HCA12-INF3

Report by the International Hydrographic Organization (IHO) on “Cooperation in hydrographic surveying and charting of Antarctic waters”

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Introduction

The International Hydrographic Organization (IHO) is an intergovernmental consultative and technical organization that was established in 1921. The IHO enjoys observer status at the UN and is recognized as the competent international authority regarding hydrography and nautical charting. Its competence is also referred in the United Nations Convention on the Law of the Sea. The Organization coordinates on a worldwide basis the setting of standards for the production of hydrographic data and the provision of hydrographic services to support safety of navigation and the protection and sustainable use of the marine environment. The IHO's mission is to create a global environment in which States provide adequate and timely hydrographic data, products and services for their widest possible use.

The IHB has encouraged the establishment of Regional Hydrographic Commissions (RHCs) to coordinate hydrographic activity and cooperation at the regional level. The RHCs are made up predominantly of IHO Member States with interests in a particular region. RHCs work in close harmony with the Organization to help further its ideals and program. RHCs meet at regular intervals to discuss such things as mutual hydrographic and chart production problems, plan joint survey operations, and resolve schemes for medium and large scale International Chart coverage in their regions.

One of these Commissions is the Hydrographic Commission on Antarctica (HCA) dedicated to promoting technical co-operation in the domains of hydrographic surveying, marine cartography, and nautical information within the Antarctic region.

The IHO and particularly the HCA works closely with different organizations concerned with and interested in Antarctica, aiming at strengthening cooperation to improve safety of life at sea, safety of navigation, protection of the marine environment and contribute to marine scientific research in Antarctica.

This Report provides a brief summary of the key coordination activities since the last ATCM.

The 11th Meeting of the IHO Hydrographic Commission on Antarctica

The 11th Meeting of the Hydrographic Commission on Antarctica (HCA) took place in Hobart, Tasmania, Australia, from 5 to 7 October 2011. The meeting was organised by the Australian Hydrographic Service (AHS) with the support of the Australian Antarctic Division (AAD). Fifteen HCA Member States[1], out of 23, were represented at this meeting, plus observers from COMNAP, IAATO, IALA, GEBCO and SCAR, and one expert contributor (Fugro-Pelagos). In total, 29 delegates were in attendance.

Participants were welcomed by Dr. Tony FLEMING, AAD Director, highlighting the strong involvement of AAD in environment protection in Antarctica and climate change.

Opening Remarks were provided by Commodore Rod NAIRN, AHS Director and HCA Vice-Chair, stressing the need for better charts and improved chart coverage in Antarctica. He emphasized that the HCA work is critical to best support shipping operations and advancing science knowledge in Antarctica.

[1] Australia, Brazil, Chile, Ecuador, France, Germany, Korea (Rep. of), New Zealand, Norway, South Africa, Spain, United Kingdom, USA, Uruguay and Venezuela.

He thanked AAD for their support in organizing this meeting and reported that apologies for absence had been received from Japan and the Antarctic Treaty Secretariat.

The HCA currently comprised 23 IHO Members States and there have been no changes since the last report. (**See Annex A**).

The Commission re-elected Commodore NAIRN (Australia) as Vice-Chairman of HCA and reviewed all actions arising from the 10th HCA meeting concluding that most of the actions had been completed. The following subjects merit special attention:

- HCA Members from Brazil, Chile, France, Germany, South Africa, Spain and UK reported that they have briefed their ATCM National delegates on the importance of improving hydrography and nautical charting for safety of navigation in Antarctica. The meeting agreed that improving coordination at a national level should be an ongoing practice.

- Noting the unique status of Antarctica and the imminent introduction of the IMO Polar Code, the Commission agreed that there was a need to define how safety of navigation, including hydrography and aids to navigation, should be administered in Antarctica.

- The Commission felt that a new strategic approach was needed for raising awareness on safety of navigation and environmental protection in Antarctica, through the submission of a set of recommendations to the XVIII International Hydrographic Conference. This was done and the IHO 2013-2017 Work Program includes the following relevant tasks:

  a) to conduct a risk assessment for the Antarctic region and develop a Work Program to improve Antarctic charting. (2013/2014)

  b) to submit through the IHB to ATCM the risk assessment conducted by HCA for the Antarctic Region together with a proposed HCA work program to improve Antarctic charting, for consideration, endorsement and support from ATCM. (2015)

- The Commission instructed the HCA Chair to approach ATCM explaining that SOLAS obligations (limited to Chap V, Reg. 2, 4, 9, 27) [and environmental protection mechanisms] and related efforts in Antarctica rely on the efforts of the nations that are party to the Antarctic Treaty in meeting those obligations. The Commission also instructed the HCA Chair to seek support from the ATCM for the IMO to encourage voluntary participation in data collection activities to be included into the Polar Code (IMO's mandatory code for ships operating in polar waters), noting that the remote nature and environmental constraints of the Antarctic region coupled with the limited suitable resources available to conduct surveying and charting drives a focus on investigating alternate methods for data gathering.

- Following a kind invitation from the Servicio Oceanografico, Hidrografico y Meteorologico de la Armada del Uruguay, the Commission decided to have the 12th HCA meeting in Uruguay, (venue to be determined) on 10 – 12 October 2012.

The Status of Hydrographic Surveys

Out of the 15 National Reports submitted to the last HCA meeting, 8 indicated that some systematic hydrographic surveys had taken place during the 2010/2011 season. There is no assessment yet with respect to the 2011/2012 season.

The HCA Hydrographic Survey Prioritizing Working Group with cooperation from COMNAP and IAATO, have revised and produced new versions of the HCA Long Term Survey Plan and the HCA

Survey Short List to reflect new survey requirements arising from IAATO input based on previous season tourist statistics.

HCA has been proactive in complying with the scope of ATCM Resolution 2/2010 and at least 9 HCA members have established links and arrangements *with relevant national scientific institutions for the collection of bathymetric information*. Another 4 HCA Members, having a direct responsibility for the collection of bathymetric data information, indicated that such links do not seem relevant to be established. Nevertheless as soon as new data is available, the IHB stands ready to receive such data and further disseminate it to the relevant HOs.

IAATO has released some past bathymetric data to the IHB that then made it available to the producer nation of the charts that could benefit from such data. The HCA encourages IAATO members to continue this practice that enables the improvement of the Antarctic chart coverage

Following experiences so far gathered the HCA agreed to further develop guidelines for IAATO ships of opportunity willing to collect hydrographic data and for the Hydrographic Offices visiting IAATO ships so that a visit process and participation schemes be facilitated. Despite of the feeling of little concrete results from such visits to date, due to the difficulties in their implementation, the meeting agreed to continue arranging the visit of hydrographic surveyors to IAATO ships when calling in ports on her way to Antarctica, or in Antarctica, to advice on the collection and rendering of hydrographic data.

The Commission took note of a project involving the UKHO and a hydrographic company aiming to improve data coverage in Antarctica (predominately the Peninsula) for all shipping. The system is known as ARGUS (Autonomous Remote Global Underwater Surveillance) and will provide cooperative surveying through the acquisition and collective processing of vessel GPS and Echo Sounder data via a black box recorder. The cost of a box should be about USD 2.000.

The Status of Nautical Chart Production

Six new INT charts have been approved for inclusion in the scheme, to be produced by Ecuador (INT 9129), Spain (INT 9128), Australia (INT 9022 and INT 9038) and UK (INT 9117 and INT 9133). As a result, the total number of INT charts in the scheme is 108. Of these, 67 INT charts had been published as of April 2012; 27 are planned for publication by 2014 as either new publication or new edition. (**See Annex B**).

The key element for progressing INT chart production is the availability of good quality hydrographic survey data for the areas concerned. In many areas not yet covered, there is either no data or it is old data of unsatisfactory quality. Any significant progress towards completion of production for the whole scheme will therefore depend upon the capability of conducting hydrographic surveys to modern standards.

Hydrographic operations in Antarctica are highly costly. This fact and the priority given by IHO Member States to surveying their own national waters are both limiting factors to the progression of INT chart production for Antarctica.

The production of Electronic Navigational Charts (ENC) of Antarctica has continued to grow. So far 60 ENCs cells are available (**See Annex C**) based on various national charts and on 32 INT charts. These ENCs include 13 “overview”, 7 “general”, 15 “coastal”, 13 “approach”, 11 “harbour” and 1 “berthing”.

The current production program covers mainly the same areas covered by the paper charts and that looks promising, but at the end, ENC production will be governed by the availability of new surveys data.

Therefore if real progress is to be achieved, an increase in the hydrographic surveys operations seems necessary.

The IHO/HCA has already agreed on a small and medium scale scheme for ENCs covering Antarctic waters and it is working together with the IHB on the development of a large scale ENC scheme, based on existing paper charts and other requirements.

Others

The IHO has contributed to the ATCM work participating with comments on the work conducted by :

a) ICG on "Yachting guidelines for Antarctic cruises"
b) ICG on "Outstanding Questions on Antarctic Tourism" and
c) ICG on "Review of ATCM Recommendations on Operational Matters"

Conclusions

- While several Hydrographic Offices are progressing in the production of INT Charts and ENC covering Antarctic waters, this activity is dependent on the availability of reliable hydrographic data. The IHO/HCA acknowledges and appreciates the cooperation and contribution received from several international organizations, particularly from IAATO, COMNAP and research institutions, which have made ancient collections of bathymetric informative data available. This collective effort goes in direct support of the production of INT Charts and ENC covering Antarctic waters.

- Improving coordination at a national level between the ATCM National delegates and their respective National Hydrographers facilitates the understanding of the importance of improving hydrography and nautical charting for safety of navigation and protection of the marine environment in Antarctica.

- Noting the unique status of Antarctica and the imminent introduction of the IMO Polar Code, there is a need to define within the ATCM how safety of navigation, including hydrography and aids to navigation, should be administered in Antarctica.

- SOLAS obligations (limited to Chap V, Reg. 2, 4, 9, 27) and related efforts in Antarctica rely on the efforts of the nations that are party to the Antarctic Treaty in meeting those obligations. It is important that ATCM invites IMO to encourage voluntary participation in data collection activities to be included into the Polar Code (IMO's mandatory code for ships operating in polar waters).

- The approved IHO 2013-2017 Work Program includes the following relevant tasks to be developed by the HCA, the result of which shall contribute the ATCM objectives :

    a) to conduct a risk assessment for the Antarctic region and develop a Work Program to improve Antarctic charting (2013/2014)

    b) to submit through the IHB to ATCM the risk assessment conducted together with a proposed HCA work program to improve Antarctic charting, for consideration, endorsement and support from ATCM. (2015)

Recommendations.

It is recommended that the XXXV ATCM:

a) Takes note of the IHO Report.

b) Consider adopting the required administrative provisions to implement SOLAS obligations (limited to Chap V, Reg. 2, 4, 9, 27)

c) Consider inviting IMO to encourage voluntary participation in data collection activities to be included into the Polar Code and consider the way the implementation of the provisions contained in the mentioned IMO Polar Code will be handle in Antarctica.

Monaco, May 2012.

ANNEXES (IN ENGLISH ONLY):

A: HCA Membership.
B: INT Chart Production Status (April 2012).
C: ENC Production Status (April 2012)

ANNEX A
HCA MEMBERSHIP
(March 2012)

MEMBERS:

Argentina
Australia
Brazil
Chile
China
Ecuador
France
Germany
Greece
India
Italy
Japan
Korea, Republic of
New Zealand
Norway
Peru
Russian Federation
South Africa
Spain
United Kingdom
Uruguay
USA
Venezuela

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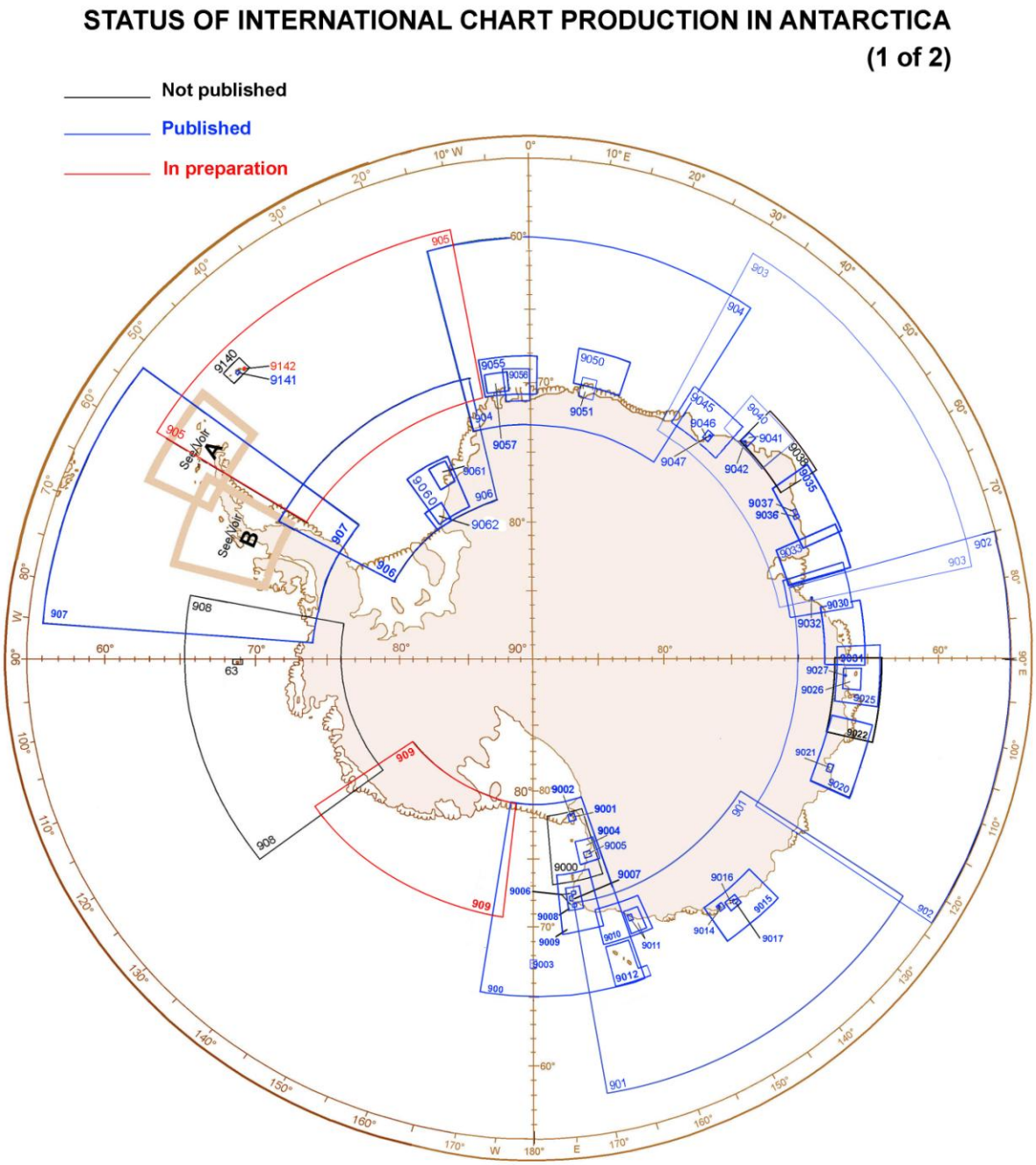
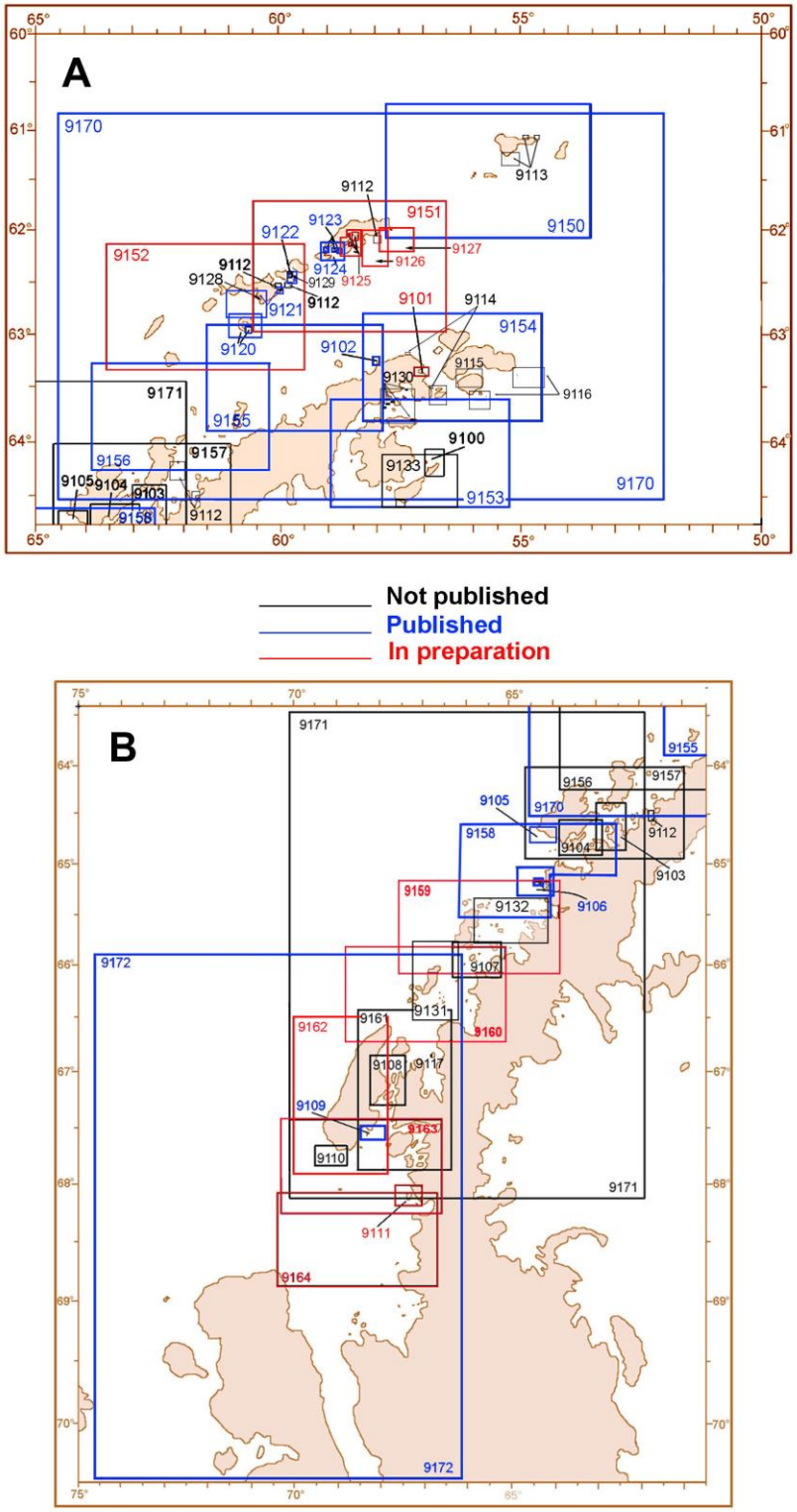
OBSERVER ORGANIZATIONS:

Antarctic Treaty Secretariat (ATS)
Council of Managers of National Antarctic Programmes (COMNAP)
Standing Committee on Antarctic Logistics and Operations (SCALOP)
International Association of Antarctic Tour Operators (IAATO)
Scientific Committee on Antarctic Research (SCAR)
International Maritime Organization (IMO)
Intergovernmental Oceanographic Commission (IOC)
General Bathymetric Chart of the Oceans (GEBCO)
International Bathymetric Chart of the Southern Ocean (IBCSO)
IHO Data Center for Digital Bathymetry (DCDB)
Australian Antarctic Division
Antarctica New Zealand

ANNEX B
INT CHART PRODUCTION STATUS
(April 2012)

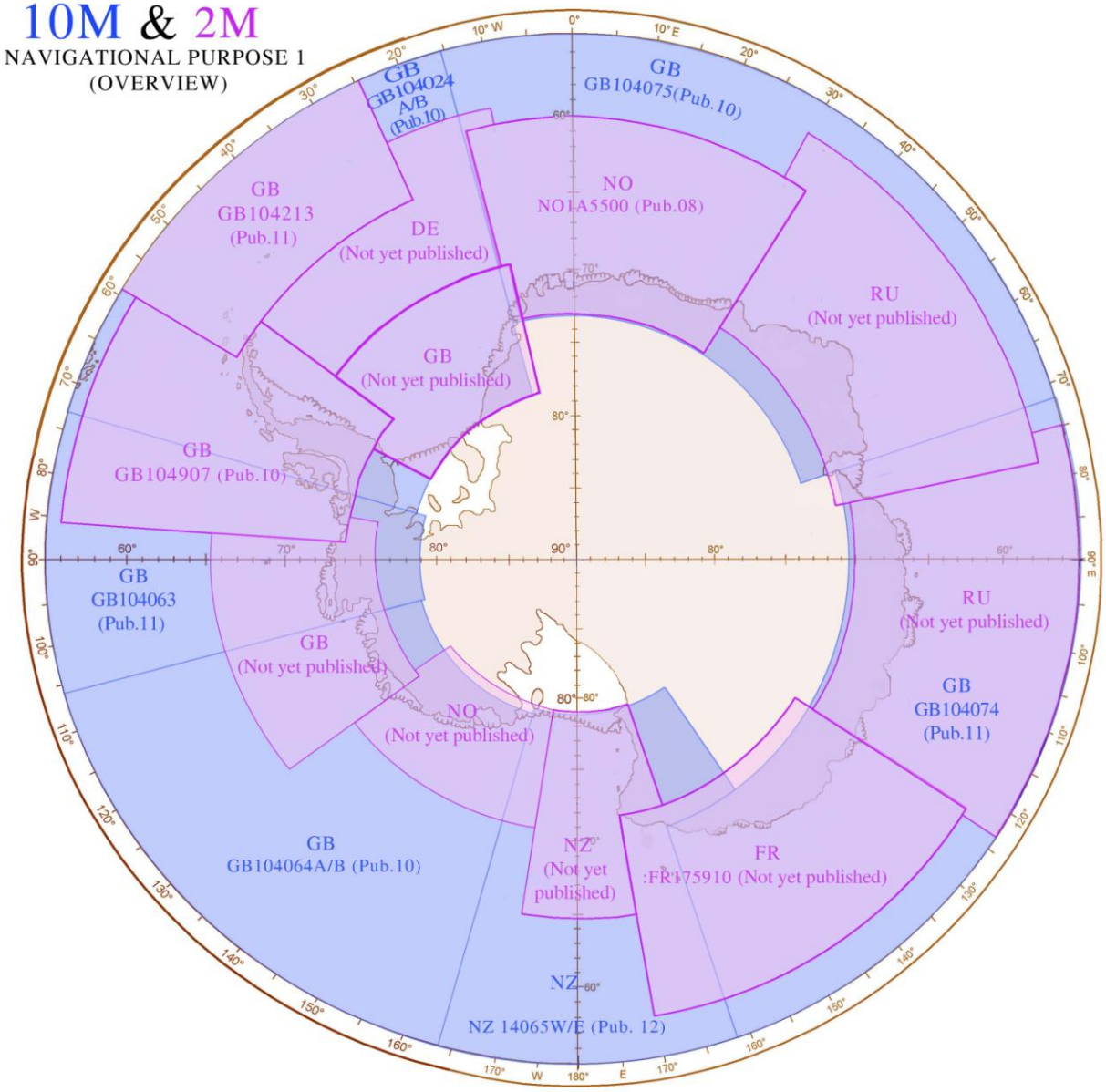


STATUS OF INTERNATIONAL CHART PRODUCTION IN ANTARCTICA
(2 of 2)

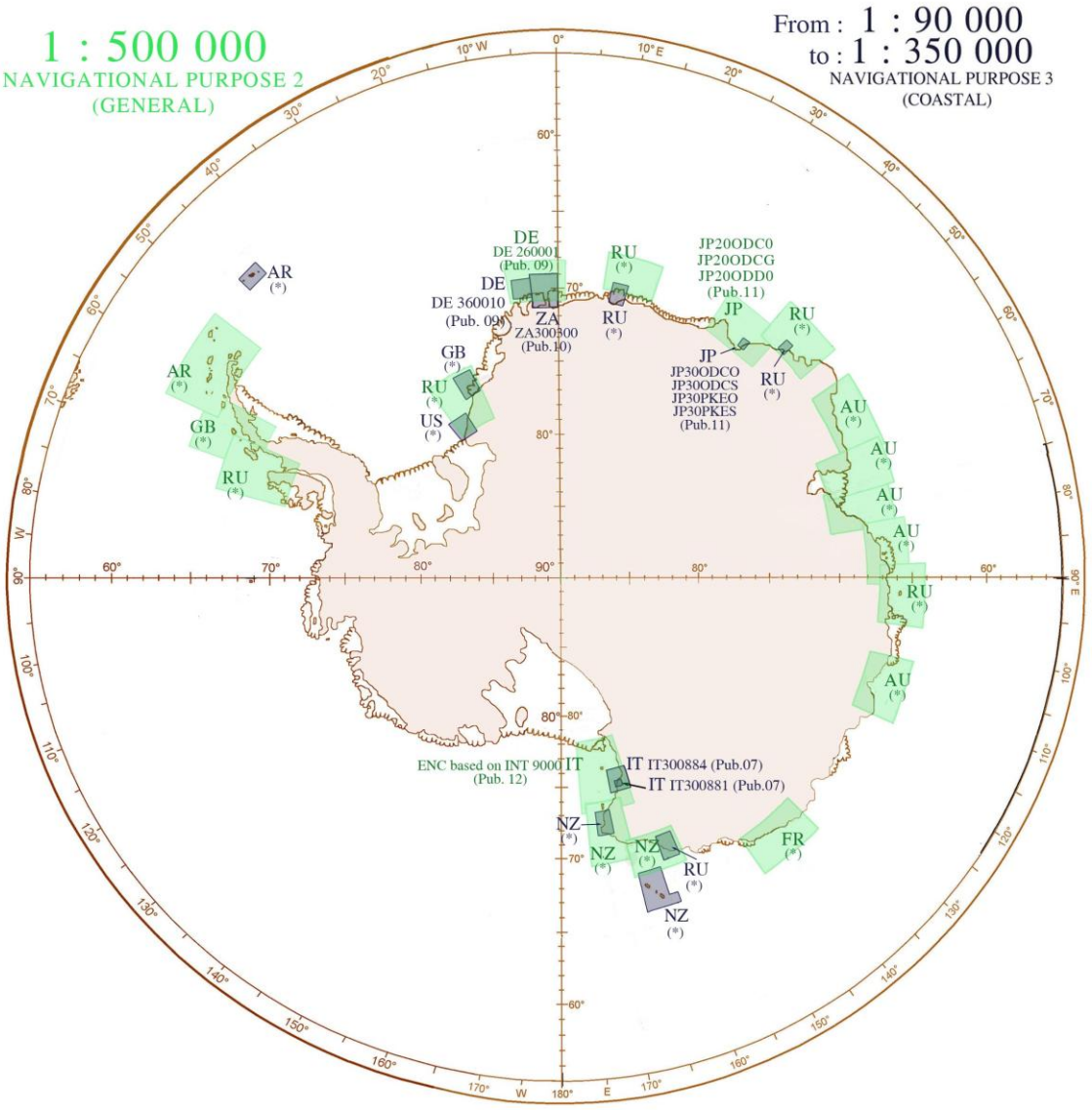


ANNEX C
ENC PRODUCTION STATUS
(April 2012)

STATUS OF ENC PRODUCTION IN ANTARCTICA
«OVERVIEW» ENCs
(based on the 1: 10M and 1: 2M INT Chart Series)

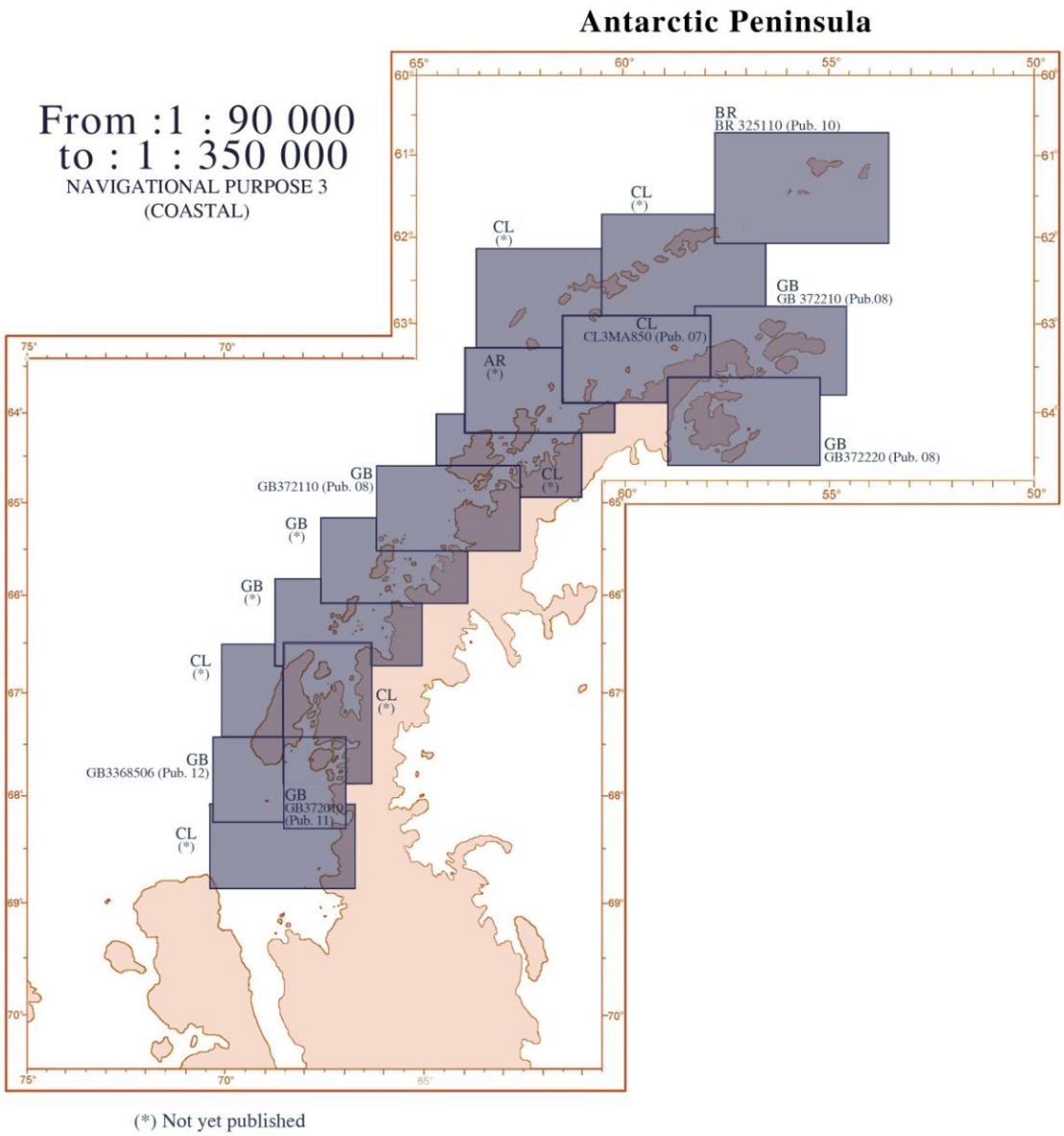


STATUS OF ENC PRODUCTION IN ANTARCTICA (2 of 3)
MEDIUM-SCALE « GENERAL» and «COASTAL» ENCs



(*) Not yet published

STATUS OF ENC PRODUCTION IN ANTARCTICA (3 of 3)
MEDIUM-SCALE «COASTAL» ENCs
(based on the medium-scale INT Chart Series)



(*) Not yet published

Note: Additionally, 25 large-scale ENCs have been published by Australia (3 ENCs), Brazil (2 ENCs), Chile (3 ENCs), France (3 ENCs), Italy (1 ENC), Japan (6 ENCs), United Kingdom (6 ENCs) and USA (1 ENC).