UN-GGIM: Europe
GRF-Europe

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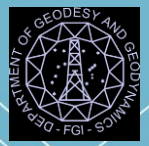

Global Geodetic Reference Frame – GGRF

- The UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) decided in July 2013 to formulate and facilitate a draft resolution for a Global Geodetic Reference Frame.
- The United Nations General Assembly adopted resolution 69/266 on a Global Geodetic Reference Frame for Sustainable Development in February 2015. Total of 53 Member States sponsored the resolution.
- This decision reinforces the importance of the GGRF

UN Resolution on GGRF

UN General Assembly urges the sharing of geospatial data to benefit People and Planet

- To ensure development and sustainability of the GGRF
- To enhance global and multilateral cooperation
- To provide technical and knowledge-based assistance for developing countries in need
- To promote open sharing of geodetic data, standards and conventions
- To commit the Member States to improving and maintaining geodetic infrastructure (out of currently used “best-effort” maintenance of geodetic infrastructure)
- To develop outreach programmes

PHOTO: BJØRN-OWE HOLMBERG

Natural hazard and disaster management

Decision makers need an accurate and stable global geodetic reference frame to make good decisions for the future and to identify areas under threat of flooding, earthquakes or drought and to adopt preventive measurements to protect them. Geodesy provides the location basis for such decisions.

PHOTO: ANNE JØRGENSEN

Climate change and sea level monitoring

Climate change is a global challenge that puts stronger requirements on the precision of the global geodetic reference frame. Geodesy provides information about sea level changes, plate movements, land uplift, and ice sheet and glacier changes. Global society requires information about current trends at a scale measured in millimeters to detect changes of the Earth system with sufficient accuracy, for local, regional and global planning.

To be able to monitor and estimate future sea level variations, significant improvements in both geodetic infrastructure and data analysis are needed.

PHOTO: MORTEN BRUN

Geospatial information, mapping and navigation

'Location-based' services are becoming increasingly important in modern society.

The global geodetic reference frame supports satellite positioning technology and is a critical enabler of geospatial information interoperability and applications such as surveying, defining sea baseline, engineering construction, precision agriculture, intelligent transport and navigation.

GGRF – Global collaboration

- Global geodesy is dependent on contributions from nations all around the globe
- No single country can maintain the global geodetic reference frame alone
- We aim to change from the current system where contributions to the development of the global geodetic reference frame are undertaken on a ”best efforts” basis to one where they are made through a multilateral collaboration under a UN mandate

Global Geodetic Reference Frame – GGRF

- The GGRF is a sparse global infrastructure of core observatories
- The GGRF is needed
  - for basis of global and regional reference frames
  - for high accuracy satellite positioning
  - to measure crustal velocities
  - to measure global sea-level change
  - to underpin global change science and support improved disaster risk reduction
- With modest infrastructure investment all countries can obtain the benefits of and contribute to the GGRF

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GGRF Working Group

- The United Nations Global Geospatial Information Management (UN-GGIM) Working Group on the Global Geodetic Reference Frame (GGRF) is now drafting a roadmap for the enhancement of the Global Geodetic Reference Frame.
- The Global Geodetic Reference Frame is fundamental for monitoring changes to the Earth including the continents, ice caps, oceans and the atmosphere. It is also fundamental for mapping, navigation and universal timing.

EUREF

DEPARTMENT OF GEODESY AND GEODYNAMICS - FGI -

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GGRF Objectives

- To provide an intergovernmental forum, for communication and cooperation on issues relating to the maintenance and enhancement of a GGRF;
- To develop a roadmap for a collaborative global geodetic observation network and the associated infrastructure, with sustainable funding and investment, as well as strategic partnerships between mapping, space and other interested agencies;
- To encourage open sharing of geodetic data and information that contribute to regional and global reference frames;
- To advocate for guidelines and standards to advance the interchangeability and interoperability of geodetic systems and data;
- To address various technical, institutional and policy issues related to the implementation of a GGRF.

UN GGIM

- The United Nations Committee of Experts on Global Geospatial Information Management, **UN-GGIM**, aims at playing a leading role in setting the agenda for the **development of global geospatial information** and promoting its use to address key global challenges.
- It provides a **forum to liaise and coordinate** among Member States, and between Member States and international organizations.
- The Committee of Experts is mandated, among other tasks, to provide a platform for the **development of effective strategies on how to build and strengthen national capacity on geospatial information**, as well as disseminating best practices and experiences of national, regional and international bodies on geospatial information related to legal instruments, management models and technical standards.

UN GGIM Tasks

1. Development of the global geodetic reference frame
2. Development of a global map for sustainable development
3. Geospatial information supporting Sustainable Development and the post 2015 development agenda
4. Adoption and implementation of standards by the global geospatial information community
5. Development of a knowledge base for geospatial information
6. Identification of trends in national institutional arrangements in geospatial information management
7. Integrating geospatial statistics and other information
8. Legal and policy frameworks, including critical issues related to authoritative data
9. Development of shared statement of principles on the management of geospatial information
10. Determining fundamental data sets

UN GGIM: Europe

- UN-GGIM regional entities are established in the Asia-Pacific, the Americas, the Arab States and Europe.
- The Europe Region of the United Nations Committee of Experts on Global Geospatial Information Management (**UN-GGIM: Europe**) will comprise representatives of the European UN Member States. It is led by Bengt Kjellson of the National Land Survey of Sweden.
- The aim of UN-GGIM: Europe is to ensure that the national mapping and cadastral authorities in the European UN Member States work together to contribute to the more effective management and availability of geospatial information in Europe

Geodetic Reference Frames in Europe: GRF-EUROPE

- ***Establishment of UN-GGIM:Europe GRF expert group***,
  - to work as an **expert group under the UN-GGIM:Europe** in close liaison with the geodesy- and georeferencing-related organizations in Europe, like **EUREF**, as well as actively contribute to the work of **GGRF**
  - to support regional mechanisms to incorporate permanent GNSS Network, height and gravity stations across Europe as a part of the global and **European geodetic network**
  - to support and foster **geodetic capacity building within Europe** when improving and maintaining appropriate national geodetic infrastructure and reference frames
  - to **support European countries** to respond to the General Assembly Resolution on A Global Geodetic Reference Frame (GGRF) for Sustainable Development
- Chairperson Markku Poutanen


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Current Status of GRF-Europe

Preparation of the Position Paper: ***Global Geodetic Reference Frame for Sustainable Development - the European Contribution "GRF-Europe"***

Ad hoc writing team to prepare the first draft: Markku Poutanen, Johannes Ihde, Wolfgang Söhne, Daniela Thaller

Special Thanks to Anne Jørgensen, Laila Løvhøiden and Zuheir Altamimi for important comments and advices

Basic idea: No new layer is needed but an interface and expert group between different actors in the field, UN Members States in Europe, and UN-GGIM: Europe

Why: GGRF covers topic globally but it cannot fulfil all needs on regional level. Continental/regional group is needed. Current actors either do not have political or economical power or they are not expert organizations.


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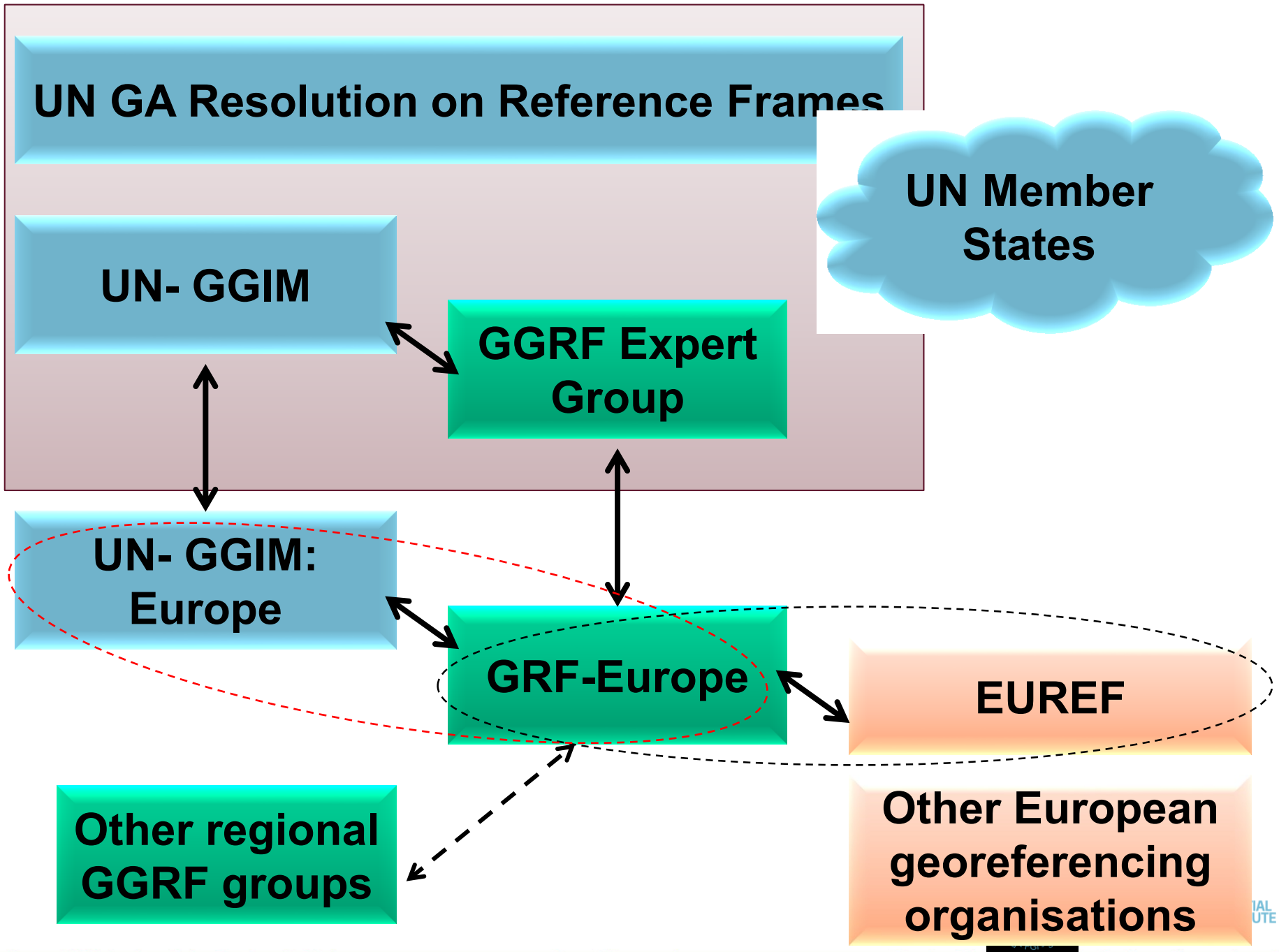
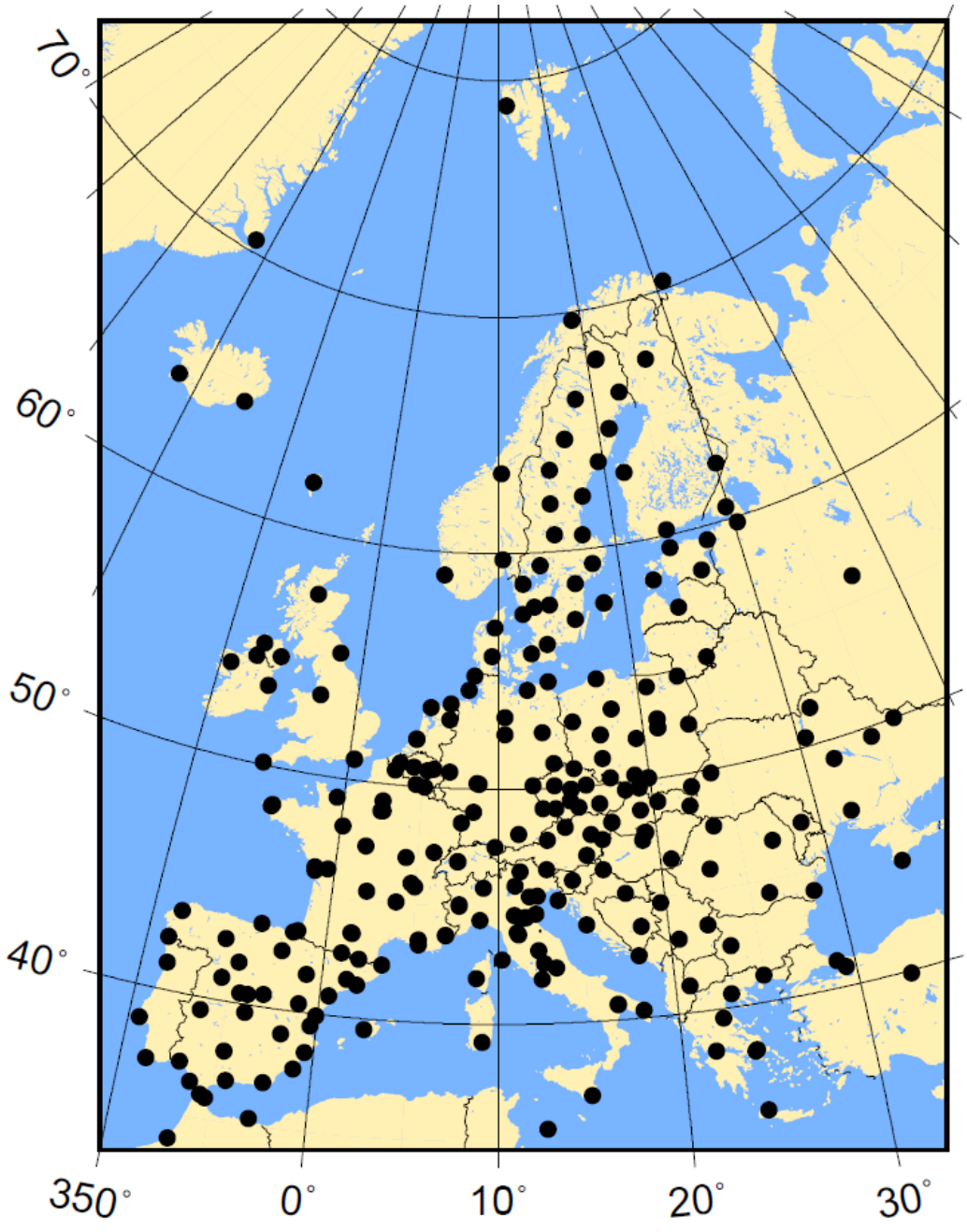

UN GA Resolution on Reference Frames
UN Member States
UN- GGIM
GGRF Expert Group
UN- GGIM: Europe
GRF-Europe
EUREF
Other regional GGRF groups
Other European georeferencing organisations

Geodesy- and georeferencing-related organizations in Europe

- EUREF
- EUPOS
- EuroGeographics
- International Federation of Surveyors (FIG)
- Council of European Geodetic Surveyors (CLGE)
- EPOS
- Network of European Regions Using Space (NEREUS)
- …

Scope of the Plan

- Constitute an Expert Working Group on Geodetic Reference Frames GRF-Europe within the UN-GGIM: Europe. The group will act as an advisory expert group on GGRF within the UN-GGIM: Europe. Under discussion, how much of this work can be done/ is already done within EUREF TWG. **No need to duplicate!**
- Demonstrate and share expertise with society and European policy makers; increase public relation work
- Support geodetic capacity building within Europe
- Contributions to GRF for small countries or countries with insufficient or missing geodetic infrastructure appear to be easier, if an international umbrella institution would exist with a high-enough mandates, like UN.
- Establish and improve connections to other regional GGIM expert groups to bring out common interests and synergy.



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