



INTERNATIONAL CIVIL AVIATION ORGANIZATION
Fourth Meeting of AFI Region Directors General of Civil Aviation (DGCA/4)
(Matsapha, Manzini, Swaziland, 8 to 9 November 2010)

Agenda Item 4.1 Challenges in addressing long-standing air navigation deficiencies
(Outcomes of APIRG/17 Meeting)

Challenges in the implementation of a Quality Management System for Aeronautical
Meteorological Services in the AFI Region

(Presented by the Secretariat)

Summary

This paper presents efforts being made by ICAO and WMO to assist States to implement the Quality Management System (QMS) for aeronautical meteorological services and the challenges being faced by States to roll-out a robust and effective QMS by November 2012 in the AFI Region in compliance with Amendment 75 to Annex 3 to the Convention on International Civil Aviation. Suggestions are made to promote a sustainable aeronautical meteorological service devoid of deficiencies in the implementation of QMS.

References

- Annex 3 to the Convention on International Civil Aviation - *Meteorological Service to International Air Navigation*
- Annex 15 to the Convention on International Civil Aviation - *Aeronautical Information Services*
- Doc 9930 - *Report of the Special Africa-Indian Ocean (AFI) Regional Air Navigation Meeting*
- Doc 9873 - *Manual on the Quality Management System for the Provision of Meteorological Services to International Air Navigation*
- WMO Doc No. 49 - *Technical Regulations Vol II Meteorological Service for International Air Navigation*

1. Introduction

1.1 Quality assurance related Standards and Recommended Practices in ICAO were first introduced in Annex 15 – *Aeronautical Information Services*, Chapter 3, 3.2.1, which became applicable on 6 November 1997. The Standard provides that “Each Contracting State shall take all necessary measures to introduce a properly organized quality system containing procedures processes and resources necessary to implement quality management at each function stage ...” in the aeronautical information service (AIS) field. In the field of meteorological service for international air navigation, quality management has also become increasingly important. The setting up of a properly organized quality system is to ensure a continued high quality of data and products provided by the aeronautical meteorological services.

1.2 Amendment 72 to International Civil Aviation Organization (ICAO) Annex 3 – *Meteorological Service for International Air Navigation* and World Meteorological Organization (WMO) No. 49, Technical Regulations, C.3.1, *Volume II Meteorological Service for International Air Navigation* which are identical except for a few minor editorial differences became applicable on 1 November 2001. It introduced Recommended Practices concerning quality control and management

of meteorological information supplied to users and in the training of meteorological personnel. Aligned as far as possible with “quality system” provisions in Annex 15, these provisions recommend conformity with the International Organization for Standardization (ISO) 9000 series of quality assurance standards. While the ISO 9000 series of quality assurance standards provides a basic framework for the development of a quality assurance programme, the details of such a programme have to be formulated by each Contracting State

1.3 Definitions for quality assurance, quality control, quality management and quality system have been introduced in ICAO Annex 3/WMO Technical Regulations (C.3.1) since Amendment 72. The Recommended Practices related to quality assurance were given in Annex 3/WMO Technical Regulations (C.3.1), Chapter 2, 2.2.2 to 2.2.6. In brief, the Recommended Practices set out the following requirements:

- a) the designated meteorological authority should establish and implement a properly organized quality system, comprising procedures, processes and resources to provide for the quality management of the meteorological information supplied to the users (Annex 3/WMO Technical Regulations (C.3.1), Chapter 2, 2.2.2);
- b) the quality system should be compliant with ISO 9000 (ICAO Annex 3/WMO Technical Regulations (C.3.1), Chapter 2, 2.2.3);
- c) the quality system provides the users with assurance that the meteorological information supplied complies with the stated requirements (ICAO Annex 3/WMO Technical Regulations (C.3.1), Chapter 2, 2.2.4);
- d) the quality system includes verification/validation procedures in regard to the operational meteorological (OPMET) information exchange, as well as resources for monitoring the adherence to the prescribed transmission schedules (ICAO Annex 3/WMO Technical Regulations (C.3.1), Chapter 2, 2.2.5); and
- e) audits should be conducted in order to demonstrate compliance of the quality system applied (ICAO Annex 3/WMO Technical Regulations (C.3.1), Chapter 2, 2.2.6).

1.4 It should be noted that all the stated requirements (1.2.1 c) refers) have been laid down in ICAO Annex 3/WMO Technical Regulations (C.3.1), the ICAO regional air navigation plans, and the WMO regulatory documents. In particular, these include product requirements concerning the geographical and spatial coverage, format and content, time and frequency of issuance and period of validity of meteorological information to be supplied to aeronautical users and requirements concerning the exchange of OPMET information. In the case of qualifications and training of meteorological personnel in aeronautical meteorology, requirements are given in WMO Publication No. 49, *Technical Regulations*, Volume I — General Meteorological Standards and Recommended Practices and also in WMO Publications No. 258 – *Guidelines for the education and training of personnel in meteorology and operational hydrology* – Volume I: Meteorology.

2. Discussion

2.1 The Special Africa-Indian Ocean (AFI) Regional Air Navigation(RAN) Meeting, in Durban, South Africa, 24-29 November 2008, while deliberating on issues of safety and efficiency in the air navigation system, concluded under Recommendation 6/16, *that ICAO identify potential sources of technical and financial support for States for the implementation of quality management systems (QMS) in the field of meteorology.* Further under Recommendation 6/15, the meeting identified the type of training that would be required for States in the AFI region which included basic

training and training of trainers in quality management systems. The Regional Offices of Dakar and Nairobi, in coordination with WMO conducted two workshops (English, Nairobi 2009 and French, Morocco, 2009) in basic quality management systems for aeronautical meteorological services. Two other workshops for SADC States and ASECNA Member States with the participation of ICAO and WMO were conducted in Pretoria, South Africa, 22-25 March 2010, and Dakar, Senegal, 28 June – 1 July 2010 respectively. A total of over 88 individuals from 40 States have thus been provided with basic training.

2.2 The ICAO Council at its 189th Session whilst considering Amendment 75 to Annex 3 with applicability date of November 2010 which included raising the Recommended Practice on quality management system for aeronautical meteorological system to a standard, recognized that many States in the developing world particularly in the AFI Region were not ready to implement QMS, and, decided to set the applicability date of November 2012 for QMS.

2.3 The Ministers responsible for Meteorology in Africa at their meeting in April, 2010 issued the Nairobi Declaration and committed amongst others to **“Take all necessary steps to ensure that African National Meteorological Services meet the ICAO requirements regarding Quality Management Systems (QMS) by November 2012.”**

2.4 ICAO in an effort to assist the States to initiate implementation of QMS to meet the set deadline of November 2012 will be conducting train-trainers courses in QMS at Nairobi, Kenya (29 November-9 December, 2010) in English and at Dakar, Senegal (13-23 December, 2010) in French. These are critical courses for Quality Managers who will be responsible for spearheading the implementation. The States are therefore urged to ensure at least one Quality Manager from their States participate at one of these courses.

2.5 Notwithstanding the importance of training Quality Managers to train other members of staff, it is critical for States provider organizations for aeronautical meteorological services to allocate sufficient financial resources to implement QMS. It is therefore very important that the State Civil Aviation Authorities which provides safety oversight actively assist the aeronautical meteorological service provider in harnessing the necessary resources to implement QMS.

2.6 It may also be noted that in many States costs for aeronautical meteorological facilities and services are invariably not included in the air navigation charges which precludes any form of cost recovery in accordance with Article 15 of the Convention on International civil aviation. This is a further constraint for the sustainability of provision of meteorological services to international air navigation.

3. Action Required

3.1 The meeting is invited to:

- a) Note the challenges that the Met Service Providers will face in the implementation of a quality management system for aeronautical meteorological services
- b) The Directors / Directors-General of Civil Aviation Authorities / Department as safety oversight authorities to render administrative and institutional support to enable the meteorological service providers to get the required financial resources to :

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- i) Send Quality Managers to the scheduled train-trainers course for Quality Management System.
 - ii) Implement QMS to meet the applicability date of November 2012
- c) And to include aeronautical meteorological services cost in the air navigation service charge where this has not already been done.

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