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| WORLD METEOROLOGICAL ORGANIZATION  COMMISSION FOR BASIC SYSTEMS  -----------------------------  SECOND MEETING OF  INTER-PROGRAMME EXPERT TEAM ON DATA REPRESENTATION MAINTENANCE AND MONITORING  COLLEGE PARK, USA, 28 APRIL - 2 MAY 2014 |  | IPET-DRMM-II / Doc. 3.1 (3)  (16. 4. 2014)  -------------------------  ITEM 3.1  ENGLISH ONLY |

BUFR & CREX

**Creation of a new BUFR Table B class for Marine data**

*Submitted by Richard Weedon (UK Met Office) & Dr David Berry (JCOMM)*

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**Summary and Purpose of Document**

This document will outline the need for a new BUFR Table B Class in Master Table 0 for Marine data.

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**ACTION PROPOSED**

The meeting is invited to discuss and if in agreement endorse the new BUFR class.

**ANNEXES:**

1.

**DISCUSSIONS**

The inclusion of Marine Biochemical data in Master Table 0 (Meteorological) and in particular the potential “saturation” of class 22 has been discussed at length over the past few months. As a result the decision was made to investigate the development of Master Table 10 (Oceanographic).

Since this decision was made, it has become clear that the development of the Oceanographic Master Tables is not at a stage which allow for its use in an operational environment.

**PROPOSAL**

Class 22 in Master Table 0 is currently running out of space having reached 185 entries. Within the next few years the marine community will require approximately 24 new entries for both Physical and Chemical elements (See Annexe A).

To allow for the use of these new descriptors in an operational context, they must be included in Master 0 under a new class. The meeting is asked to consider the possibility of opening Class 41 (currently reserved) for these new descriptors. This approach will ensure that future developments in the representation of Marine data are safeguarded whilst minimising the impact on the Migration to Table Driven Codes.

**Annexe A – Marine Descriptors (as currently represented in MT10)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Class 20: Physical oceanography elements | | | | | | | |
| **F** | **X** | **Y** | **Element Name** | **Unit** | **Scale** | **Ref Value** | **Data**  **Width** |
| 0 | 20 | 4 | Chlorinity (parts/thousand) | kg/kg | 3 | 0 | 16 |
| 0 | 20 | 5 | Chlorosity | kg/m^3 | 3 | 0 | 16 |
| Class 21: Chemistry elements | | | | | | | |
| **F** | **X** | **Y** | **Element Name** | **Unit** | **Scale** | **Ref Value** | **Data**  **Width** |
| 0 | 21 | 2 | Total alkalinity | mmol/m^3 | 1 | 10000 | 14 |
| 0 | 21 | 3 | Carbonate alkalinity | mmol/m^3 | 1 | 10000 | 14 |
| 0 | 21 | 6 | Phosphate (PO4-P) content | mmol/m^3 | 2 | 0 | 10 |
| 0 | 21 | 7 | Total phosphorous (P) content | mmol/m^3 | 2 | 0 | 10 |
| 0 | 21 | 8 | Nitrate (N03-N) content | mmol/m^3 | 3 | 0 | 16 |
| 0 | 21 | 9 | Nitrite (NO2-N) content | mmol/m^3 | 3 | 0 | 12 |
| 0 | 21 | 10 | Nitrate + nitrite content | mmol/m^3 | 3 | 0 | 16 |
| 0 | 21 | 11 | Total nitrogen (N) content | mmol/m^3 | 3 | 0 | 16 |
| 0 | 21 | 12 | Organic nitrogen content | mmol/m^3 | 3 | 0 | 17 |
| 0 | 21 | 13 | Ammonium (NH4-N) content | mmol/m^3 | 3 | 0 | 12 |
| 0 | 21 | 14 | Silicate (SiO4-Si) content | mmol/m^3 | 2 | 0 | 15 |
| 0 | 21 | 15 | Total carbon (C) content | mmol/m^3 | 3 | 0 | 20 |
| 0 | 21 | 16 | Organic carbon content | mmol/m^3 | 3 | 0 | 17 |
| 0 | 21 | 17 | Hydrogen sulphide (H2S-S) content | mmol/m^3 | 3 | 0 | 16 |