

GAW Metadata Key Elements Reporting - Survey

1. Metadata

Metadata is the data describing the data and its relevance is as follows: “The details and history of local conditions, instruments, operating procedures, data-processing algorithms and other factors pertinent to interpreting data (i.e. metadata) should be documented and treated with the same care as the data themselves.” Metadata is as important as the data itself as observations without metadata are of extremely limited use: it is only when accompanied by adequate metadata that the full potential of the observations can be utilized.

2. Metadata Categories

The WMO Integrated Global Observing System (WIGOS) metadata should describe the observed variable, the conditions under which it was observed, how it was measured, and how the data has been processed, in order to provide users with confidence that the data is appropriate for their application.

Ten categories of WIGOS metadata have been identified. These are listed in Figure 1 below. They define the WIGOS Metadata Standard, each category consisting of one or more metadata elements. All the categories listed are considered to be important for the documentation and interpretation of observations made, and even for their use in the distant future. A schematic composition of all categories, containing the individual elements is shown in Figure 2 below.

<i>Category</i>	<i>Description</i>
1. Observed variable	Specifies the basic characteristics of the observed variable and the resulting datasets. It includes an element describing the spatial representativeness of the observation as well as the biogeophysical compartment the observation describes.
2. Purpose of observation	Specifies the main application area(s) of the observation and the observing programme(s) and networks the observation is affiliated to.
3. Station/platform	Specifies the observing facility, including fixed station, moving equipment or remote-sensing platform, at which the observation is made.
4. Environment	Describes the geographical environment within which the observation is made. It also provides an unstructured element for additional meta-information that is considered relevant for adequate use of the observations and that is not captured anywhere else in this standard.
5. Instruments and methods of observation	Specifies the method of observation and describes characteristics of the instrument(s) used to make the observation. If multiple instruments are used to generate the observation, then this category should be repeated.
6. Sampling	Specifies how sampling and/or analysis are used to derive the reported observation or how a specimen is collected.
7. Data processing and reporting	Specifies how raw data are transferred into the observed variables and reported to the users.
8. Data quality	Specifies the data quality and traceability of the observation.
9. Ownership and data policy	Specifies who is responsible for the observation and owns it.
10. Contact	Specifies where information about the observation or dataset can be obtained.

Figure 1: WIGOS metadata categories. Image from WMO-No. 1192.

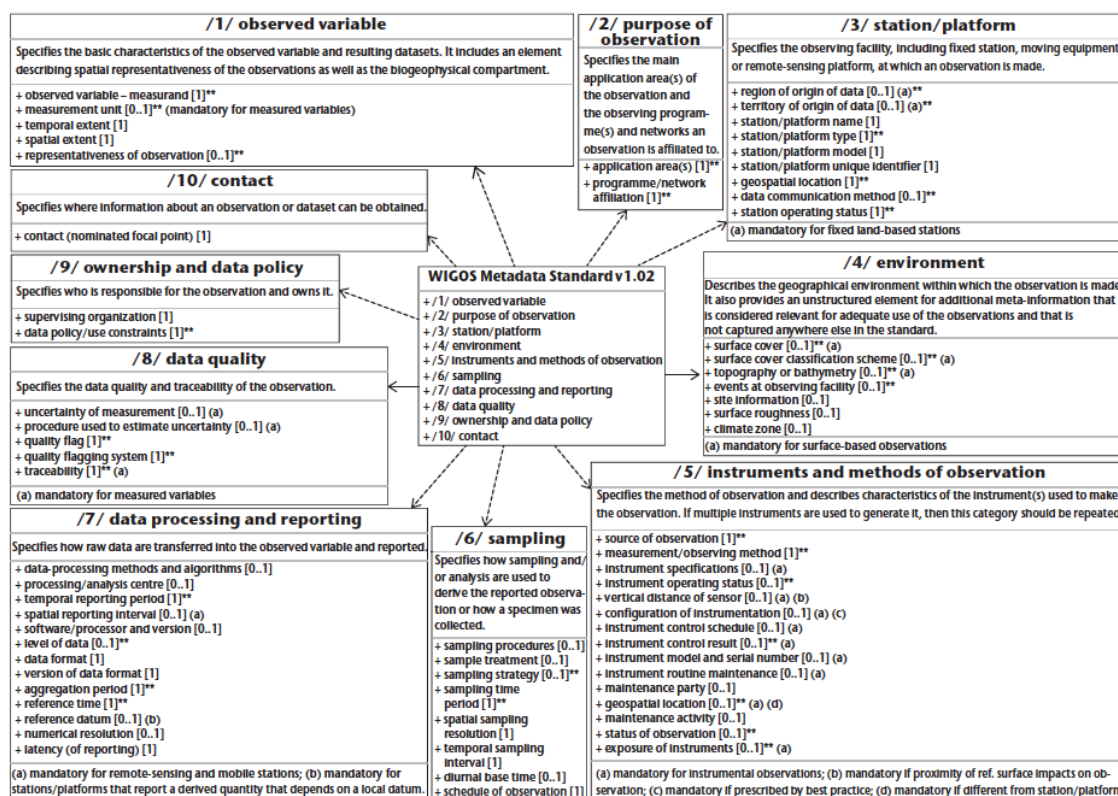


Figure 2: Unified Modeling Language (UML) diagram specifying the WIGOS Metadata Standard (** = code tables expected; [0..1] = optional or conditional elements. Conditional elements become mandatory if a given condition is met. Conditions are referenced in parentheses. Optional elements may be declared mandatory as part of profiling the standard for specific application areas; [1] = mandatory elements. These elements must be reported. In some cases, if no value is available, a nilReason can be reported, which indicates that the metadata are either unknown, not applicable or not available.). Image from WMO-No. 1192.

3. Metadata Key Elements – Survey

As a part of our efforts to standardise and synchronise the GAW metadata exchange between the OSCAR database and WDCs/CDCs , below is a table-survey which I would like you to complete by using cross (X) in the second column to indicate if you can provide a relevant information as a part of your metadata, otherwise please leave blank. Furthermore, you can use the third column (**Note**) to add any further clarification.

WIGOS MD Category	Indicate (X) Information Availability	Note
1) Observed Variable - Measured:		
- Measurement Unit		
- Temporal Extent		
- Spatial Extent		
- Representation of Observation		
2) Purpose of Observation		
- Application Area		
- Program/Network Affiliation		
3) Station/Platform		
- Name		
- Type		
- Unique Identifier		
- Geospatial Location		
- Station operating status		
4) Environment		
5) Instruments and Methods of Observation		
- Source of observation		
- Measurement/observation method		
6) Sampling		
- Sampling time period		
- Spatial sampling resolution		
- Temporal sampling interval		
- Schedule of observation		
7) Data processing and Reporting		
- Temporal reporting period		
- Data format		
- Version of data format		
- Aggregation period		
- Reference time		
- Latency (of reporting)		
8 Data Quality		
- Quality flag		
- Quality flagging system		
9 Ownership and Data Policy		
- Supervising organization		
- Data policy/use constraints		
10 Contact		

