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| WORLD METEOROLOGICAL ORGANIZATION  COMMISSION FOR BASIC SYSTEMS  -----------------------------  FOURTH MEETING OF  INTER-PROGRAMME EXPERT TEAM ON DATA REPRESENTATION MAINTENANCE AND MONITORING  GENEVA, SWITZERLAND, 30 MAY - 3 JUNE 2016 |  | IPET-DRMM-IV / Doc. 11.1  (13. 5. 2016)  -------------------------  ITEM 11.1  ENGLISH ONLY |

GRIB2

**Endorsement OGC document number 16-060: A GRIB2 Coverage Encoding Profile**

*Submitted by Daniel Lee (DWD)*

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**Summary and Purpose of Document**

This document proposes that the meeting endorse a proposal from within the Meteorology and Oceanography Domain Working Group (Met Ocean DWG) of the Open Geospatial Consortium (OGC). The proposal would enable web coverages to be encoded as GRIB2.

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**ACTION PROPOSED**

The meeting is requested to review the proposal and endorse the proposed OGC standard to support encoding web coverages in GRIB2.

**ANNEXES:**

1. Lee, D., Voidrot, M., Baumann, P. & C. Little (2016): OGC Coverage Implementation Schema – GRIB2 Coverage Encoding Profile. OGC internal reference number 16-060. <http://external.opengeospatial.org/twiki_public/pub/MetOceanDWG/WebHome/GRIB_edition_2_encoding_profile_for_Web_Coverage_Service.docx>
2. Lee, D. (2016): GRIB Edition 2 as Web Coverages. https://docs.google.com/presentation/d/1OYKiLfTeQYRQfmH\_cC5yhuCiI50\_m8ug7qbVicniVcg/edit?usp=sharing

**DISCUSSIONS**

WCS (Web Coverage Service) is a standard maintained by the Open Geospatial Consortium. It is becoming increasingly popular for the dynamic discovery and exchange of raw geospatial data. This is already well supported for classic, “pure” geospatial formats such as GeoTIFF. NetCDF is also supported and widely used. As the use of web services in the atmospheric and oceanographical domain is increasing, many users desire the possibility to exchange data in GRIB rather than convert to other formats. This is the reason that a proposal has been suggested within the Meteorology and Oceanography Domain Working Group of OGC to allow the exchange of GRIB2 data in WCS.

The proposal can be summarized as follows:

1. The semantics of GRIB2 are not affected
2. GRIB2 data is transported wrapped in a semantic layer describing the data in web coverage semantics so that it is discoverable and transferable as a web coverage
3. GRIB2 data exchanged via WCS must fully follow the GRIB2 specification by WMO
4. The grid definition provided in the GRIB2 must be accurately described in the wrapping layer using the semantics of web coverages
5. The data representation template provided in the GRIB2 must be described in the wrapping layer in the semantics of web coverages
6. Meaningful exceptions are provided if invalid requests are made or if data is not available as requested
7. Conformance tests are provided to prove that client and server applications implementing the standard conform to the standard’s requirements

The proposal has been endorsed by the Domain Working Group and has now been submitted to the Technical Committee for approval. If the proposal is endorsed by the meeting, it would show that WMO supports the exchange of meteorological data in modern, RESTful web frameworks.

The proposal is considered noncontroversial for WMO, as it only exposes GRIB2 data for discovery as a WCS layer and does not affect the semantics of GRIB2.

Extensive discussion has taken place within the various affected communities (satellite remote sensing, climate, operational forecasting) and the proposal represents the best possible consensus among all interests.

**PROPOSAL**

The WMO endorses the extension of OGC’s web coverage standard to include the exchange of data encoded in GRIB2.