

International Hydrographic Organization



– IHO Antarctic GIS –

IHO Antarctic GIS

- An “Antarctic GIS” is being developed at the IHB, which will comprise a number of layers of information relating to Hydrography, e.g. surveys, INT charts or ENCs.
- It will provide metadata and geometry for each layer.
- Assistance in this development is provided by an officer kindly seconded to the IHB by Japan (JHOD).

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Currently, the layers of information being considered include:

- **Hydrographic Surveys :**
 - Systematic surveys (areas defined by closed polygons).
 - Enroute surveys / Soundings on passage.
- **INT Charts :**
 - Agreed scheme
 - Charts published / not published / planned
- **ENCs :**
 - Agreed scheme for all Usage Bands
 - ENCs published / not published / planned

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Currently, the layers of information being considered include (cont):

- **RNCs :**
 - RNCs produced or published.
- **Geographical Names:**
 - Undersea Feature Names, e.g. from GEBCO-SCUFN Gazetteer
 - Other maritime names, e.g. from S-23
 - Land Toponymy, e.g. from SCAR Composite Gazetteer on Antarctica
- **Tide records**
- **Scientific Stations**

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How will the Antarctic GIS look like?

- An initial draft Antarctic GIS can be seen at <http://hca.iho.int/cgi-bin/getkml.php> (to be used with Google Earth)

Data Model

- As part of the Antarctic GIS development process, a Data Model is being prepared. See [Excel table showing the metadata which will be presented for each layer of information.](#)

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The slides which follow are based on the data model, as developed to date (December 2011).

Antarctic GIS (INT Charts)

The screenshot shows the Google Earth interface with the Antarctic region selected. The left sidebar contains the Search, Places, and Layers panels. The main map area displays a satellite view of Antarctica with a red rectangular information panel overlaid. The panel is titled 'Printer' and contains a table of details for an 'INT chart panel'.

Printer	
National number	
English	
INT chart panel	
Panel type	
English	
INT chart	
INT Number	907
National paper chart number	4907
INT Region	M
Producer country	UK
Producer organization	UKHO
Date of latest edition	10/2010
Horizontal datum	WGS-84
Sounding datum	LAT
Projection	Mercator
Status	Available
More detail	Link to UKHO website
Comments	

Latest update of this information: July, 2011

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78°25'35.36" S 49°32'06.78" W elev 44 m Eye alt 5887.05 km

Antarctica GIS (ENCs)

The image shows a Google Earth interface with the Antarctic continent visible. Blue lines on the map represent ENC (Electronic Navigational Chart) boundaries. A callout box on the right provides detailed information for a specific ENC.

ENC	
ENC Number	GB14024R
title	Crystal Hill to Devil Island
INT chart Number	9130
National paper chart number	4024
INT Region	M
Country	UK
Responsible organization	UKHO
Date of latest edition	10/2010
Produced ENC limits	http://dalsnuten.ecc.as/metadata/cell/GB14024R.htm
Schemed ENC limits	URL of ENC scheme
Horizontal datum	WGS-84
Sounding datum	LAT
Usage band	1-Overview
Display scale	1:2,000,000
Status	Available
More detail	Link to UKHO website
Comments	

Latest update of this information: Oct., 2010

Antarctica GIS (Surveys)

The image shows a Google Earth interface with a map of Antarctica. A yellow survey track is visible on the West Peninsula. A popup window titled 'Survey' provides details about the survey. The interface includes a search bar, a places list, and a layers panel.

Survey	
Name	West Peninsula
Country	Germany
Responsible organization	Alfred Wegener Institute for Polar and Marine Research (AWI); RV Polarstern.
Date	1 January 1994 to 27 March 1994
Area description	Area approx. limited by West coast of Antarctic Peninsula
Horizontal datum	WGS-84
Sounding datum	LAT
Scale	Random distributed
S44 order	
Sounding technique	NBS / Hydrosweep (59 depths) in soundings (1500m/s). Accuracy :less than 1% water depth. No tide measurements.
Positioning equipment	GPS integrated with ANP 2000. Accuracy :less than 100 m.
Type of survey	Enroute survey
Uncertainty propagation	
Products	Digital data : latitude, longitude, depth, for each point. - Polarstern Plotting Sheets (PPS) at 1:200 000, for multibeam data.
Status	On request. Please quote leg ANT XI/3
More detail	Link to AWI website
Comments	Systematic survey with multibeam sonar. - Multibeam sonar random placed profiles. - NBS random placed profiles.

Latest update of this information: March, 2011

Data SIO, © 2011 Inav/Geosistemas SRL
87°21'57.04" S 127°09'27.74" E elev 656 m
Eye alt 5887.05 km

Antarctica GIS (tide records)

The image shows a Google Earth interface with a map of Antarctica. A callout box displays a table of tide gauge data. The map shows various stations labeled with codes like PTC_4_2_12, PTC_4_2_30, PTC_4_2_21, PTC_4_2_32, and names like PALMER and PRIMAVERA. The left sidebar shows search and layer options, and the bottom status bar shows coordinates and elevation.

Tide gauge	
Name	MIKKELSEN
Country	
Responsible organization	
Date of measurement started	
Record length (days)	25
Sample interval (s)	
Position	63°53.22'S, 60°43.98'W
Horizontal datum	WGS-84
Vertical datum	
Instrument type	VTS Visual Tide Staff
Reference	<i>Dragani et al. (2004: Polar Geosci., 17, 156-170)</i>
Data status	Available
More detail	Link to "ESR Antarctic Tide Gauge Database"
Comments	

Latest update of this information: Jan., 2011

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69°40'08.30" S 56°41'15.07" W elev -483 m
Eye alt 2914.88 km

Antarctica GIS (Facilities / Scientific Stations)

The image shows a Google Earth interface with the Antarctic continent visible. A callout box points to the Halley facility. The interface includes a search bar, a places list, and a layers panel. The callout box contains a table with the following information:

Facility	
Name	Halley
Country	UK
Responsible organization	
Position	75°34.90'S, 026°32.47'W
Horizontal datum	WGS-84
Facility type	Scientific station
Status	Year-round
More detail	Link to COMNAP website
Comments	

Latest update of this information: July, 2010

Other visible labels on the map include: Signy, Aboa, Wasa, Soyuz, Abrazo de Maipú, Belgrano II, Sky Blu, Sobral, Antonio Huneus, Arturo Parodi, Kunlun, and Zhongshan.

Map data sources: Data SIO, NOAA, U.S. Navy, NGA, GEBCO; © 2011 Inav/Geosistemas SRL; Image U.S./Geological Survey/ott; Image USGS/PGC.

Coordinates: 78°30'43.91" S 4°02'24.26" W elev 2316 m Eye alt 3091.79 km

Antarctica GIS (Undersea feature names)

The screenshot shows the Google Earth interface with the 'Under Sea feature' layer selected. The map displays the Antarctic continent with various undersea features labeled. A callout box provides the following information:

Under sea feature	
Specific term	Polarstern
Generic term	Plateau
Limits	Link to GEBCO Gazetteer
Proposer	Dr. H. Hinze, AWI, Germany, Jan. 1997
Discoverer	
Accredited by	SCUFN (Jun. 1997)
Reason for naming	Named after the German R/V Polarstern which has carried out surveys in this area
More detail	Link to GEBCO website
Comments	

Latest update of this information: July, 2011

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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 Image U.S. Geological Survey
 US Dept of State Geographer

77°52'26.72" S 37°35'07.37" W elev -164 m
 Eye alt 3989.37 km