Solid Earth Science

- **Different communities involved**
- **Multidisciplinary data, products & services**
- **Community building required**
- **Services to society operational**
- **Geo-Hazards**
- **Geo-Resources**
- **Anthropogenic hazards**

The EPOS experience & practice

Data Generation

- Acquisition
- Quality control
- Metadata
- Standardization

Service Operation

- Qualification (PID, DOI, rich metadata)
- Storage
- Accessibility
- Interoperability

Virtual Research Env.

- Visualization
- Processing
- Computation
- Integration

For Distributed pan-European RI

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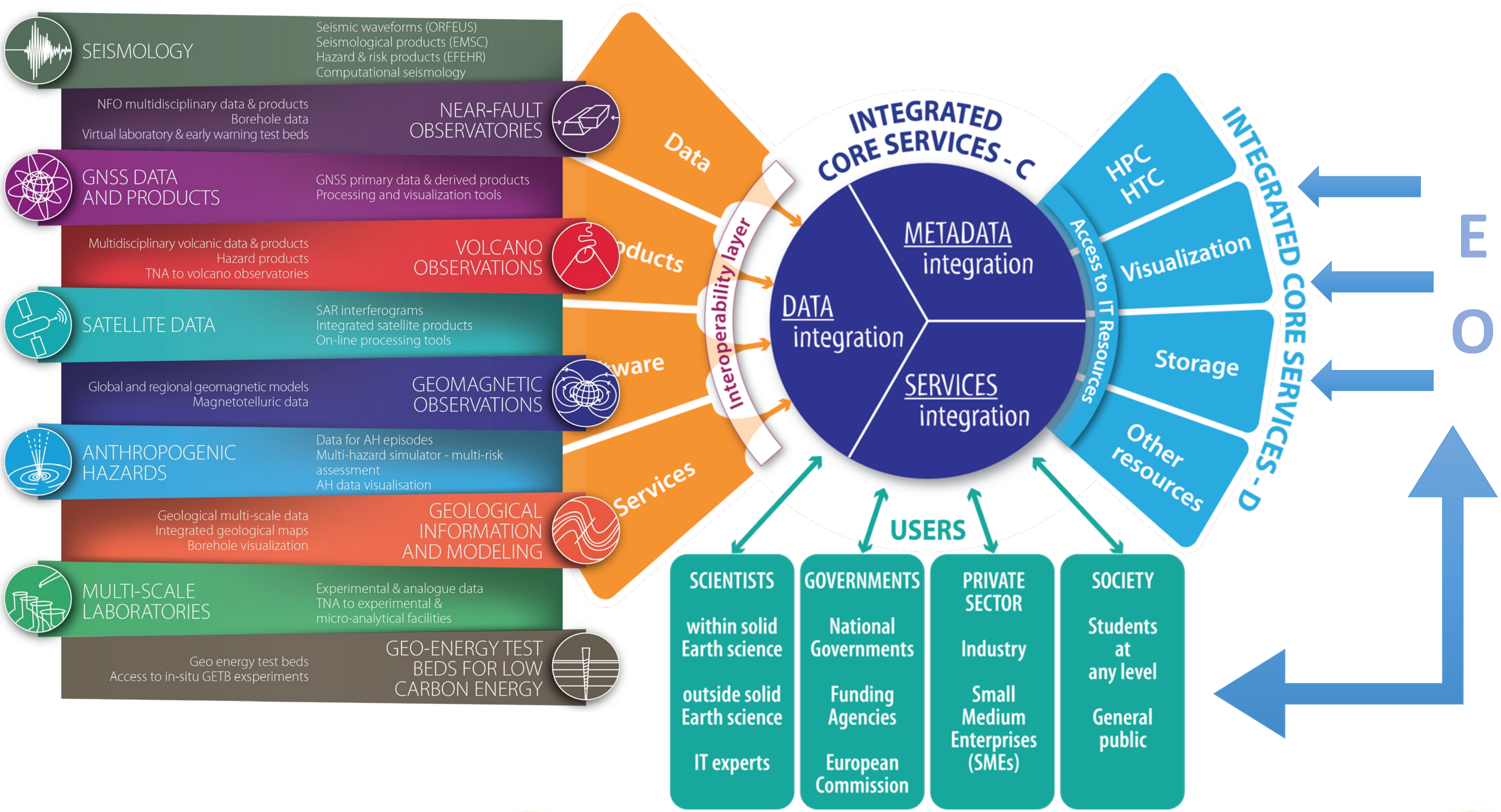
ICT Architecture: EPOS readiness toward EOSC



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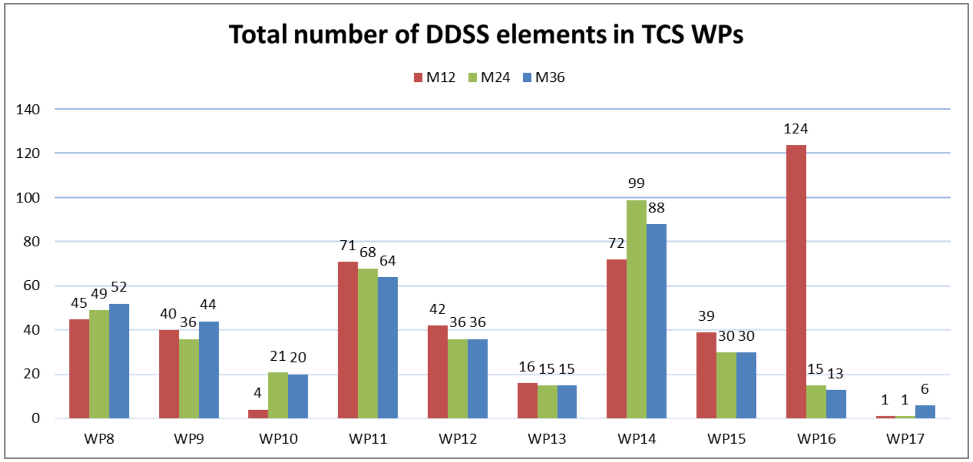
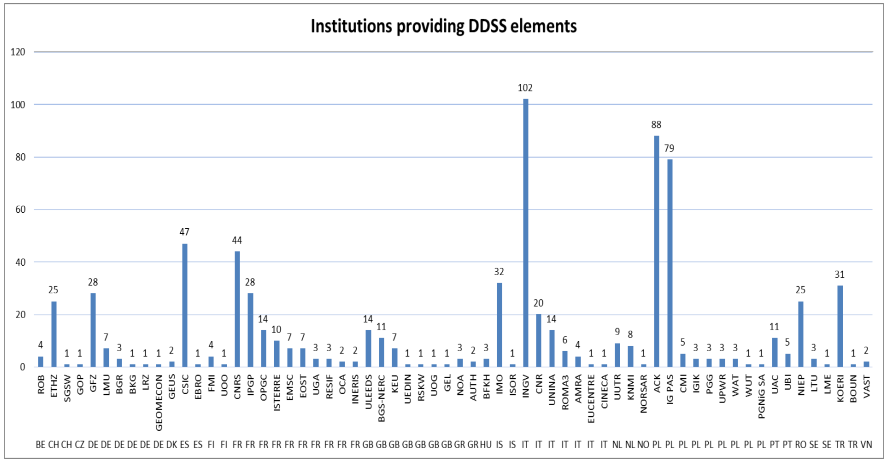
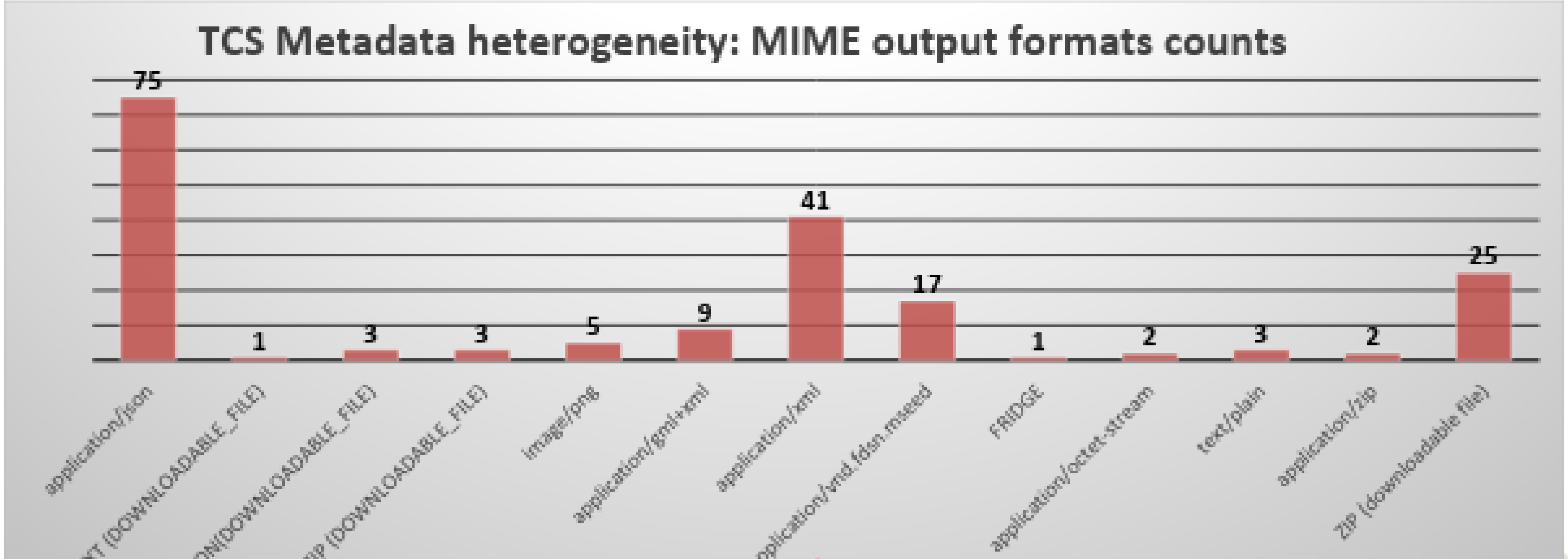
DDSS - Statistics







187 outputs to be described via metadata

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EOSC-readiness

EPOS readiness versus EOSC design and implementation

- The long-lasting RIs tradition in **data & metadata standardization** and **quality control** should be preserved as a necessary condition to make data FAIR+R. This implies bridging the gap between **principles** and **practices**.
- EPOS needs **IT resources** (storage, computing, networking, tools for data management, security, access, remote analysis) and access to external computational resources through **sustainable** procurement. **Sustainability** implies harmonization of pan-European implementation with national strategies & funding priorities.
- A major challenge is dealing with **governance**, **legal**, **financial, ethics** and **rights** frameworks surrounding RIs using e-Is
- EPOS will strive to make its Integrated and Thematic Core Services interoperable with the EOSC, and its data and scientific products accessible to:
    - allow researchers from other disciplines **discover** the suite of EPOS services,
    - access cloud computing infrastructures to **process** and **store** data and scientific products.

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Final Remarks

- **Virtual research environments** are necessary to implement a **Service Portfolio** and develop Computational Earth Science. **Where these services will be hosted?**
- Although EPOS success in identifying Data & Metadata standards, several issues still represent a challenge to tackle FAIRness in terms of available resources and solutions:
  - Traceability, citation and **persistent identifiers**
  - **Access procedures**, ideally by **automated means**, to data & services
  - Data **provenance** and traceability (and link to publications)
- The **timeline** adopted to implement and launch EOSC does not match the **timeline** and the **available resources** for making solid Earth data FAIR and accessible through EOSC portal.
- EPOS has dedicated decades to **community building** and to create awareness on **sharing data** and **open science**; it is using this empowerment of the communities to foster **FAIRness**. EOSC should represent an opportunity to strengthen such endeavors.

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