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XXXIII ATCM
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Agenda Item: 4
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**REPORT BY THE INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
ON "COOPERATION IN HYDROGRAPHIC SURVEYING AND CHARTING OF
ANTARCTIC WATERS"**

**XXXIII Antarctic Treaty Consultative Meeting
03 - 14 May, Punta del Este, URUGUAY**

Agenda Item 4

Operation of the Antarctic Treaty System: Reports by Parties, Observers and Experts.

Report by the **International Hydrographic Organization (IHO)** on
“Cooperation in Hydrographic Surveying and Charting of Antarctic Waters”

Introduction.

Through its Hydrographic Commission on Antarctica (HCA), the International Hydrographic Organization (IHO) plays an important role in contributing to safety of life at sea and the protection of the marine environment in Antarctica. Due to the very specific characteristics of Antarctica, progress in collecting hydrographic data and making hydrographic information, products and services require a coordinated effort and a great spirit of cooperation. In this context IHO Member States, members of HCA meet annually to assess the hydrographic and nautical cartographic status and to agree on activities aimed at progressing in the provision of such elements. The IHO submits this Report - that covers the period since the last ATCM -, that provides a brief summary of the key coordination activities; the status of hydrographic surveys and nautical chart production of Antarctic waters, conclusions and recommendations.

The IHO confirms its willingness to continue working closely with the AT System and other relevant international organizations to improve safety of life at sea, safety of navigation, and enhance its contribution to the efforts aimed at the protection of the marine environment and marine scientific research in Antarctica.

1.- Key Coordination Activities.

1.1 Seminar on Hydrography at the Annual Meeting of COMNAP.

On behalf of the IHO, the HCA participated in the Annual General Meeting of the Council of Managers of National Antarctic Programs (COMNAP) held in Punta Arenas, Chile, in August 2009. At the invitation of COMNAP, the IHO/HCA delivered a set of presentations in a form of a seminar referred to the “Importance of Hydrographic Activities in Antarctica”.

26 COMNAP members were present with over 150 delegates in total. Four international organizations were also represented. The IHO participated with its HCA Chairman and IHB Director, Captain Hugo Gorziglia, together with RAdm Ian Moncrieff and Commander Enrique Silva, representatives of UK and Chile to the HCA, respectively.

The objective of the seminar was: to raise awareness at the operational level on the importance of hydrographic activity in the Antarctica; to achieve a better understanding of COMNAP on the existing risks associated to the present status of charting in the region and to explore ways to jointly improve the situation.

The following three presentations were offered:

- a) *Hydrography in the Antarctica*, presented by Hugo Gorziglia, Captain Chilean Navy, former Chilean Hydrographer, Director IHB and Chairman HCA
- b) *Risks in Antarctic Operations related to Hydrography and Nautical Cartography*, presented by Ian Moncrieff, Rear Admiral, United Kingdom National Hydrographer, former Commanding Officer of HMS Endurance (the RN Antarctic Patrol Ships) and former Commander of British Forces in the South Atlantic. HCA Vice Chairman.
- c) *Practical initiatives to improve hydrography and nautical cartography in Antarctica*, presented by Enrique Silva, Commander, Head Department of Operations, Chilean Navy Hydrographic and Oceanographic Service, and Chilean representative to the HCA.

Two concrete initiatives were proposed to and agreed by COMNAP. One was to put in practice the “*IHO Collection and Rendering of Hydrographic Data Form*”, included in the document “*Collection and Rendering of Hydrographic Data obtained by SOO in Antarctic Waters*” submitted by the IHO/HCA. The second one was to review and provide comments to the HCA on the existing Hydrographic Survey Priority List developed by the Commission.

A similar Seminar is under preparation to be delivered by the HCA at the next IAATO Annual Meeting (21-24 June 2010, Turin, Italy). This seminar will address issues that the HCA will be able to coordinate whilst the operators will complement and also implement.

1.2 The 9th Meeting of the IHO Hydrographic Commission on Antarctica.

The 9th Meeting of the IHO Hydrographic Commission on Antarctica (HCA) took place in Simon’s Town, South Africa 12-14 October 2009 thanks to the kind invitation of Captain Abri KAMPFER, Hydrographer of South Africa. Twelve HCA Member States (Australia, Brazil, Chile, France, Germany, Korea (Rep of), New Zealand, Norway, South Africa, Spain, UK and Venezuela), were represented at this meeting, plus observers from COMNAP, IAATO, GEBCO/IBCSO and the South African DEAT. In total, 25 delegates were in attendance. The participants were welcomed by Rear Admiral Robert HIGGS, Flag Officer Fleet of the South African Navy and the meeting was opened by Captain GORZIGLIA, HCA Chairman who welcomed Republic of Korea and Venezuela as new members of HCA, which brought the total number of HCA signatory members to 23.

Following a detailed review of the action list agreed at the last HCA meeting, the Commission decided to nominate Dr. SCHENKE (Germany) as HCA representative to the International Bathymetric Chart of the Southern Ocean in order to improve coordination with the scientific community; to coordinate the visit of hydrographic surveyors from Argentina, Chile and New Zealand with at least one IAATO ship when calling in port on her way to Antarctica to advise on the collection and rendering of hydrographic data, making the established procedures known to ensure collected data can be used for charting purposes and to post, on the IHO website, all presentations given at the HCA seminars offered at ATCM31 and COMNAP21, as a way to widen the scope of these events.

The ATCM Secretariat, COMNAP, IAATO and SCAR submitted reports for consideration by the HCA. Representatives of all these organizations presented their reports, with the exception of ATCM Secretariat that did not attend the HCA meeting. The HCA would like to thank the international organizations for the cooperation and collaboration, as well as the

joint work in progress. Two important outcomes from the discussion were the convenience to address environmental and scientific issues in addition to safety of navigation issues when referring to hydrographic surveys and nautical cartography of Antarctic and that HCA members interested in making use of IAATO ships, especially those with no hydrographic platform, should coordinate directly with IAATO to embark hydrographic surveyors and equipment to conduct surveys in Antarctica.

The Commission examined the status of hydrographic surveys and nautical charts production, the details of which are provided under section 2 in this report.

Also it was discussed how the HCA could contribute to the ATME that examined issues surrounding ship-borne tourism in the Antarctic Treaty Area, an event that took place in New Zealand, in December 2009, details of which are provided in section 1.3 of this report.

Finally, the Commission considered various invitations received to host HCA10 and gratefully decided to accept UK's proposal to host HCA10 in Cambridge. The agreed dates are 20 to 22 of September 2010.

1.3 Antarctic Treaty Meeting of Experts (ATME)

Pursuant to Decision 7 (2009), the ATME on the Management of Ship-borne Tourism in the Antarctic Treaty Area took place in Wellington, New Zealand, 09-11 December 2009. The IHO was represented by Captain GORZIGLIA, IHB Director and Chairman of IHO Hydrographic Commission on Antarctica (HCA). The agenda included 6 topics, one of which - maritime safety -, included hydrography and nautical cartography and another agenda item referred to the cooperation between ATCM and IMO and IHO.

The IHO submitted two papers. One paper noted the role of IHO and the work so far undertaken by HCA. The paper recalled ATCM XXXI Resolution 5 (2008) and recommended that the parties consider increasing ships' days conducting hydrographic surveys and embark on a more concerted charting effort of Antarctic waters. The meeting expressed strong support for the importance and valuable work of IHO/HCA and noted the advice about a potential gap between the post 2012 mandatory carriage of ECDIS by SOLAS ships and the availability of necessary ENCs.

The second paper submitted by the IHO dealt with cooperation between ATCM and IHO. It discussed the existing level of cooperation between the ATCM and the IHO to date and asked the ATCM to consider the attendance by an ATCM representative to the IHO HCA meetings. The meeting agreed to continue inviting IHO HCA to the annual ATCM meetings and where appropriate to be represented at IHO HCA meetings.

In addition and as coordinated at the last HCA, the Hydrographer of New Zealand submitted a working paper providing details on the hydro-cartographic activities New Zealand has conducted and offered two proposals for consideration.

Out of the recommendations adopted by the Meeting of Experts, two had direct relation with the IHO and considered both, the IHO and the New Zealand's Hydrographer proposals. The texts are as follow:

- a) « *That the AT Parties should continue to contribute to hydrographic surveying and charting information and consider advising vessels intending to operate in the AT area that many areas have not been surveyed to modern standards* ».
- b) « *The IHO HCA should continue to be invited to annual ATCMs to report the status of hydrographic survey and nautical chart production in Antarctic waters. Parties also agreed that, as appropriate, the ATCM should be represented at IHO HCA meetings. Where an IHO HCA meeting was to be held in a country that was also Consultative Party, then that Consultative Party should consider attending the HCA meeting* ».

It was felt a strong support to the IHO HCA work and recognition to the contribution made by the IHO to the objective of the Meeting of Experts.

2.- Status of Hydrographic Surveys and Nautical Chart Production.

2.1 Hydrographic Surveys.

Out of the 15 National Reports submitted to the last HCA meeting, only 7 indicated that some systematic hydrographic surveys have taken place during the season 2008/2009 in areas such as King George Island, Weddell Sea, Ross Sea, Yankee Harbour, Ryder Bay, Hope Bay, Nelson Strait and Princess Astrid Coast. (There is no assessment yet with respect to the 2009/2010 season).

Mainly, these surveys are associated to a particular INT Chart and therefore we can expect an improvement on data availability to produce new charts. Nevertheless the Commission is fully aware that it is urgent to assign a high priority to hydrographic survey activities as the “only way” to ensure the production of the charts in the INT scheme.

It is expected that with the commission of new survey ships and modern equipment installed on hydrographic survey ships, in the near future there will be a better capacity to conduct surveys in Antarctica. It has been informed that multibeam systems have been installed on Australian, Chilean and Republic of Korea vessels.

The contribution by IAATO ships and other Ships of Opportunity, in hydrographic data gathering shall be assessed at the next HCA meeting. For the time being there is no indication that special hydrographic teams have used the opportunity to embark on IAATO ships due to the complexity in the coordination and doubtful cost / benefit ratio.

Resolution 5 (2008) recommended AT Parties to clarify with HCA, the requirements for the collection of hydrographic data of sufficient quality for use in the development of electronic navigational charts and to identify priority areas for the collection of additional hydrographic and bathymetric data. The ATCM shall be aware that the “*IHO Collection and Rendering of Hydrographic Data Form*”, included as Annex B in this report, prepared by IHO/HCA and endorsed by COMNAP provides the minimum requirements that hydrographic data shall comply in order to be considered for cartographic purposes. We want to ensure as much as possible that any effort made by Ships of Opportunity will be of value. With regard to the identification of priority areas for the collection of additional hydrographic and bathymetric data, the HCA stands ready to receive ATCM position.

For the time being the HCA Hydrographic Survey Prioritizing Working Group with cooperation from COMNAP and IAATO as observers continue to progress its mandate and the preparation of graphics reflecting the status of hydrographic surveys assets, in the short list priority areas and related INT Charts. These graphics will contribute to precisely identify which surveys are still missing on a particular area.

2.2 Nautical Chart Production.

The situation with regard to chart production is provided in detail in Annex C. The INT Chart scheme includes 102 charts and 67 INT Charts have been produced or shall be finalized in 2010. The estimated production of the pending list is as follow:

- a) 5 charts are planned for 2011
- b) 2 chart is planned for 2012
- c) 2 charts are planned for 2013
- d) 0 chart is planned for 2014
- e) 8 charts are planned for “no earlier than 2015”
- f) 18 charts have not yet been considered in the planning.

Resolution 5 (2008) recommends to cooperate with HCA to improve hydrographic surveying and charting in the Antarctic region and endeavour to find additional resources towards improving hydrographic surveying and charting in the Antarctic region. The ATME held in New Zealand last December also concluded that AT Parties should continue to contribute to hydrographic surveying and charting information.

It is evident that there is a willingness to progress in the production of new INT charts. This sentiment requires to be translated in an effective increase in the priority assigned by Governments to conduct hydrographic surveying and allocate resources to nautical chart production.

With regard to the ENC production, the Commission would like to confirm that bands 1 “overview” and 2 “general” (small scale), as well as band 3 “coastal” (medium scale) have been agreed by HCA. Large scales scheme is under consideration. It was confirmed that producers of ENCs should be those of the corresponding INT charts. The Commission also would like to congratulate the following countries for their progress in ENC production of Antarctic waters: Australia, Brazil, Chile, France, Germany, Italy, Norway and UK. 14 overview; 6 coastal; 9 approaches, 10 harbour, and one berthing ENC are available. Other 35 are in production.

3.- Conclusions.

1.- The IHO/HCA makes special emphasis on the cooperation and contribution that it continues to receive from several international organizations to support hydrographic surveying and nautical chart production of Antarctic waters, not just in contributing to safety of navigation but strongly supporting the protection of the marine environment and the marine scientific research. It is expected that ATCM will soon provide HCA with its view with regard to the identification of priority areas for the collection of additional hydrographic and bathymetric data.

2.- Despite the willingness expressed by AT representatives at different meetings, - where resolutions and recommendations have been agreed -, hydrographic surveys and production of nautical charts of Antarctica does not hold, in the practice, the required priority. The IHO/HCA is concerned by the extremely low progress achieved in terms of nautical chart delivery covering an extremely vulnerable marine environment.

3.- Contribution expected from Ships of Opportunity operations should not be seen as THE solution, but as an opportunity not to be missed. The “*IHO Collection and Rendering of Hydrographic Data Form*”, presented and approved on the occasion of the Seminar organized by the IHO/HCA for COMNAP is a concrete step forward in this line.

4.- Recommendations.

It is recommended that the XXXIII ATCM:

- 1.- Takes note of the IHO Report.
- 2.- Considers providing HCA with the identification of priority areas of which hydrographic surveys and availability of INT charts could support the protection of the marine environment and facilitate marine scientific research.
- 3.- Instructs the relevant components of the AT System to make use of the “*IHO Collection and Rendering of Hydrographic Data Form*” as a follow up of Resolution 5 (2008).

Monaco, March 2010.

ANNEXES:

- A: HCA Membership Situation.
- B: *IHO Collection and Rendering of Hydrographic Data Form.*
- C: INT Chart Present Production Status (March 2010).

ANNEX A

HCA MEMBERSHIP SITUATION

(March 2010)

MEMBERS:

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

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



IHO Collection and Rendering of Hydrographic Data Form (To be used by Ships of Opportunity-SOO¹ in Antarctica)

The objective of this IHO Form is to facilitate the provision of the essential information required by the appropriate National Hydrographic Office to make use of the hydrographic data collected by a SOO in Antarctica. The Form has four sections: General information, Hydrographic Surveying information, Navigational Aids and Ancillary information and Data Format.

This Form together with all the documentation should be completed and made available to the:

International Hydrographic Organization

4 quai Antoine 1er B.P. 445 MC 98011 Monaco Cedex, MONACO
Phone +377 93108100 Fax + 377 93108140 e-mail info@ihb.mc

SECTION 1 « General Information »

General Area	Antarctic Peninsula	<input type="checkbox"/> ²	South Georgia	<input type="checkbox"/>	Other (Please specify)	<input type="checkbox"/>
	South Orkneys	<input type="checkbox"/>	South Shetlands	<input type="checkbox"/>		
Location						
Name of Vessel				Draught : (in meters)		
Name of Captain				Date :		
OBSERVATIONS : (Note 1)						

SECTION 2 « Hydrographic Surveying Information »

¹SOO for the purpose of this Form is any ship, with the exception of hydrographic and research platforms, volunteer to collect hydrographic data during routine transit utilizing her own equipment.

² To tick box, double click on box> default value > activate.

Position Fixing (Note 2)	GPS	<input type="checkbox"/>	Visual /Radar	<input type="checkbox"/>	Other (Please specify)	<input type="checkbox"/>
	Model of receiver					
	Datum setting (ie.WGS84)					
	Remarks: (eg Plotting errors between GPS and Chart)					
Echo Sounder (Note 3)	Manufacturer		Name /Type			
	Multibeam/Swathe	<input type="checkbox"/>	Single Beam	<input type="checkbox"/>	Survey line (spacing in metres)	
Stylus:	Revolutions per minute					
Scale Setting	Zero depth recorded from:	Sea Surface?	<input type="checkbox"/>	Under Keel?	<input type="checkbox"/>	
Sound Velocity	Correction made?	YES (if YES) Metres per second	<input type="checkbox"/>	NO	<input type="checkbox"/>	
Transducer displacement applied:	N/A	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Details of transducer displacement:						
X offset = Port (-) or Starboard (+) from GPS receiver		Y offset = Aft (-) or Fwd (+) from GPS receiver		Z offset = Above (-) or Below (+) from GPS receiver		
.....metres	metres	metres		
Echo trace rendered: Note (4)	YES		<input type="checkbox"/>	NO		<input type="checkbox"/>
Speed of vesselknots					

SECTION 3 « Navigational Aids and Ancillary Information »

Lights report rendered			YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Name/Location	Position	Working ? YES or NO	Characteristics Checked ? YES or NO	Remarks:		
Buoys/beacons report rendered			YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Name/Location	Position	Condition: Good, bad, missing	Remarks:			
Conspicuous Objects report rendered:			YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Name/Location	Position	Bearing from Seaward	Remarks:			
View report rendered: (Note 5)			YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Location	Position/beari ng from seaward	Panoramic	Pilotage	Portrait	Close up	Remarks

SECTION 4 « Data Format »

Data format (Note 6)	Chart/Chart cutting	<input type="checkbox"/>	Corrected to NM (...../.....)	Tracing	<input type="checkbox"/>
	Plotting sheet	<input type="checkbox"/>	Floppy disc/CD rom	Photographs	<input type="checkbox"/>
	Other - please state	<input type="checkbox"/>			

Recommended references: IHO. S-44, UK. NP100 & NP9, US MGD77
For further information on any of the above Sections, please contact info@ihb.mc

Note 1

Observations: Proposed amendments to the existing text of the Sailing Directions and/or Antarctic Pilot are always welcome. Comments or remarks that the mariner thinks would improve charting coverage or the Sailing Directions is always appreciated by the IHO. Examples of these include transit notes and tracings or chart cuttings delineating areas of kelp. Constructive comments on chart coverage or the lack of it are useful for the future planning of charts and surveying.

Note 2

1. **Visual fixes:** To ensure the greatest accuracy, a fix defined by compass bearings or ranges, should consist if possible of more than two observations. These observations should be taken as nearly as possible simultaneously, carefully recorded at the time and listed in the report with any corrections that have been applied to them.
2. **GPS positions:** The report should state which datum was set on the receiver outputting positions, (eg WGS84 Datum) and/or whether any shifts quoted on the chart have been applied.
3. **Observed differences:** Mariners are requested to report observed differences between positions referred to chart system and those from GPS, referenced to WGS84 Datum.

Note 3

1. The speed of sound in sea water in metres per second equivalent to the stylus speed.
2. Whether soundings have been corrected from *Echo-sounding correction tables*.
3. Zero Scale Setting. That is whether depths are recorded from the sea surface or from under the keel.
4. Where the displacement of the transducers from the position of the GPS receiver or other instrument used to fix is appreciable, the amount of this displacement and whether allowance has been made for it should be reported.

Note 4

If an echo trace is rendered it should be marked as follows:

1. A line drawn across it each time a fix is taken, and at regular intervals.
2. The times of each fix and alteration of course inserted, and times of interval marks at not more than 15 minute intervals.
3. The position of each fix and other recorded events inserted where possible, unless a GPS printout or separate list of times and corresponding positions is enclosed with the report.
4. The recorded depths of all peak soundings inserted.
5. The limits of the phase or scale change in which the set is running marked, noting particularly when a change is made.
6. Name of ship, date, zone time used and scale reading of the shoaling edge of the transmission line should be marked on the trace. (diagram 8.14 in NP100)

Note 5

Photographs should be obtained whenever possible and where such view would help the mariner. An imperfect photograph, correctly annotated, can often be used to produce a view of considerable help to the mariner.

The various types of views and examples are given the following names:

1. Panoramic. A composite view made up from a series of overlapping photographs. This type of view is intended to show the offshore aspect including hinterland.
2. Pilotage. A single or composite view from the approach course to a harbour or narrows showing any leading marks, transits or conspicuous fixing marks. It may be combined with a close-up of the mark if necessary for positive identification.
3. Portrait. The single view of a specific object set in its salient background.
4. Close-up. Single views of one object or feature with emphasis on clarity of the subject for its identification.

Note 6

The largest scale chart, a plotting sheet at a similar scale, a tracing or chart cutting should be used to plot the ships position during data collection.

If a chart cutting is used the additions and alterations should be marked in red. If a tracing is preferred, the additions should be marked in red, with adequate chart detail in black to enable fitting down. If a chart is rendered with data inserted, a replacement copy will be supplied free of charge.

Computer discs and CD Roms are also an easy way to render data and photographs, but must have easily readable formats.

ANNEX C

INT Chart Present Production Status (March 2010)

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
1	900	Ross Sea	2 000 000	NZ	1998	
2	901	De Cape Goodenough à Cape Adare	2 000 000	FR	2006	
3	902	Mawson Sea and Davis Sea	2 000 000	RU	2000	
4	903	Sodruzhestva Sea	2 000 000	RU	2001	
5	904	Dronning Maud Land	2 000 000	NO	2002	
6	905	South Sandwich Islands	2 000 000	DE	Proj. 2011	
7	906	Weddell Sea	2 000 000	GB	2005	
8	907	Antarctic Peninsula	2 000 000	GB	2000	
9	908	Bryan Coast to Martin Peninsula	2 000 000	GB	> 2015	
10	909	Martin Peninsula, Cape Colbeck	2 000 000	NO	Proj. 2011	
11	9000	Terra Nova Bay to Moubay Bay	500 000	IT	?	
12	9001	Cape Royds to Pram Point	60 000	NZ	2007	
13	9002	Scientific Stations McMurdo and Scott	5 000	NZ	2007	
14	9003	Approaches to Scott Island	75 000	NZ	2008	
		Plan A – Scott Island	25 000			
15	9004	Terra Nova Bay	250 000	IT	2007	2008
16	9005	Da Capo Russell a Campbell Glacier Tongue	50 000	IT	2000	
17	9006	Cape Adare and Cape Hallett	50 000	NZ	2003	2006
		Plan A – Cape Adare	50 000			
		Plan B – Cape Hallett	50 000			
		Plan C – Ridley Beach	15 000			
		Plan D – Seabee Hook	15 000			
18	9007	Possession Islands	60 000	NZ	2003	2006
19	9008	Cape Adare to Cape Daniell	200 000	NZ	2003	2006
20	9009	Cape Hooker to Coulman Island	500 000	NZ	2004	
21	9010	Matusевич Glacier to Ob' Bay	500 000	RU	2000	
22	9011	Mys Belousova to Terra Nova Island	200 000	RU	2000	

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
		Plan A – Leningradskaya Station	1 000			
23	9012	Balleny Islands	300 000	NZ	2006	
		Continuation: Balleny Seamount	300 000			
24	9014	Approaches to Commonwealth Bay	25 000	AU	2002	
		Plan A – Boat Harbour	5000			
25	9015	Du Glacier Dibble au Glacier Mertz	500 000	FR	2004	
26	9016	De la Pointe Ebba au Cap de la Découverte	100 000	FR	2004	
		Plan A – Archipel Max Douguet - Port-Martin	10 000			
		Plan B – Archipel Max Douguet	30 000			
27	9017	De l’Ile Hélène au Rocher du Débarquement - Archipel de Pointe Géologie	20 000	FR	2002	
		Plan A – Archipel de Pointe Géologie	7500			
28	9020	Mill Island to Cape Poinsett	500 000	AU	1998	
29	9021	Approaches to Casey	50 000	AU	1999	Proj. 2010
		Plan A – Newcomb Bay	12 500			
30	9025	Davis Sea	500 000	RU	1999	
31	9026	Approaches to Polar Station Mirny	200 000	RU	1999	
32	9027	Road Mirny	10 000	RU	1999	
33	9030	Sandefjord Bay to Cape Rundingen	500 000	AU	1992	
34	9031	Cape Rundingen to Cape Filchner	500 000	AU	2002	
35	9032	Approaches to Davis Anchorage	12 500	AU	2003	
36	9033	Cape Rouse to Sandefjord Bay	500 000	AU	1991	Proj. 2011
37	9035	Magnet Bay to Cape Rouse	500 000	AU	1993	Proj. 2011
38	9036	Approaches to Mawson	25 000	AU	2007	Proj. 2011
		Plan A - Horseshoe harbour	5000			
39	9037	Gibbney Island to Kista Strait	25 000	AU	Proj. 2011	

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
40	9040	Alasheyev Bight to Cape Ann	500 000	RU	2000	
41	9041	Alasheyev Bight	100 000	RU	1999	
42	9042	Approaches to Molodezhnaya Station	12 500	RU	1999	
43	9045	Vestvika Bay	500 000	JP	Proj. 2010	
44	9046	Eastern Part of Ongul	100 000	JP	2009	
45	9047	Western Part of Ongul	10 000	JP	2009	
46	9050	Sergei Kamenev Gulf to Neupokojevabukta	500 000	RU	1999	
47	9051	Approaches to Leningradbukta	200 000	RU	1998	
48	9055	Muskegbukta Bay to Atka Gulf	500 000	DE	2009	
49	9056	Approaches to Dronning Maud Land	300 000	ZA	2006	2009
50	9057	Approaches to Atka Iceport	200 000	DE	2009	
51	9060	Cape Roule to Farell Bay	500 000	RU	2000	
52	9061	Approaches to Halley Base	200 000	GB	2005	
53	9062	<i>To be determined</i>	200 000	US	?	
54	9100	Isla Marambio	25 000	AR	?	
		Plan A – Base aérea Marambio	5000			
55	9101	Peninsula Trinidad	10 000	AR	Proj. 2012	
		Plan A – Base Esperanza, Caleta Choza	5000			
56	9102	Estrecho Bransfield, Rada Covadonga y Accesos	10 000	CL	2003	
57	9103	Gerlache Strait	50 000	CL	Proj. 2013	
58	9104	Gerlache Strait	50 000	CL	Proj. 2011	
59	9105	Bismarck strait, Approaches to Arthur Harbour	25 000	US	?	
		Plan A – Arthur Harbour	10 000			
60	9106	Argentine Islands and Approaches	60 000	GB	1996	
		Plan A – Argentine Islands	15 000			
61	9107	Pendleton Strait etc.	50 000	GB	> 2015	
62	9108	Hanusse Bay to Wyatt Island	50 000	CL	?	
63	9109	British Antarctic Survey Base Rothera	25 000	GB	1999	

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
64	9110	Adelaide Island, South Western Approaches	30 000	CL	2	
65	9111	Bahía Margarita	25 000	AR	Proj. 2012	
66	9112	Plans in Bransfield Strait		GB	> 2015	
		Plan A – Yankee Harbour	12 500			
		Plan B – Freud (Pampa) Passage	50 000			
		Plan C – Portal Point	25 000			
		Plan D – Penguin Island	20 000			
		Plan E – Hydrurga Rocks	10 000			
67	9113	Plans in Elephant Island		GB	2	
		Plan A – Cape Lookout	50 000			
		Plan B – Cape Valentine	10 000			
		Plan C – Point Wild	10 000			
68	9114	Antarctic Sound		GB	2	
		Plan A – Fridtjof Sound	50 000			
		Plan B – Brown Bluff	10 000			
		Plan C – Gourdin Island	15 000			
69	9115	Active Sound	50 000	AR	2	
70	9116	Plans in Paulet and Danger Islands		GB	2	
		Plan A – Paulet Island	50 000			
		Plan B – Danger Islands	50 000			
71	9120	Isla Decepción	50 000	AR	2004	2006 Proj. 2010
		Plan A - Fuelles de Neptuno	12 500			
72	9121	Isla Livingston, de Punta Banda a la Bahía Brunow	35 000	ES	1998	
		Plan A – Isla de la Media Luna	25 000			
		Plan B – Base Juan Carlos I	5 000			
73	9122	Bahía Chile, Puerto Soberanía y Ensenadas Rojas e Iquique		CL	1998	
		Plan A - Bahía Chile	20 000			
		Plan B - Puerto Soberanía y Ensenadas Rojas e Iquique	5000			

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
74	9123	Caletas en Bahía Fildes		CL	2007	
		Plan A – Caleta Potter	10 000			
		Plan B – Caleta Ardley	10 000			
		Plan C – Caleta Marian	10 000			
75	9124	Bahia Fildes	30 000	CL	2007	
76	9125	Baia do Almirantado	40 000	BR & PE	Proj. 2010	
		Plan A – Ensenada Martel	20 000			
		Plan B – Estação Arctowski	10 000			
		Plan C – Ensenada Mackellar	15 000			
77	9126	Baia Rei George (Ilha Rei George)	40 000	BR	?	
78	9127	Baia Sheratt (Ilha Rei George)	40 000	BR	?	
79	9130	Crystal Hill to Devil Island	75 000	GB	?	
		Plan A - Bald Head	10 000			
		Plan B - View Point	10 000			
		Plan C - Matts Head	10 000			
		Plan D - Crystal Hill	10 000			
		Plan E - Camp Point	10 000			
		Plan F - Devil Island	10 000			
80	9131	Crystal Sound	75 000	GB	?	
81	9132	Grandidier Channel	75 000	GB	?	
82	9140	Islas Orcadas del Sur	150 000	AR	> 2015	
83	9141	Approaches to Signy Island	50 000	GB	2006	
		Plan A – Borge Bay and Approaches	10 000			
84	9142	Bahía Scotia	10 000	AR	2006	
85	9150	Islas Elefante y Clarence	200 000	BR	1999	2009
86	9151	De Isla De Jorge a Isla Livingston	200 000	CL & BR	Proj. 2017	
87	9152	De Isla Livingston a Isla Low	200 000	CL & BR	Proj. 2017	
88	9153	Church Point to Cape Longing including James Ross Island	150 000	GB & AR	1999	2004 Proj. 2010
89	9154	Joinville Island to Cape Ducorps and Church Point	150 000	GB & AR	1996	2002 Proj. 2010
90	9155	Estrecho Bransfield - Rada Covadonga a Isla Trinidad	150 000	CL	2003	

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
91	9156	Archipiélago de Palmer, de Isla Trinidad a Isla Amberes	150 000	AR	2009	
92	9157	Gerlache Strait	150 000	CL	Proj. 2020	
93	9158	Anvers Island to Renaud Island	150 000	GB	2001	2003
		Plan A – Port Lockroy	12 500			
94	9159	Pendleton Strait & Grandidier Channel	150 000	GB	Proj. 2011	
95	9160	Crystal Sound	150 000	GB	Proj. 2013	
96	9161	Matha Strait to Pourquoi Pas Island	150 000	CL	?	
97	9162	Adelaide Island	150 000	CL	?	
98	9163	Marguerite Bay; Rothera	150 000	GB	2009	
99	9164	Margarita Bay	150 000	CL	?	
100	9170	Islas Shetland y Mar de la Flota	500 000	AR	1997	
101	9171	Brabant Island to Adelaide Island	500 000	GB	> 2015	
102	9172	Matha Strait to Rothschild Island	500 000	RU	1999	

Resume:

- g) 67 out of 102 INT Charts have been produced (or shall be finalized in 2010).
- h) 5 charts are planned for 2011
- i) 2 chart is planned for 2012
- j) 2 charts are planned for 2013
- k) 0 chart is planned for 2014
- l) 8 charts are planned for “no earlier than 2015”
- m) 18 charts have not yet been considered in the planning.

===== THE END =====