Copernicus Climate Change Service Global Land and Marine Observations Database

First version cdm. Data models

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Executive Summary

The C3S 311a Lot 2 (Global Land and Marine Observations Database) service is concerned with the provision of globally available land and marine surface meteorological records. The service includes inventorying of, and brokering access to, data sources, their harmonization (via conversion to a Common Data Model (CDM), merging, and quality assurance) and their provision via the Copernicus Climate Change Service (C3S) Climate Data Store (CDS).

The version history is given below:

|  |  |  |
| --- | --- | --- |
| **Version** | **Release Date** | **Release notes** |
| 1.0 |  |  |
| 2.0 |  |  |

# Introduction

The Copernicus Climate Change Service (C3S) Global Land and Marine Observations Database service provides brokered access to global historical holdings of surface meteorological observations. It builds upon existing national, regional and global efforts to create an augmented set of quality assured holdings that can be used to create datasets, products and services.

**This document will contain relevant detailed information on the software and configuration used to produce the marine data holdings for service providers to be able to access, use, modify and/or update where necessary. The current version of this document is focused on the data flow leading to the December 2018 beta release (header and observations tables) and the scripts and software tools derived from it.**

The document is ordered as follows:

* Section 2 summarizes the marine code requirements.
* Section 3 describes the marine main data flows.
* The Annex to this document provides further insight into scripts and tools.

# References

# Data models mapping

Data applicable to report/observation but coming from a different source in the final CDM report (i.e. pub47 MD, sensor\_id in observations\_table) should not be needed to be declared in the imodel, unless a default value is desired (i.e. sensor\_automation\_status in observations\_table)

The following mappings reflect the **initial** mapping from a specific data source.

## imma1 generic (imma1)

Model status: built from beta release following last CDM definition available in GLAMOD GitHub, may 2019.

All keys: if they were included in beta release mapping but nothing was defined for them, that CDM element is deleted from the mapping file, as it is understood not to be directly applicable from imma1….(the corresponding table.psv file will have the field) and might be afterwards fill in by external meta data (pub47….)

### Header table

Nulls in beta release:

* region: null in beta release
* sub\_region: null in beta release
* station\_name: null in beta release
* station\_heading: null in beta release
* height\_of\_station\_above\_sea\_level\_accuracy: null in beta release
* sea\_level\_datum: null in beta release
* report\_time\_quality: null in beta release
* report\_time\_reference: null in beta release
* profile\_id: null in beta release
* events\_at\_station: null in beta release
* duplicates: null in beta release
* processing\_codes: null in beta release
* processing\_levels: null in beta release

Other issues:

* platform\_type: now that we fix imma1 PT, do we want to keep fill\_value = 2 (5 -imma)?
* platform\_sub\_type: code mapping only defined for platform type *7*, with no default value.
* primary\_station\_id\_scheme: code mapping only defined for platform type *7*, with default value to 5. Is it here where we want to add the station id classifications?
* location: this was added in the very last minute to beta release and it is not in cdm\_latest.pdf, so it is not included in the current mapping.
* report\_id, source\_id is ‘ICOADS-3-0-0T’ and we are using a data format., not data source to distinguish between mappings!

### Observations tables

Null in beta release:

* observation\_height\_above\_stations\_surface: null in beta release
* secondary\_variable: null in beta release
* secondary\_value: null in beta release
* code\_table: null in beta release
* location\_method: null in beta release
* z\_coordinate\_method: null in beta release
* bbox\_min\_longitude: null in beta release
* bbox\_max\_longitude: null in beta release
* bbox\_min\_latitude: null in beta release
* bbox\_max\_latitude: null in beta release
* sensor\_id: null in beta release
* original\_code\_table:
* processing\_code:
* adjustment\_id:

Other issues:

* report\_id, observation\_id: again like in source\_id in header\_table: data source Vs data format!
* location\_precision / accuracy?: currently as location\_precision
  + GitHub table\_definitions (and cdm\_latest): location\_precision
  + Equivalent in header table (GitHub): location\_accuracy
  + Beta release as location\_accuracy….

Dave says that although it is inconsistent, need to be as defined in CDM: different between header and observations, until naming is corrected / checked for consistency.

* numerical\_precision, original\_precision: need to rechecked definition in CDM, to see if that has changed from the beta release…. key included in mapping file, but empty.

This has been “historically” derived from the imma field “scale” as 0.1 for 1 decimal places, 0.01 for two, etc….but now, it can also be dck dependent as we might want to add specific information that is deck-dependent

* + original\_precision: Original repor􏰀ng precision in units given by ’original\_units’
  + numerical\_precision: Repor􏰀ng precision of observa􏰀on in units given by ’units’ variable. E.g. 0.1 = reported to nearest tenth, 0.5 to nearest half etc.
* value\_significance: 12 en wbt,dpt,ws. Rest temperatures and slp:2 ??? recheck this

## imma1 generic supplementals

### imma1\_cisdm\_dbo. Canadian drifting buoys - IMMA1 supplemental

Model status: built from beta release following last CDM definition available in GLAMOD GitHub, may 2019.

Now the mapping is complete, using IMMA1 core and attachments or supplemental data where required.

## imma1 specifics