

**IHO HYDROGRAPHIC COMMITTEE ON ANTARCTICA (HCA)
8th Meeting, Niterói, Brazil, 6-8 October 2008**

**International Bathymetric Chart of the Southern Ocean (IBCSO)
Status Report
Hans Werner Schenke**



General

The IBCSO program has achieved a high level of awareness and acceptance in the scientific and hydrographic communities. This project is considered as fundament of a comprehensive geodatabase for Antarctica and absolutely essential for scientific work and cartographic mapping in Antarctica. This data base is indispensable for nearly all scientific disciplines and for charting. For Nautical Charting bathymetric and partially topographic data are needed. The IBCSO data base will include beside sea floor topography also topographic data, such as coast line, land elevation and toponymy. IBCSO works closely with SCAR, GEBCO and its parent organizations IHO and IOC. Beyond that, IBCSO has established a network of hydrographers, ocean mappers and scientists which are involved in this project.

As the next step an Editorial Board will be established in agreement with the parent organisations. Two workshops were held in 2007 and 2008, which were attended by 15 to 20 people. The expert group IBCSO, established in 2004 by SCAR, is now supported by a full-time postdoctoral position at the Alfred Wegener Institute, Bathymetry and Geodesy working group. The position is filled with a geoscientific expert in digital data processing and GIS techniques to serve as IBCSO scientific editor.

Objectives of the IBCSO

Close collaboration is agreed with other Southern Ocean and Antarctic mapping programs, namely Radarsat Antarctic Mapping Program (RAMP), Antarctic Bedrock Topography (BEDMAP2), Antarctic Digital Magnetic Anomaly Project (ADMAG), and Earth Topography (ETOPO2). Due to its distinct interdisciplinary concept IBCSO has been assigned high priority within the IOC Ocean Mapping Program.

Main objectives are:

- ▶ Portraying the seafloor topography around Antarctica
- ▶ Preparation of bathymetric grids, contours and maps
- ▶ Collection of bathymetric data including their meta information (NBS and MB)
- ▶ Collection of other geo-scientific data, information, and meta data
- ▶ Provision of bathymetric grids for the General Bathymetric Chart of the Oceans (GEBCO)

Framework -Groups and Committees involved-

IBCSO was adopted an International Bathymetric Chart project of the Intergovernmental Oceanographic Commission (IOC) Ocean Mapping Program and is one of the Expert Groups within the SCAR Geosciences. In detail the IBCSO is endorsed by:

- ▶ SCAR Standing Scientific Group on GeoSciences (SSG-GS)
- ▶ IOC Consultative Group on Ocean Mapping (CGOM)
- ▶ Hydrographic Committee on Antarctica (HCA) of the IHO

IBCSO has close liaisons with:

- ▶ GEBCO Sub-Committee on Digital Bathymetry (SCDB)
- ▶ GEBCO Sub-Committee on Undersea Feature Names (SCUFN)
- ▶ SCAR/SCOR Expert Group on Oceanography (EG Ocean)
- ▶ SCAR Standing Committee on Antarctic Geographic Information (SC-AGI)

Products and By-products

- ▶ Hardcopy maps (printed charts), scheduled 2009
- ▶ Softcopy maps (web maps), scheduled 2009
- ▶ Digital bathymetric database, metadata, and documentation
- ▶ An operational Expert Group focused on polar ocean mapping

Activities

(1) The IBCSO website is updated again. A Spanish and a French version of the IBCSO homepage is now available. Native speaker, please feel free to make any suggestion or correction on the text - thanks in advance.

(2) Preparation of posters, presentations and papers for the XXX SCAR Meeting and SCAR/IASC/IPY Open Science Conference in St Petersburg, Russia, especially for the 2nd IBCSO Business-Meeting held in St Petersburg (6 July 2008).

(3) An oral presentation was submitted to the scientific conference committee as well as a poster about the IBCSO 'product and service line' during the conference.

(4) Nomination process for the IBCSO Board (representatives of SCAR member countries) makes progress. The IBCSO Board is one of three Boards, especially designed as the communication network about scientific activities in the Southern Ocean and bathymetric data acquisition. Thanks to the SCAR officers for their official support.

(5) Analysis and preparation of MB sonar data for the compilation of the two German INT charts 9057 and 9055 and processing of RAMP data for presentation of the Antarctic topography

(6) Harmonisation of Undersea Feature Names (SCUFN B-8 and Composite Gazetteer of Antarctica) with support of the IHO/GEBCO. Proposals for changes in SCUFN B-8:

- specific names: 0
- generic terms: 1
- coordinates: 103

Proposals for changes in the CGA are:

- specific names: 7
- generic terms: 15
- coordinates: 97

In the meantime some topics of the project have been revised or updated:

- collection of new bathymetric data by various cruises with RV Polarstern
- planning of new expeditions especially in the area of the Southern Pacific (2009)
- maintaining the mailing list of participating IBCSO members

Beside this, the general work comprises:

- data compilation and data evaluation of bathymetric data from various sources
- data integration of bathymetry, topography, and satellite altimetry
- updating the terms of reference
- presentation of IBCSO reports for IOC-HCA, SCAR, and GEBCO
- request for funding to get additional support for IBCSO

Past Meetings

The **Kick-Off Meeting** of IBCSO took place on **30 July 2004** during the SCAR XXVIII in Bremen.

The **Inauguration Meeting** was conducted in Bremerhaven during the CGOM-X Meeting **17 June 2006**

1st Business Meeting of IBCSO on Saturday, **1 September 2007** (8:00 a.m. to noon), Meeting Place: UCSB University Center, during the International Symposium of Antarctic Earth Sciences (ISAES) in Santa Barbara, USA.

2nd Business Meeting of IBCSO was conducted on **6 July 2008** during the XXX SCAR Science Week in St. Petersburg

Report about the 2nd IBCSO Business Meeting, held on 6th July 2008 at XXX SCAR Conference in St. Petersburg

The 2nd Business Meeting of IBCSO took place on 6th July 2008 in St. Petersburg and was attended by 15 representatives from 10 nations. Major aim was to reflect the actual status of IBCSO activities. In order to enlarge the network and to strengthen the work and outreach, it is recommended to emphasize specifically the call for delegates from each member country w.r.t. SCAR Circular 770.

Recognizing that a large amount of multibeam and single beam data, collected by research vessels, are not available to this project, an inventory of all past research cruises will be compiled and jointly with COMNAP utilized to request the delivery of the seafloor data to international data centres, or directly to IBCSO. The data exchange and data policy will be based on the IOC/IODE regulations.

Regions of very sparse bathymetric data in the southern Indian and Pacific Oceans, the Weddell, Ross, and Amundsen Seas were identified. Research vessels, operating in these regions, should be requested to perform if feasible multibeam surveys and, especially, collect data along transit lines.

A presentation about the BEDMAP emphasize that it has a strong link to IBCSO, since it forms the continuation of the sea floor topography underneath the Antarctic ice sheet. The compilation of a homogeneous, differentiable and seamless digital earth model is of special scientific value, since it describes the joint interface between the geosphere and the hydrosphere/cryosphere.


It was agreement amongst the participants that annual meetings of the IBCSO Editorial Board are indispensable in order to maintain a rapid advancement. To support the work of IBCSO, additional funding, i.e. for meetings, should be seen from other organizations. The next meeting is scheduled to be held in 2009.

Publications and outreach

- 6 July 2008: 2nd IBCSO EG Meeting during the XXX SCAR Science Week, St Petersburg, Russia, 5-7 July 2008. Read the minutes.
http://www.ibcso.org/index_files/IBCSO_Minutes_AARI_2008.pdf
- In prep.: Joint publication with bathymetric charts in the Amundsen Sea Embayment, based on BAS (J.C. Ross) and AWI (Polarstern) multibeam surveys.
- Oral presentation at the SCAR/IASC Open Science Conference, St Petersburg, Russia, 8-11 July 2008. Open the screen presentation. <http://www.ibcso.org/>
- IBCSO poster presentation at the SCAR/IASC Open Science Conference, St Petersburg, Russia, 8-11 July 2008. Open the poster.
http://www.ibcso.org/index_files/IBCSO_SCAR_A4.pdf
- Joint IBCAO and IBCSO poster presentation at the SCAR/IASC Open Science Conference, St Petersburg, Russia, 8-11 July 2008. Open the poster.
http://www.ibcso.org/index_files/Polar_IBC_A4.pdf

- Inventory of ship tracks in the Southern Ocean with existing multibeam data is now available via the MGDS web portal and the [GeoMapApp](#) visualization tool.
- 1 September 2007: 1st IBCSO Business Meeting during the 10th ISAES, University of California, Santa Barbara, USA, 26-31 August 2007. Read the Minutes.
http://www.ibcso.org/index_files/IBCSOmeeting_minutes.pdf
- Status Report in GeoReach,
http://www.scar.org/researchgroups/geoscience/GS_Newsletter_Oct2006.pdf
- Report in the EOS Transactions titled: **Southern Ocean mapping Program Restarts**
<http://www.agu.org/journals/eo/eo0731/2007EO310003.pdf>
-

Upcoming

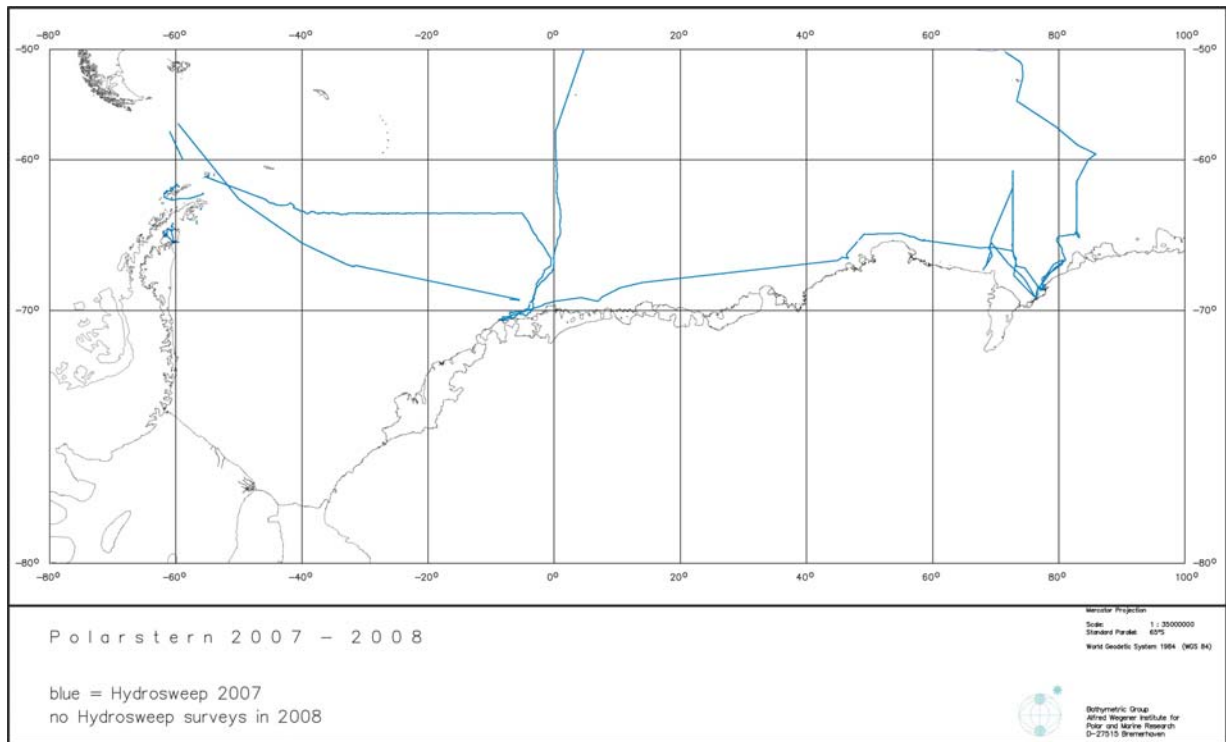
- Ship track inventory of existing echo sounding data to be submitted to COMNAP for data requests.
- Implementation of the [IOC/IODE Oceanographic Data Exchange Policy](#)  within the IBCSO project.
- Preparation for the 3rd IBCSO Business Meeting to be held in Bremerhaven in 2009
- Expedition planning in the South Pacific 2009.

This text lists available bathymetric data sets (10/14/2008)

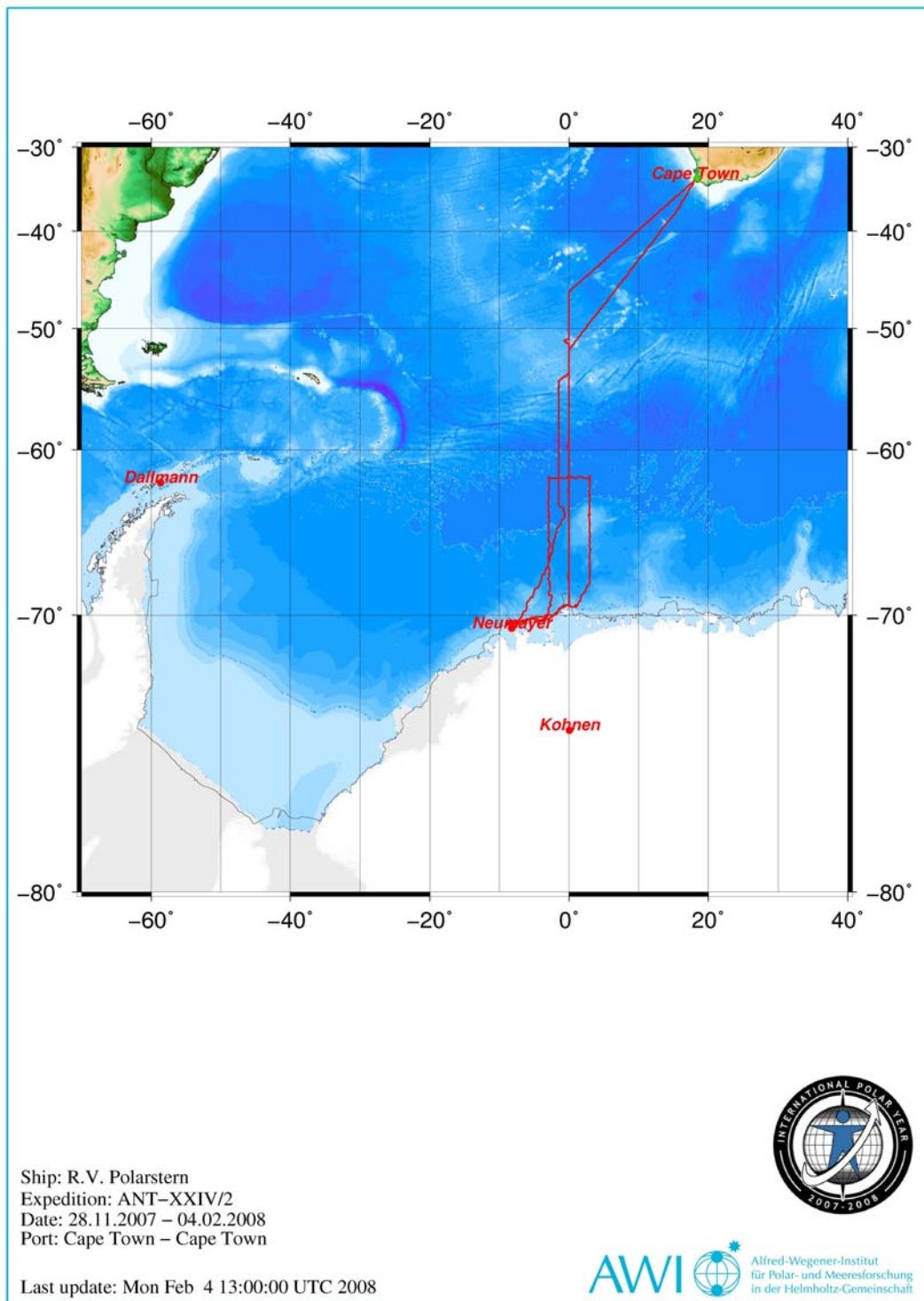
Data Provider:

1. Argentina	----		
2. Australia	GA, AAD	Enderby, Kerguelen	E00, ASCII, grids
3. Brazil	---		
4. Chile	---		
5. GEBCO GDA	TSCOM	various	grids
6. Germany	AWI	Weddell Sea	MB data
7. IHO DCDB	NGDC	various	grids
8. Japan	NIPR	Ant. Peninsula	ASCII
9. Korea	---		
10. New Zealand	GNS	Ross Sea	
11. Russia	PMGE	S Indian Ocean	Excel
12. South Africa	AGU (?)	various	ASCII
13. Spain	Univ Granada	Ant. Peninsula	planned
14. Ukraine	IGS	Ant. Peninsula	ASCII
15. United Kindom	BAS	various	
16. USA	LDEO, Scripps	Amundsen, Larsen	grids

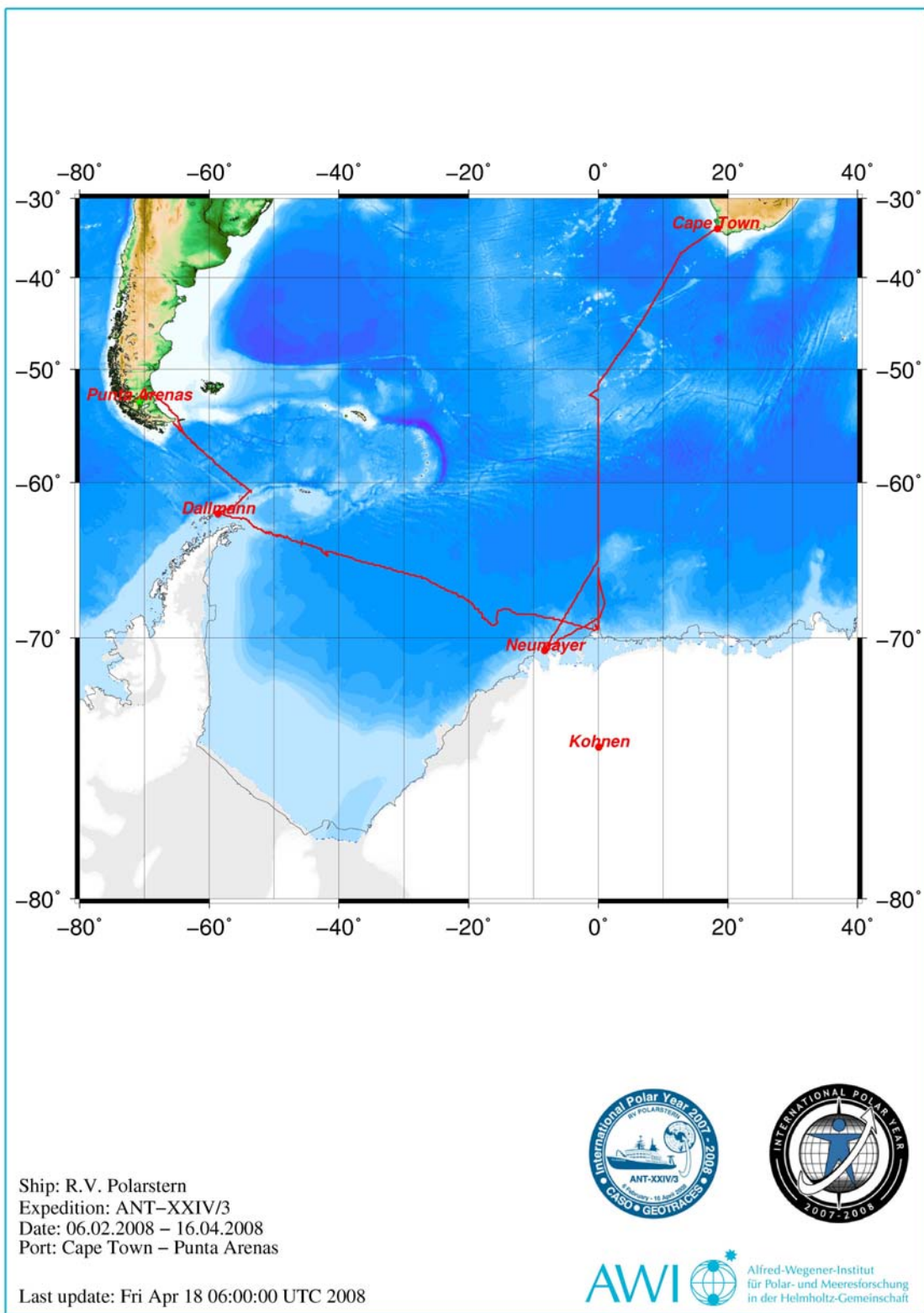
Trackplots of RS “Polarstern” cruises in 2007 and 2008 (MB and NBS data)



MB data collected during this cruise from Nov 2007 to Jan 2008



Only NBS-data on this cruise



Only NBS-data on this cruise