

Reference Frames in Practice Manual

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

- International Association of Geodesy (IAG)
- UNOOSA/ICG
- Local organisations

The presentation will also discuss the Reference Frame in Practice Manual (FIG Pub no 64)

UNOOSA/ICG has been sponsoring delegates to attend the seminars

The next seminars are planned to

- July, 2015 at SEASC2015, Singapore
- May, 2016 at FIG Working Week, Christchurch, New Zealand

The International Federation of Surveyors (FIG)

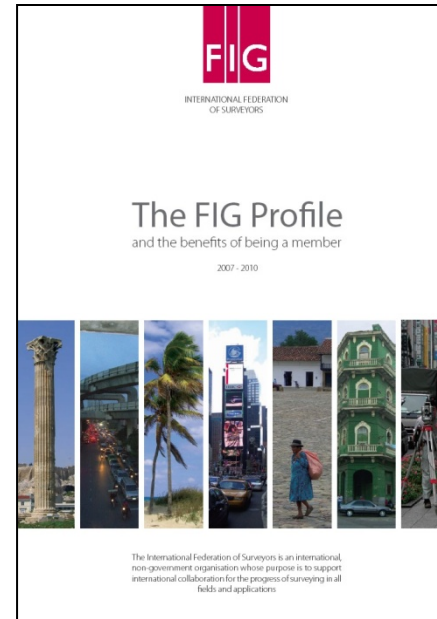
Federation of national associations;

Represents all surveying disciplines;

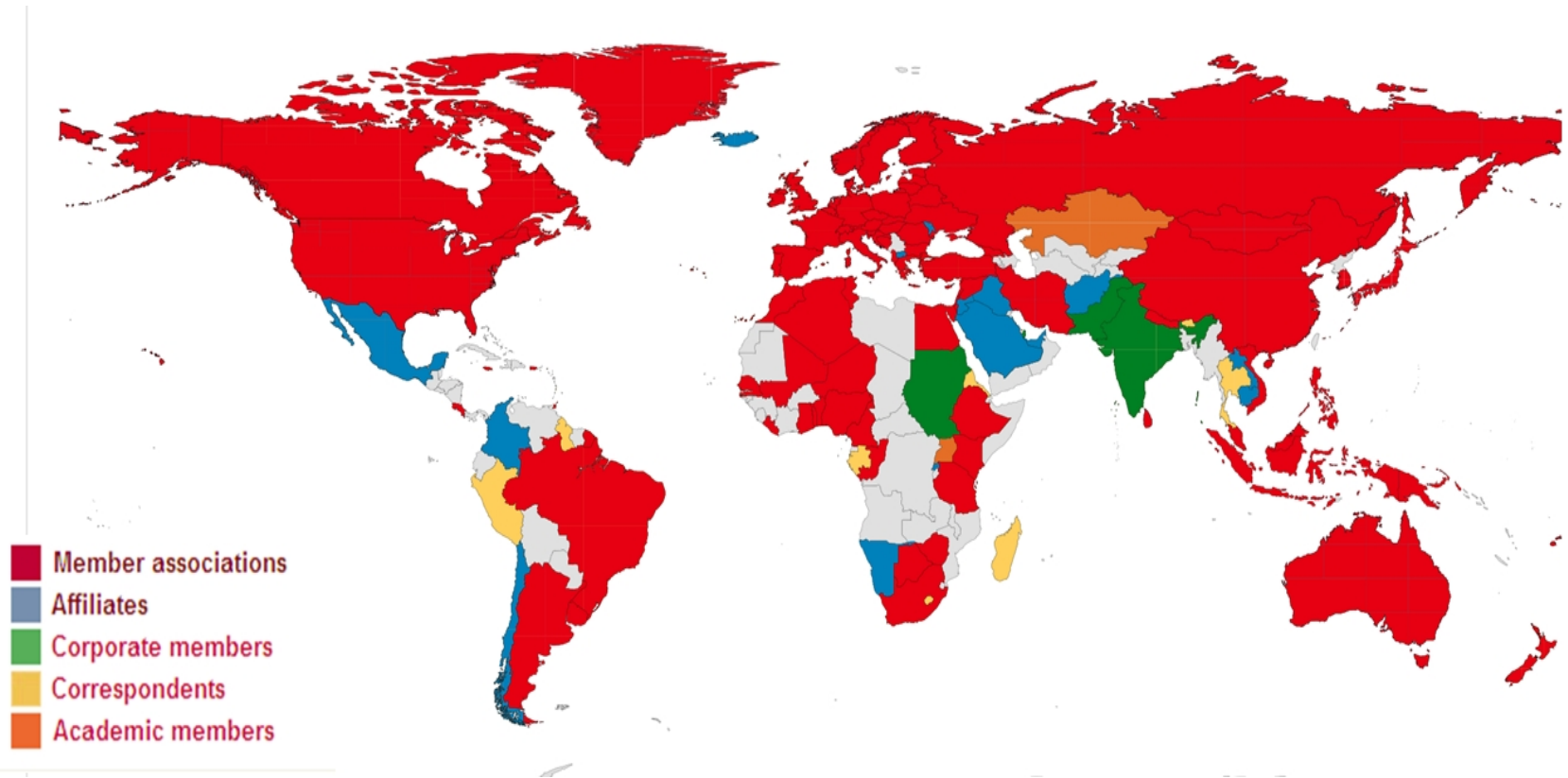
UN-recognised non-government organisation (NGO);

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



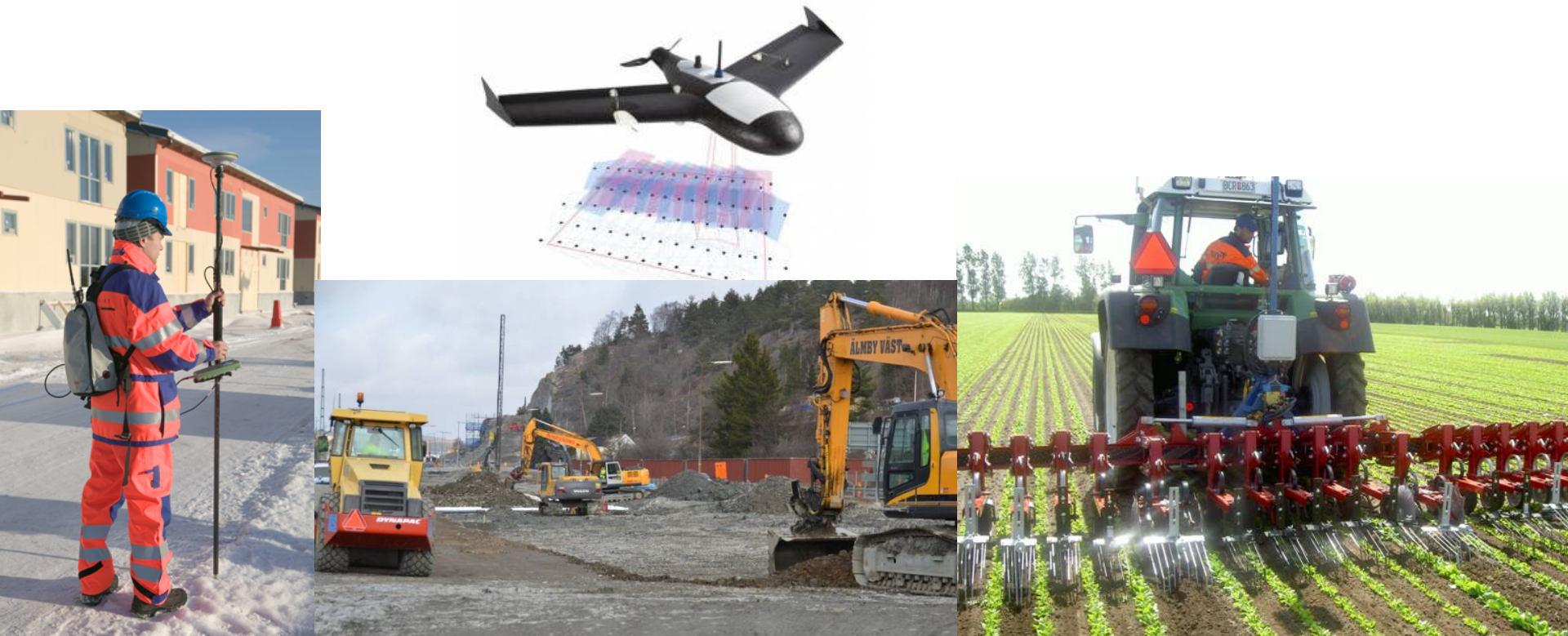
Membership – 120 countries, >300 000 professionals



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

FIG PUBLICATION
NO 49

FIG REPORT

Cost Effective GNSS Positioning Techniques



FIG Commission 5 Publication

FIG

INTERNATIONAL FEDERATION
OF SURVEYORS (IFG)

FIG

FIG PUBLICATION
NO 64

FIG GUIDE

Reference Frames in Practice Manual



May 2014

FIG

INTERNATIONAL FEDERATION
OF SURVEYORS (IFG)

Reference Frames in Practice Manual



Motivations for the seminars

The level of knowledge among decision makers globally regarding reference systems and CORS varies a lot! We find real experts but we also find those who do not easily understand the international cooperation as vital for the national development.

There is also a gap between scientists and decision makers! The gap can be describe in both meeting places as well as knowledge. And when we meet, we do not speak the "same language".

We need to understand that

- the benefit (why?) as well as the how to implement ITRS in a country and/or region is not always clear for the decision makers.
- most countries are very poor.
- many countries have legal limitations regarding how to exchange data.

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 are parts of a modern national geodetic infrastructure

This means that countries are in the phase of upgrading their geodetic infrastructure including transition to new reference frame.

There is a need for;

- Knowledge transfer and sharing experiences!
- Improving reference frames in certain areas.
- Building local capacity

FIG technical seminars on Reference Frames in Practice

The seminars have been developed in accordance to the response to request for information on Reference Frames

- 2012 FIG Working Week Rome [20],
- 2013 SE Asian Survey Congress Manila [40],
- 2013 FIG/UN-GGIM-AP Pacific Smalls Developing States Symposium Fiji [20].

We are planning number 4 and 5

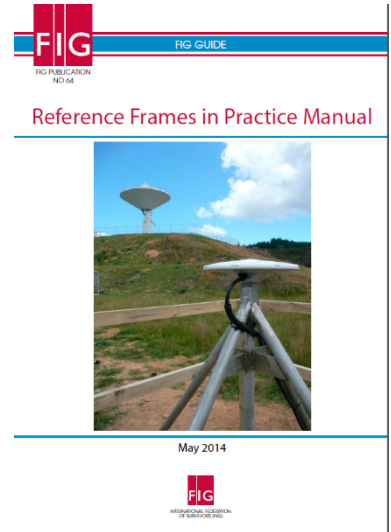
- 2015 SE Asian Survey Congress Singapore,
- 2016 FIG Working Week Christchurch

The Manual

One outcome from the seminars is the documentation also published as a FIG publication (FIG Publication no 64).

- Brought together as a series of fact sheets
- The manual addresses technical issues surrounding reference frames
- The objective is to provide a brief introduction to the use of Reference Frames in Practice.
- It is intended for surveyors but does assume some knowledge of the topic.
- Freely available on FIG website (www.fig.net)

Content



FORWARD

- 1. Introduction**
- 2. Geodesy and Global Reference Frames**
- 3. Global Terrestrial Reference Systems and Frames**
- 4. Regional and National Reference Frames**
- 5. Height Systems**
- 6. Transforming Between Datums**
- 7. Transforming Between Datums in Non-static Reference Frames**
- 8. Reference Frame Parameter Estimation and Testing via the technique of Least Squares**
- 9. Testing Measurements and Least Squares Parameter Estimates**
- 10. Global Navigation Satellite Systems**
- 11. GNSS CORS Networks and Linking to ITRF**
- 12. The International GNSS Service (IGS)**
- 13. Standards and Traceability of Terrestrial Reference Frames**

Next steps

- UN Resolution on GGRF reports on needs to knowledge exchange and global cooperation!
- We will continue the seminars (Singapore, and Christchurch)
- Improve, correct, add more to the document
- Harmonize the chapters
- Find new meeting places and communication tool



FIG Working Week

Sofia 2015

17 - 21 May, Bulgaria

From the wisdom of the ages
to the challenges of modern world

CALL FOR PAPERS

FIG Working Week 2015 is the main event of the year for International Federation of Surveyors FIG. Therefore proposals for papers are requested in all topics of interest of the following commissions:

You are invited to submit abstract by **-15 November 2014**.

More information on the FIG Congress web site at
www.fig.net/fig2015

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