WORLD METEOROLOGICAL ORGANIZATION

JOINT WMO/IOC TECHNICAL COMMISSION FOR OCEANOGRAPHY AND MARINE METEOROLOGY (JCOMM)

EXPERT TEAM ON SEA ICE – FOURTH SESSION

STEERING GROUP FOR THE PROJECT GLOBAL DIGITAL SEA ICE DATA BANK (GDSIDB) – TWELTH SESSION

ST PETERSBURG, RUSSIAN FEDERATION

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INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

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ITEM 2.6.6

Original: ENGLISH

Updates to SIGRID-3 and ice chart color standards formats

(WMO/TD-No. 1214 and No.1215)

(Submitted by Vasily Smolyanitsky, ETSI Chairperson)

Summary and Purpose of Document

This document provides information on the current status for the publications *WMO/TD-No.1214 SIGRID-3: A Vector Archive Format for Sea Ice Charts* and *WMO/TD-No.1215 Ice Chart Color Code Standard* and suggestions for their further revisions.

ACTION PROPOSED

The Expert Team on Sea Ice (ETSI) is invited to:

(a) Note and comment on the information provided as appropriate;

(b) Consider suggestions for revisions

Annexes:

1. http://wdc.aari.ru/wmo/etsi-iv/WMO_docs/JCOMM_TR23_SIGRID3_rev_Mar_2007.pdf
2. http://wdc.aari.ru/wmo/etsi-iv/WMO_docs/JCOMM_TR24_colour_standard.pdf
3. Doc. 2.6.1 appendix 1 - Proposed Changes to Harmonize the WMO Sea Ice Nomenclature and Symbology, the SIGRID-3 Coding Standard and the ENC Ice Objects Catalogue
4. Doc. 2.6.2(6)) – Proposed Additions and Amendments the WMO Sea Ice Nomenclature
5. Doc. 2.6.2(1)) – Practical use of the Sea Ice Nomenclature terms “old ice” and “ice edge” in various national ice services with reference to WMO Ice Nomenclature
6. Doc. 2.6.5 app2 – Ice Information for Electronic Navigational Charts (ENC): presentation Schemes for Ice Objects

Discussion

1. Two technical documents, the *SIGRID-3: A Vector Archive Format for Sea Ice y Charts* and the *Ice Chart Colour Code Standard*, both developed in cooperation with the IICWG, finalized by ETSI-II (April 2004) and published by the WMO Secretariat in 2004 in JCOMM Technical Reports (WMO/TD No. 1214 and No. 1215) now extend the *WMO Sea-Ice Nomenclature* Volume III International System of Sea-Ice Symbols by providing standards for operational ice chart coding and delayed-mode presentation in additional to raster *SIGRID* (WMO, 1989) and *SIGRID-2* (WMO, 1994) formats primarily intended to support sea ice climatology.

2. The ETSI-III agreed on 4 amendments to SIGRID-3 format, namely:

a) Amend the definition of code 91 in Table 4.1 "Concentration Codes for Variable Identifiers CT, CA, CB, and CC". The new definition would read: "9/10–10/10 or 9+/10".

b) Add code 91 to Table 4.3 "Form of Ice Codes for Variable Identifiers FA, FB, FC, and CF". The form would become "Strips and Patches". The Size/Concentration would be "Concentration 9+/10".

c) Amend Table 1 by replacing line 15 with 2 new lines as follows with re-numbering the following lines, as necessary and/or appropriate:

15	*FP*	*Text*	*2*	*66-67*	*Table 4.3*	*Predominant form of ice*
16	*FS*	*Text*	*2*	*68-69*	*Table 4.3*	*Secondary form of ice*

d) Amend the SIGRID-3 codes as follows:

1. *Add a new code figure 70 to Table 4-2 "Thickness of Ice or Stage of Development Codes for Variable Identifiers SA, SB, SC, CN, and CD". The Stage of Development for this new code figure will be "Brash Ice". A new code table described below will determine the thickness of this type of ice.*
2. *Extend code table 3.3 SIGRID-3 "Variable Identifiers" to add 4 new identifiers: AV, AK, AM, AT.*
3. *Amend the description of code table 4.1 "Concentration Codes for Variable Identifiers CT, CA, CB, and CC" to read, "Concentration Codes for Variable Identifiers CT, CA, CB, CC, AV, AK, AM and AT".*
4. *Add a note following code table 4.1 to read, "When AV, AK, AM and AT are used, the total of the concentrations represented by the values for AV, AK, AM and AT must sum to the concentration represented by the value for CA".*

3. After the ETSI-III session the Team chair inserted the stated amendments into the SIGRID-3 document and published the revised version at the formal depository (JCOMM SFSPA web-site): http://www.jcomm-services.org/documents.htm?parent=136

4. Pronounced discussions on the status of SIGRID-3 format implementation across the ice services and potential constraints of the Color were held during the "Ice Analysts Workshops" (June 2008, June 2009). It was agreed to add icebergs and growlers symbols into CT colour table and to ask ETSI experts to develop detailed description of using colours and symbols for bergy and open waters.

5. Following the existing WMO Sea Ice Nomenclature definition 4.2.7 Bergy water: *An area of freely navigable water in which ice of land origin is present in concentrations less than 1/10. There may be sea ice present, although the total concentration of all ice shall not exceed 1/10,* it is proposed to add an additional light-blue colour with icebergs symbols in red or black color for bergy water as a new row number 3 to table 1 of the Standard.

Table 1. Total Concentration Colour Code Standard

		150-200-255	Less than one tenth (open water)	4.2.6
		150-200-255	Bergy water	4.2.7
		140-255-160	1/10 - 3/10 (very open ice)	4.2.5

6. Additional proposals to SIGRID-3 and Color Standards are anticipated as a result of discussions on the following documents

- Doc. 2.6.1 appendix 1 - Proposed Changes to Harmonize the WMO Sea Ice Nomenclature and Symbology, the SIGRID-3 Coding Standard and the ENC Ice Objects Catalogue
- Doc. 2.6.2(6)) – Proposed Additions and Amendments the WMO Sea Ice Nomenclature
- Doc. 2.6.2(1)) – Practical use of the Sea Ice Nomenclature terms “old ice” and “ice edge” in various national ice services with reference to WMO Ice Nomenclature
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