

GEO Meetings and IGOS Symposium



Hans-Peter Plag

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University of Nevada, Reno

All Pictures Courtesy Ruth Neilan

GEO Meetings and IGOS Symposium



- All Meetings in Washington, D.C., mainly Ronald Reagan Building
- GEO Science and Technology Committee: 14 November 2009
- GEO User Interface Committee: 15-16 November 2009
- GEO Plenary (GEO VI): 17-18 November 2009
- IGOS Symposium: 19 November 2009 (Smithsonian Natural History Museum)
- GEOSS in the Americas and Coastal Zone Community of Practice (Canadian Embassy)

IAG/GGOS Delegation

Five GGOS EC Members:
Markus Rothacher (Chair)
Ruth Neilan (Vice-Chair, IGS)
Hans-Peter Plag (Vice-Chair)
Susanna Zerbini
Michael Pearlman (ILRS)

Participation in GEO-IV
Exhibition Booth
Participation in STC and UIC meetings
Participation in IGOS Symposium
Part. in GEOSS in the Americas & CZCP meetings
Several GGOS EC splinter meetings





Seasonal variations
Vertical height re-
sidual time series from 2 independent space gradi-
techniques. Green: DORIS, Blue: SLR, Red: GPS

one-way laser ranging
from ground
station to Lunar Laser Ranging Station (LLRS) will
be used to improve the orbital quality to allow
for level to support tomographic altimetry measure-
ments.
The one-way link is the first step in the develop-
ment of two-way laser ranging programs which will
significantly increase ranging capability to support
planetary programs.

consists of more than 600 stations located
is used in the processing.
The International Earth Rotation and Refer-
ential frame solution (IERS) and velocities (0.5-1mm/yr),
vertical terrestrial reference frame solution.



Earthquake (Alaska)



Gravity Recovery And Climate Experiment

GRACE: Earth from Space



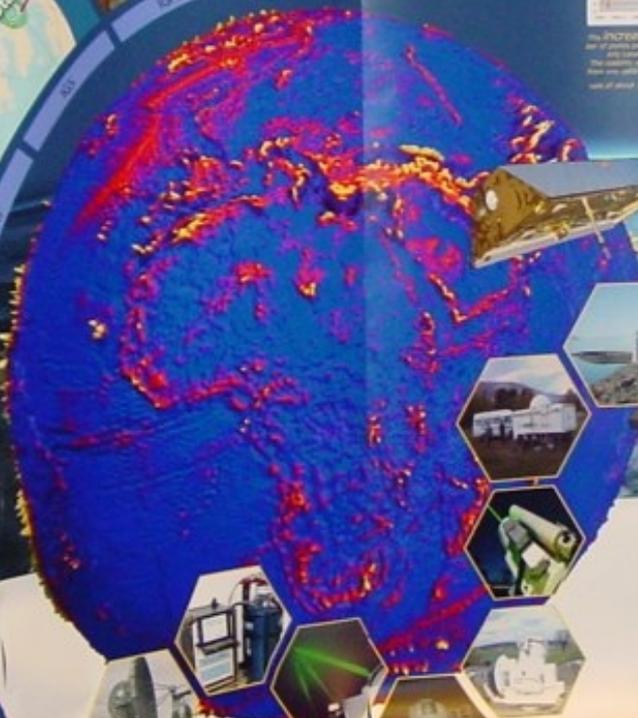
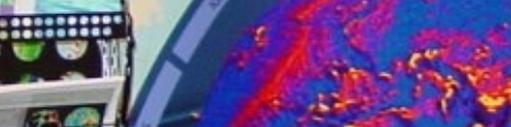
Surface Water and Ocean Topography

SWOT: From the Global Ocean

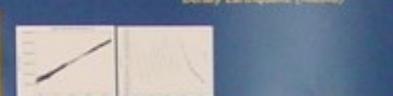


GGOS GLOBAL GEODETIC OBSERVING SYSTEM

THE GLOBAL GEODETIC OBSERVING SYSTEM



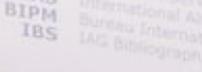
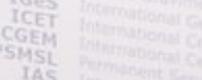
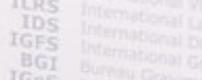
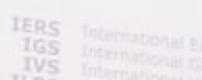
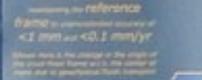
The Global International Terrestrial Reference Frame (ITRF2005) consists of more than 600 stations located in more than 100 sites and 120 long geodesy sites in the process.



Improving the reference frame is a continuous process of $<1 \text{ mm} \rightarrow <0.1 \text{ mm/yr}$.



The one-way laser ranging is the first step in the observation of laser ranging program which will significantly improve the accuracy of the reference frame.



Gravity Recovery And Climate Experiment

GRACE: Earth's Gravity

GRACE, built by NASA and launched by CLM 2002, obtains high-resolution, global measurements of Earth's gravity field from space. Since that time, GRACE data reveal increasingly subtle changes in Earth's gravity field. These variations reflect changes in the distribution of Earth's mass, including changes in water storage in river basins on land, changes in ice mass in Greenland and Antarctica, ocean mass changes, and even changes caused by large earthquakes. GRACE data are substantially improving our knowledge of important aspects of global change, including the climate consequences of a warming world.



As GRACE's mission continues, the changes in Earth's gravity field are being measured with an accuracy of 100 micrometers (1/1000th of a human hair) for each square meter of Earth's surface.

GRACE is a collaborative endeavor involving the Center for Space Systems Research at Case Western Reserve University, the University of Texas at Austin, and the University of Colorado at Boulder.



International Association of Geodesy



<http://www.ggos.org>

IAG services are the backbone of GGOS

- IERS International Earth Rotation and Reference Systems Service
- IGS International GNSS Service
- IVS International VLBI Service
- ILRS International Laser Ranging Service
- IDS International DORIS Service
- IGFS International Gravity Field Service
- BGI Bureau Gravimetric International
- IGeS International Geoid Service
- ICET International Center for Earth Tides
- ICGEM International Center for Global Earth Models
- PSMSL Permanent Center for Mean Sea Level
- IAS International Service for Mean Sea Level
- BIPM Bureau International des Poids et Mesures
- IBS IAG Bibliographic Service

GEO-VI Highlights

John Holdren (advisor to President Barack Obama for Science and Technology): emphasizing the challenges; mainly climate change, sea level rise, water management.

New Members/Participating Organizations:
Austria, Guinea, Madagascar joint => 81 Member Countries
ISDE and IUGS joint ==> ~55 Participating Organizations



GEO-VI Highlights

Data sharing rules and agreements a success of GEO

South Africa: Data sharing is not sufficient, needs to be connected to capacity building



ADN

AARSE

GEO-VI Highlights

GEO STRATEGIC TARGETS:

- GEO Strategic Targets are in line with GGOS Targets

MINISTERIAL SUMMIT:

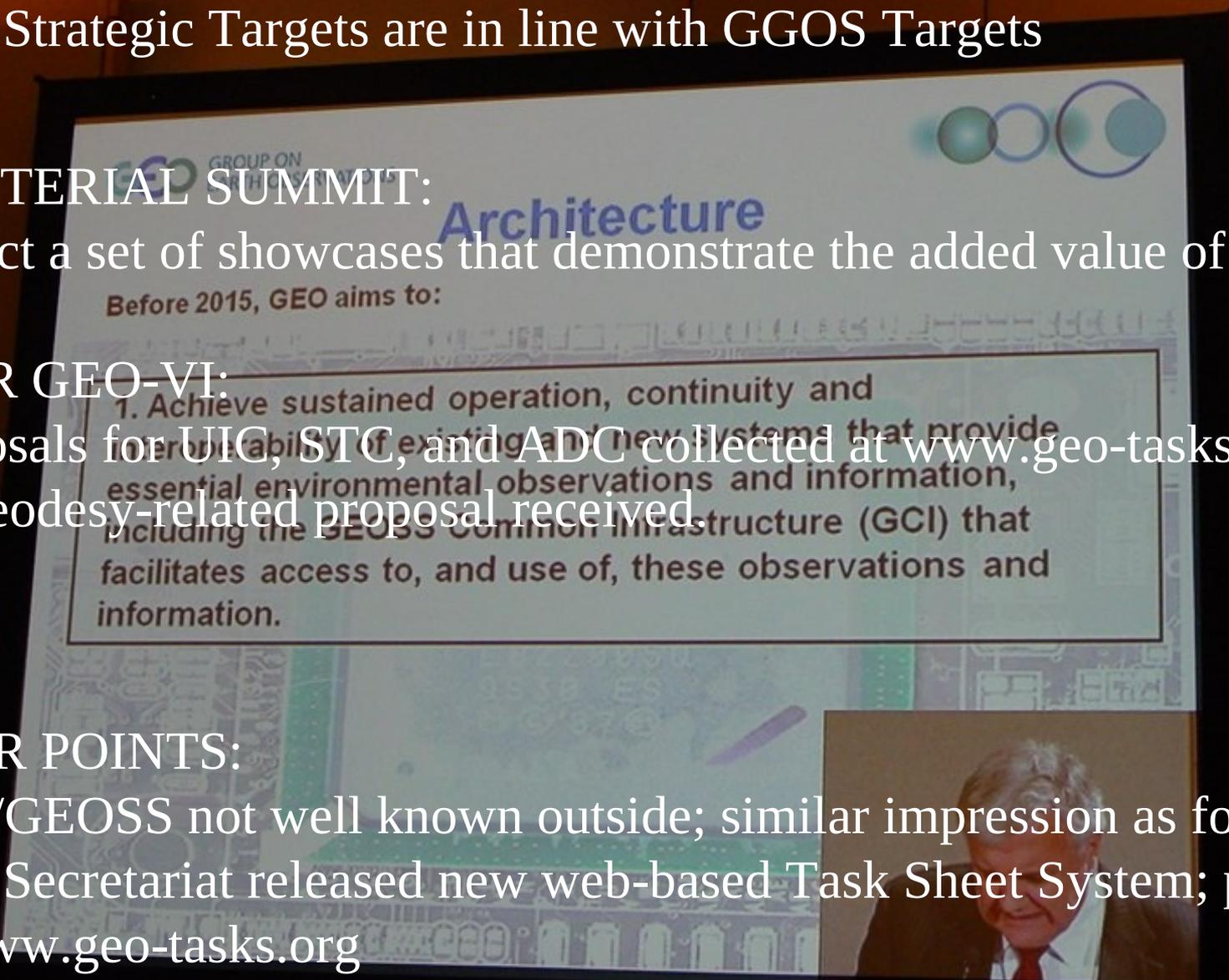
- Collect a set of showcases that demonstrate the added value of GEO/GEOSS

AFTER GEO-VI:

- Proposals for UIC, STC, and ADC collected at www.geo-tasks.org
- No geodesy-related proposal received

OTHER POINTS:

- GEO/GEOSS not well known outside; similar impression as for GGOS
- GEO Secretariat released new web-based Task Sheet System; partly forced by www.geo-tasks.org



GEO-VI Highlights

Valuable occasion to establish links to other organizations ...



GEO-IGOS Symposium



GEO-IGOS Symposium Draft Programme

"The need for Earth observations: Yesterday, Today and Tomorrow"

**Smithsonian Natural History Museum, Baird Auditorium
19th November, 2009, Washington D.C., U.S.**

08:15 Registration

Morning Session

Chair – Gregory Withee, United States Geological Survey, (USGS)

Celebration of Achievements and Current Status

09:00 Welcome from the Smithsonian, G.Wayne Clough, Smithsonian

09:05 Welcome and Introduction of the Symposium, Gregory Withee, USGS

09:10 Welcoming Remarks from the US, Sherburne Abbott, Office of Science and Technology Policy (OSTP)

09:20 Welcoming Remarks from GEO, José Achache, GEO Secretariat

09:30 Key Note Speech: Designing the Way Forward: Challenges and future developments, Roy Gibson, European Space Agency (ESA)

10:05 Importance of Science in GEO, Deliang Chen, International Council for Science (ICSU)

10:30 Coffee Break

Chair – Stuart Marsh, British Geological Survey (BGS)

11:00 Implementing IGOS through GEO (Themes overview, presentation of achievements, CoPs), Stuart Marsh, BGS

11:20 Water Community of Practice, Toshio Koike, University of Tokyo

11:40 Health Community of Practice, Madeleine Thomson, International Research Institute for Climate and Society (IRI)

12:00 Carbon Community of Practice, Antonio Bombelli, University of Tuscia and GTOS

12:20 Questions and answers

12:30-13:50 Lunch



Afternoon Session

Chair – Bob Scholes, Council for Scientific and Industrial Research (CSIR)

The Way Forward

14:00 Agriculture Community of Practice, Chris Justice, University of Maryland (UMD)

14:20 Geohazards Community of Practice, Stuart Marsh, BGS

14:40 Ocean Theme, Eric Lindstrom, National Aeronautics and Space Administration (NASA)

15:00 The Way Forward for the Cryosphere Theme, Jeff Key, National Oceanic and Atmospheric Administration (NOAA)

15:20 The Coastal Zone Community of Practice: Facilitating decision support through GEOSS for mitigation of and adaptation to climate change impacts, Paul DiGiacomo, NOAA

15:40 Coffee Break

Chair – Gilberto Camara, National Institute for Space Research of Brazil, (INPE)

16:10 The GEO Biodiversity Observation Network: an example of an emerging Community of Practice, Bob Scholes, Council for Scientific and Industrial Research (CSIR)

16:30 Informing Policy and Decision Making, Gilberto Camara, INPE

16:50 Questions and answers

17:00 Concluding Remarks, José Achache, GEO Secretariat

17:30 Adjourn

GEO-IGOS Symposium

- Celebration of Achievements and Current Status:
 - IGOS-P Themes provided requirements for Earth observations in several societal issues;
 - Stimulated and provided the cores for a number of GEO Communities of Practice.
- The Way Forward: Lesson learned for GEO/GEOSS
 - Utilizing CoPs to link GEO and GEOSS to end users.

GEOSS 2009

in the Americas
Forum
Focus on Coastal Zones



GEOSS in the Americas Forum on Coastal Zone Management

Welcome! / Bienvenue! / Bienvenido!



GEOSS In The Americas and CZCP Meetings



Coastal Zone Community of Practice **CZCP**

*Our mission:
Empowering integrated coastal zone management
through Earth observations ...*

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Citation

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- [Draft Agenda](#)

GEOSS in the Americas Forum 2009: Focus on Coastal Zones

The 2009 GEOSS in the Americas Forum was hosted by the Canadian Embassy in Washington, D.C. and took place on November 20, 2009. Announcement and draft Agenda are available at on the web page of the Embassy at <http://www.cgeo.gc.ca/events-evenements/gia-gea/index-eng.asp>. The main focus of the 2009 Forum was on coastal zones. Therefore, the presentations given during the Forum are made available here.

List of available presentations:

- Korporal, K., Welcome ([pdf](#))
- Grimes, D., Welcoming Remarks ([pdf](#))
- Wood, H., GEOSS in the Americas ([pdf](#))
- DiGiacomo, P., GEO Coastal Zone Community of Practice ([pdf](#))
- Cherrington, E., SERVIR Program ([pdf](#))
- Seymour, P., GEONETCast Americas ([pdf](#))
- Toll, D., GEO Capacity Building Workshop on Observations for Water Resource Management ([pdf](#))
- Parcher, J., PAIGH and Spatial Data Infrastructure in the Americas ([pdf](#))
- Nurse, L., Earth Observations in the Coastal Zone: Critical Issues and Lessons Learned ([pdf](#))
- Valladares, J., International Cooperation and Legal Challenges for Coastal Zone Managers ([pdf](#))
- DiGiacomo, P., Global Ocean Observing System Panel on Integrated Coastal Observations (GOOS-PICO) ([pdf](#))
- Sweeney, V., United Nations Environment Programme (UNEP) ([pdf](#))
- Frye, S., Caribbean Flood Pilot ([pdf](#))
- Soldi, H., Peru/Chile Large Marine Ecosystem Program (LME) ([pdf](#))
- Beard, R., U.S. - Mexico Bi-National Harmful Algal Blooms Observing System (HABSOS) ([pdf](#))

Applications of the Regional Visualization & Monitoring System (SERVIR) for Coastal Zone Management

Emil A. Cherrington
Water Center for the Humid Tropics of
Latin America & the Caribbean (CATHALAC)

20.11.09



GEOSS In The Americas and CZCP Meetings

Coastal Zone Community of Practice met in the afternoon

Main activity: Series of regional Workshops:

- June 2008: First Workshop in Athens, Greece
- February 15-17, 2010, Cotonou, Benin
- October 2010, Puerto Rico