

# SCAR WG-GGI Geographic Information Workshop

## Siena, 12-13 July 2001

### Notes from meeting

*Attendees:* Janet Thomson (Chair), Cheryl Hallam, Jerry Mullins, Roberto Cervellati, Fraser Taylor, Henk Brolsma, Steffen Vogt, Glenn Johnstone, Chiara Ramorino, Jan Cisak.

Mrs Thomson opened the meeting at 9:35am on 12 July 2001.

Welcome and introductions around the table before starting on reports of the Geographic Information Programme projects for 2000-2002.

#### **1. King George Island GIS (KGIS) - Steffen Vogt (Germany)**

a. Status of project. With nine nations working on the island, five Sites of Special Scientific Interest, one Antarctic Specially Managed Area, and more than 1500 tourists per annum, co-ordination of effort on King George Island was essential. The development of a KGIS had been well supported by the science co-ordinators on the island. A number of thematic layers had been prepared, including topography, near-shore bathymetry, surface hydrography, glacial drainage basins, sub-glacial bedrock topography, facilities, fauna, geology, human impact, and vegetation. Germany had collaborated with Brazil over the preparation of a 1:100 000 scale satellite image map of King George Island, as the GI framework, and this was in the process of being printed in Germany. Data for the thematic layers had been supplied by scientists and integrated by Germany.

b. Maintaining the database. Spatial data standards were discussed and it was agreed that there should be direct liaison between this project and the Spatial data standards project. Germany would maintain the KGIS database for three years but a neutral host for the server should be identified thereafter. This issue would be discussed at the next science co-ordinators meeting on King George Island.

c. Web interface to the data. The functionality of the website and software options for the interface were discussed. It may be possible to fund the development of the website through a joint European/Canadian proposal linked to the Cybercartographic atlas project.

d. Legal aspects of providing and sharing the data. It was planned to launch the KGIS website some time after the WG-GGI meeting at Siena. It was necessary to secure the rights of the producer/owner of the original data and we should establish terms of use for the KGIS, similar to those developed for the SCAR Antarctic Digital Database. UK would advise on developing on-line registration and on-line access to the data, and the wording of a disclaimer.

e. Proposed work plan. Germany would be making a presentation to SCALOP in Amsterdam in August about KGIS, with particular respect to management of the bases on the island. Data would continue to be integrated, a web interface set up, spatial data standards addressed, and required derivative products identified.

#### **2. Spatial data standards - Henk Brolsma (Australia)**

a. Status of draft spatial data dictionary. A GIS data dictionary for Antarctica was tabled and would be distributed to WG-GGI members for comment. It was especially important that the scheme proposed should be assessed for applicability to the KGIS; Germany and Australia would work closely to achieve the required model. The draft dictionary allowed different fields to be developed according to themes, layers and features.

b. Plans for future implementation of standards. Developing a synergy between WG-GGI and the ICA Commission on Standards would help to achieve global compliance - the standards should fit within the TC211 scheme. Professor Hal Moellering, at Ohio State University, is Chair of the Commission. Further drafts of the data standards would be prepared by Australia and Germany, before a new version is tabled at XXVII SCAR in Shanghai - the last version should be circulated to WG members at least two months before the Shanghai meeting to allow time for comment.

### **3. Composite Gazetteer of Antarctica - Roberto Cervellati (Italy)**

a. What's new in the CGA. A document was tabled which lists 155 new features, 230 newly adopted names, and 9 amendments, all received since the Supplement to the First Edition was published in August 2000. On 1 April 2001, it became possible for users to download the CGA from the website; there have been 12 downloads to date. The quarterly updates of the CGA website have continued, the latest one being 1 July 2001. It would be necessary to set in place a mechanism for notifying updates (possibly by e-mail) to those who had downloaded the database.

b. Analysis of database. A preliminary analysis of the CGA, based on the specific part of the first thousand names in the database, showed that 75% of multiple names are identical, 21% are nearly identical, and only 4% are significantly different. There are now 17,038 features named in the CGA and a computer-generated count of the multiple names in the entire database indicates that the percentages derived from the first thousand names are applicable to the whole database.

c. Data acquisition. There has been a slow response from countries to the request to supply descriptions. Descriptions had been received from Australia, Bulgaria, Italy, Japan, Poland, Uruguay, USA and in part from the UK; Italy had entered descriptions from Argentina for the letter A. To encourage further participation, it was agreed that Italy should combine the three papers tabled at Siena and send them to WG members to show how well the CGA project is progressing. Those nations who had not supplied data should be given a deadline; after that deadline, a similar letter would be sent to the national delegate. About 50% of the named features had descriptions attached.

d. Continuation of support for the CGA. The excellent work carried out by Italy may not be able to continue after 2002, 10 years on from the start of the project. Thus long-term plans would need to be developed for maintaining and developing the CGA. Several options were considered and the need for a younger person to take on the role in due course was identified. It was important to find a non-claimant nation that would be prepared to co-ordinate the project. Italy, Germany and UK would discuss the options at a later date, and a proposal would be tabled at XXVII SCAR in 2002.

### **4. AAT Baseline Definition Project - Henk Brolsma (Australia)**

Australia had generated a coastline dataset of the Australian Antarctic Territory (AAT) from remotely sensed data including Landsat 4, 5 and 7, and Radarsat SAR. Air photography, maps and charts had been used to georeference the data. Layers included ice features and other coastal features as polygons and line coverages, and point features such as small islands and rocks. The dataset was restricted to the coastal part of AAT and false closures had been made at the inland edge of features to complete polygons (e.g. across glaciers and extensive rock outcrops).

The new dataset had been compared with ADD Version 1.0 and there were significant differences between the two coastlines in many areas. Australia handed a copy of the data on CD-ROM to the UK and hoped that it could be incorporated into ADD Version 4.0. Such work was dependent on availability of resources from SCAR.

## **5. Map catalogue - Henk Brolsma (Australia)**

The catalogue had gone on-line several weeks ago but the server had crashed and several members had been unable to access the catalogue to check details or carry out sample on-line editing. The procedures to follow were demonstrated and the comprehensive fields incorporated in the catalogue were well received. UK expressed doubt about the feasibility of editing on-line since there were so many errors in all UK sections of the map catalogue. It was not clear how these errors had arisen. Work had begun on editing the database provided to the UK by the USA as Excel spreadsheets but this was a mammoth task [It was agreed out of the meeting that UK would send an edited sample of one map type to Australia, to highlight the problems.]

Since Australia had not received much feedback from nations about their entries in the catalogue, a further message would be sent to WG members requesting input. Australia will send the final database to the USA early in 2002 to allow the printing of hard copies of the catalogue in time for distribution at XVII SCAR.

The policy of archiving paper and digital copies of maps was discussed and the procedures varied amongst the nations present. It was suggested that there should be a SCAR policy statement on archiving data, which would provide guidance on the time interval to be followed for bringing digital data on to current systems. Australia would ask JCADM if guidance on digital archiving already existed. It was thought important to have a dated paper output from all digital files, in case the files became unreadable with time.

## **6. On-line atlases**

### **a. US Atlas of Antarctic Research (AAR) - Cheryl Hallam (USA)**

The full scope of the AAR, which has been on-line for over two years, was demonstrated on-line. It has proved to be a useful research tool and plans for enhancements were discussed, including links to more scientific data and the SCAR map catalogue, an enhanced place-names query display and linkage to the CGA. A new version of the AAR was expected to be released in September 2001.

### **b. Cybercartographic atlas of Antarctica - Fraser Taylor (Canada)**

This was at a conceptual stage but it was envisaged that it would be complementary to the US AAR, providing information for educational purposes and for entertainment; it would be a valuable product for managers and decision makers as well as the public. A short clip from a Mexican cybercartographic atlas was shown, as an example of the product under discussion. A distributed management structure for the atlas was envisaged, with key nodes being, for example, the US AAR and the KGIS websites. Each node would be responsible for maintaining its own website. Suitable linkages would need to be discussed. The product would be an open, not-for-profit database and participants had to be comfortable with open access to their data.

It was highly probable that funding for the start-up phase would be provided by Canada. However, this was dependent on international approval of the project through SCAR. It was hoped that members of the WG-GGI would become involved. A meeting to discuss the project in more detail would be held later in 2001, at Puerto Madryn, Argentina, with a follow-up meeting being held at a more accessible location. A list of people to invite to the second meeting will be drawn up by the Chief Officer, Executive Officer and Janet Thomson before being emailed to Fraser Taylor.

The product should become available by December 2002. On-going financial support would be needed for 5 years in the first instance. Technical support for the project will be provided by the ICA Commission on Multimedia Mapping, if required.

## **General discussion**

Doubts about overlap between the two on-line atlases, and the effectiveness of fusion software and middleware to integrate the data, were discussed. The two atlases use different methodology, the US AAR being a fully integrated product, whereas the Cybercartographic atlas is based wholly on a distributed management structure. Each node in the cyber-atlas would need to be a clearly identifiable website, to ensure it was seen as a separate entity that could be accessed directly by users.

Canada should think about the requirements of managers and the public when developing the linkage structure for the cybercartographic atlas of Antarctica. The requirements of the scientific users were already being addressed by the US AAR.

In conclusion, Canada requested that the WG-GGI endorsed the Cybercartographic atlas of Antarctica, and that its members should provide an expression of interest if they wished to participate in the project. A formal letter of support would need to be sent to Canada by each participating member.

During the WG-GGI Co-ordinators' meeting which followed, it was suggested that the two products should be accessible through a SCAR site, called SCAR on-line atlases. Both the US AAR and the Cybercartographic atlas of Antarctica would be clickable entry points on the site, and both would have links to each other. The former would act as the science node, with links to the independent CGA and ADD websites; the latter would support the needs of decision makers such as managers, the ATCM, environmental workers and the public (including educational material) through a wide range of additional linkages.

#### **7. Imagery catalogue - Jerry Mullins (USA)**

A questionnaire had been sent out to WG-GGI at the end of June asking for information on holdings of Antarctic aerial photography. Replies had been received from Germany, Australia, Poland and the US; the UK was seeking advice about copyright access to some of its photography. The US would standardize the format of the replies. Members were asked to provide a map-based index of coverage if possible.

#### **Wrap-up**

The Chair thanked everyone for their participation in the meeting and it was formally closed at 5:30pm on Friday 13 July.