5th Ice Analysts Workshop

**Day 1**

Opening

NIC – welcome to participants from the head of NIC, Cap…Kelly Tailor

Local logistics presented by Caryn P.

Introduction of participants

Introductory presentation on Antarctic sea ice conditions by Dr Thorsten Markus

Theme covered by presentation

* Arctic versus Antarctic ice coverage.
* IceSat-2 mission

Use of GIS by nat’l ice services

Introductory to SIGRID-3 by P.Wagner

* Additional comments by V.Smolyanitsky and J.Holfort on simplified/full options of coding sea ice parameters using concept of IOC, coding of polygone/linear/point objects

**Recommendations:**

1.1 Clarify wording in SIGRID concerning using/mixing ‘simplified’/’’extended’ identifiers

1) NIC SIPAS system (G. Wachita)

2) AARI GIS system (Vladimir Bessonov)

3) Bifrost – met.no GI system, Nick Hughes

Aims (recommendations from workshop):

**Recommendations:**

1.2 Proceed with Bifrost collaboratively with national ice services

1.3 Consider single JCOMM / WMO depository for all sea ice symbology

4) DMI Antarctic analysis

 Support ship operations, one of the product sent to masters is AMSR annotated

5) Argentina Naval Hydrographic service ([www.hydro.gob.ar](http://www.hydro.gob.ar))

 - large dependency on imagery

- sea ice analysis by 9 zonas near the areas of interest (13 Arg. bases) (concentration, stages), presently no SIGRID-3

 - iceberg analysis (weekly analysis in winter, twice a week in summer)

- iceberg analysis for SafetyNET for NAVAREA is done daily, coding is in plain text

Comment by Pablo C.-C.

– WMO PSTG is looking after Antarctic and asked for 3days SO coverage in the last report

* Besides ASPeCT and Argentian system another software system for ship-borne obs is developed by Jenny Hutchings, there is a firld for collaboration

6) Australia – Jan Leizer

- quality management in the WMO style

- certification of ice services like aviation

**Recommendation:**

1.4 Proceed with developing criteria for Ice Services certification and ice services quality control

7) NMI-NIC-AARI collaboration (Nick Hughes)

Proposals for next steps:

* A number listed in presentation
* Icebergs: include limit of known icebergs

Discussion:

**Day 2**

**NIC Antarctic Database/Antarctic shelf update**

Chris Readinger, NIC

Comments:

P.Wagner, Juergen Holfort, Jan Leizer – Critical to establish update / feedback to SCAR AAD

Vasily Smolyanitsky – comments on GEBCO, ‘NOT for navigational purposes’ – for the latter possibly the IHO / SCAR have the best coastline, but the national ice services have better ice shelf contours

**Recommendation**

2.1 Develop feedback to SCAR

**Tracking icebergs, NIC**

MST1 Tyson

Comments: P.C-C

**BYU Antarctic Iceberg Tracking Dtabase**

David Long

Vasily Smolyanitsky – whether BYU database is validated using ship-borne obs and vice versa – answer is yes, BYU is also providing feedback to vessels in SO

**IIP experience and IICWG Iceberg sub-committee update**

Gabrielle McGrath

**Additions to iceberg coding and symbology**

Vasily Smolyanitsky

2.2 Agree on proposals for additions to iceberg coding, proceed with the draft within the IICWG Sub-Committes with finalization by ETSI-6

Discussion:

**Way Ahead for Monitoring Antarctic Icebergs**

**Day 3**

**1) GOFS Model in Antarctic**

**2) Argentina’s Antarctic Models in Souhern Hemi**

**3) Group discussion**

**P.C.C. – convener**

**- send a message from the workshop to IABP to reignite the program**

**4) GMDSS report by Vasily Smolyanitsky**

**proposal for additional things**

**Day 4**

Discussion on ice edge in GMDSS

4.1 Consent that developed rules are sufficient for the SO

- no additional sea ice information is currently can be provided for SafetyNET

- however, as it partly due to financial restrictions (cost of Inmarsat transmission) some ice services feel that amount of info should be bigger.

**Recommendation:**

4.2 for ETSI investigate influence of financial restrictions on amount of MSI in SafetyNET

Discussion on icebergs

**Recommendation:**

4.3 Following specifications for icebergs in GMDSS METAREA/NAVAREA SafetyNET are recommended following WMO-No.558 in effect rules and Argentina practices for NAVAREA

* Iceberg analysis for SafetyNET should be done daily
* Iceberg information in SafetyNET should include following 4 parts
1. “EXTREME ICEBERGS LIMIT” (following WMO-558 spec for ice edge lat-lon pairs)
2. “POSITION OF ICEBERGS GREATER THAN XX NM” (following US NIC naming conventions)
3. “POSITION OF ICEBERGS SMALLER THAN XX NM” (if observed, in enumerated manner)
4. “LOCATION OF ICEBERGS CLUSTERS” (ZONES of certain concentration) using limited number of lat-lon pairs (4 pairs)

Following met.no demonstration of using BIFROST software for forth and backward visualization of GMDSS SafetyNET bulletins and existing practices (e.g. AARI at gmdss.aari.ru when graphical replicas are produced on a basis of textual information)

**Recommendation:**

4.4 Develop scripts/software for backward conversion of ice edge and iceberg information in SafetyNET onto GML and shapefile formats; that will be possible a way forward of GMDSS in ENC

**Day 5**

Presentation by P.C.-C. on geophysical factors constraining / driving Antarctic sea ice extent including the validation part.

**Recommendations**:

5.1 Consider depicting historical obs from 18th – 19th – early 20th on modern SO sea ice propagation

5.2 Address restoration of IPAB configuration

Demonstration of USNIC weekly iceberg analysis in ArcGIS (SIPAS ?)

Weekly analysis (on Friday) is forwarded to (renews) the general sea ice database.

**Recommendations:**

5.3 In case AARI or other partner detects new iceberg objects (greater than XX nm) and smaller than XX nm, NIC naming conventions should be used for the first one and UKXXX for the latter ones; the service should inform US NIC for confirmation (nic.cdo@noaa.gov with copies to Matt Tyson matthew.tyson@noaa.gov and Chis Readinger Christopher.readinger@noaa.gov)

5.4 Inside collaborative project consider producing normal SIGRID 3.3 file for icebergs including attributes for names, dimensions, and optionally source of information, link to picture

5.5 Consider developing a JCOMM “Guide to Antarctic iceberg analysis”