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| WORLD METEOROLOGICAL ORGANIZATION  COMMISSION FOR BASIC SYSTEMS  -----------------------------  FIRST MEETING OF  INTER-PROGRAMME EXPERT TEAM ON CODES MAINTENANCE  GENEVA, SWITZERLAND, 24 - 28 JULY 2017 |  | IPET-CM-I / Doc. 2.6 (1)  (7. 7. 2017)  -------------------------  ITEM 2.6  ENGLISH ONLY |

GRIB edition 3

**Templates and Templates components for time intervals**

*Submitted by Enrico Fucile*

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**Summary and Purpose of Document**

The document is proposing a template component for time interval and time statistical processing and some templates implementing some combinations of nested statistical processing.

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**ACTION PROPOSED**

The Team is asked to review the proposal and accept it for validation.

**DISCUSSIONS**

In the process of defining new templates components the definition of time statistical process and time interval are important. In the proposal there is the attempt to address some of the problems affecting the corresponding templates in GRIB edition 2. It wasn’t clear in GRIB-2 that a statistical process is changing the units of the parameter and was left to the user to guess the units of the parameter after the application of a statistical process. We assume that a statistical process can change the units of the original parameter or the parameter can be the final product after the application of the time statistical process and we use a code table to explicitly express this information (see code table 3.5).

The nested application of a time statistical process is built by repeating the “forecast time interval” component several times explicitly.

**PROPOSAL**

***Time Domain Template Component 3.2 – Forecast time interval***

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| --- | --- |
| **Byte No.** | **Contents** |
| 1-2 | Hours of observational data cut-off after reference time (see Note 1) |
| 3 | Minutes of observational data cut-off after reference time |
| 4 | Type of statistical processing (code table 3.4) |
| 5 | Indicator of unit of time range (see Code table 3.3) |
| 6-9 | Start of interval after reference time in units defined by byte 5 |
| 10 | Indicator of unit of time range (see Code table 3.3) |
| 11-14 | Length of time range over which statistical processing is done, in units defined by byte 10 |
| 15-16 | Observable quantity units after statistical processing (code table 3.5) |
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***Time Domain Template 3.2 – Forecast time interval***

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| --- | --- |
| Component Code | Component Name |
| 3.2 | Time interval |

***Time Domain Template 3.3 – Forecast two nested time intervals***

|  |  |
| --- | --- |
| Component Code | Component Name |
| 3.2 | Time interval (see note 1) |
| 3.2 | Time interval |
|  |  |

***Time Domain Template 3.3 – Forecast three nested time intervals***

|  |  |
| --- | --- |
| Component Code | Component Name |
| 3.2 | Time interval (see note 1) |
| 3.2 | Time interval (see note 1) |
| 3.2 | Time interval (see note 1) |
|  |  |

Notes:

(1) Outer time interval first.

**Code table 3.4** – *Type of time statistical processing*

Code figure Meaning

0 Average

1 Accumulation (see Note 1)

2 Maximum

3 Minimum

4 Difference (value at the end of time range minus value at the beginning)

5 Root mean square

6 Standard deviation

7 Covariance (temporal variance) (see Note 2)

8 Difference (value at the start of time range minus value at the end)

9 Ratio

10 Standardized anomaly

11 Summation

12–191 Reserved

192–254 Reserved for local use

255 Missing

**Code table 3.5** – *Observable quantity units after statistical processing*

Code figure Meaning

0 Unchanged

1 Multiply by time

65535 Missing