Exchanging and Sharing Geodetic Data

- A Standards Perspective -

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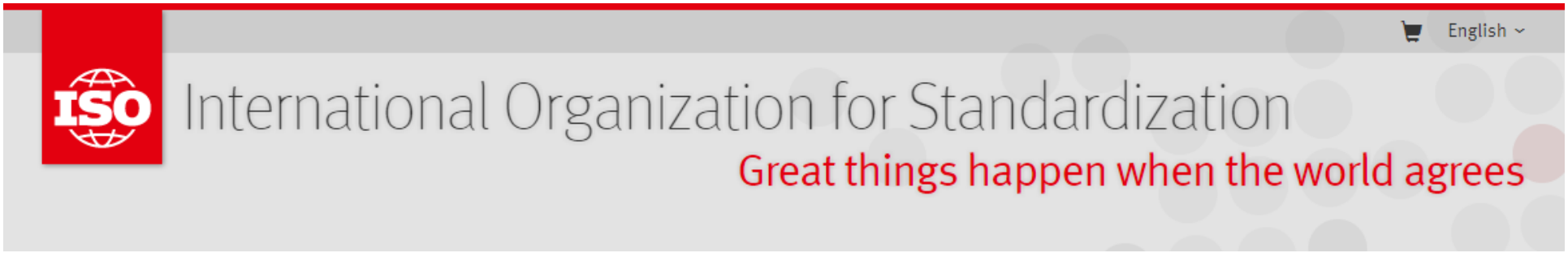
Leica Geosytems APAC

Standards



https://www.iso.org

"…standards underpin the technology that we rely on and ensure the quality that we expect."

Standards

OGC®
Making location count.

Guide to Role of Geospatial Standards

UN-GGIM
UNITED NATIONS INITIATIVE ON GLOBAL GEOSPATIAL INFORMATION MANAGEMENT

http://www.opengeospatial.org/unggim

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

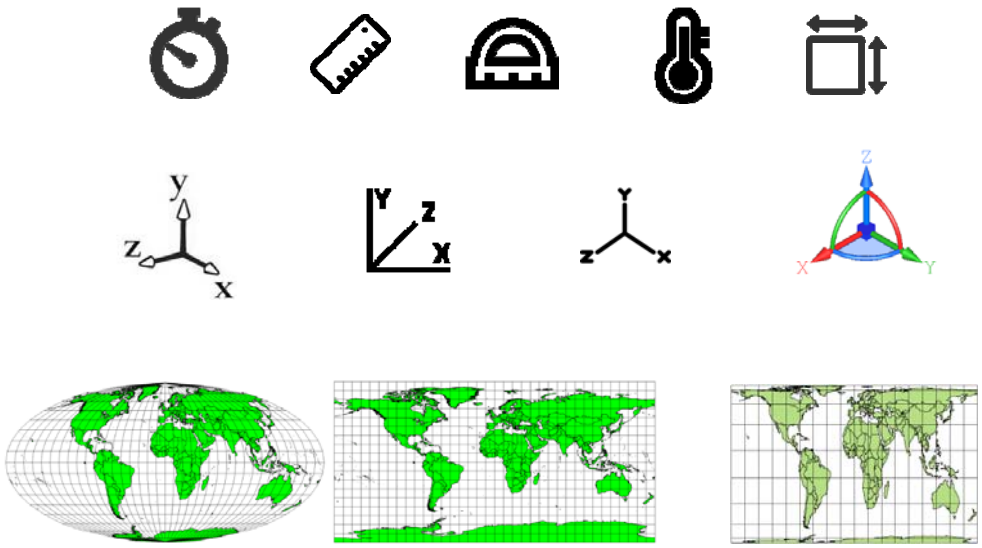
International Federation of Surveyors
Fédération Internationale des Géomètres
Internationale Vereinigung der Vermessungsingenieure

http://www.fig.net

- **ABOUT FIG**
- International Federation of Surveyors, FIG, is a United Nations and World Bank recognized non-governmental organization of national member associations and covers the whole range of professional fields within the global surveying community. It provides an international forum for discussion and development aiming to **promote** professional practice and **standards.**

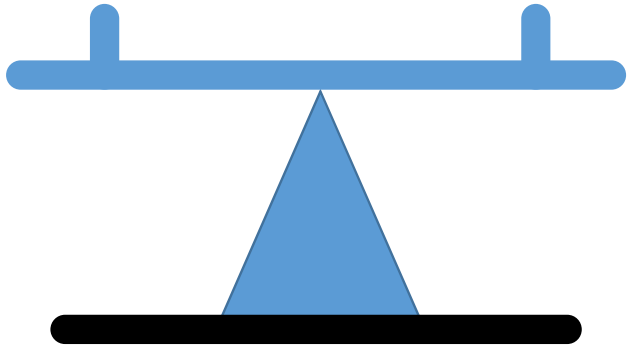
Geodetic Data

- Geodetic Data can be complex
  - Measurement Units
  - Coordinate Systems
  - Observation types
  - Monument definitions
  - Parcel definitions
  - Surfaces
  - Alignments
  - Etc…



Standards allow **compatibility** and **interoperability** between organisations

Proprietary Data versus Open Data



	Proprietary System	Open System
Data Content	✓ Very Efficient × Not Published (Vendor controlled) × Less Interoperable	× Reduced efficiency, loss of information ✓ Published (Vendor neutral) ✓ Designed with interoperability in mind
Data Formats	× Not Published × Not Exchangeable × Compact size	✓ Published ✓ Easily exchangeable × Potentially larger in size

Balanced approach of enclosed Proprietary systems and Open systems for external interfacing

Benefits of Open Data Standards

- Increased return on Geospatial Investment through wider distribution of Data ("Standards contribute to more economic growth than patents and licenses")
- Re-use of Geospatial Data collected from different agencies

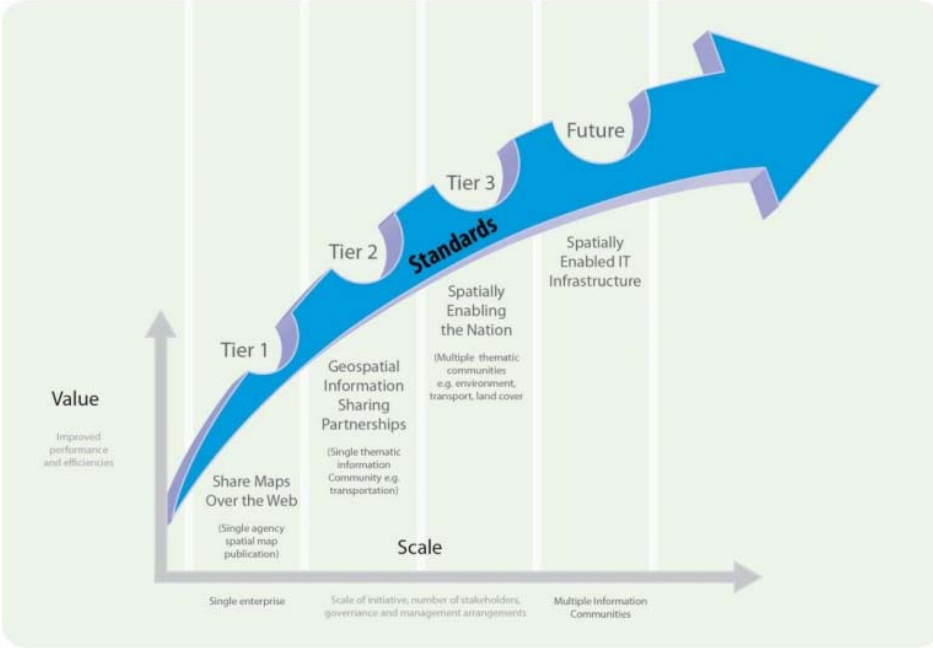
Working towards:

REGIONAL/NATIONAL/INTERNATIONAL

INTEROPERABILITY

Requirements

- **Data Policy** to allow Data Sharing
- Common Reference Frame



Ref: ggim.un.org

GNSS Data Standards

Standard Naming Conventions

Structured Information or Content

FILES: Online (FTP or Web Access), Offline (USB Drives, CD's)

- GNSS Observations → RINEX (v3.x)
- GNSS Solutions → SINEX (v1.x)

STREAMS: NTRIP Distribution (IP Ports 2101)

- GNSS Observations → RTCM (v2.x, v3.x)
- GNSS Positions → NMEA 0183 eg GGA, GGQ

INTERFACING

- Public API's

More Reading….


A Guide to the Role of Standards in Geospatial Information Management

Prepared cooperatively by the

Open Geospatial Consortium (OGC);

The International Organization for Standards (ISO)

Technical Committee 211 Geographic information/Geomatics;

and the

International Hydrographic Organization (IHO).

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http://ggim.un.org

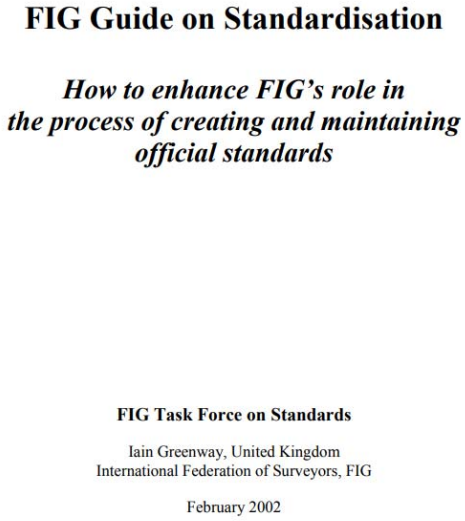
FIG Guide on Standardisation

How to enhance FIG's role in the process of creating and maintaining official standards

FIG Task Force on Standards

Iain Greenway, United Kingdom
International Federation of Surveyors, FIG

February 2002

https://www.fig.net