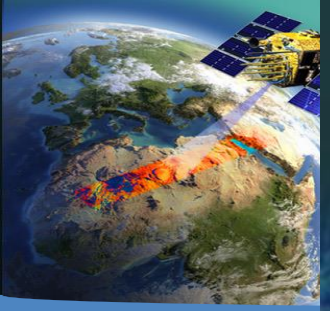
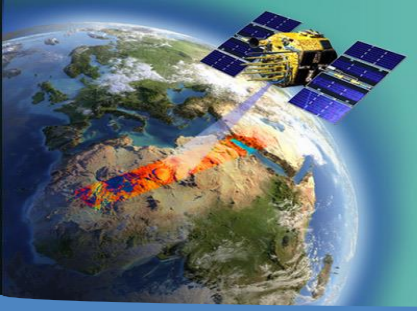


ISPRS

International Society for Photogrammetry and Remote Sensing

Serving society with information from images

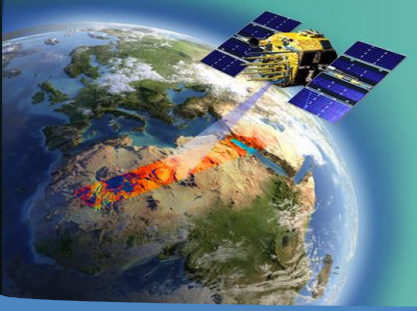
Lena Halounová,
ISPRS President 2022-26



Title of the Session

Session 1: Space Data as a Service: The Power of Earth Observation and Analytics

- Modernising national and regional geodetic frameworks through robust policy frameworks, **standards**, and long-term public investment strategies
- Policy-driven **interoperability** of EO, GNSS, and geospatial platforms, including **data-sharing** regulations, open data policies, and **cross-border coordination**
- Public-Private collaboration models supported by enabling policies, procurement reforms, and regulatory incentives to accelerate **space-based infrastructure development**
- Governance frameworks to ensure resilience, accuracy, and trust, including data security, privacy regulations, and **standardisation protocols**
- Harmonisation of global geospatial policies and standards to support **seamless integration** and scalability of space-enabled services across regions

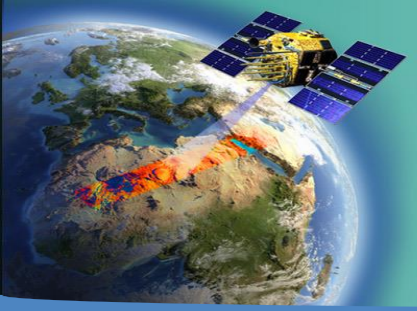


Earth Observation Standards

Earth observation (EO) standards ensure
- interoperability,
- quality, and
- consistency

in remote sensing data, covering
- data acquisition,
- calibration, and
- product formatting.

+ standards of other organisations:
IEEE GRSS, CEOS, …



ISO standards for EO

Core ISO Earth Observation Standards

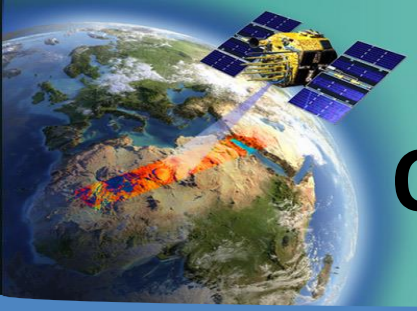
- **ISO 19130: Imaging Sensor Models**:
  - Defines the sensor models for geopositioning, covering SAR, InSAR, LiDAR, and optical sensors (ISO 19130-1 and 19130-2).

- **ISO 19115-2: Metadata for Imagery/Gridded Data**:
  - Extends standard metadata to include details on imagery sources, processing levels, and sensor geometry.

- **ISO 19124: Calibration and Validation (Cal/Val)**:
  - Sets framework standards for calibrating remote sensing imagery sensors and data, ensuring data quality.

- **ISO 19165-2: Preservation of EO Data**:
  - Standardizes the preservation of provenance and context for data from satellite and airborne missions.

- **ISO 19176-1: Analysis Ready Data (ARD)**:
  - Defines requirements and metadata for data that has been processed to a minimum standard for immediate use.



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Key OGC EO Standards & Profiles

- **EO Metadata Profile of O&M (10-157r4):** Defines common metadata for optical, radar, and other EO products.

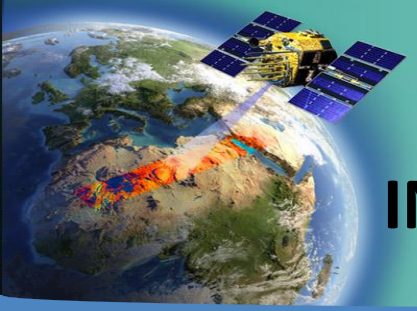
- **EO Dataset Metadata GeoJSON(-LD) (17-003r2):** Encodes EO metadata using GeoJSON and JSON-LD for web compatibility.

- **EO Product Collection, Service and Sensor Discovery (10-189):** Uses CS-W (Catalog Services for the Web) with ebRIM for discovering EO data and sensors.

- **Ordering Services Framework for EO Products (06-141r6):** Defines interfaces for ordering EO data.

- **EO-WCS (Web Coverage Service):** Defines specifically designed coverages (EO Coverages) for efficient retrieval.

- **OGC Best Practice for EO Application Package:** Enables packaging of algorithms for deployment on platforms like ESA's



INSPIRE, infrastructure for Spatial Information in the European Community
European Directive, from 2007

The INSPIRE Directive establishes a
legal **framework for harmonized geospatial data**
across **Europe**.

It does not have a single "Earth Observation" (EO) standard.
It integrates EO data through specific data themes,
technical guidelines, and interoperability standards.

- Nonprofit / NGO
- Government
- Academic
- Individual

OGC Membership

Commercial

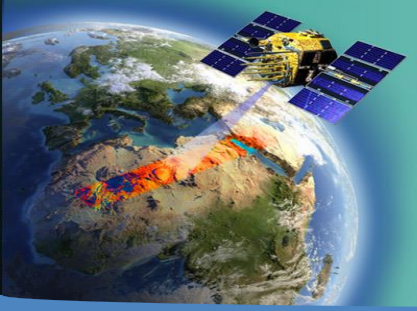
Not-for-profit

Government

Academia

Individual

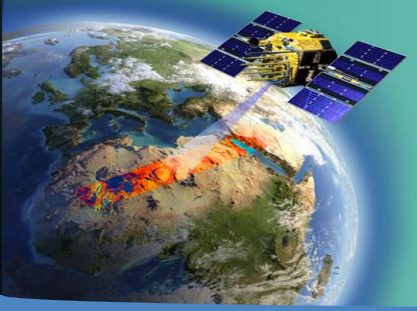
Open Geospatial Consortium



Geospatial policy

What is it?

- Way of thinking
- Knowledge of benefits
- Knowledge of technology
- Understanding cooperation
- Being aware of the problems of cooperation = respecting standardization
- Understanding how to get the knowledge
- Education of politicians to transfer the geospatial tool to international geospatial policy on various scales: local, regional, national, international



Geospatial policy as a powerful tool

How to reach it and who should be involved?

1) The target is to have all countries on the same level of knowledge on different scales.

2) The way is to have geospatial data and systems to be able to communicate regardless of the boundaries.

3) Everybody who can help should be involved.