eligible for Panel membership, their representation can be addressed either by associate membership, or as an observer.

Members:

Panel members shall be Members of WMO that operate or intend to operate AMDAR programs and are willing to contribute to the Panel's activities or the AMDAR Panel Trust Fund.

Associate Members:

Representatives of any international organization or programme actively involved in the use, development, collection, provision or standardization of avionics and communication practices related to automated meteorological reporting from aircraft, or organizations which specifically require such data may be invited by or apply to the AMDAR Panel to participate in Panel Meetings and activities. Associate Members will not have voting rights for AMDAR Panel decisions and may be excluded from AMDAR Panel discussions and activities appropriate to Members only.

Observers:

Representatives of any organization or programme actively interested in automated meteorological observations from aircraft, or which specifically require such data, may be invited to participate as Observers in AMDAR Panel Meetings. Observers will not have voting rights for AMDAR Panel decisions and may be excluded from AMDAR Panel activities appropriate to Members only.

VI. OPERATING PROCEDURES FOR THE WMO AMDAR PANEL

1. The Panel will normally meet annually. The Panel will elect a Chairperson and Vice-chairperson, from among the representatives of the Panel members by a simple majority of the participating Panel Members. Also, the AMDAR Panel will appoint coordinators of its sub-groups as necessary to carry out the agreed work programme of the Panel between sessions. The Chairperson will prepare reports for WMO, as required;
2. The Chairperson may call on representatives of individual Panel members for assistance in matters such as the representation of the Panel at meetings of other bodies, the preparation of reports on specific topics, etc.;
3. A position in the WMO Secretariat (Scientific Officer-Aircraft and Remote Sensing Observations) also covers the duties of the AMDAR Technical Coordinator to support the work of the AMDAR Panel. The cost for this position is shared between the WMO Secretariat and the AMDAR Panel Trust Fund.
4. The Panel's budget and associated income and expenditures will be reviewed and approved at the annual meetings of the Panel;
5. The WMO Secretary-General will provide appropriate support to the Panel and manage any trust funds established;
6. The working language of the Panel shall be English; and
7. The Panel's terms of reference, membership and operating procedures shall be reviewed and revised as necessary at the annual meetings. The Chairperson shall prepare recommendations to be distributed before the meeting.

VII. TERMS OF REFERENCE FOR THE WMO AMDAR TRUST FUND

1. The purpose of the AMDAR Fund is to support the AMDAR Programme and the activities of the Panel on Aircraft Meteorological Data Relay (AMDAR Panel).
2. The AMDAR Fund is a Trust Fund within the provisions of Articles 9.7, 9.8 and 9.9 of the WMO Financial Regulations (1991 edition).
3. The Fund shall be managed according to the budget adopted by the AMDAR Panel.
4. The budget will be constructed according to a format agreed by the Panel, in which all income and expenditures will be identified in general articles and specific chapters. The format of the budget may be revised by the Panel as necessary. The budget may take note of other monies and resources made available for support of the operational AMDAR Programme, but which are not included as part of the Fund. These might include, for example, meeting support provided by WMO VCP contributions, support of conditioned and agreed activities or support in kind. Only those monies placed in the Fund, however, shall be subject to these terms of reference.
5. The unit of account shall be the Swiss Franc. When commitments are made, the appropriate funds will be converted, as necessary, to the currency of commitment in at least the amount of the commitment.
6. The income of the Fund will include:
 - (i) Annual voluntary contributions;
 - (ii) Funds deposited for specific purposes, hereafter referred to as deposits;
 - (iii) Other contributions;
 - (iv) Interest on investments as may be made by the Secretary-General in accordance with the provisions of Financial Regulation 12.2; and
 - (v) Miscellaneous income.
7. The fund will be used as agreed by the AMDAR Panel:
 - (i) To finance technical and operational support services for AMDAR, including the proportional part of the cost associated with the position of the Scientific Officer (Aircraft and Remote Sensing Observations);
 - (ii) To assist in the establishment and operation of programmes of automated meteorological reporting from aircraft;
 - (iii) To meet appropriate administrative costs incurred by WMO in providing support to AMDAR Panel activities;
 - (iv) To meet other administrative costs including such items as meetings and consultants;

- (v) To purchase specified items of equipment and software; and
 - (vi) To support other activities required to meet the basic goal of the AMDAR Panel.
8. Authority for the disbursement of funds, in respect of contracts and agreements properly concluded, will be delegated to the Chairperson of the AMDAR Panel, together with the Secretary-General of WMO, or his representative. The Chairperson of the AMDAR Panel will authorize the Secretary-General of WMO, or his representative to disburse the funds by means of a written communication to the WMO Secretariat.
 9. Where required by their internal regulations, individual contributors to the AMDAR Fund may wish to negotiate additional conditions governing the application, conditions of deposit and disbursement of funds. Such additional conditions shall not inhibit the efficient and proper use of the Fund nor modify the intent of the Fund. They shall require the acceptance in writing by the Chairperson of the AMDAR Panel and the Secretary-General of WMO or his representative.
 10. The Fund shall be maintained on a continuous basis and amounts standing to the credit of the Fund at the end of any annual period shall remain in the Fund for use in the subsequent period.
 11. All funds credited to the AMDAR Fund, including those for VCP purposes, shall be subject to these terms of reference and to the terms of reference of the AMDAR Panel.
 12. Following cessation of AMDAR Panel activities the Trust Fund will be closed.
 13. The Trust Fund will be closed when all remaining funds are exhausted.

VIII. TERMS OF REFERENCE FOR THE WMO AMDAR PANEL SCIENCE AND TECHNICAL SUB-GROUP (STSG)

1. The Purpose of the Sub-Group

The purpose of the AMDAR Panel Science and Technical Sub-Group (STSG) shall be to coordinate and provide information on scientific and technical matters relating to AMDAR for Panel members and the wider meteorological and aeronautical communities. It shall coordinate and where appropriate, undertake activities and investigations into specific matters of scientific and technical value to improve data quality and extend the range of reported meteorological elements. The Sub-Group will also assist with expansion of the operational use of AMDAR data.

2. Membership

- 2.1. The members of the Sub-Group shall be elected by the AMDAR Panel.
- 2.2. The AMDAR Panel shall select a Coordinator with the responsibility for:
 - (a) Leading and coordinating the activities of the STSG; and
 - (b) Reporting back to the AMDAR Panel on the STSG's activities and achievements.
- 2.3. The Panel will review the membership on an annual basis taking into consideration the recommendations of the STSG.

3. Activities

The Science and Technical Sub-Group in collaboration with CBS ET-AIR and CIMO Theme Leader Aircraft Measurements shall:

- 3.1. Review and exchange information on scientific and technical matters of relevance to AMDAR.
- 3.2. Coordinate and facilitate studies or experiments related to AMDAR science and technical activities.
- 3.3. Advise the AMDAR Panel on scientific and technical aspects of the AMDAR programme.
- 3.4. Provide guidance and information to agencies undertaking activities in the development of AMDAR sensors and operational systems.
- 3.5. Provide documentation relevant to AMDAR science and technical activities for publication on the WMO AMDAR Website and other fora where appropriate.
- 3.6. Provide advice and input to the organization of AMDAR Panel Science and Technology workshops.
- 3.7. Provide advice, input and coordination to other AMDAR Panel Sub-Groups and Coordinators.
- 3.8. Provide progress reports to the AMDAR Panel Meetings and seek review and approval.
- 3.9. Coordinate STSG's activities with the WMO Secretariat Scientific Officer (Aircraft and Remote

Sensing Observations).

- 2.10 Provide support to the Panel regarding the AMDAR standardization related to the WMO Integrated Global Observing System (WIGOS).

IX. TERMS OF REFERENCE FOR THE WMO AMDAR PANEL TRAINING AND OUTREACH SUB-GROUP (TROSG)

1. The Purpose of the Sub-group

The AMDAR Panel is recognized as a body fostering active co-operation among members in the implementation and operation of AMDAR as a component of the WWW Global Observing System. The purposes of the Training and Outreach Sub-group (TroSG) shall be:

- (i) To support technical training and outreach activities of the AMDAR Panel. It shall coordinate and where appropriate, support training workshops organized by the Panel for the implementation and operation of AMDAR. It shall, where appropriate, support participation in outreach activities for the purpose of promoting AMDAR. Also, it shall seek new outreach opportunities for the benefit of the AMDAR program; and
- (ii) To support the CBS-OPAG-IOS activities to set up an implementation plan for training relevant to AMDAR including familiarization and awareness for the global meteorological community of the availability and use of AMDAR data, its benefits and limitations as a form of basic upper air data in operational meteorology.

2. Membership and Responsibilities

2.1 The members of the Sub-Group shall be elected by the AMDAR Panel.

2.2 The AMDAR Panel shall select a Coordinator with the responsibility for

- Leading and coordinating the activities of the TroSG; and
- Reporting back to the AMDAR Panel on the activities and achievements of the TroSG.

2.3 The Panel will review the membership of the Sub-Group on an annual basis taking into consideration the recommendations of the TroSG.

2.4 Meetings of the Sub-Group will be held in conjunction with AMDAR Panel meetings, otherwise the group works by correspondence.

3 Activities

The Training and Outreach Sub-Group shall:

3.1 Identify existing training material and programmes, and assess its suitability for technical training activities and for posting or cross-referencing on the WMO AMDAR website. Identify, support and participate in appropriate outreach activities and assess their suitability for posting on the WMO AMDAR website.

3.2 Support technical training workshops and outreach activities organized by the Panel.

3.3 Support the CBS-OPAG-IOS activities to set up a training implementation plan.

3.4 Liaise with and support WMO Members and other appropriate agencies by providing expert information and advice relevant to national and regional training activities.

- 3.5 Co-ordinate TrOSG's activities with the Science and Technical Sub-Group.
- 3.6 Coordinate TrOSG's activities with the WMO Secretariat Scientific Officer (Aircraft and Remote Sensing Observations).
- 3.7 Provide support to the Panel regarding the capacity building and training component of the WMO Integrated Global Observing System (WIGOS).
- 3.8 Provide progress reports to the AMDAR Panel and seek review and approval.

X. TERMS OF REFERENCE FOR THE WMO AMDAR PANEL COORDINATOR FOR THE IMPROVEMENT IN DATA EXCHANGE AND QUALITY CONTROL

Recognizing a fundamental principle of WMO to broaden and enhance the free and unrestricted international exchange of data and noting the increasing availability of aircraft platforms with suitable sensors, avionics and communication systems, The AMDAR Panel Coordinator shall:

1. Promote the exchange and dissemination of all appropriate automated meteorological reports from aircraft through the Global Telecommunication System (GTS)/WMO Information System (WIS) and other systems as appropriate;
2. Promote the dissemination, exchange and use of information on AMDAR data availability and quality among Members and data providers with a view to initiating appropriate corrective action;

Activities

The Coordinator for the Improvement in Data Exchange and Quality Control shall:

- Assess present data exchange among Members and end-users;
- Review requirements for exchange; and
- Develop recommendations for exchange.
- Assess present quality control activity by Members and end-users;
- Review requirements for quality control; and
- Develop recommendations for quality control in accordance with WIGOS Standardization activities

XI. DUTIES AND RESPONSIBILITIES OF THE WMO SCIENTIFIC OFFICER RESPONSIBLE TO SUPPORT WMO AMDAR PANEL ACTIVITIES

Under the overall guidance of the Chief of the WMO Observing Systems Division, the incumbent will perform the following duties:

- a) Act as Secretariat lead for the aeronautical and in-situ remote sensing observations;
- b) Coordinate the planning and implementation activities relevant to aircraft-based and in-situ remote sensing observational systems within the WMO Integrated Global Observing System (WIGOS), including the World Weather Watch (WWW), AMDAR and Instruments and Methods of Observation (IMOP) Programmes, on matters related to the standardization of the above observations, observing systems design, optimization and evolution, and instrument and systems evaluations. Ensure liaison with other relevant programmes, technical commissions, international organizations, aircraft and instrument manufacturers as well as aviation communication providers;
- c) Coordinate and support the work of the relevant CBS, CIMO and AMDAR Panel subordinate bodies (including pre-session and in-session documents and final reports), as well as organize and support expert meetings, technical conferences and training workshops. Assist and provide specialist support to the chairpersons of the respective CBS, CIMO and AMDAR Panel subsidiary bodies in conducting their duties, such as in coordinating and monitoring programmatic and development activities, in preparing technical and scientific analysis, budget proposals and in monitoring expenditures;
- d) Provide scientific/technical advice to technical cooperation projects and other support activities related to AMDAR and in-situ remote sensing observations as a part of CBS and CIMO responsibilities;
- e) Coordinate quality monitoring of data generated by the surface-based Global Observing System (GOS) and prepare scientific reports, studies and analyses;
- f) Promote observational data and product utilization by coordinating and supporting the generation of the observational data products, especially from the remote sensing systems, as well as by supporting the training and education activities relevant to the aircraft and remote sensing observations;
- g) Inform regularly the Members and user community of conducted activities and plans. Maintain up to date the respective components of the WMO Website;
- h) Carry out other relevant duties as required.

XII **AMDAR Workshop Guidelines and Procedures**

1. Objective of the AMDAR workshops is to promote development and implementation of national/regional AMDAR programs by supplying technical and programmatic support. The intention of the AMDAR Workshop is to identify roles and responsibilities essential in the development and implementation of a national and/or regional AMDAR Program.
 2. It is not aimed at training of weather/aviation forecasters on the use of AMDAR data, training on coding/decoding of AMDAR data or training of other operational personnel of NMHSs. Such training workshops normally would follow once the national/regional AMDAR programme is about to be implemented and shall be negotiated by Members with respective WMO Secretariat Departments, especially through the WMO Education and Training Programme.
 3. Interested WMO Members or appropriate international organization related to air transport should notify officially (in writing) their desire for a workshop through AMDAR Panel chairperson, chairperson of the CBS Expert Team on Aircraft-based Observations or directly to WMO Secretariat.
 4. Members' should demonstrate their intent and potential capability to develop a national AMDAR program.
 - This intent should come from all national stakeholders, i.e., national meteorological services, relevant airline operators and/or civil aviation authorities;
 - Additionally, any identified candidate airline operator must be capable of supporting an AMDAR infrastructure, e.g., avionics, communications. This will be done through completing the AMDAR compliance questionnaire, to be provided by WMO Secretariat.
 5. Priority will be given to organizing one workshop in a sub-region in the case where multiple written notifications where received in that area.
 6. Once the workshop is approved by AMDAR Panel and funding is available, the Permanent Representative of the requesting WMO Member should send an invitation to WMO offering their willingness to host the AMDAR workshop.
 7. Workshops of about 2½ days normally would be organized conjointly with the annual AMDAR Panel meetings.
 8. Host countries will be responsible for all necessary local arrangements, such as meeting room facilities, audio visual equipment (computer, projector, etc.), internet connection, hotel booking, and inviting local and/or international participants.
 9. AMDAR Panel will be responsible for identification of workshop lectures, conducting workshop and providing support to lectures.
 10. AMDAR Panel will provide further assistance to a Member to develop and implement a national AMDAR programme.
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