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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.4.3** |
| Submitted by: Jörg Klausen  23.11.2017  **Version 1** |

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# ET-WDC and GAW community

(Submitted by Jörg Klausen)

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| **Feedback from CAS OPAG EPAC ET-WDC (Expert Team on World Data Centers) on WMD Schema and sharing of chemical composition metadata with GAWSIS** |

**Action proposed**

1. Test automated machine-to-machine provision of WIGOS metadata from WDCs to OSCAR/Surface.
2. Consider if any changes are required to WIGOS Metadata Standard to incorporate chemical composition metadata.

**References:**

1. GAW Implementation Plan  
   <https://www.google.ch/url?sa=t&rct=j&q=&esrc=s&source=web&cd=10&cad=rja&uact=8&ved=0ahUKEwiP7dGfsdTXAhVCyaQKHWSkDckQjBAIPDAJ&url=https%3A%2F%2Fpublic.wmo.int%2Fen%2Fresources%2Flibrary%2Fwmo-global-atmosphere-watch-gaw-implementation-plan-2016-2023&usg=AOvVaw0G5tXdckjrIF0j9L3boSKe>
2. ET-WDC website  
   <https://sites.google.com/site/wmoetwdc/2017>

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**4.3.1 Overview**

4.3.1.1 Based inter alia on conclusions of a workshop on “The Future of GAW Data Management” in 2015, the GAW Implementation Plan 2016-2023 intends to establish a federated system of data centers in support of atmospheric composition monitoring, research and services. This requires interoperability of systems for metadata management, discovery, access, and retrieval. At the quadrennial GAW symposium 2017, at the ET-WDC meeting 2017, and during the CAS Science Summit 2017, these notions have been re-enforced.

4.3.1.2 The ET-WDC is charged with developing the concept further and implementing the technical solution based on voluntary contributions of Members operating the archives.

4.3.1.3 During its most recent meeting, ET-WDC reviewed and discussed the WIGOS metadata standard and the UML diagram describing the WMDR (the “representation” of WIGOS MetaData) and agreed to support it.

4.3.1.4 GAWSIS and OSCAR/Surface share the same architecture and use the same data base. Therefore, the API endpoints supporting upload of WMD XML files will also meet the needs of the GAW community.

**4.3.2 GAW IMPLEMENTATIOn**

4.3.2.1 The federated system of data centers will make use of GAWSIS as a central metadata management system, and is intended to reduce the burden of data providers and data users in submitting to and retrieving atmospheric composition data, including of air quality and climate-relevant atmospheric constituents, from the participating data centers (cf. Figure 1).

4.3.2.2 For the exchange of metadata within the federation, and specifically with GAWSIS, the ET-WDC will begin to explore the existing WMDR XML schema release candidate (currently 1.0RC6, 1.0RC7 expected end of November 2017). The purpose of this is to test the viability of the schema and help identify deficiencies, as well as to get ready for exchange of full (or more likely, partial) WMDR records.

4.3.2.3 The ET-WDC also agreed that GAWSIS shall serve as the authoritative source for metadata describing station characteristics, while the data centers themselves shall provide information related to the data they archive (begin and end dates, instrument-related metadata.)

4.3.2.4 Between now and the next ET-WDC meeting, tentatively foreseen for early summer 2018, more concrete work plans should be developed.

4.3.2.5 GAWSIS and OSCAR/Surface will support upload of full or partial WMD records through an API REST endpoint. A test version of this interface is available at <https://oscardevt.meteoswiss.ch/surface/index.html#/m2m>. The existing REST interface already supports retrieval of certain metadata in JSON and more endpoints are being developed to support more flexible machine-to-machine access of the content of the applications. Alternative solutions to serving WMD records, in particular using OAI-PMH are presently explored.

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**Figure 1 – Federation of atmospheric composition data (Source: GAW Implementation Plan 2016-2023)**

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