

C3S 311a Lot 2 Global Land and Marine Observations Database Service Land Data Policy

Version History

Version	Author(s)	Date	CDS release version that pertains
V1.0	Kate Willett, Simon Noone, Robert Dunn, Peter Thorne	30/6/20	V1.0

1. Introduction

The C3S 311a Lot 2 Global Land and Marine Observations Database service (hereafter, the Service) is undertaken in collaboration with the US National Oceanic and Atmospheric Administration's National Centre for Environmental Information (NCEI). The aim of the Service is to improve access to, and management of, historical land and marine surface meteorological data holdings. Long-term historical observations allow us to understand past changes and variability in climate, and hence to contextualise projected future changes and their impacts.

Sharing and onward usage policy relating to land surface meteorological data is complex and highly variable depending on the owning country or entity, and in most cases is not clearly associated with the data itself, requiring case by case detailed investigation. Historical changes to network designations, political boundaries, data archives and policy practices further complicate the issue. This means that in the majority of cases there is no immediately clear data policy associated with a station or collection of stations, and significant investigation is required.

Out of an abundance of caution, the default approach of the Service is to determine data to be restricted to non-commercial usage unless and until a more open policy can be ascertained.

Modern use of meteorological data is governed by the World Meteorological Organization (WMO) policy, practice and guidelines for the exchange of meteorological and related data and products. This is laid out in the following resolutions:

- WMO Resolution 40 of the Twelfth WMO Congress 1995 - http://datastore.copernicus-climate.eu/documents/in-situ/wmo_827_enCG-XII-Res40.pdf, https://www.wmo.int/pages/prog/www/ois/Operational_Information/Publications/Congress/Cg_XII/res40_en.html;
- WMO Resolution 60 of the Seventeenth WMO Congress 2015 - https://library.wmo.int/doc_num.php?explnum_id=4192.

Resolution 40 calls for **free** and **unrestricted** international exchange of meteorological data as well as related data and products. It mandates this for those data that are considered 'essential' to 'services in support of the protection of life and property and the well-being of all nations'. All other

meteorological data and products are considered to be 'additional' whereby owners are asked to share data freely but with the ability to place restrictions on their commercial use. Hence, the 'essential' and 'additional' data categories can be interpreted as relating to use cases of 'commercial' and 'non-commercial', respectively. The extent to which WMO Resolution 40 applies retrospectively to data that pre-dates the Resolution is not clear. Neither is it clear what happens in the case of stations changing their network designation and therefore whether they are classed as 'essential' or not through time.

Some countries have declared an open data policy relating to all their meteorological holdings. However, it is not clear how this relates to stations located within that country that may have previously been made by another country (e.g. changes in international borders, or data being held by a former colonial state), nor for stations located within other countries that were previously governed by the open data policy country. The hope is that over time more countries will declare their meteorological holdings open. There is currently no definitive single point of reference listing the data policy within each country.

Historical data that pre-dates the electronic exchange era was originally recorded on paper and in many cases remains solely in paper form. Efforts to digitise such data are often done as part of grassroots or international research projects and so the digital data have been made publicly available. It is rare that a clear data policy is attached to these data but the assumption is that they can be used at a minimum for non-commercial applications as they are already in the public domain. Where digitisation has taken place, the data are not necessarily available under an open data policy.

Daily and monthly meteorological data may be provided directly from the owning country. Therefore, unless it is a CLIMAT designated observation, whereby it comes under the WMO Resolution 40 'essential' data category, there may be restrictions on its onward use. In those cases where the C3S Service has derived daily and monthly values from hourly observations it is not possible to easily retrieve the original hourly observations. However, the hourly observations themselves can be identified and traced. Hence, where those hourly data are not 'essential' data and have restrictions placed on their onwards use, these restrictions also are determined to pertain to derived daily and monthly values.

The Service is a collation of meteorological observations collected electronically from previously archived international data exchanges (GTS, etc), individual agreements (with Institutions, NHMSs etc.) or ad hoc submissions of data collections and data rescue missions. Hence, data policy relating to these holdings includes all of the above scenarios.

2. Data Policy Categories Applied in the Present Release

As noted in the prior section, out of an abundance of caution, in early data releases of the Service, more data than may be necessary are being flagged as being restricted to non-commercial use only. This is to avoid raising issues with ultimate data rights holders and any resulting negative impacts on real-time data exchange which, for example, may imperil the provision of operational forecasts. Over successive releases an increasing volume of data will be made available for commercial applications once we have a sufficiently documented basis for doing so.

2.1 Nationally Open Data Policies

A number of countries have declared their meteorological collections as ‘open’ datasets available to all for unrestricted onwards use cases, including ‘commercial’ activities. Where we are satisfied of this policy at a national level, data will be flagged as available for commercial use applications without restriction. An updated list of open data policy countries can be found in Annex A. There will likely be more complicated cases whereby the ownership of a particular time series or set of data is not clear because the country instigating the original measurements is not the country where the measurements took place. This will be addressed on a case by case basis as queries arise.

2.2 Pre-Resolution 40 Adoption Data Policy (pre 1995)

Data pre-dating electronic global exchange has mostly come from existing global and national public archives and various significant digitisation efforts (e.g., Atmospheric Circulation Reconstructions over the Earth (ACRE) – met-acre.net, oldweather.org). Such efforts are now supported by the C3S Data Rescue Service and periodically more newly digitised historical data should become available through the C3S Service. Generally, there is no link to a source IPR policy documents for such data. Unless otherwise documented an assumption is made that such data can be used on a non-commercial basis.

The data policy applying to data exchanged electronically before the agreement of WMO Resolution 40 is also unclear. Given that these are not explicitly listed in the ‘essential’ criteria we have interpreted the guidance to mean that these are ‘additional’ and therefore made available on a non-commercial basis.

2.3 WMO Resolution 40 Essential Data

WMO Resolution 40 states that all ‘essential’ data are to be provided on a free and unrestricted basis:

“Members shall provide on a free and unrestricted basis essential data and products which are necessary for the provision of services in support of the protection of life and property and the well-being of all nations, particularly those basic data and products, as, at a minimum, described in Annex 1 to this resolution, required to describe and forecast accurately weather and climate, and support WMO Programmes.”

Following the WMO Resolution 40 Annex 1 definition (http://datastore.copernicus-climate.eu/documents/in-situ/wmo_827_enCG-XII-Res40.pdf), any 00, 06, 12, 18Z hours observations from stations identified as part of the Regional Basic Surface Network (RBSN), or CLIMAT reports, are considered to be ‘essential’. These data are therefore available on a free and unrestricted basis, which includes for ‘commercial’ use and efforts are underway to identify all such reports as ‘commercial’ within the Service.

2.4 WMO Resolution 40 Additional Data

WMO Resolution 40 states that all ‘additional’ data should be provided on a free and unrestricted basis:

“Members should also provide the additional data and products which are required to sustain WMO Programmes at the global, regional, and national levels and, further, as agreed, to assist other Members in the provision of meteorological services in their countries. While increasing the volume of data and products available to all Members by providing these additional data and products, it is understood that WMO Members may be justified in placing conditions on their re-export for commercial purposes outside of the receiving country or group of countries forming a single economic group, for reasons such as national laws or costs of production.”

“Members should provide to the research and education communities, for their non-commercial activities, free and unrestricted access to all data and products exchanged under the auspices of WMO with the understanding that their commercial activities are subject to the same conditions identified in ADOPTS (2) above.”

Hence, any land meteorological data not already identified as under the above categories are considered to be ‘additional’ data. These data are therefore available on a free but restricted basis, where only ‘non-commercial’ activities are permitted. They will be identified as ‘non-commercial’ within the Service.

2.5 Derived Data Values

In many cases, the Service’s daily and monthly values are derived from hourly and daily data respectively. Although the original values are not retrievable from the averages they are traceable through the station ID. Therefore, we have restricted these data to non-commercial use only, in keeping with the WMO Resolution 40 Annex 2 point 6 statement that the derived data ‘should carry the same conditions on their re-export for commercial purposes as those [source] additional data or products’.

3. Policy Queries and Change Process

There will undoubtedly be cases that arise where data may be accidentally listed under the incorrect data policy category. We have a process to follow in this event, whether it is a user-led change or a Service detected change.

In the event of a user discovered query, please contact Copernicus-support@ecmwf.int or log in to the C3S Enquiry Portal (<https://jira.ecmwf.int/servicedesk/customer/portal/1/user/login?destination=portal%2F1%2Fgroup%2F6%3FgroupId%3D6>). Please state 'C3S 311a Lot 2 Data Policy' and describe the issue found with as much detail and documentation as possible.

Where 'open' data are queried they will be withheld while investigation takes place. Any formal change of policy must be supported by sufficient evidence such as the data owner's written consent or a link to a formal policy document. A copy of these documents will be held by the Service along with the initial query and investigation trail. We aim to resolve all queries within 6 months.

4. Acknowledgement and Citation Requirements

All data accessed from the Service will have the relevant acknowledgements and citations attached. We ask that users reproduce these data provider statements whenever their use of the data results in a publication. These are often key for data providers to justify continued provision of observations to their funders. For example Met Éireann (Irish Met Service) state that all users acknowledge them when using their data:

“Under the CC-BY-SA Licence, users must acknowledge Met Éireann as the source of the data by inserting this attribution statement in their product or application: Contains Met Éireann Data licensed”

Data acknowledgements and citations requirements pertaining to each download will be provided in a text file. Users agree to use acknowledgments and citations in any application that uses the data provided.

There is no additional formal requirement to cite or acknowledge the Service although relevant papers and documentation are available through the CDS documentation tab and are citeable should the user wish to do so.

Annex A – Countries with verified open data policies