



**“STATUS OF HYDROGRAPHIC SURVEYING
AND
NAUTICAL CHARTING IN ANTARCTICA”**

Arctic-Antarctic Seafloor Mapping Meeting 2011
Stockholm, Sweden, May 3-5

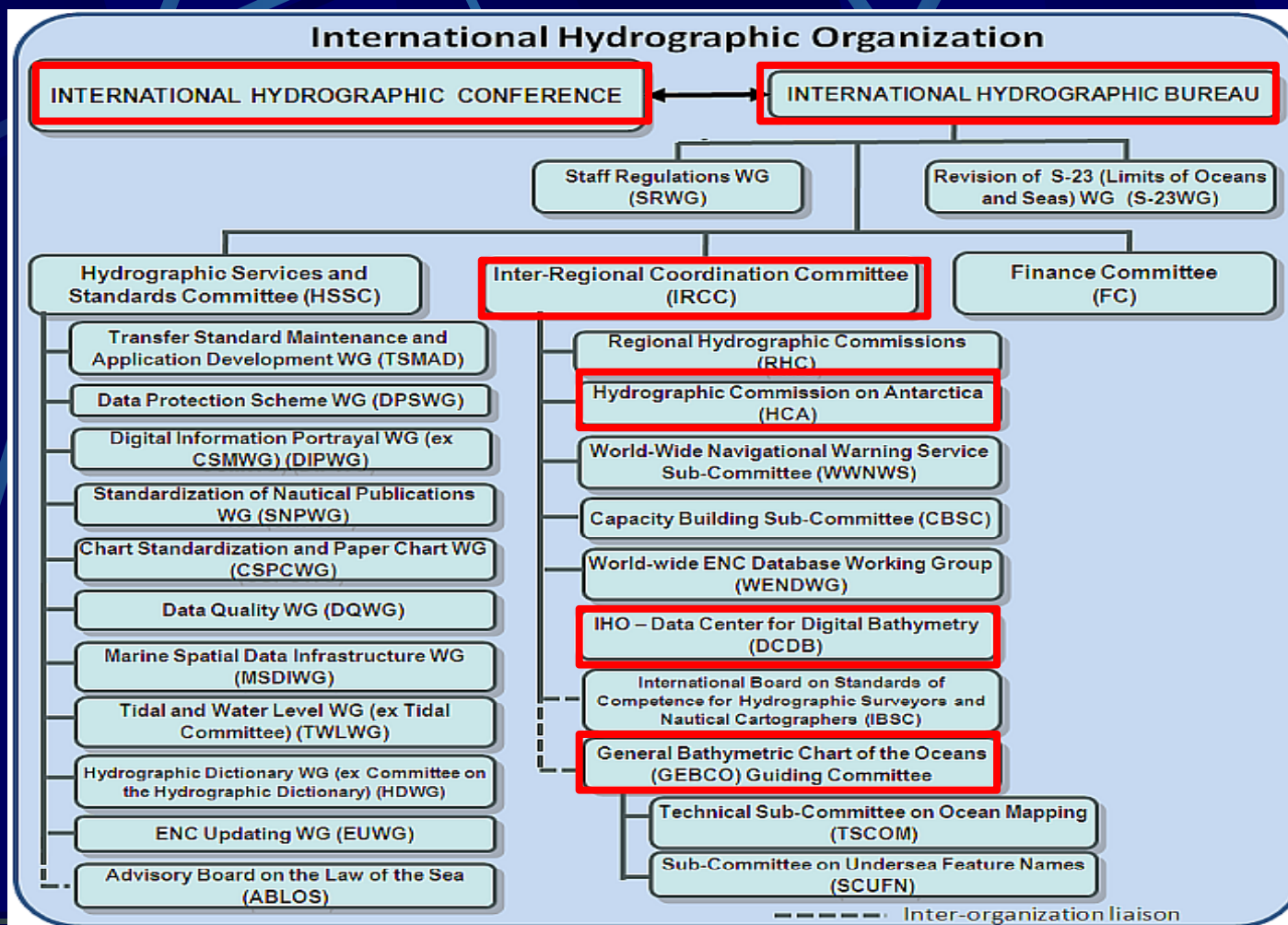
By Hugo GORZIGLIA, IHB Director

CONTENT



- Background
- Antarctic Mapping Activities
- Antarctic Hydrographic Activities
- Initiatives for a cooperative and collaborative approach

THE IHO STRUCTURE



HYDROGRAPHIC COMMISSION ON ANTARCTICA



- 1989 ATCM XV invited IHO to take.
- 1992 XIVth IHC established a "Permanent Working Group of Cooperation in Antarctica"
- 1993 First meeting of the PWGCA in Chile. First draft INT Chart scheme
- 1994 First INT Chart (INT-65) produced by New Zealand
- 1996 full INT Chart scheme (89) charts approved. 16 Producer Nations.
- 1997 became Hydrographic Committee on Antarctica (HCA)
- 2008 became Hydrographic Commission on Antarctica (HCA)

HCA MEMBERS (23)



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

HCA MEETINGS



- 1993 1st Meeting PWGCA Valparaíso, Chile
- 1994 2nd Meeting PWGCA Buenos Aires, Argentina
- 1996 3rd Meeting PWGCA Wollongong, Australia
- 1998 1st Meeting HCA Christchurch, New Zealand
- 2001 2nd Meeting HCA Simon's Town, South Africa
- 2003 3rd Meeting HCA Monaco
- 2004 4th Meeting HCA Kythnos, Greece
- 2005 5th Meeting HCA Christchurch, New Zealand
- 2006 6th Meeting HCA Punta Arenas, Chile
- 2007 7th Meeting HCA Buenos Aires, Argentina
- 2008 8th Meeting HCA Rio de Janeiro, Brazil
- 2009 9th Meeting HCA Simon's Town, South Africa
- 2010 10th Meeting HCA Cambridge, UK
- 2011 11th Meeting HCA Planned Oct 2011, Hobart, Australia

RECOMMENDATIONS & RESOLUTIONS



- ATCM XV (1989) Recommendation XV-19
Cooperation in the hydrographic charting of Antarctic waters
- ATCM XIX (1995) Resolution 1
Strengthening Cooperation in Hydrographic Surveying and Charting of Antarctic Waters
- ATCM XXVI (2003) Resolution 3
Co-operation in Hydrographic Survey and Charting of Antarctic Waters
- ATCM XXXI (2008) Resolution 5
Improving hydrographic surveying and charting to support safety of navigation and environmental protection in the Antarctic region
- ATCM XXXIII (2010) Resolution 2
The contribution of the IPY to hydrographic knowledge of waters of the Antarctic Treaty area

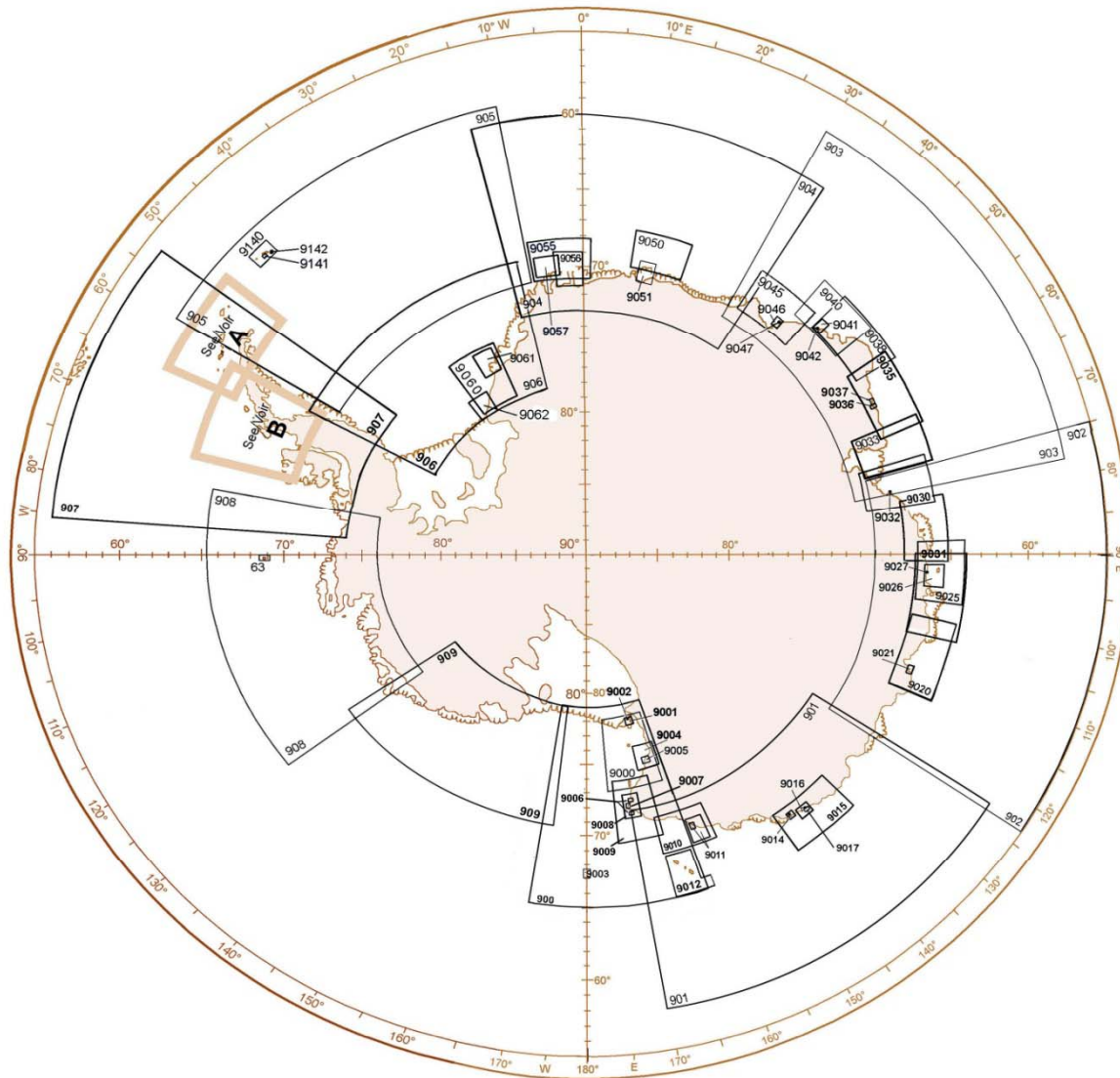
ANTARCTIC MAPPING ACTIVITIES



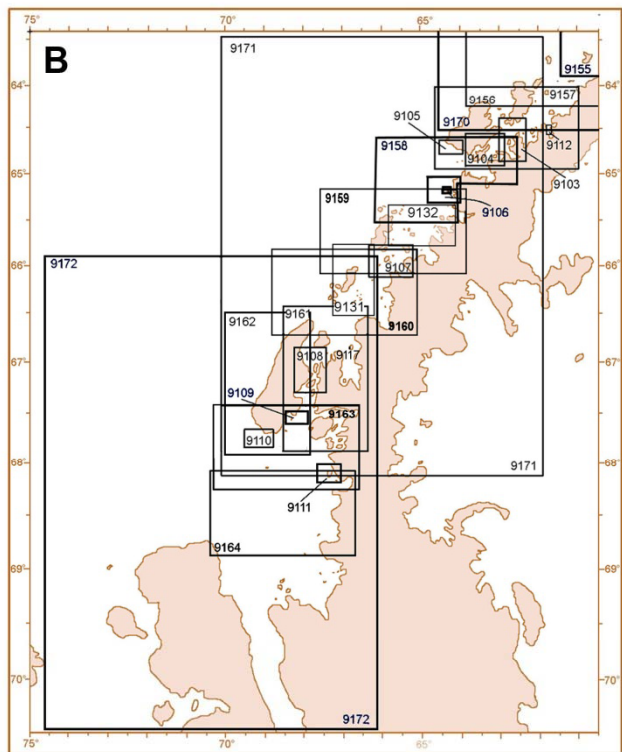
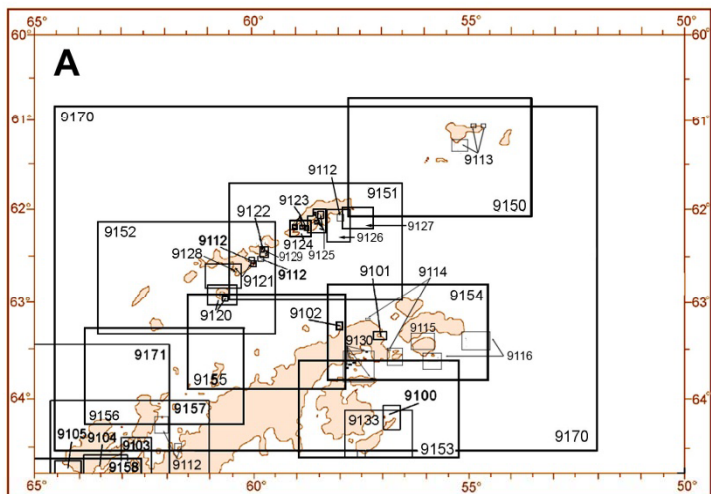
Criteria:

- Adequate cover for international shipping.
- Conformance to IHO charts specifications.
- Number of charts kept to a minimum.
- Specific coverage for access to permanent scientific bases and those areas most frequently visited by cruise vessels.
- Responsibility for chart production shared by IHO Member States on a voluntary basis.
- Adoption of WGS-84 as the common geodetic datum.

IHO SCHEME FOR INTERNATIONAL CHARTS IN ANTARCTICA
(1 of 2)

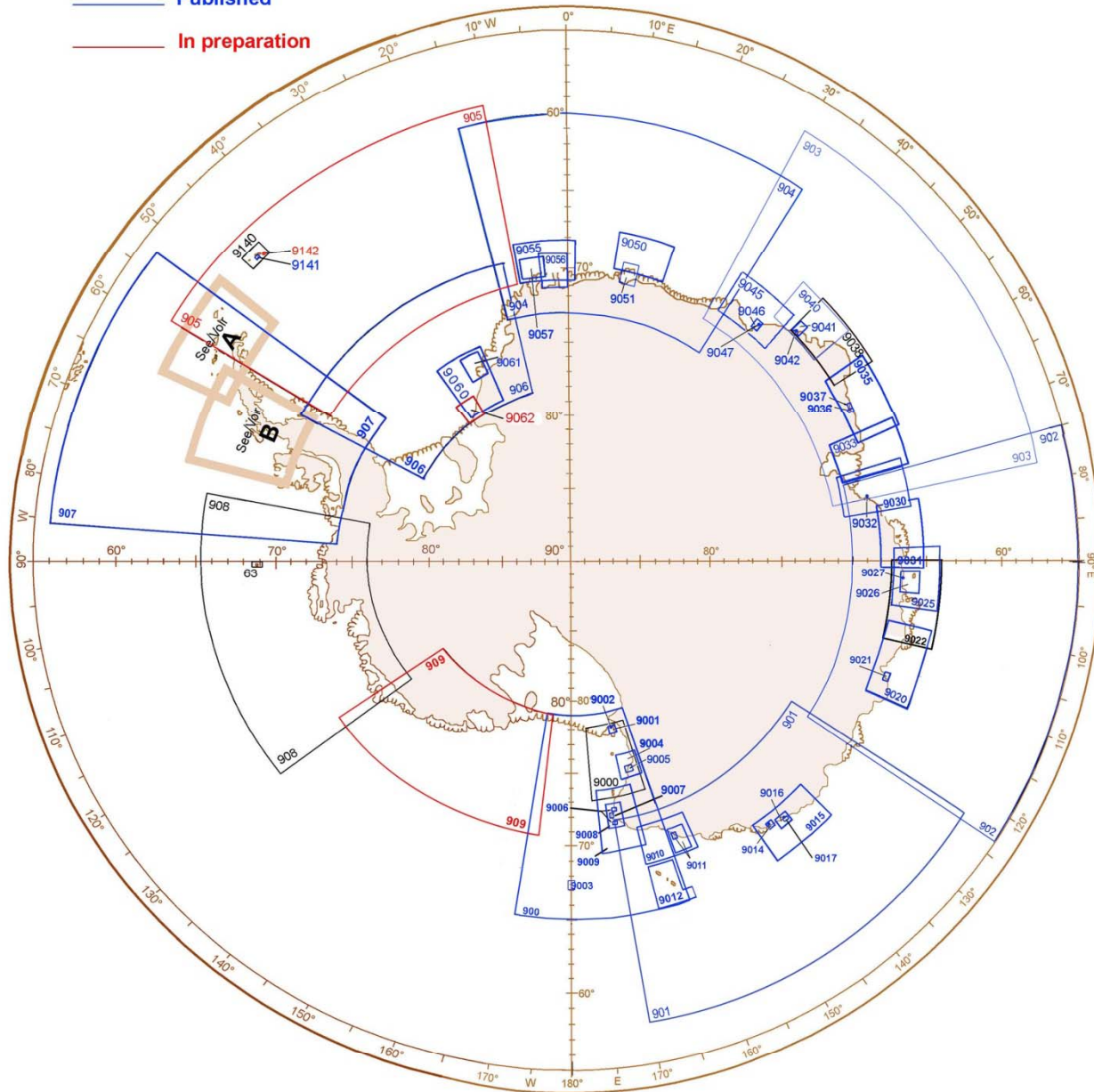


**IHO INT
CHART
SCHEME
(Fig 1)**

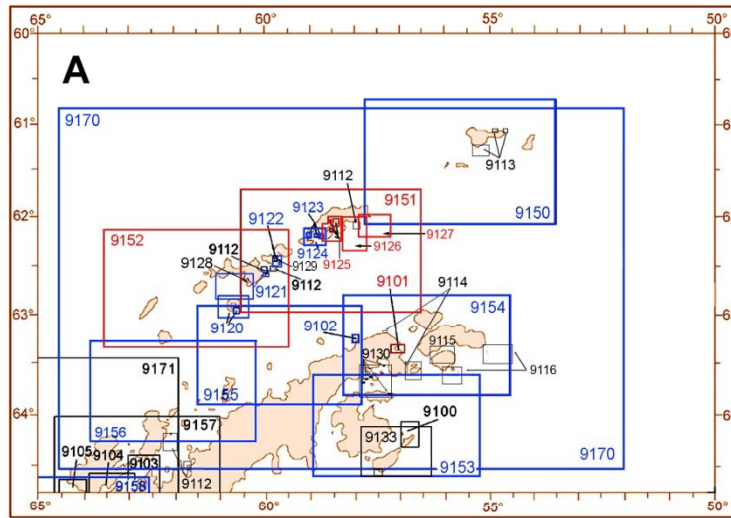


IHO INT CHART SCHEME (Fig 2)

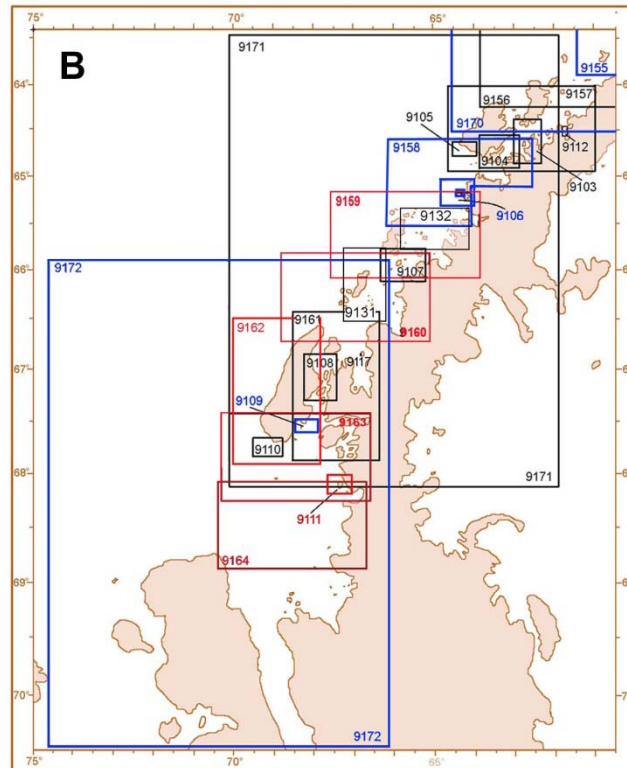
- Not published
- Published
- In preparation



INT CHART COVERAGE (Antarctica Fig.1)



— Not published
— Published
— In preparation



INT CHART COVERAGE (Antarctica Fig. 2)

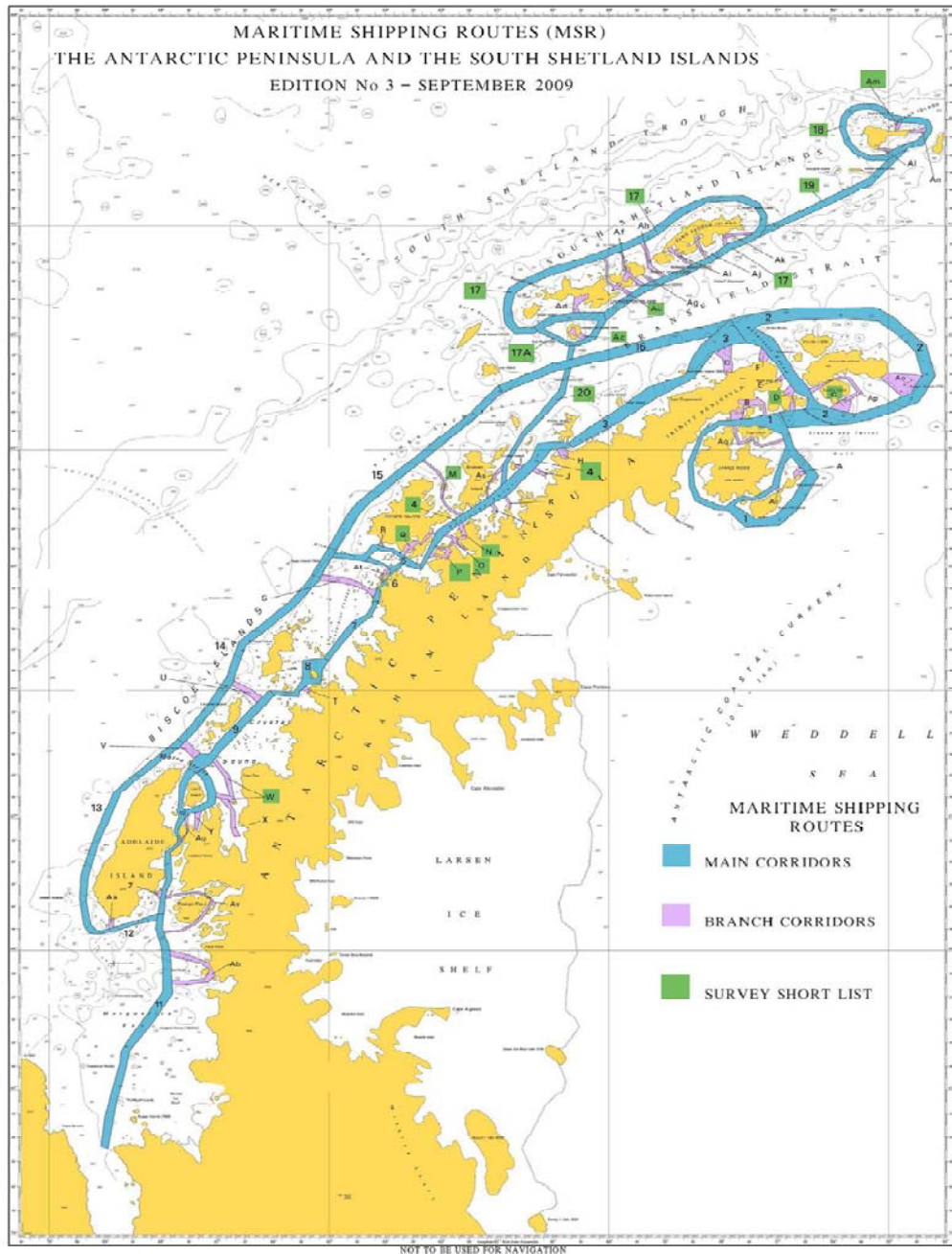


HCA SURVEY PRIORITIZATION WG

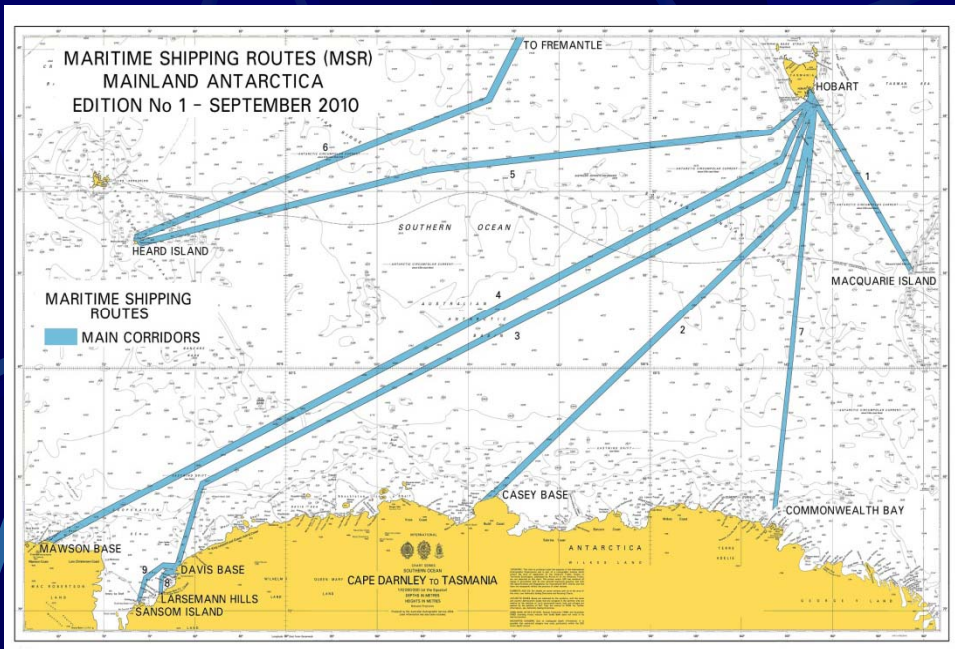


Three deliverables were identified:

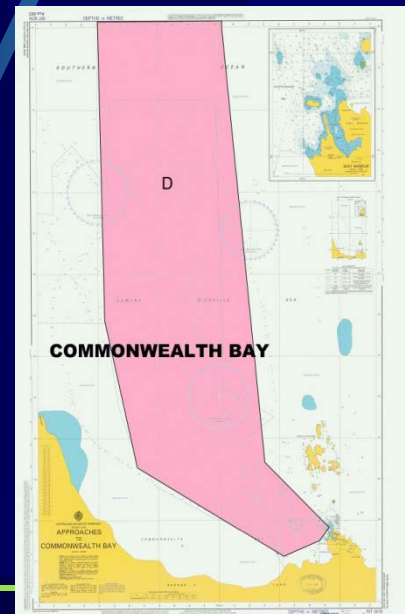
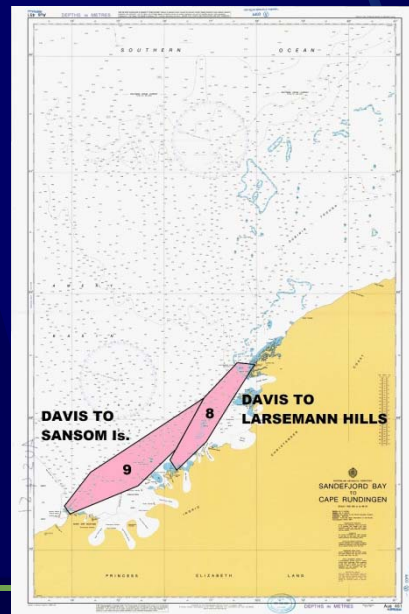
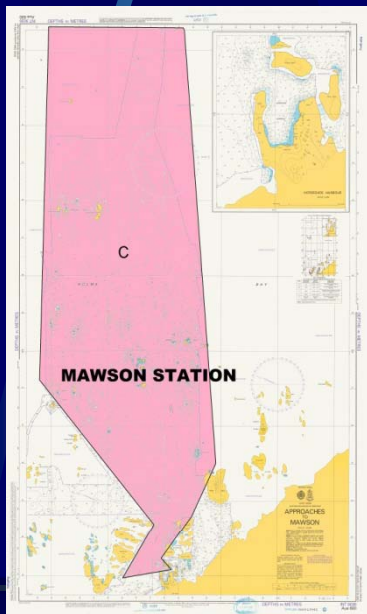
- 1. A list of areas of significance based on the themes:
 - a. Sensitivity of the Environment
 - b. Needs of scientific research
 - c. Demands of the tourism industry
 - d. Other identified maritime activities
- 2. Updated prioritized statement of HCA survey requirements
- 3. Updated “Guidelines for Collection and Rendering of Hydrographic Data for non-survey vessels”



MARITIME SHIPPING ROUTES (Fig. 1)



MARITIME SHIPPING ROUTES (Fig. 2)



RAISING AWARENESS



- a) XXXI ATCM 2008,
 - b) XXI COMNAP Council 2009 and
 - c) XXI IAATO Annual Meeting 2010.
- 1.- *“Hydrography in the Antarctica”.*
 - 2.- *“Hydrography and its contribution to the protection of the marine environment in Antarctic waters”.*
 - 3.- *“Hydrography and its contribution to Antarctic Sciences”.*
 - 4.- *“Hydrographic and Cartographic Status in the Antarctica”.*
 - 5.- *“Practical initiatives to improve hydrography and nautical charting in Antarctica”.*

ANTARCTIC HYDROGRAPHIC ACTIVITIES



- 1.- Regular Hydrographic Surveys
- 2.- Ships of Opportunity (SOO)
- 3.- International Polar Year
- 4.- Call for Rendering Hydrographic Data
- 5.- Procedure for supplying Hydrographic Data



REGULAR HYDROGRAPHIC SURVEYS



SHIPS OF OPPORTUNITY (SOO)



At the IHO/HCA we consider SOO
*“those vessels conducting other
missions in Antarctic waters that
being fitted with standard
modern
navigational equipment could
collect hydrographic data,
mainly bathymetry of great utility
to update or complement current
nautical charts”.*



INTERNATIONAL POLAR YEAR



The Contribution of the IPY to hydrographic knowledge of waters of the Antarctic Treaty Area is **RECOGNIZED.**

CALL FOR RENDERING HYDROGRAPHIC DATA

June 2010



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	Antarctic Continent <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)			

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.

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

SECTION 2 « Hydrographic Surveying Information»

Positioning (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)		
Manufacturer (Note 3)			Name /Type
	Multibeam/Swath <input type="checkbox"/>	Single Beam <input type="checkbox"/>	Survey line (spacing in metres)
Revolutions per minute			
Depth Setting	Zero depth recorded from:	Sea Surface? <input type="checkbox"/>	Under Keel? <input type="checkbox"/>
Correction made? (Note 4)	YES (if YES) Metres per second	<input type="checkbox"/>	NO <input type="checkbox"/>
Transducer placement (Note 5):	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	
.....metresmetresmetres	
Position trace rendered: (Note 4)	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
Speed of vessel knots		

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:	
report rendered		YES <input type="checkbox"/>	NO <input type="checkbox"/>
Position	Condition: Good, bad, missing	Remarks:	
Subjects report rendered:		YES <input type="checkbox"/>	NO <input type="checkbox"/>
Position	Bearing from Seaward	Remarks:	
Report rendered:		YES <input type="checkbox"/>	NO <input type="checkbox"/>
Position/bearing from Seaward	Panoramic	Pilotage	Portrait Close up
		Remarks	

June 2010

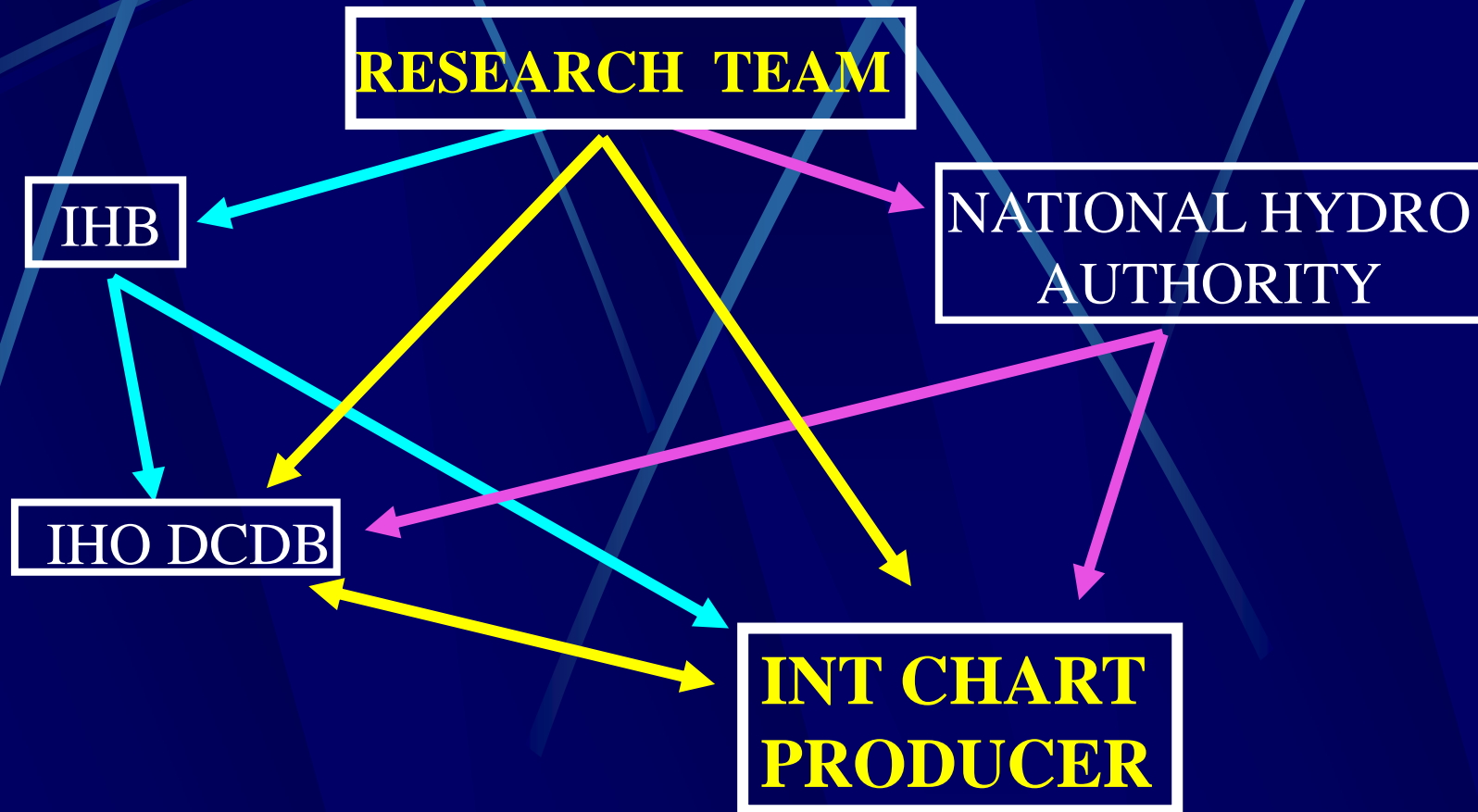
SECTION 4 « Data Format »

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"/>			

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



PROCEDURE FOR SUPPLYING HYDROGRAPHIC DATA



INITIATIVES FOR A COOPERATIVE AND COLLABORATIVE APPROACH



1. With regard to existing bathymetric data
 1. Examine past collections
 2. Communicate area and make data available
2. With regard to hydrographic data to be collected
 1. Contact IHO/HCA for coordination of mutual benefit
 2. Make use of the Collection and Rendering Form
3. With regard to Nautical Chart availability
 1. Examine INT Chart scheme and provide input
 2. Examine short list and report on priority areas not covered



**THANKS
FOR YOUR ATTENTION**