ON-LINE GEODETIC INFRASTUCTURE INFORMATION

Action Item from Heppenheim coordinators meeting : *Proposal on geodetic and survey control on line data base to be prepared for SCAR XXVI*.

In the past two years the GIANT program has contributed to building a continent wide geodetic infrastructure through :

- The establishment of a framework GPS base stations with access to data
- The densification of the ITRF global coordinates through the SCAR/ GAP program
- Extended crustal motion surveys such as TAMDEF and Northern Victoria Land.

This current data is however only a fraction of the total geodetic information relevant to all position fixes established in Antarctic over the past fifty years or so.

To gather and archive this information from historical and contemporary sites a meta data directory is proposed for the GIANT web site. Initially this is in a simplified graphical and text format, before moving to a distributed on-line geodetic data base for the whole Antarctic as more detailed information becomes available. Since the Heppenheim coordinators meeting a start has been made on gathering and displaying this top level general information to gain an overall picture. This now typically consist of screens of:

- The BAS control in the Antarctic Peninsula
- The Australian historical astro fixes in East Antarctica
- The Australian Geodetic network in East Antarctica
- The Italian Geodetic network in Northern Victoria Land
- The network of sites processed by Germany in the SCAR 1995-99 Epoch surveys

In addition to the simplified approach full data base information on the sites and access to data is under development by Italy, Germany, Great Britain and Australia. It is intended that these developments can be used as guide to eventually achieve a fully distributed data base with individual country responsible for accuracy and maintenance of the site information.

In some Antarctic nations there is more than one agency gathering and archiving geodetic survey information. Whilst the greater use of GPS now makes mapping and even engineering control readily obtainable at geodetic accuracies. The UK for example has two authorities BAS and Hydrographic office acquiring control of geodetic quality for survey and mapping. In Australia responsibility for national Geodesy is held by AUSLIG whereas responsibility for mapping and engineering station surveys is undertaken by the Australian Antarctic Division (AAD). In the USA a number of agencies can be involved JPL, BYRD POLAR (OSU), UNAVACO, USGS or NGS, so some compatibility of format and content is desirable

However as this can make for a very complex project which has not been carried through in the past. As a start it is intended this time to build a more immediate but simplified complete picture of the geodetic control established for various purposes and an initial contact person.

In parallel with this top level approach, a second activity to be supported is to build on- line control data bases of details with each agency providing data (with accuracies rated within a specified datum) in a generally format. AUSLIG and AAD are working on a compatible data base content bridging Geodetic, Mapping and engineering control, whilst BAS and RAN Hydro are discussing a similar situation with mapping and charting control.

Project Design

1.Establish a multi scale graphical representation of the historical and existing geodetic control across Antarctica on the GIANT web site with cross links to contacts and archival data bases as they are developed

2. Australia, Italy and UK to liaise with regard to content and format of on-line Antarctic geodetic control data bases

Workplan project : *Coordinators:- Australia, Italy, UK*

Item 1	Responsibility	Milestone	Reporting
Establish a web site framework for geodetic coverage diagrams	WG-GGI secretariat	August 2000	Progress by Listserver newsletter
Supply of coordinates and accuracies of control to GIANT convenor. Together with appropriate contact in each country	All nations	September	Progress reported monthly
Item 2			
Circulate format design for contact for detailed data base for eventual use as a distributed on line geodetic data base	Australia, UK, Italy	September 2000	Progress reported by Australia
Build on line geodetic data base suitable for a distributed network	Each Geodetic authority	As resources are available	To be reviewed in 2002

Recommendations

1. That WG-GGI members agree to make geodetic infrastructure data base information available for the to the web in order to build an online geodetic information data base available to SCAR members.

2. That the top level information be presented in a simplified form in an immediate time frame on the web whilst details of the full on line format and content be further developed as a GIANT Project.

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