



DISCUSSION FORUM ON GNSS CORS



Outline

FIG Commission 5 working group 5.2 and 5.4

Plans for our webpage

Experiences from the forum in Munich

IAG - GGOS, IGS ...

Issues from poster presentations

Proposal for a work shop/seminar on CORS



FIG Working Group 5.2 – Reference Frame in Practice

FIG

Chaired by Mikael Lilje (Sweden)

From the work plan:

- Facilitate development of standards / guidelines– site, monumentation, hardware, fundamental (IGS) vs CORs sites and then other, density, how many stations to be IGS
- Provide best practice guidelines, surveying methodologies, field operations for RTK CORs users and providers
- Educate and promote to surveyors RTK CORs through information exchange forums, technical sessions, workshops and internet.
- Facilitate representation for RTK CORs providers / users to 'voice' or lobby their wants / needs to GNSS owners, telecommunication agencies, GNSS equipment and software manufacturers / suppliers, IGS

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FIG Working Group 5.4 - GNSS

FIG

Chaired by Volker Schwieger (Germany)

From the work plan

Study Group 5.4.2 – GNSS networks (together with WG 5.2)

- Analysis and review of GNSS network technologies for practitioners
- Analysis of the importance of site calibrations of permanent networks
- Analyse and compare different commercial and non-commercial GNSS networks
- Organise Work shops(s) on GNSS networks

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On the FIG Commission 5 web

FIG

Idea:

- Publish description on national/regional/local CORS on the FIG Commission 5 web (Template for the format available and spread)
- Presentations from Stockholm as well as others. Please send in your contribution to Mikael Lilje or Rob Sarib.
- Guidelines, links, technical papers and so on

www.fig.net/commission5/

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Forum at the FIG Congress in Munich, 2006

FIG

Something similar as in Stockholm

Presentations from

- | | |
|----------|----------|
| -Sweden | - Serbia |
| -UK | - Brazil |
| -Turkey | - Israel |
| -Ireland | - Poland |

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Issues raised during the Munich-Forum

FIG

Facilitate

- development of standards/ guidelines
- the compilation of the why and how to connect RTK CORs networks to ITRF

Facilitate forums on various issues as technical and business models

Facilitate representation for RTK CORs providers/users to 'voice' or lobby their wants/needs to GNSS owners, telecommunication agencies, GNSS equipment and software manufacturers / suppliers, IGS

Provide best practice guidelines, surveying methodologies, field operations for RTK CORs users and providers

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Global Geodetic Observing System

FIG

GGOS integrates different geodetic techniques, different models, different approaches in order to achieve the required **long-term consistency, reliability and understanding of the geodetic, geodynamic and global change processes of "System Earth"**.

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International GNSS Service



IGS product summary
Precise and predicted GNSS orbits
GNSS clock corrections
Earth orientation parameters
Ground positioning (sub-cm)
Consolidated input to ITRF
Ionospheric mapping (> "near real time")
Tropospheric corrections

These products are used by a wide range of users in the scientific & professional disciplines.

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IGS...



IAG service, global CORS network, freely available data & products to all users...

Supports: **ITRF, regional densification, GGOS...**

The IGS CORS network is mostly provided by FIG-relevant national agencies.

The IGS needs an upgraded CORS infrastructure, that is true GNSS-capable, with real-time data streaming...

Complements (non-IGS) geoscientific networks in U.S., Japan, China...

*New applications need more dense CORS networks, with receiver spacing also suitable for surveying/mapping apps... **GNSS geodesy and GNSS surveying side-by-side***

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Where does the FIG come in?...

FIG

**GNSS CORS infrastructure to support surveying, mapping,
precise navigation applications...**

This is a responsibility of government agencies...

**Geodesy needs more (not less) GNSS stations, *globally
distributed, but also locally with high density...***

The FIG through its links to national geodetic/survey agencies is an important ally of the IAG... particularly in ensuring the upgrade and densification of GNSS CORS infrastructure...

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Issues from today's presentations

FIG

Presentations from

- Australia (several)
- Canada
- Korea
- New Zealand
- Portugal
- Sweden
- USA

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Issues from today's presentations

FIG

- What is the role of FIG concerning the following issues
 - standards/guidelines for station infrastructure and co-ord integrity?
 - standards, models and protocols for base station data management and distribution?
 - Data exchange format - e.g. compatibility between RTK systems
 - various service and data management model that could be used? Business and Pricing models?
 - the role, function and responsibility of stake holders.
 - finding and justifying financial resources for the expansion/densification/maintenance of CORS? Business cases?
 - Finding skilled human resources to manage the network.
- How can FIG encourage the development and provide best practice guidelines, surveying methodologies, field operations for RTK CORS users and providers.
- Facilitate representation for RTK CORS providers/users to lobby their wants/needs to GNSS owners, telecommunication agencies, GNSS equipment and software manufacturers / suppliers, IGS

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Work Shop/Seminar on CORS

FIG

WHERE and WHEN - FIG WW Israel 2009? SEASC Bali 2009, FIG Regional Conf Vietnam 2009? Other suggestions?

FIG-facilitate the event in co-operation with stakeholders, IAG? Compile – disseminate information via web?

WHO - CORS managers, industry, users, and others

Focusing on

- Guidelines, standards on station infrastructure
- Guidelines, standards, best practice on surveying
- Data management
- Business models
- Communication issues
- Hardware issues
- GNSS developments
- Vertical data issues

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