dépasser les frontières

Institut National de Physique Nucléaire et de Physique des Particules

The European Open Science Cloud (EOSC)

Volker.Beckmann@IN2P3.FR

European Open Science Cloud

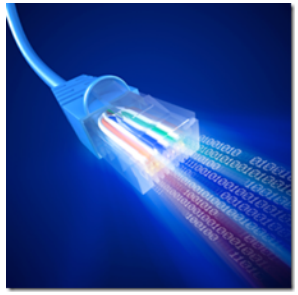
- European Open Science Cloud (EOSC) – Context
- Aims of EOSC
- Horizon2020 calls for EOSC
- EOSC pilot
- Road ahead

EOSC
European Context

European Cloud Initiative is about maximising the benefit of

- The use of Big Data in science, industry and public services
- Access for researchers, SMEs*, industries, and public administrations in the EU to world-class supercomputing
- Secure data storage and analysis
- Reliable and high-speed connectivity






* SME: Small and Medium-sized Enterprises

EOSC
European Solutions

Widening Access

- SMEs*, Government as a Service, Standards

European Data Infrastructure

- Development and deployment of large-scale European HPC*, data and network infrastructure

European Open Science Cloud (EOSC)

* SME: Small and Medium-sized Enterprises
* HPC: High-Performance Computing

EOSC
European Solutions

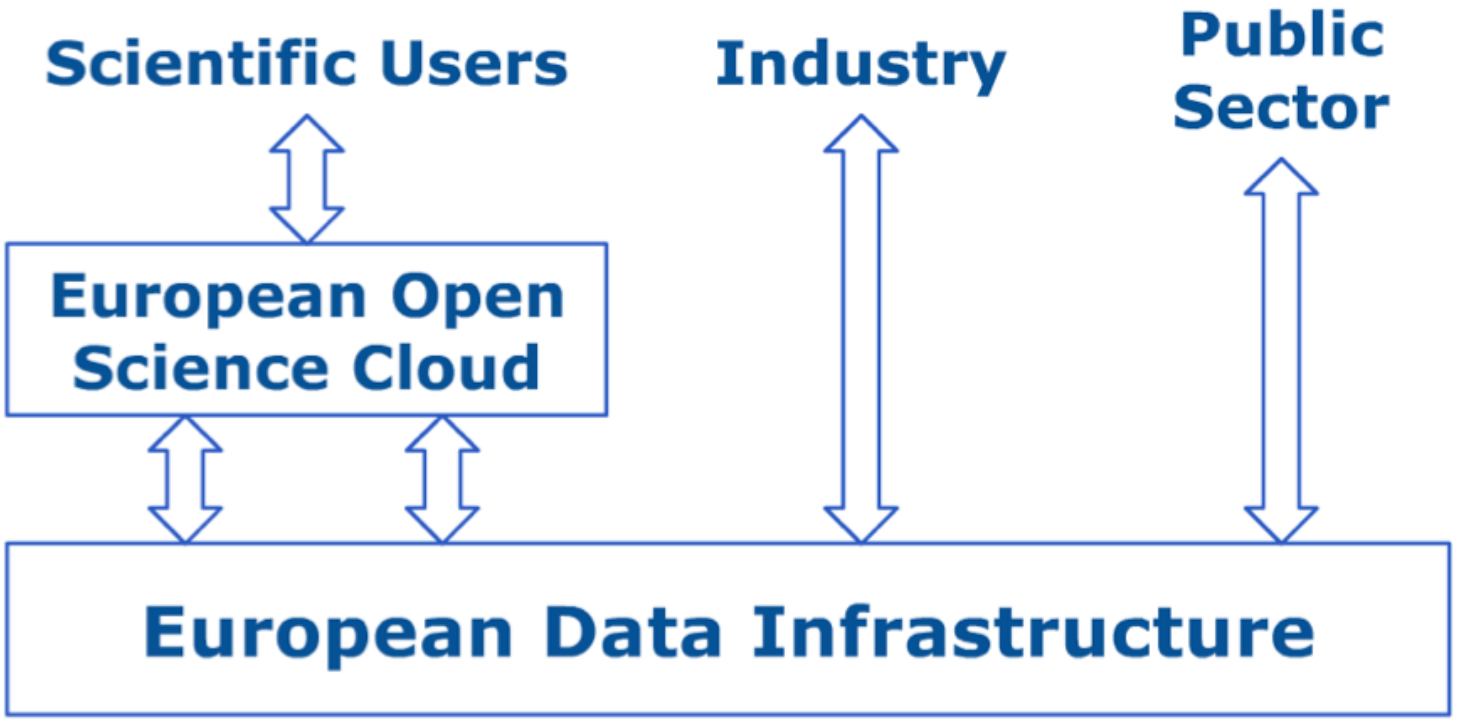
European Open Science Cloud (EOSC)

- Integration and consolidation of e-infrastructures
- Federation of existing research infrastructures and scientific clouds
- Development of cloud-based services for Open Science
- Connection of ESFRIs* to the EOSC

ESFRI roadmap: "The research process is becoming more and more dependent on […] large amounts of data, often acquired in a very short time, and on the availability of effective **on-line analysis** and **high throughput**, **high performance** computing and the strongly emerging shift towards cloud computing."

* ESFRI: European Strategy Forum on Research Infrastructures. E.g. CTA, KM3NeT, Euro-BioImaging, HL-LHC, FAIR, SPIRAL2,SKA, …

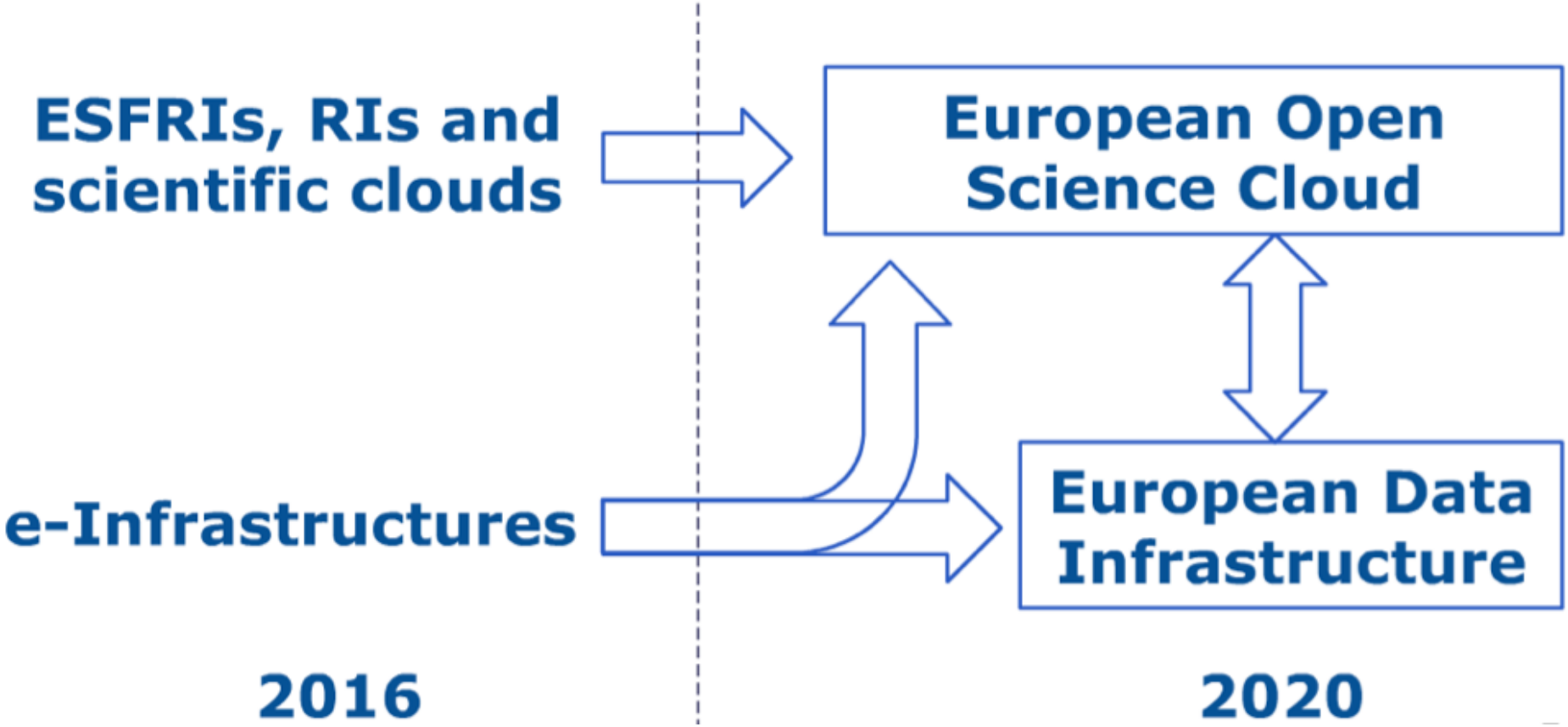
Static View on Year 2020 (over-simplification)



* From: Augusto Burgueno Arjona (Head of Unit e-Infrastructure, DG CONNECT, European Commission)

European Commission

Dynamic View from 2016 to 2020 (over-simplification)



The European Open Science Cloud will encompass data, computing, and networking services for the benefit of the whole scientific community.

Contribution of e-infrastructure (H2020 Excellence in Science):

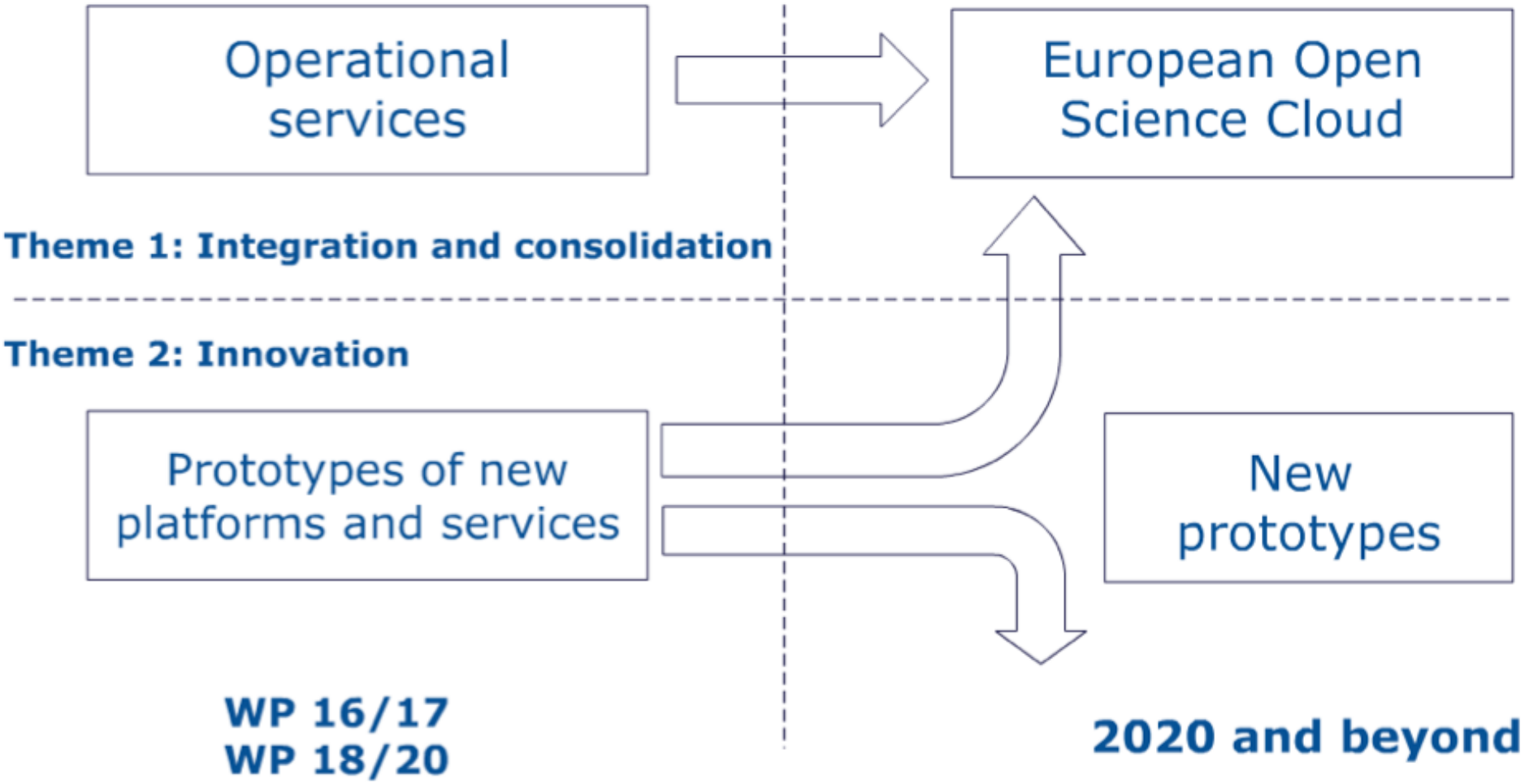
Theme 1:

Integration and consolidation of e-infrastructures

Theme 2:

Prototyping of innovative e-infrastructure services

EOSC
Interplay between Theme 1 and Theme 2



EOSC
Main topics

Requirements for EOSC

- All science data of H2020 projects open
- Raise awareness
- Interoperability and data sharing across disciplines and infrastructures
- Fit-for-purpose pan-European governance structure. Build on existing structures!
- Cloud-based services for Open Science. Find/access data, analytical s/w, HPC resources, expertise
- Enlarge scientific user base

EOSC
Project calls

EINFRA-22-2016: User-driven e-infrastructure innovation (21 M€, March 2016). Service development for

- Societal challenges
- Innovative actors (SMEs)
- Pan-European ID federation
- Support services for Open Science

EINFRASUPP-03-2016: Support to policies and international cooperation for e-infrastructures (7.5 M€, March 2016)

- Square Kilometer Array (SKA)
- Catalogue of services
- Foresight roadmaps

EOSC
Project calls

INFRADEV-04-2016: European Open Science Cloud (10 M€, June 2016)

- Research data generated by RI, such as ESFRI projects
- Head and long-tail science
- Governance

EINFRA-12-2017: Data and distributed computing e-infrastrucutres for Open Science (40 M€, March 2017)

- Integration and consolidation of e-infrastructure services
- EGI, EUDAT

EINFRA-21-2017: Platform-driven e-infrastructure innovation (20 M€, March 2017)

- Service development

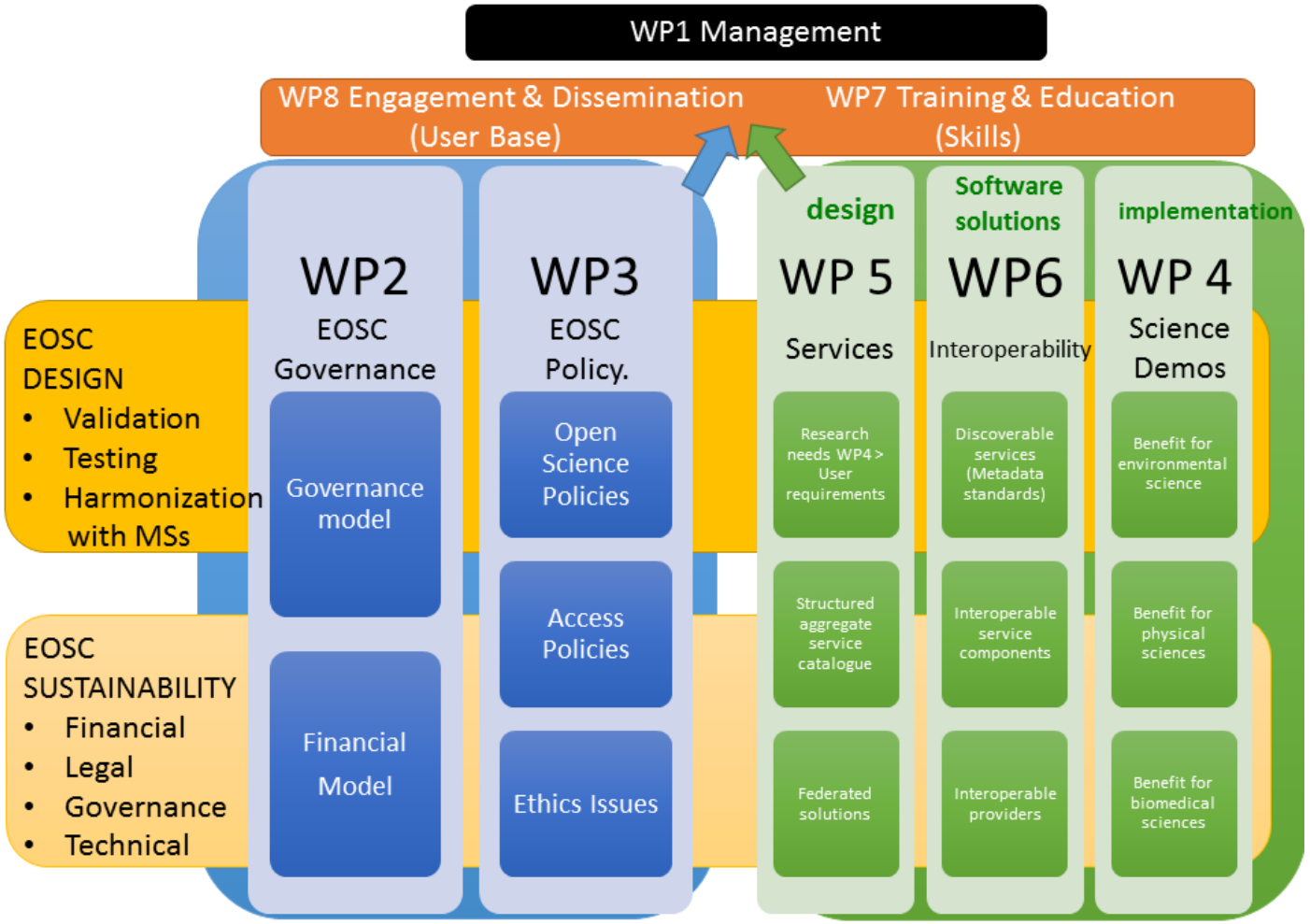
INFRASUPP-02-2017: Policy and international cooperation measures for research infrastructures: support for RDA until (at least) 2020

EOSC Pilot

INFRADEV-04-2016: European Open Science Cloud (10 M€, June 2016)

- 24 months
- Governance framework for the EOCS
- Pilots that integrate services and infras
- Involve a broad range of stake holders
- Reduce fragmentation
- Improve interoperability
- 33 participating institutes, led by STFC (UK)
- France: CNRS, ECRIN (European Clinical Researc infrastructure network), CEA

EOSC Pilot


WP1 Management
WP8 Engagement & Dissemination (User Base)
WP7 Training & Education (Skills)
WP2
EOSC Governance
WP3
EOSC Policy.
design
Software solutions
implementation
WP 5
Services
WP6
Interoperability
WP 4
Science Demos
EOSC DESIGN
• Validation
• Testing
• Harmonization with MSs
Governance model
Open Science Policies
Research needs WP4 > User requirements
Discoverable services (Metadata standards)
Benefit for environmental science
EOSC SUSTAINABILITY
• Financial
• Legal
• Governance
• Technical
Financial Model
Access Policies
Structured aggregate service catalogue
Interoperable service components
Benefit for physical sciences
Ethics Issues
Federated solutions
Interoperable providers
Benefit for biomedical sciences

European Open Science Cloud Pilot – Work package 6

- WP6: Research data and infrastructure interoperability

- Provide architectures, validate solutions, best practices, etc.
- Forum for e-infrastructures
- Define and set up interoperability pilots (involving multiple infras and communities)
- Maturity level of science demonstrators
- Long-term data preservation
- Mechanisms for representation in EOSC
- Matching and mapping of metadata

- Focus: interoperabilité GriCad / IDRIS / CC-IN2P3*

* GriCad: Grenoble Alpe Recherche – Infrastructure de Calcul Intensif et de Données
* IDRIS: Institut du développement et des resources en informatique scientifique
* CC-IN2P3: Centre Calcul IN2P3 Lyon

European Open Science Cloud Perspective

- EOSC pilot kick-off: January 17-19, 2017
- EOSC: access, interoperability, exchange, services, tools
- Next round: coordinated by EGI and EUDAT
- Opportunity: (funded) contribution by France Grilles partners contributing to European services
- We will benefit from Interoperability (data & infra) and open science

European Open Science Cloud References

EOSC in a nutshell (in French) :
http://eur-lex.europa.eu/legal-content/FR/TXT/HTML/?uri=CELEX:52016DC0178&from=en

EC website on EOSC:
http://ec.europa.eu/research/openscience/index.cfm?pg=open-science-cloud

Booklet about e-infrastructures in Europe (introduction):
https://ec.europa.eu/futurium/en/system/files/ged/booklet_infra_web_final.pdf

European context: « Realising the European Open Science Cloud »
First report and recommendations of the Commission High Level Expert Group on the EOSC:
http://bookshop.europa.eu/en/realising-the-european-open-science-cloud-pbKI0116872/;pgid=GSPefJMEtXBSR0dT6jbGakZD0000_3hwTpXa;sid=u8MY6wKj7lsY6lqP2jaGTGCGvBAeOAVwvRA=?CatalogCategoryID=7QwKABstDHwAAAEjK5EY4e5L