

*EPOS brings together European nations and combines
solid Earth science infrastructures
and their capital of human expertise, data, and services
into one integrated system for
a better understanding of planet Earth dynamics*

IKC to the implementation and operation of an RI/ERIC

Massimo Cocco
EPOS-ERIC
Executive Director

In-kind Contributions in the life of an ERIC
Munich December 5th 2019

EARTHQUAKES

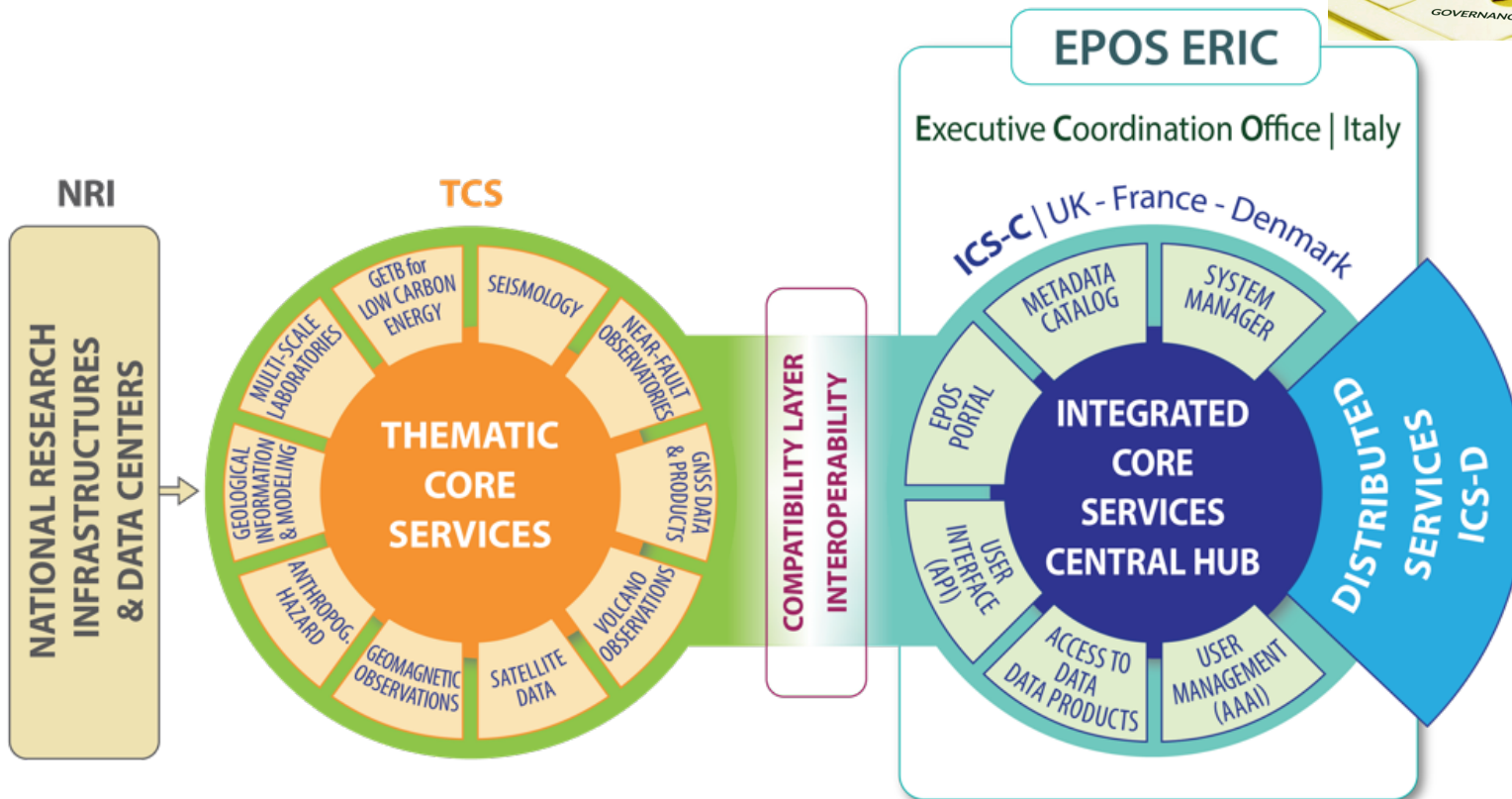
VOLCANIC ERUPTIONS

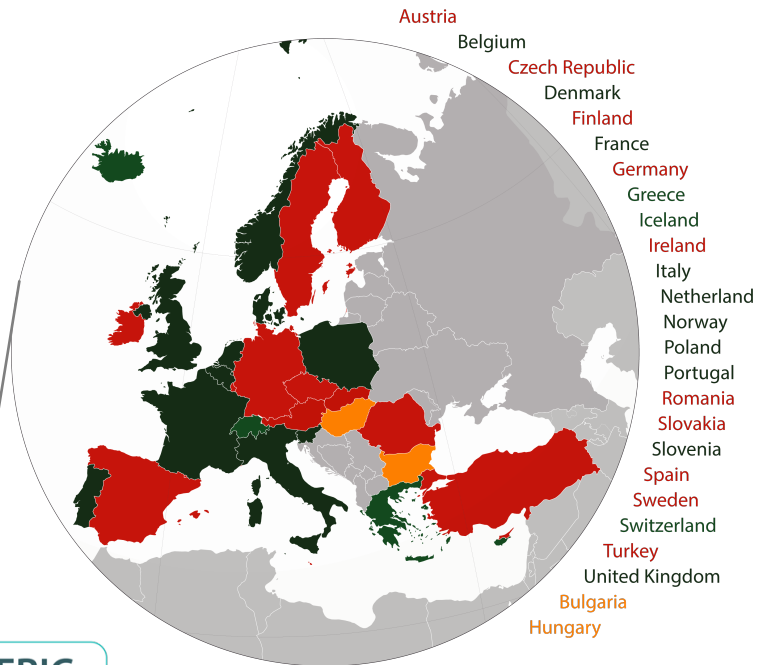
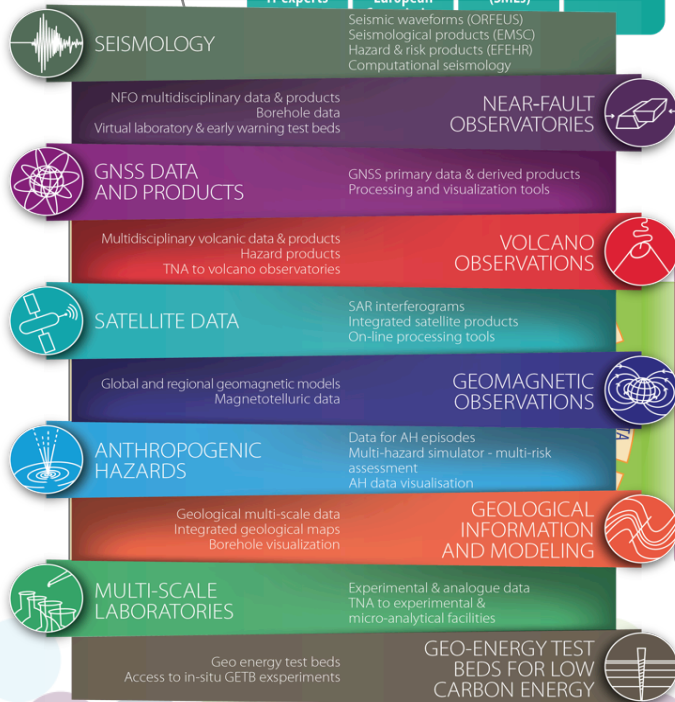
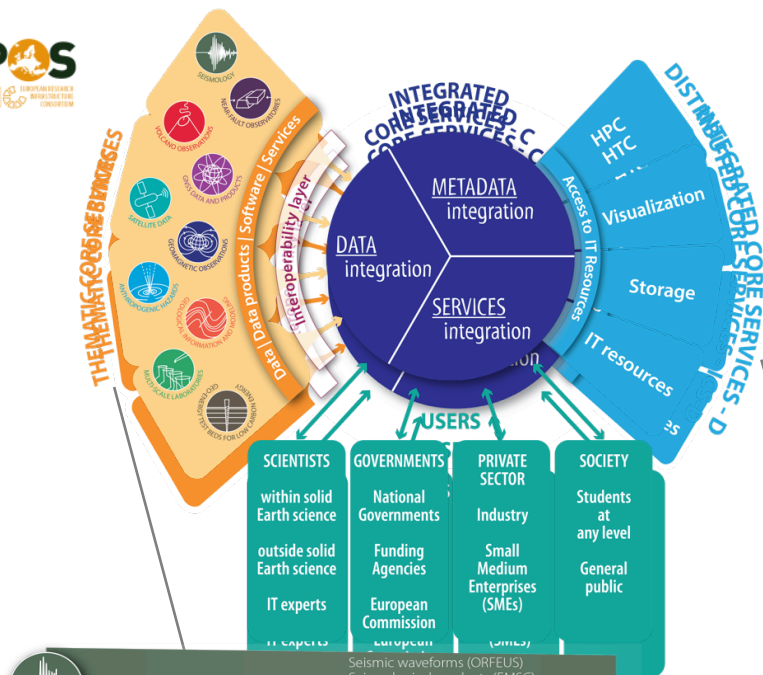
TSUNAMIS

**SURFACE DYNAMICS
& TECTONICS**

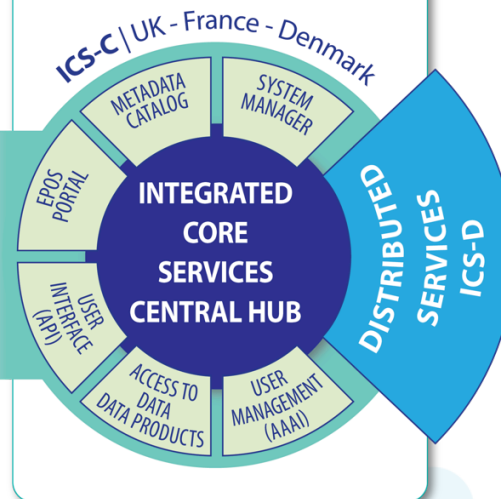
GEORESOURCES

- **Pan-European dimension**
 - 25 countries for data provision
 - 149 Research Organizations
 - 256 Research Infrastructures
 - 5 International Organizations
- **Distributed Environmental RI**
 - 23 Governments engaged
 - Novel e-infrastructure (ICS-C)
 - 10 Scientific Communities (TCS)
 - Two new Candidate TCS
- **Multidisciplinary data & products**
 - ≈5000 seismic stations
 - ≈3000 GNSS receivers
 - 118 laboratories 829 instruments
 - Several Volcano Observatories
 - Satellite data products
 - ≈100 Petabytes of solid Earth data
- **Operational services to Society**
 - Anthropogenic Hazards
 - Services for Hazards & Risk
 - Data & Products for Tsunami Alert





EPOS ERIC
Executive Coordination Office | Italy

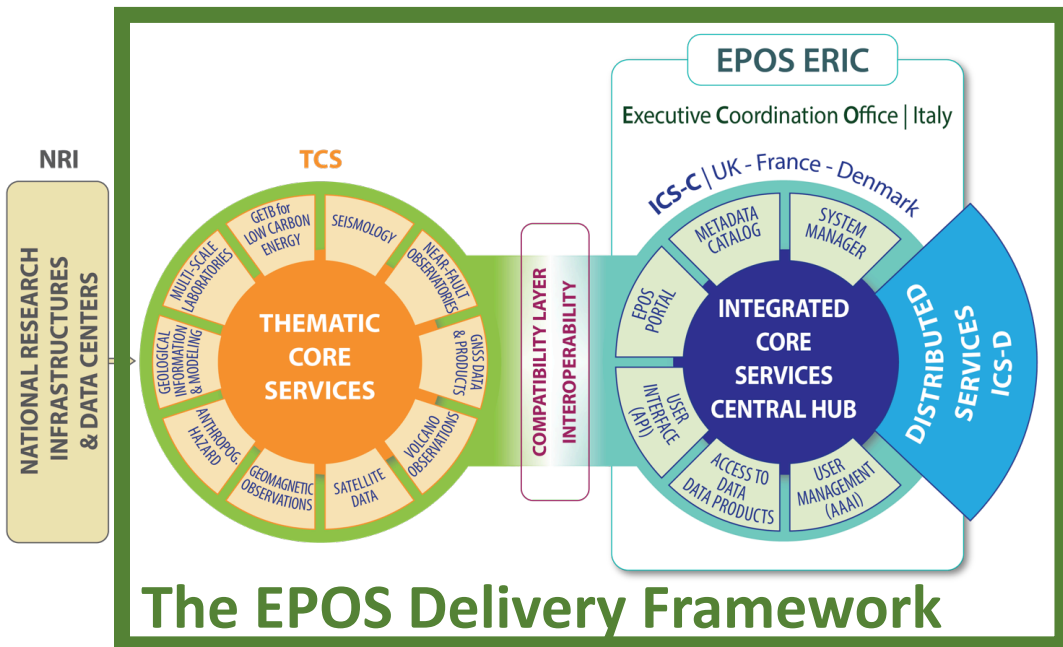


ESTIMATED COSTS

Capital value: 500 M€
Preparation: 4.5 M€
Implementation: 32 M€
Construction: 53 M€
Operation: 15 M€/year

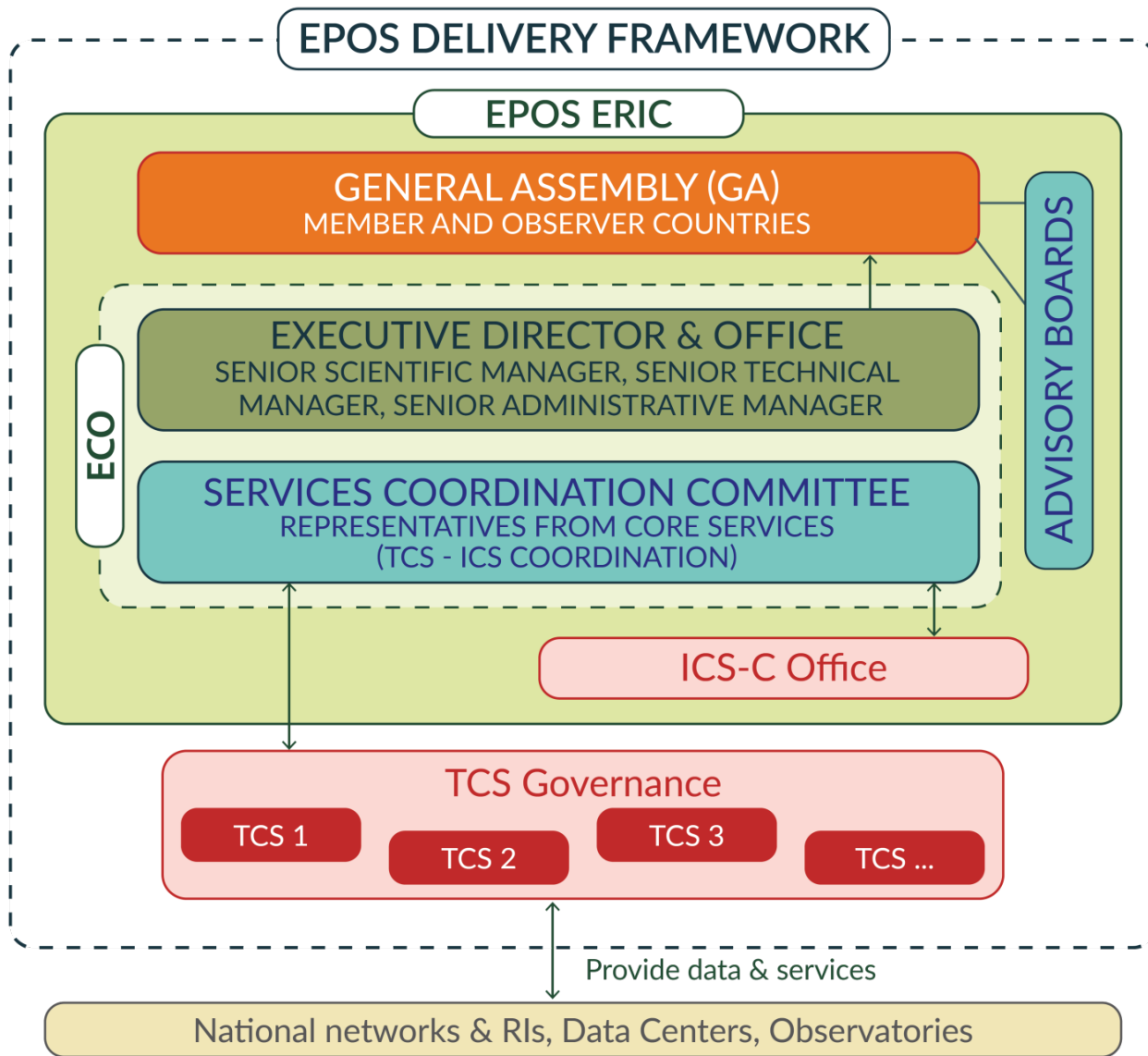
FEDERATED means:

- TCS communities
 - ❖ 9 TCS validated for Governance & Coordination
 - ❖ 2 Candidate TCS (1 new)
 - ❖ 1 new community (from SERA)
 - ❖ 34 Service Providers
 - ❖ Data & Service provision: 221 DDSS, 186 interoperable ICS-C
 - ❖ TNA Coordination & provision
- TCS-ICS system
 - ✓ ICS-C Data Interoperability
 - ✓ Procurement ICS-D
 - ✓ Shared IT developments
- 149 Research Organizations
- 5+1 International Organizations



The EPOS Delivery Framework

- Robust Governace
- Effective Legal Framework
- Financial Viability
- Technical Robustness
- Trust & Credibility



LEGEND

DECISION

EXECUTION

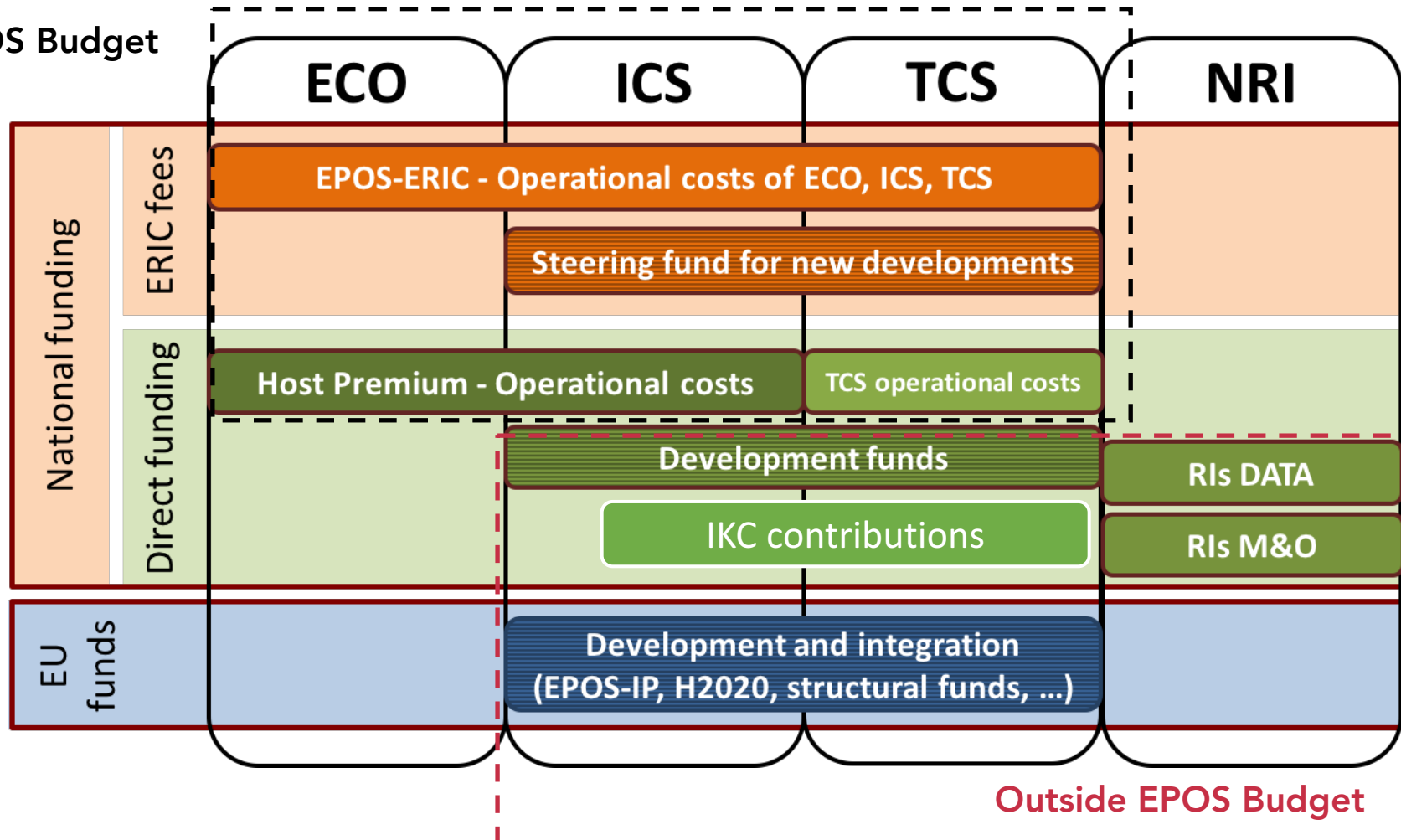
OPERATION

ADVICE

ECO + ICS-C \approx 17,4% total costs

TCS Cost Book \approx 15 M€/year

EPOS Budget



$$TMF = [ECO - HP_{ECO}] + [ICS-C - HP_{ICS}] + STF + \beta (ICS-D + TCS)$$

Planning IKC in the specific EPOS Architecture

- IKC is formally included only in the Host Premium provided by:
 - ☐ Italy to host the Legal Seat of EPOS ERIC
 - ☐ UK, France and Denmark to host the central hub ICS-C
- All the other nine countries contribute in cash through membership fees
- Currently, VAT exemption concerns only INGV (Italy) as Representing Entity to host the legal seat
- EPOS architecture and sustainability plan relies on EPOS ERIC contributions to legal entities outside its perimeter
- IKC has been envisioned to support data and service provision outside the EPOS Perimeter
- IKC has been envisioned and planned for the operational phase of the EPOS RI

Approach followed and achievements

- IKC from Italian host premium is included in the EPOS ERIC budget and RI operation
 - ☐ Cash flow from Italian Ministry to EPOS ERIC through the Representing Entity (INGV)
 - ☐ Personnel hired by INGV with Italian host premium funds and working in EPOS ERIC
 - ☐ Personnel provided in-kind by INGV to EPOS ERIC
- IKC declared by BRGM (France), BGS (UK) and GEUS (DK) but not yet included in the EPOS ERIC business plan
- Discussions at the Ministry level to extend VAT exemption to BRGM, BGS and GEUS
- Harmonization of EPOS implementation with national strategies and priorities to foster national IKC to EPOS provision

- BREXIT and UK participation:
 - ☐ So far solved by a declaration of UK Government
 - ☐ Extension of VAT exemption to BGS still pending
- Inclusion of IKC from UK, France and Denmark for ICS-C in the EPOS ERIC budget and assets
- Limited benefit of VAT exemption within the EPOS Delivery Framework
- Overload and complexity caused by the request for auditing for any expenditure done within and outside EPOS ERIC perimeter
- Heterogeneity of mechanisms for national funding to RIs integrated in EPOS complicating the inclusion of IKC in EPOS sustainability plan

EPOS: a federated approach to integrate data & services



WebSite



www.epos-ip.org

Newsletter



www.epos-ip.org/news-press/epos-ip-newsletter

Social Media



Thank You



Budget

$$\text{EPOS Budget} = \text{ECO} + \text{ICS-C} + \text{STF} + \text{ICS-D} + \text{TCS}$$

ECO	Executive Coordination Office
ICS-C	Integrated Core Services – central hub
ICS-D	Integrated Core Services – distributed
STF	Steering Fund
TCS	Thematic Core Services

Total Membership Fees, excluding host premium

$$\text{TMF} = [\text{ECO} - \text{HP}_{\text{ECO}}] + [\text{ICS-C} - \text{HP}_{\text{ICS}}] + \text{STF} + \beta (\text{ICS-D} + \text{TCS})$$

TMF	Total Membership Fees
HP	Host Premium
β	Between 0 and 1