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Progress Report and Outcomes from the TF on Metadata Implementation

The CGMS-WMO Task Force on Metadata implementation has been created after CGMS 42 to provide a consolidated view regarding the WMO Information System (WIS) discovery metadata definition for satellite data products, accelerate the adoption of WIS by satellite data providers and represent the satellite data users point of view within the WIS.

The Task Force has started to work on two aspects of its mandate: the generation of guidance documentation to generate WIS discovery WMO Core Profile 1.3 metadata for satellite data products and a "WIS portal usability report" representing the view of satellite data users when using the WIS portals.

This document presents the work performed by the Task Force during year one, the progress made in the direction of fulfilling its mandate and the planned schedule for finalising its work. It describes in particular the information model for satellite data products created by the Task Force as a necessary preliminary work for generating the WIS metadata for satellite products guidance documentation. It also summarizes the recommendations of the produced WIS Portal Usability Report to help moving to WIS infrastructure towards a state where it completely fulfils the satellite data user's community needs when using a meteorology product catalogue.

Action/Recommendation proposed:

- Submit "Satellite Data Essential Information for WIS Discovery Metadata" for review to IPET-SUP and IPET-MDRD.

- Submit "WMO WIS Portal Usability Report" for information to ET-WISC.

Progress Report and Outcomes from the TF on Metadata Implementation

1 INTRODUCTION

The CGMS-WMO Task Force on Metadata Implementation (TF-MI) has been created during CGMS 42 to further increase the satellite data providers' involvement in the WMO Information System (WIS) and allow the distribution of more satellite data products through the WIS. The CGMS-WMO TF-MI main objective is to create the necessary guidance documentation for helping satellite data providers creating WIS discovery metadata. An additional objective of the CGMS-WMO TF-MI is also to relay comments/inputs from the satellite data user's community regarding the usage of the WIS infrastructure, especially for accessing satellite products.

This document presents the outcomes of the CGMS-WMO TF-MI up to current date (year one) and the current planned schedule to finalise the work and its foreseen objectives.

2 CGMS-WMO TFMI DOCUMENTATION

The CGMS-WMO TFMI is having regular teleconference and all the discussions can be followed on the following mailing list:

https://groups.google.com/forum/#!forum/cgms-tf-mi

email: cgms-tf-mi@googlegroups.com

Minutes of the various meetings and additional documentation can be found here:

https://github.com/CGMS-TFMI/CGMSTFMI-Teleconferences

3 GUIDANCE DOCUMENTATION FOR WIS METADATA CREATION

The task force has immediately started to tackle its main objective, the creation of guidance documentation for generating satellite data product WIS metadata. The Task Force established a work plan and a task break down to organise the work. The Task Force members recognised that one of the issues of the WIS catalogues is the quality of the metadata populating the WIS catalogues. There is often not enough information regarding the product in the metadata to provide a worthwhile search experience for end-users. This is why it was decided to spend some time creating an information model representing the essential information to add in a metadata record to enhance and describe more effectively satellite data products for the benefit of the users.

The information model is organised around four categories of information:

- ***Product Information***, providing the information related to the product such as product type, latency, vertical resolution, spatial coverage,
- ***Product Distribution Information*** providing the information related to the product access such as product format, distribution means, data policies

- ***Instrument Information***, providing the information related to the instrument from which the product is resulting,
- ***Satellite Information***, providing the information related to the satellite from which the product is resulting.

The information model is presented in the document SatelliteDataEssentialInformationForDiscovertMetadata. This data model is going to be submitted for review to the IPET-MDRD the Inter-Programme Expert Team on Metadata and Data Representation Definition and the IPET-SUP the Inter-Programme Expert Team on Satellite Utilization and Products.

3.1 Next Steps

The TF-MI plans to use the information model as the corner stone to generate the guidance documentation for creating WIS discovery metadata for satellite data products. Based on this document the Task Force will now proceed with the following tasks to create the guidance documentation for the generation of satellite data product WIS metadata:

Information model to ISO model mapping:

The WMO Core Profile 1.3 is based on the ISO 19115-1 format and the Task Force has to now map each of the information of the defined abstract data model to the ISO model. It is most likely that not all the information can be added in the ISO metadata records because the ISO metadata model may not have that type of information in it is current version. The CGMS TF-MI should then submit potential changes to the IPET-MDRD to include them in future WMO Core Profile version and/or to the ISO committee for consideration for future ISO evolutions.

Generation of guidance documentation for metadata creation:

The CGMS TF-MI plans to produce a guide explaining how to create the metadata records for satellite data products and how to populate the most important parts of the WMO Core Profile (product description, data policy, data distribution).

Generation of examples for the most representative product types:

The CGMS TF-MI plans to produce examples for the most representative data products (GEO imagers, LEO sounders, ...). Those examples can then be used as templates by each of the satellite data providers for creating their dedicated product metadata records.

The generated documentation will then be submitted to WMO IPET-MDRD and ET-WISC (Expert Team on WIS GISCs and DCPCs) responsible for establishing, maintaining the WIS infrastructure and managing its evolutions.

It will also be made available and freely accessible from the WMO or CGMS web site and maintained by the WMO CGMS TF-MI.

The CGMS TF-MI expects to finish the work by Q2 2016.

4 WIS USABILITY REPORT

Another mission of the CGMS-WMO Task Force is also to represent the satellite data users' community which has expressed difficulties when using WIS portals for finding satellite data products. For those reasons and to help WIS catalogue providers to get access to users' feedback and improving the overall quality and usability of the WIS, the CGMS-WMO Task Force has performed a survey and produced a report recommending on how to improve the usability of the WIS portals.

The report CGMS-TFMI-WMO-WIS-Portal-Usability-Report and the survey come to the following conclusion and made the following recommendations:

Centre the WIS portal user experience on the Products. The WIS portals are currently presenting too much technical information associated to products (GTS identification ...) and do not focus on presenting the product essential information in a simple way such as the product description, content and fields of application. The CGMS TF-MI recommends to improve the product information presentation relevant for end users to make the portals more intuitive and attract a larger audience.

Simplify the user interfaces. In general, the WIS portals provide complex technical specialised user interfaces for the discovery. The CGMS TF-MI recommends simplifying the WIS Portal user interfaces by following the convention established by the main web search engines to greatly help the users.

Provide better search results. Satellite data users have indicated that the returned results are often not related to the initial search keywords because the information provided to describe the products is not sufficient. In those cases, the data providers have often not provided enough information or the metadata records have been automatically generated (for GTS metadata records). The CGMS-TF-MI recommends improving the quality of the search results to attract and retain more satellite data users by either improving the metadata quality and/or improving the search technologies.

Present products to first time users. The WIS has been created to open the access of meteorological products previously reserved to GTS participants to a much broader audience. There are often in most of the WIS portals no interfaces allowing the users to discover the list of products and product categories available on the WIS catalogue. The CGMS TF-MI recommend to implement a browse by type/category interface allowing users to discover the catalogue content (using facetted or browse tree like interfaces).

Create some homogeneity between the different WIS portals interfaces. Users have reported large dissimilarities between the different WIS portals in the search experience. According to the WIS operation manual, users are redirected to a back up GISC in case of issues but it will be really difficult for users to work on the back-up GISC having a different user interface. The CGMS TFMI recommends taking into consideration the adoption of user interfaces and navigability conventions to allow

users having the same working practices when being redirected to a backup WIS Portal.

The CGMS-TFMI-WMO-WIS-Portal-Usability-Report has been submitted to the ET-WISC for review and comments and to the IPET-SUP for information.

5 FUTURE WORK AND SCHEDULE

Between CGMS-43 and CGMS-44, the TF-MI has planned to perform the following tasks

- Generation of guidance documentation for metadata creation,
- Generation of examples and templates for the most representative product types,
- Publication of the different document and communication/presentation to the different stakeholders.

Once the documentation is available the CGMS TF-MI would also like to maintain the documentation and template to be compliant with the future WMO Core Profile 2 planned for 2017 and create web validation/creation tools allowing to validate that a created metadata records is following the recommendations defined by the CGMS TF-MI.

6 CONCLUSION

The CGMS TF-MI work in the first year has been very fruitful as the Task Force has created an information model to define what type of information has to be included in the product metadata records to generate metadata compliant with the WIS infrastructure and relevant for the users. The CGMS TF-MI has also produced a WIS Portal Usability Report that will help WIS Portal providers understanding on which aspects of the infrastructure they should focus to improve the Portals usability, relevance and attract a larger crowd of users either expert or first time users.

The CGMS TF-MI has also proven very useful in creating the link between one of the WIS user communities (the satellite data users) and the WIS implementers and representing the interests of the WIS satellite data users.

The CGMS TF-MI will also liaise with the standardisation instances such as the ISO committee and the WMO IPET-MDRD to consider adding more relevant information in the metadata standards for satellite products and allow building better satellite data product discovery portals.

The work for the coming year will be focused on finalising the documentation helping the satellite providers to make more data products available through the WIS. This will greatly improve how satellite data products can be discovered on the WIS.