

WORLD METEOROLOGICAL ORGANIZATION

**MEETING OF THE CCI EXPERT TEAM  
CLIMATE DATA MANAGEMENT SYSTEMS (ET CDMS)**

24-26 November 2015

Prague, Czech Republic

FINAL REPORT

## **1. Opening**

The meeting of the CCI Expert Team Climate Data Management Systems (ET CDMS) was formally opened at 9.30 a.m. on Tuesday, 24 November 2015 by its Chair Mr Denis Stuber. On behalf of the Secretary-General of the World Meteorological Organization (WMO), Mr Peer Hechler, Scientific Officer, Data Management Applications Division addressed the meeting by highlighting the importance of climate data management to underpin climate products and services. He stressed the fact that a high level of IT modelling expertise is needed to develop relevant guidance for Members. Dr Pavla Skrivankova, Deputy Director of the Czech Hydrometeorological Institute (CHMI) warmly welcomed the participants to Prague. She emphasised Members' needs for appropriate Climate Data Management Systems and mentioned CLIDATA as one successful example to assist Members' accordingly.

Eventually, meeting participants introduced themselves during a short *tour de table*.

## **2. Organisation of the meeting**

The meeting was chaired by ET CDMS Chair Mr Stuber. The agenda for the meeting (see Annex 1) was adopted with no revisions. The meeting agreed on its hours of work and other practical arrangements. The list of participants is presented in Annex 2.

Meeting presentations can be accessed via the Team's Wiki.

## **3. Recent activities relevant to CDMSs worldwide**

Mr Bruce Bannerman provided an overview of ET CDMS activities during the previous 12 months, including (i) the proposed version management for the CDMS specifications publication, (ii) the drafted user story 'Data ingest and extract', (iii) draft discussion papers regarding aspects of CDMS sustainability as well as Cloud storage, (iv) liaison with the Task Team on WIGOS Metadata (TT WMD) to ensure compatibility of WIGOS and CDMS observational metadata standards and (v) participation in the first meeting of the Implementation Co-ordination Team for the Climate Services Information System (ICT-CSIS) where a strong emphasis was placed on climate data management.

Mr Stuber presented the current content of the ET CDMS Wiki including the Team's current task list.

In the subsequent discussion, it was felt that the current ET CDMS work plan might be too ambitious to be fully accomplished by voluntary contributions of the experts. Accordingly, actions will be prioritised more rigorously in the work plan update.

Meeting participants presented achievements in national and regional climate data management, and reflected on related key challenges in their respective home institutes, which include fund and resource constraints, quality control and assurance of historical climate

records, planning and implementation of new CDMSs, better representation of observational Metadata in CDMSs, and handling of missing data.

Mr Chenghu Sun, CCI OPACE 1 Technical Support Unit, briefed the meeting of latest developments regarding the International Data Rescue Portal (I-DARE), the work of the Inter-Programme Expert Team Climate Data Modernisation Programme (IPET CDMP) and cross-cutting activities of CCI OPACE 5. He also informed of relevant outcome of the most recent CCI Management Group meeting end of October 2015 in Madrid, Spain.

#### **4. Further activities relevant to CDMS specifications**

*Note: Relevant actions complementing the below sub-items are captured in Annex 3.*

##### WMO CDMS user stories and use cases

The Team discussed the progress achieved so far regarding drafting user stories underpinning CDMS functions. It noted the limitations of collaborative writing for rather complex tasks while being challenged by day-to-day business in the respective home institutions and recommended to consider alternative arrangements in order to ensure successful delivery of results, such as expert visits to the WMO Secretariat.

##### Updateable register of CDMS compliance with the specifications as per WMO N° 1131

The Team decided to develop a template for a compliance self-assessment for developers, which response will be subject to validation upon completion of the user stories/use cases.

##### Keeping WMO CDMS specifications current

The next update of the WMO CDMS specifications publications is planned for 2017.

##### Amendment of WMO Technical Regulations regarding CDMS specifications

The Team decided to get in touch with CBS in order to identify a point of contact and to specify content and extent of the amendment.

##### Promotion and communication of CDMS specifications

The Team discussed the various aspects of promotion and communication of WMO CDMS specifications and agreed on the elaboration of a communication plan.

#### **5. Open CDMS**

The Team was briefed of the status and outlook of the three known open-source CDMSs implemented in various WMO Member countries, namely CliDE (developed by Australia and implemented on Pacific island states), Climsoft (developed by experts from Guinea, Kenya

and Zimbabwe, supported by the UK and used by many African countries and Nepal), and MCH (developed by Mexican experts and implemented in Latin America, Ghana and Western Balkan countries).

Mr Bannerman then introduced the current evolution state of Open CDMS, a concept for a future open-source based CDMS. This proposed project is expected to:

- help ensuring basic maintenance of CliDE, Climsoft and MCH;
- develop a single reference open source CDMS that is consistent with WMO CDMS specifications and that can be widely distributed to developing countries and small island nations free of software licence costs. This CDMS will reuse as much existing open source software as possible to minimise the effort required and to maximise reuse of investment.
- facilitate the convergence of existing open source CDMSs so that much fewer toolsets need to be maintained in the future; and
- establish a strong open source community to facilitate future Open CDMS maintenance, development and sustainability.

The project is suggested to be launched under the OpenWIS Association framework, which may hold and manage the Intellectual Property rights for Open CDMS. The Australian Bureau of Meteorology is prepared to lead this effort in close collaboration with selected peer NMHS.

It is expected that this investment will result in:

- reduced expense, in that CDMS capability can be developed once and reused by many organisations;
- consistent climate data and data products from countries that use the new CDMS. This data can be used to underpin regional and global analysis, including seasonal forecasts;
- consistent and reliable CDMS functionality available to all participating countries.

The Team thoroughly discussed the opportunities and challenges attached to such proposal and agreed on a policy statement (cf. Annex 4), which is envisaged to be submitted to the CCI Management Group through OPACE-1 Co-Chairs for consideration and endorsement. Further Open CDMS concept development and implementation will be subject to appropriate funding.

## **6. ET CDMS activities and work plan update**

The Team discussed further ET CDMS activities, including (i) collaboration with IPET-MDRD on logical data model and metadata (Mr. Bannerman), (ii) guidance for and aspects of sustainability regarding CDMS implementation in developing countries (keywords: competencies and responsibilities of climate data managers, CDMS capacity building strategy

incl. training aspects and liaison with ET ETR), (iii) prospects of cloud computing in NMHS (climate) data management, (iv) prospects of an update to the CDMS survey and (v) liaison aspects regarding ICT-CSIS and IPET- CDMP activities. The Team's discussions resulted in a number of activities, which are captured in the Team's work plan (Annex 3).

## **7. Any other business**

No further items were raised by the participants.

## **8. Conclusions and recommendations**

*[Cf. Annex 3]*

## **9. Closing**

The meeting was closed by its Chairperson on Thursday, 26 November at 2.19 p.m.