

WORLD METEOROLOGICAL ORGANIZATION

**COMMISSION FOR INSTRUMENT AND
METHODS OF OBSERVATION
OPAG-UPPER AIR**

**CIMO EXPERT TEAM ON
UPGRADING THE GLOBAL RADIOSONDE NETWORK
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INTEGRATING CIMO INTO AMDAR

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Summary and purpose of document

This document provides initial suggestion on integrating CIMO into AMDAR.

Action proposed

The meeting is invited to take into account information presented in this document when discussing issues related to a discussion on how to best integrate CIMO into AMDAR.

INTEGRATING CIMO INTO AMDAR

1. Introduction

1.1 Given that the AMDAR observing system has become a recognized component of the Global Observing System, 2-way interaction is now needed between the AMDAR community and the Commission for Instruments and Methods of Observation (CIMO). AMDAR requires guidance from CIMO and can provide important information to CIMO on the observing system for review and distribution to WMO Members. This is essential if AMDAR is to become fully integrated into the GOS. Although AMDAR is often seen initially as of value only to support aviation meteorological services, it has proven to be useful for many different applications and services and therefore is now a valuable source of basic upper air data.

2. CIMO to AMDAR

2.1 AMDAR requires guidance from CIMO in the form of observation performance standards where they exist in order for the data to be operationally useful. Operational accuracy requirements for upper air data defined by CIMO are used as the accepted standards for AMDAR temperature and wind in the troposphere. AMDAR looks to CIMO to provide guidance on other forms of observation including turbulence and ice accretion that although initially specific to aviation operations, can provide valuable meteorological information for a variety of meteorological applications and services.

2.2 AMDAR also looks to CIMO's specialist expertise in instrumentation technology and observations for information and assistance in developing new sensors for use on aircraft such as humidity/water vapor sensors.

3. AMDAR to CIMO

3.1 AMDAR can provide CIMO with information on the developing observing system as it begins to mature. CIMO can use this to provide a valuable function by helping to collate and distribute information in regard to the development of AMDAR technology, instruments, operations and the special observing capabilities of this in-situ upper air observing system.

3.2 The cost effectiveness and reliability of AMDAR is now encouraging NMSs to integrate AMDAR into national and regional programmes as part of a composite upper air observing system. It also has its own constraints that must be taken into consideration by NMSs as they begin to decide whether AMDAR can be used just to augment existing conventional upper air observing systems or whether it has reached sufficient maturity and reliability that it can begin to replace parts of existing radiosonde networks. CIMO can assist this process by providing up-to-date information and guidance on the respective advantages and disadvantages of AMDAR versus those of conventional observing systems.

3.3 AMDAR technology is now able to provide upper air observations in remote data sparse regions of the world but its ability to target data needs to be further developed and promoted. AMDAR will provide information to CIMO on the technology and procedures behind this important function.

3.4 Regional AMDAR programs have shown the clear advantages of collaborative development and operations through the sharing of expertise and resources between neighbouring countries. AMDAR will provide information and expertise to CIMO so that this concept can be better disseminated to Members.

4. Conclusion

4.1 AMDAR and CIMO can mutually benefit through the frequent exchange and update of information and expertise. CIMO in turn can assist WMO Members by publishing relevant information and providing advice on AMDAR technology, sensors and methods of observation.