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Item 9(m) of the provisional agenda*

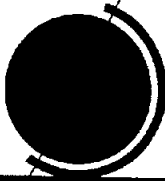
REPORT ON ACHIEVEMENTS IN SURVEYING, MAPPING AND CHARTING IN
ADDRESSING NATIONAL, SUBREGIONAL, REGIONAL AND GLOBAL ISSUES
INCLUDING: TECHNICAL COOPERATION AND TRANSFER OF TECHNOLOGY

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


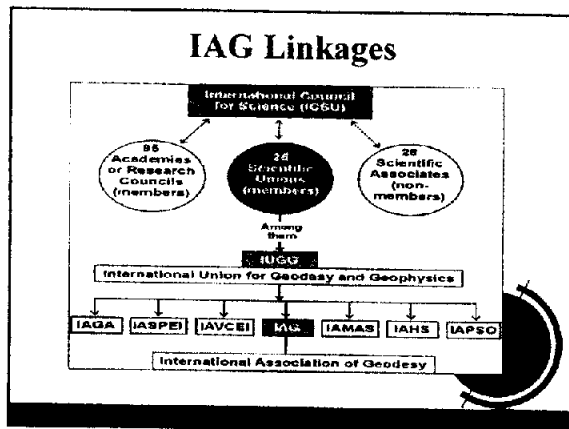


The role of IAG in densification of global networks

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)


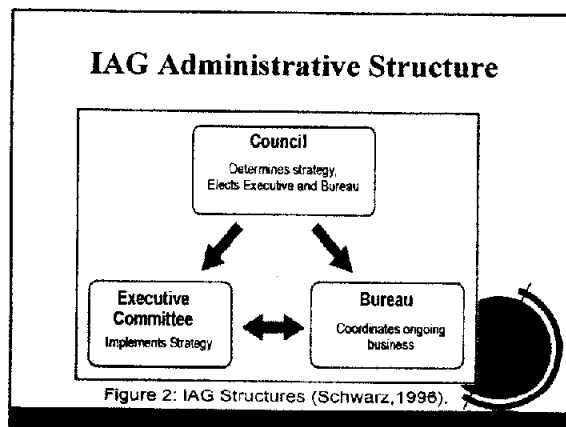
IAG Background

- ✦ 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 and work outcomes as indicated above.

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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*



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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

Acronym	Section Linkage	Service Title
IERS	V	International Earth Rotation Service
IGS	II	International GPS Service
ILRS	II	International Laser Ranging Service
IVS	II	International VLBI Service
IDS	II	International DORIS Service
BIPM	V	International Bureau of Weights & Measures
PSMSL	V	Permanent Service for Mean Sea Level
BGI	III	International Gravimetric Bureau
ICET	V	International Centre for Earth Tides
IGeS	III	International Geoid Service
IBS	General	IAG Bibliographic Service
IIS	General	IAG Information Service



Int. Earth Rotation Service (IERS)

- ✦ Formed in 1988
- ✦ Replaces ILS, IPMS, BIH
- ✦ Mission to monitor ICRF/ITRF parameters
- ✦ Multi technique input required, ie
- ✦ VLBI, SLR, GPS, DORIS
- ✦ Generates combined products
- ✦ web site <http://hpiers.obspm.fr>

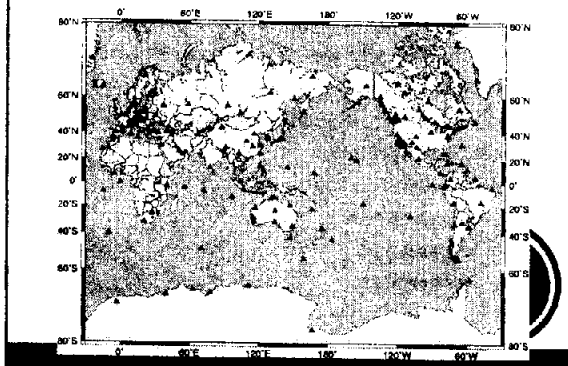


International GPS Service (IGS)

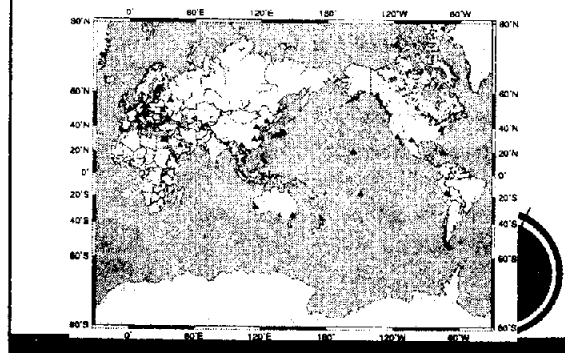
- ✦ Single focus technique for GPS
- ✦ established in 1994
- ✦ global network of sites
- ✦ data available daily
- ✦ orbits generated daily
- ✦ Global data centres
- ✦ Global/regional analysis centres
- ✦ Central bureau hosted by JPL



IGS Network of GPS Base Stations



ILRS Global network of SLR sites



IAG regional strategies

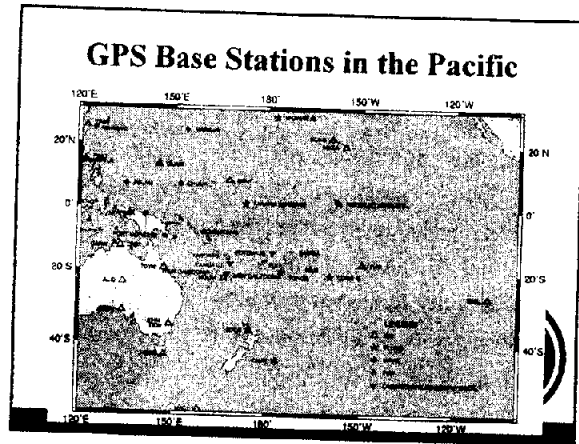
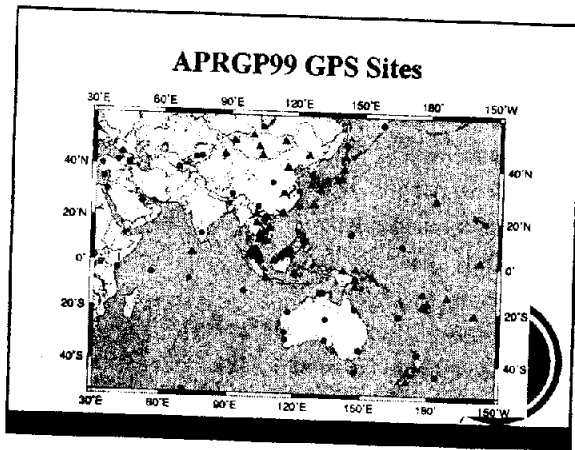
- ✦ Densification of official positions within a global reference frame (through IERS and ITRF)
- ✦ Global observation networks
- ✦ Local expertise needed to maintain facilities and make best use of services
- ✦ Greater involvement in research studies
- ✦ Facilitate ability to use IAG products



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 IGS 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