

WORLD METEOROLOGICAL ORGANIZATION

CBS/OPAG-IOS (ET-AWS-6)/Doc. 4

COMMISSION FOR BASIC SYSTEMS
OPEN PROGRAMME AREA GROUP ON INTEGRATED
OBSERVING SYSTEMS

(02.IV.2010)

**EXPERT TEAM ON REQUIREMENTS AND
IMPLEMENTATION AWS PLATFORMS (ET-AWS)**
Sixth Session

ITEM: 4

Original: ENGLISH ONLY

GENEVA, SWITZERLAND, 20 APRIL – 23 APRIL 2010

AWS FUNCTIONAL SPECIFICATIONS

Submitted by Rabia Merrouchi (Morocco)

Summary and Purpose of Document

The document concerns AWS Functional Specifications as approved by ET-AWS-5.

ACTIONS PROPOSED

The meeting is invited to consider and update AWS Functional Specifications if needed, and is invited to validate the IPETDRC-I BUFR/CREX descriptors proposed in response to recommendation 6.1/2 (CBS-XIV)

References:

1. Abridged Final Report, CBS-Fourteenth Session. (2009), Dubrovnik, Republic of Croatia, April 2009 (WMO-No. 1040),
2. Final report, CBS/OPAG-IOS ET-AWS-5, Geneva, May 2008,
3. Final report, CBS/OPAG-ISS- First session of the Inter-Programme Expert Team on Data Representation and Codes IPETDRC-1, Geneva, September 2009,
4. Final report, CBS/OPAG-IOS ET-EGOS-5, Geneva, December 2009,
5. Report of the Seventh Meeting of the ICAO-Study Group on Aerodrome Meteorological Observation and Forecast (AMOSFG- Montréal, September 2008) and in particular the Document of the Item 5.

Background

The 14th Session of the Commission for Basic Systems (Dubrovnik, Croatia, 25 March to 2 April 2009) reviewed the Functional Specifications for Automatic Weather Stations and adopted draft Recommendation 6.1/2 which recommend to approve the revised FS for Automatic Weather Stations and request that the Secretary-General make arrangements for the publication of the updated Guide to the Global Observing System (WMO-No. 488). The Commission requested also the OPAG-ISS to develop BUFR descriptors for all the variables listed in the "Functional Specifications for Automatic Weather Stations" and to develop metadata compliant with the WMO metadata profile.

During its fifth session, the Expert Team ET-AWS discussed additional set of variables proposed by representatives of other WMO Technical Commissions (TCs). Due to the lack of clear definition and the absence of a well defined range and reporting resolution, the Expert Team have postponed the consideration of some variables including "freshwater salinity", "freshwater conductivity", "(net) heat flux" and "Slant Path Visual Range (SVR)" in order to conduct further investigation on the needed requirements.

Furthermore, the Expert Team requested OPAG-ISS to develop BUFR descriptors of all variables considered.

1. Investigations on proposed parameters

1.1 Hydrologic parameters

An objective definition of freshwater is based on a definition of the associated salinity interval. The ranges considered for salinity to distinguish freshwater are different but all converge towards low salinities below 3 PSU.

It's also noted the absence of a clear definition of a specific range of fresh water conductivity. This conductivity is lower (some sources express an upper limit for freshwater of about 0,2 S m⁻¹) but remains variable depending on water quality where it is measured.

Furthermore, some measurement ranges and resolutions reported by manufacturers for the salinity and conductivity of fresh water are larger and cover areas beyond those theoretically set for freshwater.

Recognizing the importance of these parameters in the field of hydrology and in particular in the monitoring of the surface water and groundwater quality and;

considering the fact that adding those parameters to the AWS-FS is significant of a desire to have more precise information on the salinity and the conductivity of the freshwater by reducing the measurement range and by increasing the resolution and;

considering the high resolutions reported in the FS table for sea water salinity and sea water conductivity,

the ET is invited to consider, while discussing with the technical commissions representatives, to consider the following suggestion:

To modify the term "sea salinity" and "sea conductivity" by "water salinity" and "water conductivity" and to specify two different measuring ranges for sea water and fresh water and to keep resolutions already available for the two defined measuring ranges.

1.2 Slant Path Visual Range

Considering:

the CIMO-GUIDE WMO N°8 statement regarding the Slant Visual Range: “Despite the development work carried out in various countries, no instrument for measuring the Slant Visual Range has really been made operational. The rapid technological development of all-weather landing systems has made it possible to reduce the set landing minima at aerodromes (Categories II, IIIA and III B) and has gradually resulted in this parameter being considered less important. No recommendation has been established for measuring this parameter”and;

the results of investigations conducted by ICAO-Study Group on Aerodrome Meteorological Observation and Forecast (Montréal, September 2008) expressing that there is currently no ICAO requirement for SVR owing to the inherent difficulties in its measurement or assessment and the fact that research into its assessment has been negligible in recent years. Furthermore, the ICAO Sub-Group on Communications/Navigation/Surveillance and Meteorology (CNS/MET SG/12 meeting, July 2008) recalled that currently SVR was not a MET element required by the SARPs and there were no operational procedures relating to SVR,

the ET feels that it would be useful to wait for results of scientific issues and methodology investigations of State members and manufacturers involved in observing slant visual range before pronouncing a definitive opinion.

2. BUFR/CREX Descriptors proposed by the IPETDRC

As a response to the request of the CBS on its fourteenth session regarding the development of descriptors for variables listed in the FS table, the IPETDRC suggested during its first session in September 2009 an update of the BUFR/CREX descriptors by using existing descriptors or by the introduction of new ones. A detailed information are given in the document 10.1 submitted by Dr Eva Červená.

3. Additional parameters proposed

ET AWS has received no request for updating the AWS Functional Specifications approved by CBS-XIV.