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| WORLD METEOROLOGICAL ORGANIZATION  COMMISSION FOR BASIC SYSTEMS  -----------------------------  FIRST MEETING OF  INTER-PROGRAMME EXPERT TEAM ON DATA REPRESENTATION MAINTENANCE AND MONITORING  TOKYO, JAPAN, 1 - 5 JULY 2013 |  | IPET-DRMM-I / Doc.2.1 (1)  (14.VI.2013)  -------------------------    ITEM 2.1    ENGLISH ONLY |

**Reporting quality information in GRIB2**

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**Summary and Purpose of Document**

This document describes the need to develop a generic methodology for the reporting of quality information associated with GRIB2 parameters in Code Table 4.2.

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**ACTION PROPOSED**

The meeting is requested to develop and endorse a long-term solution to address this need.

**DISCUSSION**

BUFR has many ways to report quality information associated with data values, from the use of the Table C 2-22-000 operator and associated bitmaps, to the list of descriptors in Table B Class 33. GRIB2, on the other hand, has very few ways to report such information. Part of this problem is undoubtedly due to the structure of GRIB2, since a single parameter is normally reported over a range of gridded data points. Within the same message, additional parameters can be reported at the same data points by repeating the appropriate message sections, but there is no generic way to associate the second parameter with the first parameter in a way that unambiguously defines it as being a quality attribute of the first parameter. In the past there have been specialized parameters added to Code Table 4.2 (e.g. “Cloud top height quality indicator”) in an attempt to get around this issue, but such an approach is not sustainable for the volume of existing parameters in this table.

Another current approach is shown in Product Definition Template 4.20, which can be used to define any Code Table 4.2 parameter and contains a separate octet “Quality control indicator” pointing to Code Table 4.13. But this means the quality value is fixed over the entire grid, rather than being allowed to vary at each individual grid point.

So a more generic solution is needed for the long term, one that ideally would allow any number of quality indicators (e.g. not just discrete values such as “good”, “bad” or “questionable”, but also continuous values such as percent confidence) to be unambiguously associated with other parameters from GRIB2 Code Table 4.2. Such a capability would be especially useful for gridded datasets containing observational data. In the near term, NCEP is interested in a solution that could be used to report quality information associated with scatterometer data, and EUMETSAT also has quality control information including error estimate values that they wish to report using GRIB2. So the meeting is urged to develop and endorse a generic methodology to address these needs.