

Expert-Team on Data Requirements for Climate Services  
Standing Committee on Climate Services  
Services Commission of WMO

## **Draft abstract to be presented at the**

## **2nd Climate Observation Conference**

**17-19 October 2022**

### **Abstract Title:**

Exchanging worldwide daily data together with its quality information: a WMO initiative

### **Keywords:**

WMO, message, BUFR, TDCF, CLIMAT, DAYCLI, Data Exchange, Data Quality, Data Control, Quality Information

### **Abstract:**

The development of the principal measure of the state of the climate has hitherto extensively depended on monthly CLIMAT data provided by National Meteorological and Hydrological Services (NMHSs). Over the last 20 years, there has been a growing demand for indices and measures of the climate that also consider extremes (Jones et al., 2012). For many extreme measures, monthly data are insufficient and there is an identified need for operationally exchanged daily climate data. This need builds on real-time data but demands better data quality that is principally compatible with long historical daily series developed and made available by NMHSs.

The WMO DAYCLI initiative takes the form of a message at a monthly frequency containing daily quality-controlled values of temperature, rain and snow parameters, with also a comprehensive set of information on the quality of the measurements and on the results of the quality controls applied to each data value. The latter information is a new and distinct feature that will help scientists to analyse the data globally, considering their qualities, and the inclusion of extra information on things like aggregated data and lower bounds in certain situations where, for instance, raingauges overflow or instrumentation is destroyed during extreme weather events. It will also be a way to move towards standardizing climatological data management practices for all WMO members.

This presentation will describe the structure of the so called DAYCLI message and give explanation on the new “Metadata” exchanged. Finally, it will consider the proposed next steps that should lead to the successful implementation and usage of this message.

## References:

Jones, P.D., Lister, D.H., Osborn, T.J., Harpham, C., Salmon, M., Morice, C.P., 2012: Hemispheric and large-scale land-surface air temperature variations: An extensive revision and an update to 2010. *Journal of Geophysical Research*, 117, D05127, **doi:10.1029/2011JD017139**.

Van den Besselaar, E.J.M., Klein Tank, A.M.G, van der Schrier, G. and Jones, P.D., 2012: Synoptic messages to extend climate data records. *Journal of Geophysical Research*, 117, D07101, **doi:10.1029/2011JD1688**.

WMO, 2022, Manual on Codes v1.2 (Fast Track 2022-1), WMO Adoption 14 April 2022, Implementation 15 May 2022, <https://community.wmo.int/activity-areas/wis/wis-manuals>

WMO, 2020 Provisional Edition, Instruments and Methods of Observation Programme, WMO-No. 8, <https://community.wmo.int/activity-areas/imop/wmo-no.8/wmo-no-8-provisional-2020-edition>

WMO, 2019, Manual on the High-quality Global Data Management Framework for Climate, WMO-No. 1238, [https://library.wmo.int/vig\\_num\\_norights.php?explnum\\_id=10197](https://library.wmo.int/vig_num_norights.php?explnum_id=10197)