

# Report from Geospatial Information Group of Experts (GIG)

## Background

The new Geospatial Information Group of Experts was formed as a result of the SCAR restructure. The group met on Friday 19<sup>th</sup> July to identify a terms of reference and develop a forward workplan. Past details of a number of the projects are given in the separate report of the Working Group on Geodesy and Geographic Information dated 17<sup>th</sup> July

## 1. GIG Terms of Reference

1. To make fundamental reference data (geographic, geodetic, geophysical) available to the Antarctic and global user communities to meet scientific research requirements.
2. Contribute to global geodesy for the study of the physical processes of the earth and the maintenance of the precise terrestrial reference frame
3. To integrate and coordinate Antarctic mapping and GIS programs
4. Provide a common geographic reference system for all Antarctic scientists and operators as the basis for sound data management.
5. To establish and maintain strong links with all Antarctic science research groups and Antarctic data management groups.

## 2. Summary of Meeting

John Manning (Australia) was elected Chairman of the Geospatial Information Group of Experts. Glenn Johnstone (Australia) as Chairman of the Geoscience Communication and Outreach Action Group (COG) will provide Executive Officer support to the group as part of his overall responsibilities in GSSG. It was resolved to continue with same structure for operations as previously employed in the WG-GGI. Coordinators were appointed for the two major WG-GGI programs:

- Geodesy (GIANT): John Manning (Australia)
- Geographic Information: Janet Thomson (UK)

### *Work Plans 2002-2004*

The following work plans with responsibilities and general deliverables were developed

## GIANT Program Work Plan 2002 - 2004

### 1. Permanent Observatories

**Project Leader:** Australia - [Mr John Manning](#)

**Members:** Italy, USA

**Goal:** To develop an infrastructure of permanent geoscientific (ie. seismologic, geomagnetic, geodetic and gravimetric) stations to bring all individual networks to a common datum, and to provide geoscientific information for the global monitoring and analysis of natural earth processes.

**Activities:**

1. Extend the network of permanent observatories to include seismic and geomagnetic techniques which provide data for crustal deformation studies
  2. Post details of all permanent sites on web site
  3. Complete and publish cGPS base station specifications.
  4. Record survey results of accurate local ties between collocated techniques and add to web site
  5. Collaborate with other SCAR scientists to identify requirements for space geodetic sites
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## 2. Epoch Crustal Movement Campaigns

**Project Leader:** Germany - [Prof Reinhard Dietrich](#)

**Members:** Italy, Chile, Japan, China, Australia, USA

**Goals:**

1. To densify the geodetic infrastructure established from the permanent observatories; and
2. To develop a deformation model for surface movement vectors within a common Antarctic reference frame.

**Activities:**

1. Co-ordinate annual continental or regional epoch campaigns
  2. Maintain orderly data archive and data access from these campaigns
  3. Identify and coordinate integration of regional campaigns (eg. TAMDEF and VLNDEF)
  4. Facilitate GPS connections to tide gauge bench marks
  5. Deliver results to ITRF in conjunction with results from permanent observatories
  6. Collaboration with appropriate IAG Antarctic Crustal Deformation Sub-Commission
  7. Integration of solutions using ITRF guidelines
  8. Provide project results to ANTEC
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## 3. Physical Geodesy

**Project Leader:** Italy - [Prof Alessandro Capra](#)

**Members:** Germany, Australia, Russia, USA, Japan, Canada

**Goal:** Compilation and analysis of physical geodesy data, for the development of a new high resolution Geoid for the Antarctic.

**Activities:**

1. Compilation of geodetic data and a gravimetric database (using Russian gravity data, ADGRAV database)
  2. Investigate the ADMAP database and link into the Physical Geodesy database
  3. Collaboration with IAG Antarctic Gravity project and SCAR Solid Earth Working Group
  4. Analysis and validation of observations and database specifically BEDMAP, RAMP (AMM1 & 2), airborne radar profiles
  5. Develop a simulation model & geoid model on a test area in North Victoria Land, in collaboration with IGES.
  6. Coordinate with Project 8 on new satellite gravity data mission
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## 4. Geodetic Control Database

**Project Leader:** Australia – [Glenn Johnstone](#)

**Members:** Germany, UK, USA

**Goal:** Maintain the master index for Antarctic positional control, including all levels of accuracy

**Activities:**

1. Maintain database and add in newly acquired data
  2. Italy to provide further details on NVL points (photos, etc)
  3. Collaboration with Steffen Vogt for KGI geodetic control
  4. Australia (Henk Brolsma & John Manning) to help develop guidelines for photo identification (collaboration from Jerry Mullins) – October 2002
  5. Publish guidelines for geodetic control identification on web site
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## 5. Tide Gauge Data

**Project Leader:** Japan - [Dr Kazuo Shibuya](#)

**Members:** Australia, China, Germany, New Zealand, Italy, Russia, USA (Amos), UK (Woodworth), other specialists as required

**Goal:** To consolidate the collection of and access to Antarctic tide gauge information

**Activities**

1. Revise information on the web to benchmark values and connections to IGS GPS observations sites  
GPS stations
2. Gather information on history of establishment and operation of Antarctic tide gauges
3. [Research](#) and list all permanent and significant tide gauges established for hydrographic information and scientific studies. [Also available is [tide gauge instrumentation information](#) and [tide gauge reference information](#)]
4. List all known sea level determinations, dates and accuracy estimates for all significant tide gauges
5. Identify benchmark values and connections to GPS observations sites
6. Facilitate index data into the Geodetic data base
7. Post meta data on web
8. Produce 'best-practice' guidelines on establishment and calibrating on bottom mounted and acoustic type gauges in Antarctic conditions.
9. Investigate GLOSS guidelines and compatibility with Antarctic conditions

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## 6. Atmospheric Impact on GPS Observations in Antarctica

**Project Leader:** Poland - [Dr Jan Cisak](#)

**Members:** Germany, Italy, USA, Australia (IPS), Norway, China, IAG

**Goal:** To understand the ionospheric and tropospheric impact of the atmosphere on the quality of GPS observations in Antarctica

**Activities:**

1. Facilitate access to GPS observations from permanent GPS sites and SCAR GPS epoch campaigns for computation of atmospheric delay to GPS signals
2. Examine the correlation with magnetic storms
3. Research impact of differing levels of solar and meteorological activity on Antarctic GPS observations
4. Report on participation in international studies
5. Report on project findings
6. Continue collaboration with Iono\_WG of IGS
7. Search for existing research (PhD) that is currently being conducted – may be able to assist with data analysis
8. Develop recommendations for future GPS observations to minimise impact on GPS network surveys

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## 7. Remote Observatory Technologies

**Project Leader:** USA - [Mr Larry Hothem](#)

**Members:** Japan (GSI), Australia, Italy, Netherlands (Swartz)

**Goal:** Identify technology and monitor developments for the deployment of geophysical and geodetic measurement sensors, and ancillary support equipment, at unattended remote (no existing infrastructure for power, shelter and communications) Antarctic localities.

**Activities:**

1. Power generation: monitor and report on developments and experiences in use of solar, wind, fuel cells, and other methods of power generation. Includes information on voltage regulation devices, voltage control devices, temperature sensors, and other ancillary devices used for power systems.
2. Batteries: compile information on type and make of batteries deployed at remote sites.
3. Data communications: monitor and report on developments for controlling operations and retrieving data from remote sites via satellite communication techniques, such as IMARSAT, Iridium, ARGIS, etc.
4. Engineering factors: investigate component heating requirements, static discharge hazards, benefits of redundant systems, solar mounting options, reliability of wind generators, etc.

5. Annual status report: summarize at end of each austral summer status, developments and experiences in deploying instruments and support systems at remote unattended sites in Antarctica, to include list of stations, names, locations, country sponsor, initial and ending deployment dates, specifics (if available) on hardware deployed, data communication systems (if any), and URLs for additional information. What worked and what failed (why). Provide report to Outreach and Communication Group by March 2003 and March 2004.
  6. Experiences in Arctic polar regions: monitor experiences in deployment of sensors at remote unattended sites. Include in annual status report.
  7. Information dissemination: provide for incorporating at Geosciences SSG website, URLs linking to information on "remote observatory technologies," that will include technical publications, projects reports, manufacturers, key contacts, etc.
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## 8. Ground Truthing for Satellite Missions

**Project Leader:** Germany - [Prof Reinhard Dietrich](#)

**Members:** Italy, Australia, USA (U of Texas)

**Goal:** To ensure new satellite missions are integrated with the Antarctic geodetic system

**Activities:**

1. To identify and report on new satellite missions that will provide geodetic data or require geodetic support (eg. ICESAT, CryoSat, Envisat)
  2. Coordinate ground truthing campaigns in Antarctica with other known researchers
  3. Liaison with satellite mission principal investigators and ANTEC
  4. Facilitate the transfer of satellite mission data to the Antarctic community
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## 9. Geodetic Advice on positioning limits of special areas in Antarctica

**Project Leader:** Chile - [Tnt Col Rodrigo Barriga](#)

**Members:** Germany, Australia, USA

**Goal:** To provide advice to SCAR, through the Geoscience Standing Scientific Group on the geodetic aspects of protected area definitions.

**Activities:**

1. Undertake a scoping study on how limits are described for protected areas and the accuracy of the coordinates (September 2003)
2. Liase with former GOSEAC, CEP and other relevant groups
3. Identify difficulties / problems related to coordinates (September 2003)
4. Identify pilot project areas (September 2003)
5. Develop guidelines for surveying and describing limits (SCAR XVIII)

[In Chile a Work Group will be set up consisting of [Mr Juan Carlos Montero](#), [Miss Wendy Rubio](#) and [Mr Edwin Hunt](#), being lead by [Tnt Col Rodrigo Barriga](#). We are planning to develop GPS field work in King George Island next summer (January 2003) in order to use this as a pilot project area.]

## Geographic Information Program Work Plan 2002-2004

### 1. Place Names (SCAR Composite Gazetteer)

**Project Leader:** Italy – [Prof Roberto Cervellati](#)

**Members:** UK, Germany

**Goal:** Provide an authoritative database of all Antarctic place names approved by recognised bodies, for reference by national Antarctic naming authorities, scientists and operators.

**Activities:**

1. Continue to collect descriptions and dates of approval for letters B to Z
2. Address non-responding countries via letter through former GGI representatives / SCAR delegates / COMNAP delegates / Place Names Committees
3. For new or modified entries include source of co-ordinates (Australia to suggest fields)
4. If countries supply names for submarine features advise GEBCO
5. Investigate links to existing gazetteers for place names above 60° South

6. Publish a "Supplement 2004" including all new information compiled since 1998
  7. Remove SCOUT program from website
  8. Prepare position paper on multiple names for SCAR XXVIII
  9. Advise KGIS and Larseman Hills GIS projects on pilot studies related to establish common coordinates per SCAR Gazetteer feature using GIS
  10. Address the resourcing of the SCAR Composite Gazetteer from two years on prior to SCAR XXVIII
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## 2. Antarctic Digital Database (ADD)

**Project Leader:** UK – [Mrs Janet Thomson](#)

**Members:** Australia, USA, Germany

**Goal:** Provide a SCAR standard small scale topographic GIS database, for use by scientists and operators, and contribute topographic data to global mapping initiatives.

**Activities:**

1. Australia to check coding for ice shelves / glacier tongues
  2. Add Chinese / Lambert traverses for version 4.0
  3. Italy to supply ITASE data for version 4.1
  4. Release ADD 4.0 in August 2002
  5. Release ADD 4.1 including bedrock contours from BEDMAP, improved elevation data derived from BKG ERS Altimeter DEM, and improved metadata in Decemeber 2002 (provided funding is available)
  6. Get advice from other SCAR groups on northern limits for extension above 60°S
  7. Workshop on extension above 60°S: To investigate northern limits and to involve relevant national data providers in the project
  8. Identify data sources for extension above 60°S
  9. Migrate the ADD to object oriented data model and create the Antarctic Map Server
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## 3. Map Catalogue

**Project Leader:** Australia – [Mr Henk Brolsma](#)

**Members:** UK, USA, Germany, Chile

**Goal:** To maintain a public-access catalogue of all Antarctic mapping products

**Activities:**

1. Ask relevant countries through former GGI representatives / SCAR delegates / COMNAP delegates to check existing entries and to add new or missing ones
  2. Evaluate which countries will provide translation of catalogue interface into Spanish, French, and Russian (Australia to write explanatory notes first)
  3. Provide a SCAR Map Catalogue start page
  4. Implement a geographical mask search tool
  5. Define additional fields if necessary
  6. Evaluate inclusion of SCAR geological map catalogue (at BAS)
  7. Link US and BAS thumbnails into the map catalogue
  8. Request countries to provide thumbnail scans of their maps
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## 4. King George Island GIS (KGIS)

**Project Leader:** Germany – [Mr Steffen Vogt](#)

**Members:** Argentina, Chile, Brazil, Poland, China, Korea, UK, Uruguay

**Goal:** To produce an integrated geographic database for use by all countries, for use in multi-disciplinary applications.

**Activities:**

1. Continue obtaining and integrating data: high resolution topography for Eastern part of the island, thematic data
2. Evaluate available nearshore bathymetry data
3. Publish meta data on the Antarctic Master Directory
4. Maintain database, website and user's manual
5. Continue promoting KGIS among users / data producers (attend 3rd Scientific Coordinators Meeting on KGI, liase with CEP, CoMNAP and IAATO)
6. Maintain close links to related GIS projects on KGI

7. Organise KGIS workshop in March/April 2003 in Freiburg including participants from Argentina, Brasil, Chile, China, Czech Republic, Germany, Korea, Poland, Russia, UK, Uruguay (provided funding is available)
  8. Continue contributing to the development for the SCAR spatial data standards
  9. A UK-Germany pilot study on place names: propose common coordinates per SCAR Gazetteer feature using GIS (provided funding is available)
  10. Link data into Cybercartographic Atlas (provided funding is available)
  11. Enquire possibilities to establish mapserver
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## 5. Spatial Data Standards

**Project Leader:** Australia – [Mr Henk Brolsma](#)

**Members:** UK, USA, Germany, Chile

**Goal:** To provide a SCAR standard spatial data model for use in SCAR and national GIS databases.

**Activities:**

1. Continue developing the SCAR Feature Type Catalogue and the SCAR Spatial Data Model
  2. Provide SCAR Feature Type Catalogue online for comments – finalise by end August 2002
  3. Creation and incorporation of symbology
  4. Investigate metadata / data quality requirements
  5. Ensure compliance to ISO TC211 and OGC standards
  6. TC211 “Standards-In-Action” symposium – presentation on SCAR FTC to TC211 meeting (Switzerland, 21 May 2003) – Steffen Vogt to attend and present current research.
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## 6. National On-line Atlases

**Project Leader:** USA – [Mr Jerry Mullins](#)

**Members:** Australia, China, Canada

**Goal:** To develop a distributed network of national Antarctic online atlas nodes linked to the Cybercartographic Atlas hub.

**Activities:**

1. Version 2 of US Antarctic Atlas (incorporating ADD V3.0) be made available online by end 2002
  2. Build up a collaborative group for participation in the project
  3. USA to provide Communications and Outreach Group a list of new satellite missions relevant to Antarctic geospatial information to be made available on the GGI website – October 2002
  4. Keep group members informed on available imagery collections
    - contact for aerial photography collections – August 2002
    - details on what they have – September 2002
    - USARC provide scanned flight line indexes for web site - December 2002)
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## 7. SCAR Cybercartographic Atlas of Antarctica

**Project Leader:** Canada – [Prof D.R.Fraser Taylor](#)

**Members:** Australia, USA, China, Argentina, Chile, IHO, Poland

**Goal:** To provide an online Antarctic Cybercartographic Atlas

**Activities:**

1. Prepare a detailed technical framework for the atlas (December 2002)
2. Hold a workshop of key stakeholders (Ottawa, May 2003)
3. Continue development of the content of the Atlas (August 2002 – March 2003)
4. Contact key groups in the scientific standing groups and standing committees of SCAR to incorporate case studies for the atlas (August 2002 – March 2003)
5. Consolidate linkages with the key online nodes for the atlas and add new nodes as appropriate (August – December 2002)
6. Develop contacts with key information providers/users of the Atlas such as COMNAP, IAATO, etc. (August 2002 – March 2003)
7. Begin full implementation of the Atlas (January 2003)
8. Complete a working version of the atlas for demonstration at the XXVIII SCAR meeting, Bremen, Germany, July 2004

## 8. East Antarctica GIS

**Project Leader:** Russia – [Mr Alexander Yuskevitch](#)

**Members:** Australia, China, Italy

**Goal:** To develop and finalise a proposal for GIS collaboration at a key site in East Antarctica.

**Activities:**

1. Australia to revise the Russian proposal and to take forward a regional GIS of Larseman Hills in cooperation with China and Russia
  2. Circulate draft proposal for comment
  3. John Manning to follow up with Russia on the regional geodetic control database
  4. Propose common coordinates per SCAR Gazetteer feature using Larseman Hills GIS
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## 9. IHO Bathymetry Proposal

**Project Leader:** Australia – [Mr John Manning](#)

**Members:** Canada, New Zealand, IHO

**Goal:** Support the proposal for the production of a new International Bathymetric Chart of the Southern Ocean.

**Activities:**

1. John Manning to contact Hans-Werner Schenke regarding Ron Mcnab and his involvement in the International Bathymetric Chart of the Southern Ocean
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## 10. Grove Mountains ortho-rectified satellite image map

**Project Leaders:** [Prof E Dongchen](#) and [Mr Henk Brolsma](#)

**Members:** Australia, China

**Goal:** To prepare a 1:25 000 scale ortho-rectified satellite image map of the Grove Mountains.

**Activities:**

**Activities:**

1. Identify other information sources (eg. Geological information from China)
  2. Identify existing maps
  3. China to digitise existing topographic maps and develop a digital elevation model
  4. Identify existing satellite imagery, ground control, connection between datums and topographic surveys
  5. Determine medium and high-resolution satellite imagery to purchase
  6. Australia to acquire high-resolution satellite image (Jan-Feb 2003)
  7. Georeference and Ortho-rectify the imagery using existing mapping and ground control
  8. Design and produce satellite image maps (dual language, Chinese/English)
  9. Start on a compilation of a GIS for the Grove Mountains
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## *Proposed Meetings 2002-2004*

The Working Group proposes the following intersessional meetings in 2002-2004.

- Trans Antarctic Mountains Regional Coordinators meeting – Wellington, New Zealand – November 2002
- Antarctic Geodesy sessions at EGS/EUG/AGU - Nice, France – April 2003
- GI Technical experts meeting – Freiburg, Germany – April 2003
- Antarctic Geodesy sessions at IUGG – Sapporo, Japan - July 2003
- ISAES symposium – Potsdam, Germany – September 2003
- Antarctic Geodesy Workshop (AGS'03) – Ukraine – September 2003
- Place Names meeting – Rome, Italy – March 2003
- Cybercartographic Atlas symposium – Ottawa, Canada – May 2003
- Antarctic Geodesy sessions at EGU - Nice, France – April 2004
- XXVIII SCAR meeting – Bremen, Germany – July 2004
- East Antarctic Regional GIS meeting – Wuhan, China – November 2004

## ***GIG Standing Resolutions***

The previous WG-GGI Standing Resolutions were reviewed and updated.

### **Standards**

1. That members will apply approved SCAR geodetic and geographic standards, specifications and guidelines in their national Antarctic programs.

### **Directories**

2. That members will contribute all relevant geospatial information to SCAR through their National Antarctic Data Centres.

### **Information Exchange**

3. That members will exchange and make freely available geodetic and geographic data, in accordance with the Antarctic Treaty. A minimum of two copies of maps, charts and other geographic publications shall be automatically distributed to the Antarctic Mapping Centres of the SCAR countries.

### **Control Points**

4. That members will make ground control points, including photographic identifications, and tide gauge information available on the World Wide Web for use in other Antarctic mapping and research applications.

### **Geodetic Datum**

5. That members adopt the International Terrestrial Reference Frame 2000 (ITRF2000) at an epoch of 2000.0 together with the GRS80 ellipsoid, as the geodetic datum for all Antarctic activities.

### **Web site**

6. That a comprehensive web site outlining project activities, reports, contact details and links be maintained.

### **Global Programs**

7. That SCAR supports all relevant global science programmes through the contributions of Antarctic geodesy and geographic information.

## ***GIG Recommendations***

GIG recommends that SCAR XXVII adopt the following recommendations.

### **Amendment to the existing recommendation (SCAR XXVI-2)**

#### **1. Place Names**

*Noting* that the SCAR Composite Gazetteer of Antarctica (CGA):

- has been published in March 1998 by the SCAR Working Group on Geodesy and Geographic Information (WG-GGI);
- contains names data from twenty-two SCAR member countries and the International Hydrographic Organisation (IHO) / International Oceanographic Commission (IOC);
- comprises around 34,165 entries for 17,097 features, with about 10% of features having two or more entirely different names.

*Also noting* the increasing importance being placed on names for operational and research purposes there is a requirement for a greater accuracy of the coordinates

*Considering* that, in the interests of both scientific clarity and operational safety, the general principle of 'one name per feature' should apply for all new feature names;

The Geospatial Information Group of Experts (GIG) *recommends* to SCAR that:

National Committees, directly or through their national Antarctic naming authority:



6. refer to the CGA in considering all proposals for new place names;
7. avoid adding new place names to features already named;
8. submit all new approved place names to GIG for inclusion in the CGA;
9. provide existing data to the GIG for inclusion in the CGA.

### Amending existing recommendation (SCAR XXVI-3)

## 2. Bathymetric Data

*Noting* that the lack of bathymetric information in large areas of the Southern Ocean is a limiting factor in bathymetric mapping and nautical charting;

*Noting* the initiative from the IHO for an improved International Bathymetric Chart for the Southern Ocean (IBCSO)

*Further noting* the key role of the IHO Data Center on Digital Bathymetry (DCDB) located at the US National Geophysical Data Center (NGDC) in Boulder, CO, and the efforts of the IOC/IHO organizations for updating and maintaining the General Bathymetric Chart of the Ocean (GEBCO);

*Considering* the need for bathymetric maps for the morphological interpretation of the sea-floor structure and general oceanographic studies, the geo-location of scientific data, and the general requirements for precise nautical charts to ensure the safety of navigation in Antarctic waters;

The GIG *recommends* that:

1. SCAR supports the acquisition of echo-sounding data on all vessels operating in Antarctic waters and the delivery of the gathered measurements to the IHO DCDB for further use in bathymetric mapping;
2. wherever possible, vessel transits should be planned through oceanic regions where few bathymetric data exist in order to gather additional bathymetric information.

### Amending existing recommendation (SCAR XXVI-11)

## 3. Geodetic and Geographic Information

*Noting* the Antarctic Treaty Article III (1c) requirements regarding data exchange,

*Recognising* that the information products produced by the SCAR Geoscience Standing Scientific Group are all derived from the work of National Committees and Programmes:

SCAR *recommends* that National Committees request National Programmes to provide continuing access for all SCAR members to fundamental geodetic and geographic information, including:

- geodetic observations and databases;
- geodetic control point and tide gauge records;
- remotely sensed data (including satellite imagery and aerial photography)
- topographic and bathymetric data;
- and place names data.

### Amending existing recommendation (SCAR XXVI-12)

## 4. Airborne Gravity Data for Geoid Computation

*Noting* that determination of a high resolution geoid in Antarctica benefits research of the ice density of the Antarctic ice sheet, determination of surface elevation relative to mean sea level, and the calibration and validation of satellite missions;

*Recognising* that there is a major gap in gravity data required for the computation of a high resolution geoid in Antarctica;

*Considering* the current lack of gravity data, the need to acquire gravity data at close intervals (optimally spaced between 10 and 50 km), that new satellite gravity missions will leave a gap from 82 to 90 degrees south, and that airborne gravity observation is considered the most cost effective and reliable method for collecting data;

SCAR *recommends* that National Committees request National Programmes:

- support a scientific programme of airborne gravity to cover gaps in Antarctica gravity data; and
- encourage all researchers to coordinate their efforts in Antarctic gravity data acquisition, in particular airborne gravity data, and to provide such data to the SCAR Geoscience Standing Scientific Group for incorporation into a physical geodetic database of Antarctica.

## New Recommendations

### 5. Geodetic observations at remote locations

*Recognising* the technological advances being made in low power operation, data storage capacity and data communication at remote Antarctic sites

The Geospatial Information Group of Experts:

*Recommends* that National Committees, where possible, place long-term GPS observatories on remote bedrock features (as identified by the SCAR ANTEC group – [www.scar-ggi.org.au/geodesy/antec/proposed\\_gps.htm](http://www.scar-ggi.org.au/geodesy/antec/proposed_gps.htm)) to provide information on the current tectonic motion of the Antarctic plate.

### 6. King George Island Geographic Information System

*Noting* the SCAR recommendation XXVI-6 concerning rationalization of scientific activities on King George Island the Geospatial Information Group of Experts

*Recognising* that a Geographic Information System for the whole island has been produced and is now available on the internet

*Recommends* that countries with program activities on King George Island should make use of this integrated system for science activity, environmental planning and logistic operations.

And *further recommends* that National Committees, through their National Programmes, continue providing spatially referenced data to the GIS for the mutual benefit of all National Programmes with activities on the island.

## ***Funding Applications to SCAR 2002-2004***

Applications for SCAR funding support were discussed and will be incorporated in the overall Geoscience Standing Scientific Standing Groups application.

## ***GIG Member Contact Details***

See attachment.

John Manning  
GIG Chairman  
21<sup>st</sup> July 2002

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