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Report on the WORKSHOP ON QUALITY MANAGEMENT KUALA LUMPUR, MALAYSIA 26-28 OCTOBER 2004

(Submitted by Dr. R. Canterford, Acting President of CIMO)

Summary and purpose of document

This document provides a brief on the Workshop on Quality Management called by the Chair of the WMO Inter-Commission Task Team on the Quality Management Framework, Dr Chow Kok Kee, Permanent Representative of Malaysia.

Action proposed

None

I. Background

1. This workshop was called to develop the WMO Quality Management Framework aspects that were requested by the 56th Session of the WMO Executive Council in June 2004. In particular, the workshop addressed the following recommendation of the 56th EC:

> *…that WMO should work towards a Quality Management Framework (QMF) for NHMSs that would eventually include and develop the following distinct though related elements, which could be addressed, possibly on a phased basis:*
>
> a. *WMO technical standards;*
> b. *Quality management system(s) including quality control; and*
> c. *Certification procedure(s).*

2. Dr Canterford presented the QM system advocated by CIMO through its current CIMO Guide (6th ed). This Guide details all aspects that NHMSs should follow in any QMS and, in general conforms to ISO 9000 Standards. In addition he presented the work of Dr Carolin Richter of the German Weather Service that updated and confirmed all aspects of the CIMO Guide in providing suitable QMS guidance. The workshop agreed that the *CIMO Guide Part III (Quality Assurance and Management of Observing Systems*) would be suitable for inclusion in a WMO QM Framework.

3. It should be noted that the differentiation between a QM Framework and QM System was discussed at the meeting and the following established:

4. A *quality management framework* can be defined as the overall management approach that also provides guidance to specific documentation such as Technical Regulations, training requirements and guidance of suitable quality management systems. A *quality management system* is an integral component of the QMF and defines the specific procedures, processes and resources required to meet a specified standard. Such a system is the ISO 9000 Standard.

5. Representatives at the workshop advised during their presentations that overall they had gained positive outcomes for their NHMS's with a Quality Management System (QMS) based on ISO 9000. However, the resource costs varied enormously ($US15k to over $US1m). They also noted that the quality of the consultants was a key factor in the overall cost of implementation.

6. Some NHMS's had only implemented QMS for components of their service that were most marketable, such as management and corporate functions. There was interesting discussion on what were the drivers for undertaking a QMS, for example government policy, competitive edge, client requests or overall visibility. In no instance did it appear that any of the QMSs were adopted at the direct request of a customer, or worse still, in the pursuit of enhanced quality outcomes.

7. It was pointed out that the implementation of QMS could be pursued for separate sectors, such as aeronautical meteorological, marine meteorological and climatological services, or for the Service as a whole. Singapore for instance had not pursued QMS for its Public Weather Services because of the difficulty in identifying the client base

8. The WMO Secretariat has been pursuing the requests of EC regarding QMF and has been consulting with the ISO Secretariat with a view to obtaining practical advice, and training to ensure that the staff involved were competent, specifically with respect to ISO 9001:2000. As part of their fulfilling the EC requirements, the WWW Secretariat established this QM Workshop in association with Dr Chow to facilitate a common starting point and knowledge base for WMO. As explained at the meeting the results of this Workshop will be forwarded to the next President's of Technical Commissions for endorsement and/or possible expansion prior EC 57.

9. A valuable range of QM documentation was provided to the meeting by several members of WMO, including Germany, New Zealand, Hong Kong, Singapore and Malaysia. Each country provided a presentation on their QMS and various aspects were discussed.

10. Of particular note was the presentation of a draft document titled *Guidelines on Quality Management Procedures and Practices for Public Weather Services* by Joe Shaykewich (PWS Expert). This document provided comprehensive discussion and guidance on possible QMS for public weather services and included commentary on a number of QM approaches including, ISO 9000, Six Sigma and the Balanced Scorecard. The meeting was advised this document would be published at the CBS Meeting held in early 2005 (others in the MG to may report on CBS). The discussion of the Workshop focused on the applicability of the document for inclusion into the proposed WMO QM Framework.

II. WMO Quality Management Framework

1. The meeting also discussed the pros and cons of WMO developing its own QM System similar to an ISO 9000 approach to sit within the WMO QM Framework.

2. However, the meeting felt that WMO should not pursue its own Quality Management System and Certification role because:

(i) The need for a significant resource commitment – financial and personnel; and

(ii) It was not considered to be a WMO function particularly as there is already an international organization that has this role as their core business – International Standards Organization (ISO). It was noted that ISO also has a relationship with UN bodies

III. WMO technical standards

1. The meeting confirmed that the development of a QM Framework was the appropriate way to proceed. It was felt that the Framework document would have direct links to all up-to-date Technical Regulations and Guides of WMO.

2. In addressing the need to harmonise the Technical Regulations in terms of quality management across the board it was recommended that this could be achieved through a focused ad hoc group of experts in a particular process, such as observations. Recognising that observations are a common denominator for all Commissions and WMO Programmes, the ad hoc group would need membership from these sectors. The primary purpose of this is to avoid duplication of development of quality control processes within each of these sectors.

IV. Quality management system(s) including quality control

1. Dr Canterford emphasised the need for the opportunity to enable developing countries access to implementing a QMS. His concerns were based on the belief that certification through an ISO 9000 could impact on the skills and knowledge of those NHMSs and their very viability. He also noted that the International Standards Organization have a specific Developing Country Programme (DEVCO) to which WMO could provide links. The Secretariat advised they were not aware of the DEVCO Programme.

2. The new edition of the *Guide to Practices of Meteorological Offices Serving Aviation* (WMO-No. 732) developed by CAeM was tabled and the new section on QM highlighted. It was also noted that ICAO has its own QM initiative (in collaboration with WMO) but at this stage the status if this initiative is not known. The meeting was advised that a revision of the *Guide to Agricultural*

Practices (WMO-No.134) was being developed by CAgM, and would have a chapter on QM.

3. It was considered by the meeting that these chapters on QM guideline were suitable for inclusion in the WMO QM Framework documentation.

V. Certification

1. This is defined as an external audit process for quality assurance to a specific ISO standard.

2. As discussed above, the workshop came to the conclusion that WMO should not participate in a certification process. It was also felt that the costs of a "centralised" certification arm of WMO would be too high for Members, and that if it was to be undertaken, local consultants would be more appropriate. In other words there were no financial benefits in such a proposal. However, the concept of including a mature WMO QMF for the delivery of weather products and services within the ISO standards was considered to be feasible and an appropriate long term objective.

VI. Documentation for QMF and links to WMO Technical Regulations

1. The workshop was able to gather a great deal of valuable documentation on various QM systems, including details of the QM Manuals and case studies of some countries. This information will be published on a CD as requested by EC in accordance with the wishes of several countries for immediate guidance on such systems.

VII. Recommendation

1. Apart from the requirements for the WMO QMF that are discussed above, NMHS should seriously consider a phased approach to adoption of more formal QMS within their functions wherever possible, particularly where they are able to adopt ISO 9000 standards. This could be done in parallel with the EC QMF requirements for these particular sectors to be addressed in the first instance in any QMS developed.

VIII. Possible Future Direction

1. Furthermore, it presents the opportunity for NMHSs to meet the competitive drive by other NHMSs, who may have already implemented ISO 9000. In particular, rebalancing of services within NMHSs and the external drivers for possible regulatory changes would significantly benefit from a formal WMO QMS Framework implementation or ISO QMS (with or without certification).