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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

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ITEM 2.6.2

Original: ENGLISH

Sea Ice Nomenclature and Illustrated Glossary

(WMO No. 259)

(Submitted by Vasily Smolyanitsky, ETSI Chairperson)

Summary and Purpose of Document

This document provides information on the current status for the publication *WMO Sea Ice Nomenclature* (WMO No. 259, volume 1 – Terminology and Codes, Volume II – Illustrated Glossary and III – International System of Sea-Ice Symbols) and suggestions for mechanisms for its further regular 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 in developing mechanism for regular revisions to the publication *WMO Sea Ice Nomenclature* (WMO No. 259, volume 1 – Terminology and Codes, Volume II – Illustrated Glossary and III – International System of Sea-Ice Symbols)

Annexes:

1. 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
2. Doc. 2.6.2(6)) – Proposed Additions and Amendments the WMO Sea Ice Nomenclature
3. 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
4. Doc. 2.6.2(2)) – Proposed Additions and Amendments the WMO Sea Ice Nomenclature to ensure consistency with “Ice Objects Catalogue” version 5.0
5. Doc. 2.6.2(5) – Understanding and identifying old ice in summer
6. Updated version of the Nomenclature (by Dr Andrey Bushuev).

Discussion

Background

1. The WMO publication No. 259 “Sea Ice Nomenclature” is a top level WMO sea-ice standard. The first complete version was published in 1970 with several later revision through 1989 and includes 3 volumes:

- Volume 1 – Terminology and Codes
- Volume II – Illustrated Glossary
- Volume III – International System of Sea-Ice Symbols

Volume I - Terminology and codes

2. The latest amendments to terminology and codes were introduced by ETSI-I (Buenos Aires, 2002) and ETSI-II (Hamburg, 2004) and include:

- 4 terms 4.4.7 [ice jam], 4.4.8.5 [median ice edge], 6.4.1 [finger rafting] and 10.4.5 [growler]
- Corrections to French, Russian and Spanish versions to ensure authentity with the English versions and correspondence with existing national practices.

3. The current Volume I contains 193 terms and definition.

4. Following ETSI-II recommendations, the Volume I was prepared by the AARI expert as WMO Sea ice Nomenclature is formally available in electronic form in 4 four WMO languages (English, French, Russian and Spanish). The storage format is a MySQL database in UTF-8 coding with backup as a master .CSV-format file also in UTF-8 coding with the following 9 fields: wmo_id, wmo_name_en, wmo_def_en, …., wmo_name_es, wmo_def_es.

5. MySQL terminology database is presently hosted by the AARI GDSIDB center and supervised by the ETSI chair. During 2009 interface to the database was rewritten in PHP-language and is now available as http://www.aari.ru/gdsidb/XML/wmo_259.php. PHP-interface provides possibility of a) all possible combinations for English, French, Russian and Spanish with a number of languages 1, 2 and 4, b) sorting by subject and alphabet and c) search for output as .html which maybe further converted to .pdf.

6. Changes to terminology database are provided by means of local editing of the master .CSV file with subsequent update to MySQL database. It is proposed to follow such approach during the next intersessional period with agreed amendments submitted to ETSI chair for update of the master file and update to database.

Sea Ice Nomenclature for Ice Charting (update by Andrey Bushuev)

7. It should be noted that concept of the currently active Sea Ice Nomenclature was elaborated in the time when air sea ice reconnaissance and paper charts were predominant. To minimize its inconsistencies and following recommendations by the former CMM-XI, JCOMM-I and JCOMM-II Sessions, the experts from the AARI developed the draft of a new Nomenclature in a form of a two documents with the following preliminary titles: a) shorter “Sea Ice Nomenclature for Ice Charting” (author: Dr Andrey Bushuev), and b) a wider, more scientific one “WMO Glossary on Sea Ice Cover” (authors: Dr Stanislav Losev and Dr Vladimir Spichkin). The ETSI-II Session in April 2004 discussed the drafts and agreed that it would concentrate its further work on the update of the Sea Ice Nomenclature using the document prepared by Dr Andrey Bushuev as a draft version 1.0. During May 2004, Dr Jonathan Shanklin (United Kingdom), which resulted in version 1.1 of the document carried out an editorship review of the document. The latter version, together with Annexes 1 and 2 (code tables, symbols and conventional designations and order of using ice symbols) was posted in .pdf format at JCOMM SPA website, section 'sea-ice documents'. Though ETSI-III agreed to proceed with this draft, we may see that for the practical reasons (likely the need to speed up the process with the Ice Objects Catalogue) this work is currently postponed.

However, the Team is encouraged both to proceed with cardinal update of the WMO Sea Ice Nomenclature in the next decade and to use this document in its further work as a glossary/ reference material.

Sea ice nomenclature for the Baltic Sea

8. Following recommendations from BSIM-23 the ETSI chair received documents containing sea-ice terminology and illustrated glossary for the winter navigation in the Baltic Sea in English, Finnish, Swedish, Estonian, Russian and Polish languages. The purpose of these documents is to promote winter navigation in the Baltic Sea by providing seafarers with a common sea ice nomenclature for communication. Documents were prepared in additional languages in accordance with the WMO Sea Ice Nomenclature (WMO, 1989) and are based on an English-Finnish-Swedish glossary published by the Finnish Institute of Marine Research in 2001 (Seinä et al., 2001) and corresponding publications in Estonia, Poland and Russia.

9. The current Baltic version contains 85 terms and definitions in English, Finnish, Swedish, Estonian, Russian and Polish languages. It is anticipated that terms and definitions in remaining BSIS languages will be also provided to ETSI chair.

10. It is proposed to formally link these terms and definitions with the Volume I as a subset of terms and definitions by this ensuring correspondence and simultaneous update of all terms and definitions. Technical mechanism can be a new Volume I regional Supplement “Sea ice nomenclature for the Baltic Sea” based on extended electronic database.

Proposed updates to follow present practices of national ice services and implementation of “Ice Objects Catalogue“

11. Further amendments to terms and definitions are due to the following main issues in national ice practices:

- Implementation of harmonization between the technical publications with SIGRID-3 format and the “Ice Objects Catalogue“ as drivers
- Implementation of harmonization of ice analysis across the ice services as revealed by the “Ice Analysts Workshops” 1 and 2 and the IICWG.

12. Such amendments are summarized as the following separate documents:

- Proposed Changes to Harmonize the WMO Sea Ice Nomenclature and Symbology, the SIGRID-3 Coding Standard and the ENC Ice Objects Catalogue (doc. 2.6.1 appendix 1)
- Proposed Additions and Amendments the WMO Sea Ice Nomenclature (doc. 2.6.2(6))
- Practical use of the Sea Ice Nomenclature terms “old ice” and “ice edge” in various national ice services with reference to WMO Ice Nomenclature (doc. 2.6.2(1))
- Proposed Additions and Amendments the WMO Sea Ice Nomenclature to ensure consistency with “Ice Objects Catalogue” version 5.0 (doc. 2.6.2(2))
- A new updated version of the Nomenclature (by Dr Andrey Bushuev).

13. The Team is invited to discuss these documents one by one bearing in mind the following ETSI accepted philosophy/paradigm that the ***Ice Objects catalogue represents the subset of the WMO Sea Ice Nomenclature being at the same time a driving force for amending sea ice Nomenclature with an intention of including the navigators’ feedback in the future*****.**

Volume II – Illustrated Glossary

14. During the intersessional period the existing 176 photos in the hardcopy edition of Volume II “Illustrated Glossary” were scanned and processed in the same way as Volume I forming a MySQL database and catalogue of photos in JPEG format, both hosted by the AARI GDSIDB center and supervised by the ETSI chair. Glossary database has the

following 5 fields: wmo_id, number of photo, author, air_rec_height, comment and is relationally linked to database of terms with access available under the same interface http://www.aari.ru/gdsidb/XML/wmo_259.php. PHP-interface provides possibility of a) captions in English, French, Russian and Spanish, b) sorting by subject and alphabet and c) search for output as .html which maybe further converted to .pdf. Changes to glossary database are provided in the same way as to the terminology by local editing the master .CSV file with subsequent update to MySQL glossary database.

15. The present glossary contains photos which are mostly a) black and white with low quality and b) based on experience from aircraft reconnaissance. There is definitely a need for its amendment by modern colour photos with higher resolution and possibly complementing the ground photos by corresponding simultaneous satellite imagery. ETSI-III discussed and noted following possible sources for such update:

- CIS - MANICE and ad-hoc huge collection of photos;
- Argentina – poster for the mariners;
- ASPeCT CD-ROM;
- USA - NOAA ad-hoc resources;
- FIMR - ad-hoc resources;
- UK – Marine Observers handbook and Admiralty mariners' handbook.

16. At the present session it is proposed to take into consideration following sources for amending and extending the Volume II:

- English-Finnish-Swedish glossary published by the Finnish Institute of Marine Research in 2001, containing 18 photos
- Publication of the National Research Council (NRC) of Canada Understanding and Identifying Old Ice in Summer", 2006-2008 (doc. 2.6.2(5)).
- Working proposals from the national services.

17. Technical mechanisms for amending the Glossary can be both a simple extension of the glossary database and catalogue as well as development of new Volume II regional Supplements "Sea ice Glossary for the Baltic Sea" / "Sea ice Glossary for the old ice" with a new database structure, in all cases relationally linked to terminology database. It is proposed to follow such approach during the next intersessional period with agreed amendments submitted to ETSI chair for update of the master file and update to glossary database.

Volume III – International System of Sea-Ice Symbols

18. At present the Volume III – International System of Sea-Ice Symbols is formally existing only as hardcopy version though its subsets are included into the coding tables of SIGRID, SIGRID-3 formats, "Colour Standard for Ice Charts" and "Ice Objects Catalogue". Indirect and direct discussions on Volume III content are included into agenda items 2.6.1, and 2.6.5. For the next intersessional period it is proposed to develop an electronic update of the Volume III based on the agreed results of this session.

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