



WORKING ARRANGEMENT

BETWEEN

**the International Air Transport Association
(IATA)**

AND

**the World Meteorological Organization
(WMO)**

on the Operation of the AMDAR Programme

July 2017

The World Meteorological Organization, hereinafter referred to as 'WMO' is an intergovernmental organization having its seat at Geneva, Switzerland. WMO is a specialized agency of the United Nations (UN) and is the UN system's authoritative voice on the state and behavior of the Earth's atmosphere, its interaction with the oceans and land as well as the climate it produces. The WMO's mandate is to provide world leadership in expertise and international cooperation in weather, climate, hydrology and water resources and related environmental issues and thereby contribute to the safety and well-being of people throughout the world and to the economic benefit of all nations.

The International Air Transport Association, hereinafter referred to as 'IATA' is an international, non-governmental organization having its seat at Montréal, Canada. It is the prime vehicle for inter-airline cooperation in promoting safe, reliable, secure and economical air services – for the benefit of the world's consumers.

IATA and WMO agree to discuss the establishment of a working arrangement regarding cooperation relative to matters of the automated measurement and transmission of meteorological (MET) data from an aircraft platform, currently operational as the WMO Aircraft Meteorological Data Relay (AMDAR) programme and recognised as a key component of the WMO Global Observing System.

EXECUTIVE SUMMARY

The WMO AMDAR programme is based on the automated measurement and transmission of MET data from an aircraft platform. AMDAR data collected by the National Meteorological and Hydrological Services (NMHSs) from the airlines through the AMDAR Programme is of high value to the global meteorological community for its ability to increase forecasting accuracy, for all users of weather forecasts, including aviation.

While the programme has been successfully functioning in Europe, North America, Asia and Oceania, other areas such as Africa, Southern and Central America, the areas of Eastern Europe, Western Asia, the Southwest Pacific and the Middle East remain data-sparse often due to limited funding available in these regions for programme expansion.

Acknowledging the benefits of the AMDAR data to the meteorological community and, consequently, the aviation industry through improved meteorological forecast accuracy¹, IATA and WMO would jointly work on expanding the programme to new geographical areas whilst introducing new measures to give participating airlines better control over, and access to, the data they provide to the programme. This Working Arrangement envisages cooperation intended to achieve these objectives, and requests WMO Members and IATA member airlines to express their interest in this effort.

This Working Arrangement merely reflects the potential collaboration that the Parties are currently contemplating and discussing.

The potential collaboration would be in compliance with WMO Resolution 40 (Cg-XII) - WMO policy and practice for the exchange of meteorological and related and products including guidelines on relationships in commercial meteorological activities².

¹ See WMO WIGOS Technical Report 2014-1, The Benefits of AMDAR Data to Meteorology and Aviation: https://library.wmo.int/opac/index.php?lvl=notice_display&id=16116#.WQLgmGmGNtR

² WMO Resolution 40 (Cg-XII) - Full text of the resolution is available on the WMO website at: http://www.wmo.ch/pages/prog/www/ois/Operational_Information/Publications/Congress/Cg_XII/res_40_en.html

The potential partnership would respect the UN Global Compact Ten Principles.

BACKGROUND

The AMDAR observing system was established by WMO in collaboration with participating airline partners, commencing initial operations in the late 1980s. AMDAR facilitates the automated measurement and transmission of meteorological data (observations) from an aircraft platform. The system predominantly uses existing aircraft onboard sensors (the preferred and complete AMDAR configuration requires the addition of a water vapour measurement sensor to the aircraft platform) and is enabled by a specially-developed AMDAR avionics software application that ensures the data produced meets meteorological requirements and specifications for data reporting and quality. The resulting AMDAR data is currently collected by the airlines within the WMO AMDAR Programme and then forwarded to the partner NMHSs, which is then responsible for making the data available on the WMO Global Telecommunications System (GTS) under the conditions of WMO Resolution 40 (Cg-XII). The data is of high value to the global meteorological community because, where implemented, it has good spatial and temporal resolution, has a significant and demonstrable positive impact on error reduction and forecast improvement to numerical weather prediction (NWP) and is useful in many other applications that require upper-air meteorological observations. The programme provides high-quality upper-air observations that complement traditional radiosonde observations, which are too sparse in many regions. In addition to its use in NWP in support of operational weather forecasts, AMDAR data is extensively used within most other meteorological monitoring, forecasting and verification applications used by NMHSs, thus contributing to the general public good through socioeconomic development and civil protection. The demonstrated significant positive impact of AMDAR data on NWP, other forecasting applications and aeronautical meteorological products, means that the observing system operation also strongly benefits all airlines (IATA members and non-members) and the wider air transport industry. AMDAR data, mainly due but not limited to their benefit of significant error reduction in NWP, is a critical component of the operation of two World Area Forecast Centres (WAFCs) within ICAO's World Area Forecast System (WAFS), supplying airlines and other aeronautical users with global forecast data of upper-air wind, temperature and other critical parameters used in flight planning and operations.

With 40 airlines presently (2017) contributing around 700,000 aircraft-based observations per day to the AMDAR Programme, it is believed there is a potential to at least double the number of carriers participating in the programme, thus significantly improving the coverage and impact of AMDAR. It is acknowledged that such an outcome would be greatly assisted, and potentially made more efficient, if an improved funding mechanism to support the development could be put in place.

IATA-WMO COLLABORATION

Acknowledging the benefits of the AMDAR data firstly for the global meteorological community and secondly for the aviation industry, and recognizing the significant resource investment of WMO Member NMHSs in the existing AMDAR observing system and its operation, IATA and WMO would jointly work on expanding the programme to new geographical areas (as described above) as well as improving some aspects of the programme so as to better protect the respective intellectual property of both Parties and the control rights of the data by the participating airlines.

By working in cooperation, IATA and WMO aim to explore the following matters that are expected to bring additional benefits to airlines, the aviation industry, and WMO Member NMHSs:

- (a) Improve and expand AMDAR data coverage and availability and, as a result, improve

weather forecast accuracy and related services and products delivered by WMO and its Members, by:

- (i) Encouraging and facilitating participation in the AMDAR Programme, by all airlines, with a focus on those operating in current data-sparse areas;
 - (ii) Encouraging and coordinating the enhancement of the AMDAR Programme through wider implementation of water vapour measurement;
 - (iii) Working with the aviation industry, including equipment manufacturers, to encourage greater efficiencies in the development and deployment of AMDAR avionics applications and related infrastructure and service costs;
 - (iv) Establishing additional funding mechanisms and cost and resource-sharing initiatives, thus enabling the implementation of new national and regional AMDAR Programmes;
 - (v) Negotiating directly with aviation data service providers to derive efficiencies and more equitable arrangements for AMDAR communications costs; and
 - (vi) Collaborating with HMEI member companies active in the WMO Aircraft Based Observations Programme to maximize effectiveness through utilization of existing commercial infrastructures.
- (b) Ensure improved and secured access to AMDAR data for WMO Members and data users, enabling adherence to agreements with commercial airline partners that license the provision and use of their data.

AMDAR PROGRAMME EXPANSION FUND

In order to address one of the key challenges in increasing airline participation, e.g. insufficient funding on behalf of NMHSs in data-sparse areas, IATA and WMO would evaluate the feasibility of establishing an AMDAR Programme Expansion Fund (APEF). Several sources of funding would be considered for contributing to the APEF, which would be used for the development of new AMDAR programmes or the expansion and enhancement of existing programmes.

GENERAL PROVISIONS

1.
 - (i) Where appropriate and necessary, WMO would be invited to be represented as an observer in meetings of IATA groups or their subsidiary bodies or conferences convened by IATA. Such participation would be in accordance with the applicable IATA Procedures and Administrative Matters;
 - (ii) Where appropriate and necessary, IATA would be invited to be represented as an observer in meetings of WMO subsidiary bodies or conferences convened by WMO. Such participation would be in accordance with the WMO Convention and General Regulations.
2. Each Party (IATA and WMO) shall be responsible for their own costs or funding sources to perform their respective activities under this Working Arrangement. In the event that financial support from one Party to the other is required, a mutually agreed decision shall be made in accordance with the applicable contracting rules and regulations.
3. Nothing contained in this Working Arrangement or future collaboration arrangement shall be deemed a waiver of any of the privileges or immunities enjoyed by WMO.
4. Any dispute between the Parties concerning the interpretation or application of this Working Arrangement which cannot be settled amicably would, at the request of either Party, be settled by arbitration in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL).

5. The Parties shall meet at least annually to take stock of progress and identify possible new areas of cooperation.
6. This Working Arrangement may be amended by the Parties at any time. Any such amendment shall be agreed by mutual consent and shall be effected by an exchange of letters.
7. This Working Arrangement may be supplemented by additional arrangements between the Parties. These additional arrangements shall be in writing and fully respect the provisions of this Working Arrangement.
8. Each Party shall appoint a Representative who shall coordinate relations with the other Party, including between technical experts of the Parties, and who shall keep the Head of his or her organization informed. Any change of Representative shall be communicated in writing to the other Party.
9. This Working Arrangement shall enter into force the date after both Parties have signed the Working Arrangement and shall remain in force for a period of five (5) years. It shall thereafter be renewed automatically, each time for a new period of five (5) years, unless a written notice of termination is given by one of the Parties to the other at least six (6) months prior to the renewal date, or the Parties have agreed on its termination or on its renewal by another period.
10. Notwithstanding the above Section 9, this Working Arrangement may be terminated by either Party at any time by giving at least six (6) months prior written notice to the other Party.
11. It is understood that by entering into this Working Arrangement, neither Party is committing to entering into a collaboration. This Working Arrangement merely reflects the potential collaboration that the Parties are currently contemplating and discussing.

Done in duplicate in the English language.

Signed on behalf of the
International Air Transport Association
(IATA)

Signed on behalf of the
World Meteorological Organization
(WMO)

Mr Alexandre de Juniac
Director General and CEO

Prof. Petteri Taalas
Secretary-General

Done in Geneva the _____

Done in Geneva the _____