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| **World Meteorological Organization**  **Inter-Commission Coordination Group On WIGOS/Task Team on WIGOS Metadata**  **Sixth Session** Zurich, Switzerland, 27-29 November 2017 | **TT-WMD-6/Doc.4.10** |
| Submitted by: Karl Monnik  25.11.2017  **Version 1** |

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# ExperT team-Surface Based observations

(Submitted by Karl Monnik)

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| **Summary and purpose of document**  To provide feedback from CBS Expert Team Surface Based Observations |

**Action proposed**

To consider the points raised concerning observations metadata. A number of recommendations were made to TT-WMD and the OSCAR development team.

**References:**

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**1 introduction**

1.1 At the Expert Team on Surface-Based Observations Third Session, held 20-23 June 2017, in Geneva, Switzerland, a group considered observations metadata in the context of surface based observations, considering primarily AWS, manual synoptic, upper air and radar wind profiler stations.

1.2 The group members recognised the progress that had been made in developing an observations metadata standard and recognised the tremendous value it will provide to the effective use of observations in the future.

1.3. A number of issues were discussed and actions proposed. Actions in **bold** were identified for ET-SBO.

**2 specific comments and feedback**

* 1. The value of the WMDS will only be realised once the stations metadata is populated correctly. The challenge of how to encourage Members to update OSCAR/Surface and make sure metadata reflect reality of observing platforms was briefly considered.
* Task for the Regional WIGOS Centres (RWC) to undertake.
  1. The complexity of what is required in OSCAR/Surface in terms of metadata content, is drawback preventing users to enter information. Some metadata fields are not available in national records, and thus guidance is needed concerning prioritization of fields to be entered. Some fields are critical and need to be filled if missing (e.g. calibration date).
* **ET-SBO can recommend levels of metadata for AWS and Radar Wind Profilers etc., and identify what’s critical.**
  1. The group considered the frequency of updating content for observations in the SBO scope. Considering most data is used in real-time, SBO recommended the following.
* Whenever there is a change with regard to the observing station, OSCAR/Surface shall be updated accordingly (deadline < 1 week). Changes at national level will most likely be made in one place, typically in the national database; so the M2M interface must be developed and implemented to make sure that changes are automatically reflected in OSCAR/Surface. To be specified in OSCAR/Surface guidance material.
  1. It was noted that there are discrepancies between Vol. A and OSCAR/Surface content. These are due to assumptions that were made when Vol. A was imported in OSCAR/Surface in May 2016. NFPs need to be aware of the assumptions and then check and correct metadata as needed.
* OSCAR/Surface development team need to document assumptions that were made (Secretariat to lead).
  1. It is critical to put in place M2M interface at the national level.
* Task for the OSCAR/Surface development Task Team; including instructions for each member Country.
  1. WIGOS Metadata Standard does not perfectly align with the data model used at the national level. This implies undertaking developments to translate the national model into the WIGOS metadata standard for the M2M interface with OSCAR/Surface. Different terminology/vocabularies may also be used in national databases. Correspondence between vocabularies must be developed. Countries starting from scratch can directly start from the WIGOS metadata standard. Countries can also broaden their data model to comply with WMDS but also to have national requirements considered.
* FPs to be alerted about such requirements, which is national task under guidance of RWCs.
  1. The National Focal Point may need to delegate tasks to several people for specific types of networks (AWS, Upper Air, Weather Radars, Wind Profilers, etc.) but also at the regional level.
* OSCAR/Surface Guidance materials need to explain this approach, and the WIGOS PO (initially) and RWCs to communicate and promote this.
  1. OSCAR/Surface interface, and code tables, ought to be translated in WMO languages, noting that the people involved in updating metadata will often be technical staff who are less likely in being proficient in English.
* OSCAR/Surface development team and WIGOS PO to consider such requirement, and identify required resources to undertake such developments.
  1. Automatic real-time quality control is needed and the QC checks required need to be defined. More elaborated delayed mode QC checks ought also to be made; standard queries need to be developed to allow WRCs to check content and investigate suspicious cases. Some typical errors have been discovered based on the Secretariat's current experience of monitoring OSCAR. This may lead to a reduction in communication with the focal point.
* **OSCAR/Surface development team to propose what QC checks to make with assistance from Secretariat and ET-SBO for AWS, Radar Wind Profilers, etc.** 
  1. Some Application Areas have specific or required Metadata while for others some metadata may not be necessary. It is recommended that best practices should be developed and documented.
* The OSCAR/Surface Development team to propose technical solution making it simple for the user of OSCAR/Surface (e.g. AA is defined as part of Data Series, and some fields may be hidden depending on what AA(s) is/are chosen by the user).
  1. The requisite accuracy of metadata for needs to be defined (e.g. position, height …). A barometer used for aviation may have a different requirement as for a drifting buoy.
* **ET-SBO can advise TT-WMD on the accuracy of lat, long elevation and dates (nearest day, month, year or unknown) for our systems (aws etc). There is also metadata which is restricted to national use (e.g. military facilities, commercial) which should not be sent to OSCAR/surface.**
* It is recommended that TT-WMD to ask IPET-OSDE (RRR) for required accuracy of key metadata for different application areas.
  1. While Members are maintaining national databases of metadata, there is a need to communicate on importance of collecting global metadata and making them available to OSCAR/Surface. Some Members actually are not aware of OSCAR.
* Secretariat and Regional WIGOS Centres to consider how to publicise and encourage populating OSCAR/Surface.
* Reports which assess the level of compliance, producing “traffic light” diagrams, and sending these reports to the Permanent Representatives may be effective. There is a role for the WRCs also in this regard to remind Members of their obligations.
  1. Variety of types of metadata: WIGOS, WIS, Vol. C1: some cross checks are needed for consistency and for adding missing stations in OSCAR.
* The OSCAR/Surface development team can identify inconsistencies, and these need to be reported to ICG-WIGOS for further action with appropriate responsible bodies.
* Secretariat to invite NFPs to check WDQMS output and identify the stations in the Country for which there are issues in terms of WIGOS metadata in OSCAR/Surface (e.g. stations reporting on GTS but which do not appear in OSCAR/Surface).
  1. The issue concerning the metadata required for services provided by private companies and third parties (e.g. lightning detection) needs to be considered. NMHS should not be required to provide resources to complete this task.
* **ET-SBO to provide advice on what is an acceptable level of metadata for private companies.**
  1. An interesting dilemma concerning lightning detection was raised. This network uses multiple sensors for providing information on observations which are not located where the sensors are installed. This may be similar in content to weather radars.
* **ET-SBO to recommend the standard approach to describe the metadata for a specific network such as the lightning detection network.**
  1. ET-SBO offered to develop example metadata sets for each of the systems ET-SBO is responsible for (AWS, land stations, Wind Profilers, Lightning Detectors, Radio sondes …). Example of AWS available for “MELBOURNE (OLYMPIC PARK) (Australia)” and “CAMBORNE (United Kingdom (the))”
* **ET-SBO should help in this exercise e.g. AWS in different geographic locations with different instruments connected to it, Radar Wind Profiler (e.g. PAYERN), Radio Sonde (e.g. CAMBORNE, PAYERN).**

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