

# **FIG Technical Seminar on Reference Frame in Practice**

Mikael Lilje, chair FIG Commission 5  
Rob Sarib, FIG Commission 5 Vice Chair of  
Administration

Presented at the ICG-8, November 2013, Dubai



This presentation will discuss the three seminars that FIG has organised together with

- International Association of Geodesy
- UNOOSA/ICG
- Local organisations

Sponsored by Leica, Trimble and ESRI

UNOOSA/ICG has been sponsoring delegates to two of the seminars

UN Global Geospatial Information Management (UN-GGIM-AP)

The next seminar is planned to be held in June, 2014



# The International Federation of Surveyors

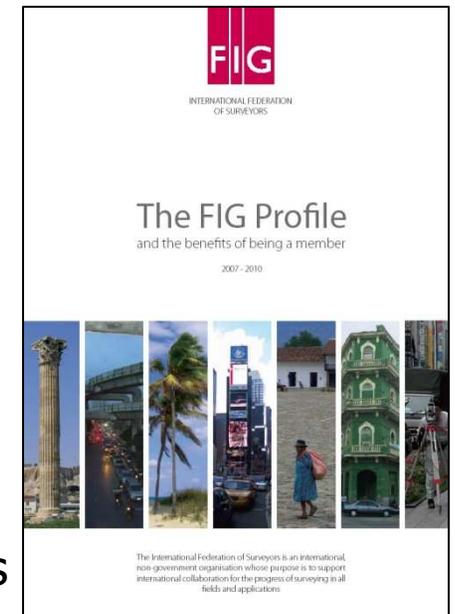
Federation of national associations;

Represents all surveying disciplines;

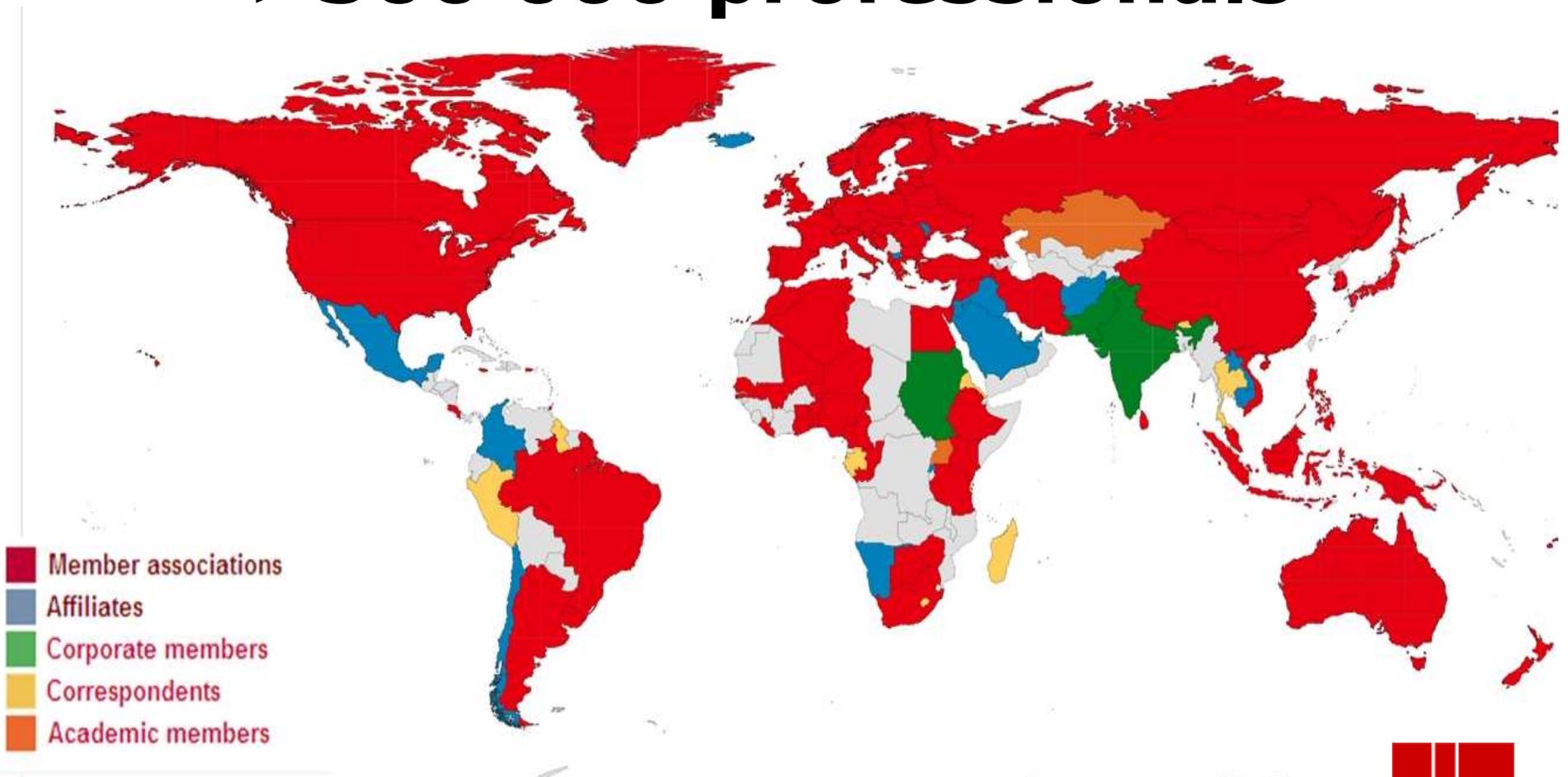
UN-recognised non-government organisation (NGO);

Its aim is to ensure that the disciplines of surveying and all who practise them meet the needs of the markets and communities that they serve;

It provides an international forum for discussion and development aiming to promote professional practice and standards



# Membership – 120 countries, >300 000 professionals



# FIG Commissions

- Commission 1 – Professional Standards and Practice
- Commission 2 – Professional Education
- Commission 3 – Spatial Information Management
- Commission 4 – Hydrography
- **Commission 5 – Positioning and Measurement**
- Commission 6 – Engineering Surveys
- Commission 7 – Cadastre and Land Management
- Commission 8 – Spatial Planning and Development
- Commission 9 – Valuation and the Management of Real Estate
- Commission 10 - Construction Economics and Management
- Young Surveyors Network



# **The Mission of FIG Commission 5 (Positioning and Measurement)**

- Focus on modern and integrated positioning technologies.
- Facilitate and keep abreast of technical developments.
- Foster and support applied research
- Formulate and formalize collaboration with sister organizations, such as IAG/IGS and UN-organizations as UN-OOSA and UN-GGIM-
- Regular participation in FIG Events



# Who do we normally meet at our events?

FIG Commission 5 meet managers and surveyors at Geodetic Authorities and institutes, Universities and Private Sectors

They can be responsible for national and/or regional reference frames/system but can be also traditional "end users"



# **FIG can contribute through ...**

FIG Commissions and working groups

FIG Working Week, FIG Congress, FIG Regional Conferences

FIG Publications

FIG Reference Frame in Practice Manual

FIG sponsored events as the FIG Technical Seminar



**FIG**

FIG PUBLICATION  
NO. 49

FIG REPORT

## Cost Effective GNSS Positioning Techniques



FIG Commission 5 Publication

**FIG**

INTERNATIONAL FEDERATION  
OF SURVEYORS (IFS)

**FIG**

# Motivations for the seminars

- Using a ITRF based reference frame is the future and GNSS-CORS infrastructure is the most cost-effective way to connect to ITRF. Using CORS gives the users and potential plenty of new and traditionally application to do positioning
- ITRF and CORS is part of a modern geodetic infrastructure
- This means that countries are in the phase of upgrading their geodetic infrastructure including transition to a new reference frame.
- There is a need for;
  - Knowledge transfer and sharing experiences!
  - Improving reference frames in certain areas.
  - Building local capacity



# Technical Seminar on Reference Frame in Practice

4-5 May 2012, Rome, Italy



# Seminar Program

- The Role of Geodesy
- Global Terrestrial Reference Systems and Frames
- Regional and National Reference Systems
- Worked examples of Terrestrial Reference Frame Realisations
- IGS Services and other initiatives
- Gravity and WHS
- Multi GNSS
- Standards and Traceability of a Terrestrial Reference Frame/GNSS
- Four dimensional deformation models for Terrestrial Reference Frames



IAG / FIG / UNGGIM / UNICG / PhilGEGS

# Reference Frame in Practice



# Seminar Program

- Case Studies – The Status and Issues of Geodetic Infrastructure from Countries in the Region
- IGS Services and Other Initiatives
- APREF Status and Determination
- Reference Frame Infrastructure
- Gravity and WHS
- Multi-GNSS Environment
- Going GeoCentric
- Dynamic Datums
- The Role of Manufacturers in Geodetic Infrastructure



# FIG Pacific Small Island Developing States Symposium

*Policies and Practices for Responsible Governance*

FIG  Fiji 18–20 September 2013

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# Reference Frames in Practice Manual

Global, Regional, National Reference Frames and  
Systems – ITRS, ITRF, GGOS

IGS – International GNSS Service

Height Systems

Standards, Quality, Best Practice

GNSS CORS Networks

Transformations





# XXV FIG Congress

*"Engaging the Challenges, Enhancing the Relevance"*

**16 - 21 JUNE 2014, MALAYSIA**

