The IBCSO Data Compilation SOGIS: Data Management and Processing

Southern Ocean

Geographic Information System

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10th ISAES at UCSB
Objectives

• International collaboration
• Interoperable digital SOGIS
• Complementary data exchange
• Portraying seafloor topography
• Generating thematic maps
Southern Ocean - Antarctica

Sketch of Antarctica and the SO

Rock surface and sea ground

Source: BEDMAP, 2000
Echo Sounding Data

Depth Measurements

Ship Tracks: AWI, GEBCO, IHO-DCDB
Gravity Data

Marine Gravity

Predicted Bathymetry

2’ Global Relief

Source: McAdoo & Laxon, 1997

Source: Smith & Sandwell, 1997

Source: NGDC, 2006
Magnetic Anomalies

Survey, Ørsted and Champ Data

Source: ADMAP, 2007

Age Grid of the Ocean Floor

Source: POMP, 1992

Source: ADMAP, 2007
Radar imagery and DTM

Radersat SAR Mosaic

Digital Terrain Model

Source: RAMP and AMM, 2007

Source: USGS, 1989

coastline, grounding line, ice edge, ice- and sea-bed topography

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GIS-Architecture

• High end GIS
  – Full data capabilities

• GIS concept
  – Desktop GIS (me)
  – Server GIS (AWI and me)
  – Web GIS (you)

• Data storage
  – Files vs. geodatabase
GIS Data Processing

• Ping-Processing
  – profile de-spiking
  – geometrical control
  – quality control

• GIS-Modeling
  – data import, export
  – georeferencing
  – data modeling
  – data merge
  – quality control
Prospective Tasks

• Continuous data transfer
  – backbone of the SOGIS

• Evaluation of processing techniques
  – data merge for optimized visualization

• Collaboration with other efforts
  – AMBS, ADMAP, BEDMAP, RAMP, SOOS, ...

• IBCSO meetings/work shops
  – 1st Meeting: Saturday, 8:00a.m. to noon
Conclusions

• Use of digital data
  – flexibility

• Implementation of SOGIS
  – interoperability

• Use of digital tools
  – numerical analyzes

• IBCSO products
  – database, metadata, maps
  – operational network
Acknowledgements

• and
  – Supporting the IBCSO program

• Friends of the and
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• Collaborating facilities
  – Providing cooperation and data

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