REPORT ON ACHIEVEMENTS IN SURVEYING, MAPPING AND CHARTING IN ADDRESSING NATIONAL, SUBREGIONAL, REGIONAL AND GLOBAL ISSUES INCLUDING: TECHNICAL COOPERATION AND TRANSFER OF TECHNOLOGY

The Role of IAG in Densification of Global Geodetic Networks**

(Submitted by The International Association of Geodesy (IAG))

* E/CONF.92/INF/1

** Prepared by Mr. John Manning, Chairman IAG Sub Commission on SE Asia and the Pacific
The role of IAG in densification of global networks

John Manning
Chairman IAG Sub Commission on Asia and the Pacific

What is IAG

- Peak organisation in Geodesy
- Links Geosciences with surveying and cartography
- Part of IUGG (and ISCU)

IAG Linkages

IAG Background

- Historically based in Europe
- Origins in cooperation for meridional arc-measurements
- Science based
- Now wide global focus, with Services
- Supports activities in developing countries

IAG Objectives

- To promote the study of all scientific problems of geodesy and to encourage geodetic research;
- To promote and coordinate international cooperation in this field, and promote geodetic activities in developing countries;
- To provide, on an international basis, for discussion and publication of the results of the studies, research and work outcomes as indicated above.

IAG Administrative Structure
Current Admin officers of the IAG

President: Fortunato Giusi (Italy)
First Vice President: Anders Bodin (Sweden)
Second Vice President: C. C. Treuherz (Bulgaria)
Secretary General: D. F. Schylling (Brazil)

Other officers:
- The Bureau and the Second Vice President
- The Past President: C. G. Schumacher
- The Section Presidents

Editor in Chief of the journal of Geodesy: F. R. Tournier (France)
Assistant Secretaries of the Association
On Bachelor and awam (France)
Giusti Vitali (Switzerland)
Secretary: L. Metrin (Lugano)
P. V. Angell (Abidjan)
B. U. Prat (New York)
W. Tung (Germany)
J.-K. Schwarz (England)
Secretary General: G. A. Lomniski (France)
M. Lord (France)

Scientific Structure

- Section I: Positioning
- Section II: Advanced Space Technology
- Section III: Determination of the Gravity Field
- Section IV: General Theory and Methodology
- Section V: Geodynamics

IAG Section Presidents

- Section I: Alan Dodson (UK)
- Section II: C. K. Shum (USA)
- Section III: Michael Sideris (CAN)
- Section IV: Bernhard Heck (GER)
- Section V: Clark Wilson (USA)

Section Organisation

- Commissions
- Sub Commissions
- Special Commissions
- Special Study Groups
- Linkages to Services
- Section president and secretary
- Section steering committee

IAG SERVICES

- These play an important role in making the result of high level research available
- They also produce a range of user products for effective geodetic applications

IAG Services

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<th>Section</th>
<th>Service</th>
</tr>
</thead>
<tbody>
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<td>IERS</td>
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**Int. Earth Rotation Service (IERS)**
- Formed in 1988
- Replaces ILS, IPMS, BIH
- Mission to monitor ICRF/ITRF parameters
- Multi technique input required, i.e., VLBI, SLR, GPS, DORIS
- Generates combined products
- Website: [http://hpiers.obspm.fr](http://hpiers.obspm.fr)

**International GPS Service (IGS)**
- Single focus technique for GPS
- Established in 1994
- Global network of sites
- Data available daily
- Orbits generated daily
- Global data centres
- Global/regional analysis centres
- Central bureau hosted by JPL

**IGS Network of GPS Base Stations**

**ILRS Global network of SLR sites**

**IAG regional strategies**
- Densification of official positions within a global reference frame (through IERS and ITRF)
- Global observation networks
- Local expertise needed to maintain facilities and make best use of services
- Greater involvement in research
- Facilitate ability to use IAG products

**IAG Regional focus in Asia Pacific**
- Endorses work of PCGIAP Working Group on Geodesy, and
- Promotes collaboration with IAG Sub-Commission on Asia and the Pacific
- Regional Geoid School, hosted by IGeS and Malaysia in Feb 2000
- Plans for next school in Pacific with IGS tutorials on GPS
IAG Forward Directions

+ Review currently in progress
+ build global network
+ expand range of services
+ strong objective to promote geodetic activities in developing countries,
+ Greater local involvement and participation

Summary

+ IAG historically based on research into size and shape of the Earth
+ Focus has been broadened to include all aspects of Geodesy
+ Three levels
  - high level theory
  - Services
  - Applications