Building National Initiatives for Open Science: NI4OS-Europe

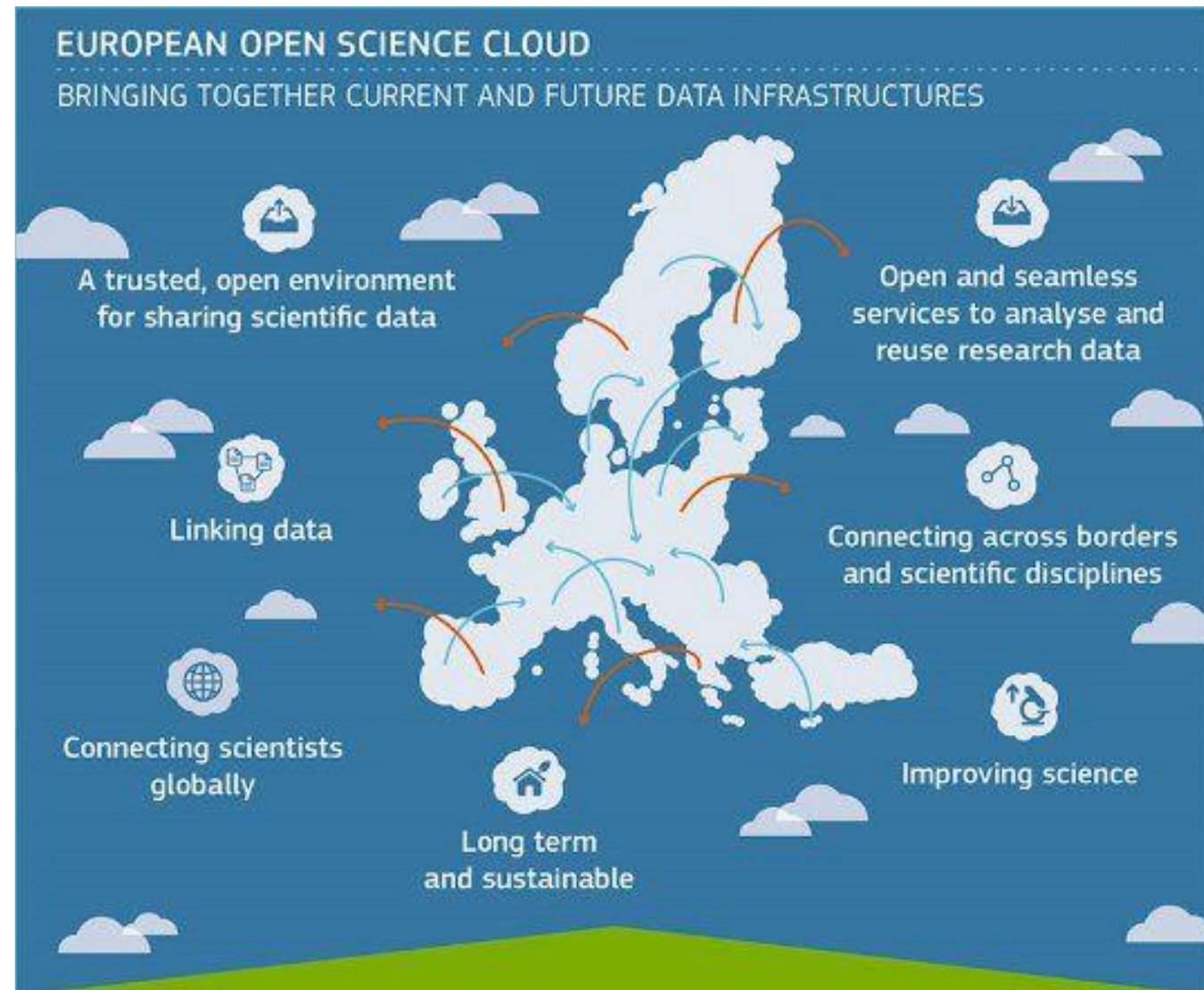ESOF2020 - Euroscience Open Forum, Trieste 5-9 July 2020

Dr. Ognjen Prnjat, Director of European Infrastructures and Projects,

European Open Science Cloud

- The role of the EOSC is to ensure that European scientists reap the full benefits of data-driven science, by offering:

- "1.7 million European researchers and 70 million professionals in science and technology a virtual environment with free at the point of use, open and seamless services for storage, management, analysis and re-use of research data, across borders and scientific disciplines"
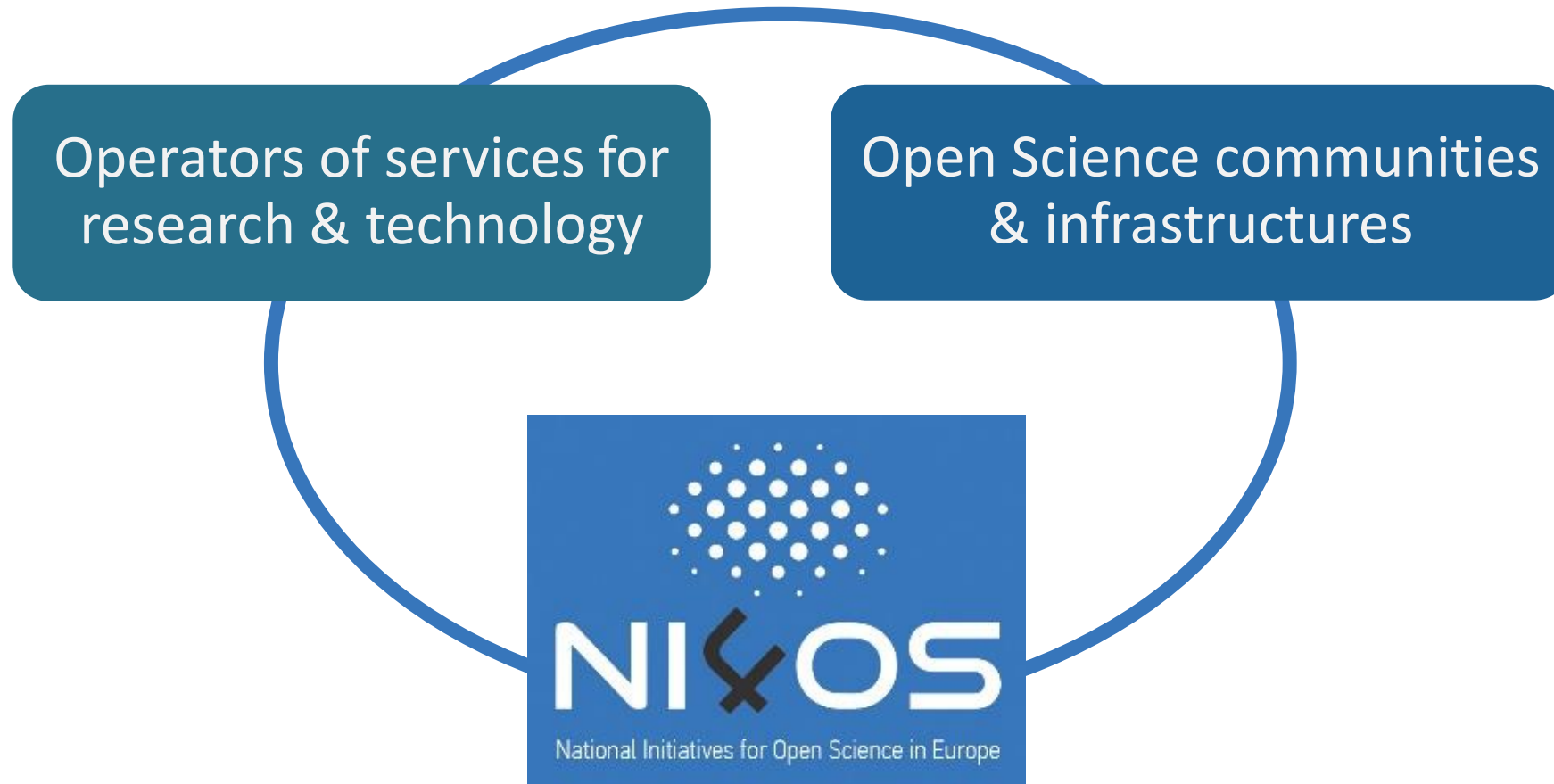
  2016 Communication on the "European Cloud Initiative"

EUROPEAN OPEN SCIENCE CLOUD
BRINGING TOGETHER CURRENT AND FUTURE DATA INFRASTRUCTURES

A trusted, open environment for sharing scientific data

Linking data

Connecting scientists globally

Long term and sustainable

Open and seamless services to analyse and reuse research data

Connecting across borders and scientific disciplines

Improving science

Project administrative summary

☐ Name: National Initiatives for Open Science in Europe

☐ Acronym: NI4OS-Europe (pronounced "NIFOS")

☐ Call: INFRAEOSC-05 (b) Coordination of EOSC-relevant national initiatives across Europe and support to prospective EOSC service providers - Research and Innovation Actions

☐ Grant number: 857645

☐ Amount of EC funding 5,599,475e

☐ 22 Partners from 15 countries

Participating countries

Greece	Hungary	Albania	Republic of Moldova
Cyprus	Romania	Bosnia-Herzegovina	Armenia
Bulgaria	Slovenia	North Macedonia	Georgia
Croatia	Serbia	Montenegro	

Partnership building blocks

Operators of services for research & technology

Open Science communities & infrastructures

Partnership

1	National Infrastructures for Research and Technology SA	GRNET	Greece
2	Athena Research & Innovation Center	ATHENA	Greece
3	The Cyprus Institute	CYI	Cyprus
4	University of Cyprus	UCY	Cyprus
5	Institute of Information and Communication Technologies	IICT	Bulgaria
6	SRCE - University of Zagreb, University Computing Centre	SRCE	Croatia
7	Ruđer Bošković Institute	RBI	Croatia
8	Governmental Agency for IT Development	KIFU	Hungary
9	University of Debrecen	UD	Hungary
10	National Institute for Research and Development	ICI	Romania
11	Executive Agency for Higher Education, Research, Development and Innovation Funding	UEFISCDI	Romania
12	Academic and Research Network of Slovenia	ARNES	Slovenia
13	University of Maribor Library	UMUKM	Slovenia
14	Institute of Physics Belgrade	IPB	Serbia
15	University of Belgrade	UOB	Serbia
16	Albanian Academic Network - Interinstitutional ICT Research Centre	RASH	Albania
17	University of Banja Luka	UNI BL	Bosnia-Herzegovina
18	Ss. Cyril and Methodius University in Skopje	UKIM	Northern Macedonia
19	University of Montenegro, Faculty of Electrical Engineering	UOM	Montenegro
20	Research and Educational Networking Association of Moldova	RENAM	Republic of Moldova
21	Institute for Informatics and Automation of the Academy of Sciences of Armenia	IIAP	Armenia
22	Georgian Research and Educational Networking Association	GRENA	Georgia

Mission
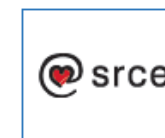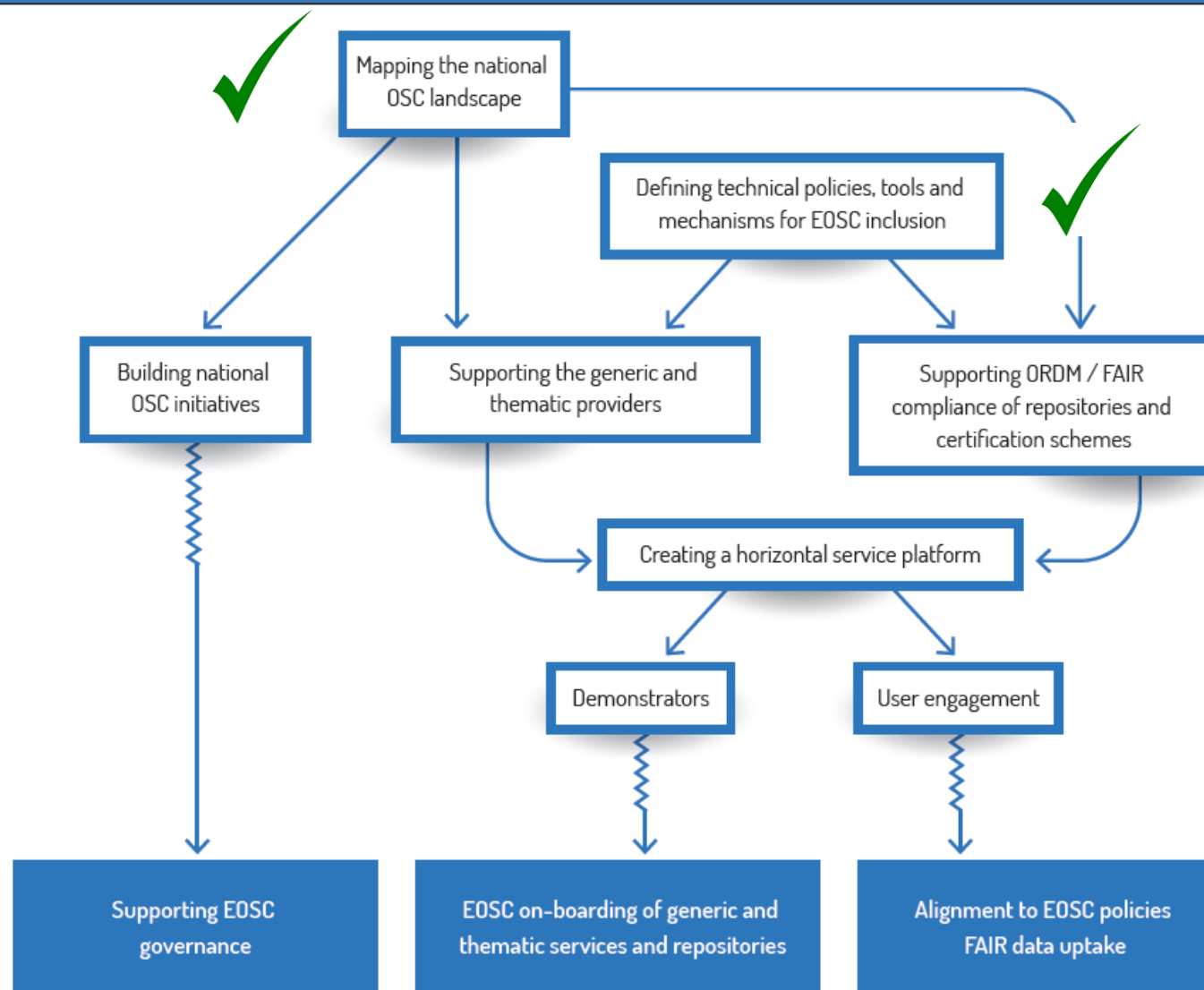
Support
the development and inclusion of the national Open Science Cloud (OSC) initiatives in 15 Member States and Associated Countries in the overall scheme of EOSC governance
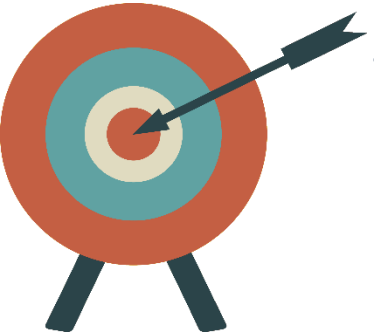
Spread the EOSC and FAIR principles in the community and train it

Provide technical and policy support in on-boarding of the existing and future service providers into EOSC

Methodology

EOSC national initiatives and policy support (WP2)

Strengthen the national Open Science ecosystems, enhance regional representation in the pan-EU initiatives, and support alignment of policies and practices for RRI, Open Science and FAIR data with the EOSC

Support the EOSC Governance structure by forming **15 national OSC initiatives** in partner countries

Support the building of sustainable **pan-European EOSC** governance by engaging the national initiatives

Provide **support and interface** to other EOSC-relevant bodies

Reduce **fragmentation** and promote federation on national level

Prepare the ground for EOSC **on-boarding**

Open Science stakeholders map (WP2)

- Existing OS stakeholders in SEE
- Clustered on the basis of their role in important Open Science functions, i.e. funding, creating, supporting, consuming and facilitating OS.
- Result of NI4OS-Europe landscaping activity
- Supports filtering per country and stakeholder group
- 1010 stakeholders

Service integration and onboarding (WP3, WP5)

❑ **NI4OS-Europe onboarding includes:**

- ❑ Pre-production environment to prepare for the onboarding process (validating readiness and maturity level)
- ❑ Inclusion in the service and portfolio management system / service description template
- ❑ Integration with the federation core services (AAI, monitoring, accounting, etc.)
- ❑ Integration with generic services (HPC, HTC, cloud, storage, etc.)
- ❑ Usage of the thematic services
- ❑ Inclusion of repositories

EUROPEAN OPEN SCIENCE CLOUD

Repositories

Thematic services

Generic services

Federation core

Portfolio management

EOSC generic services (WP5)
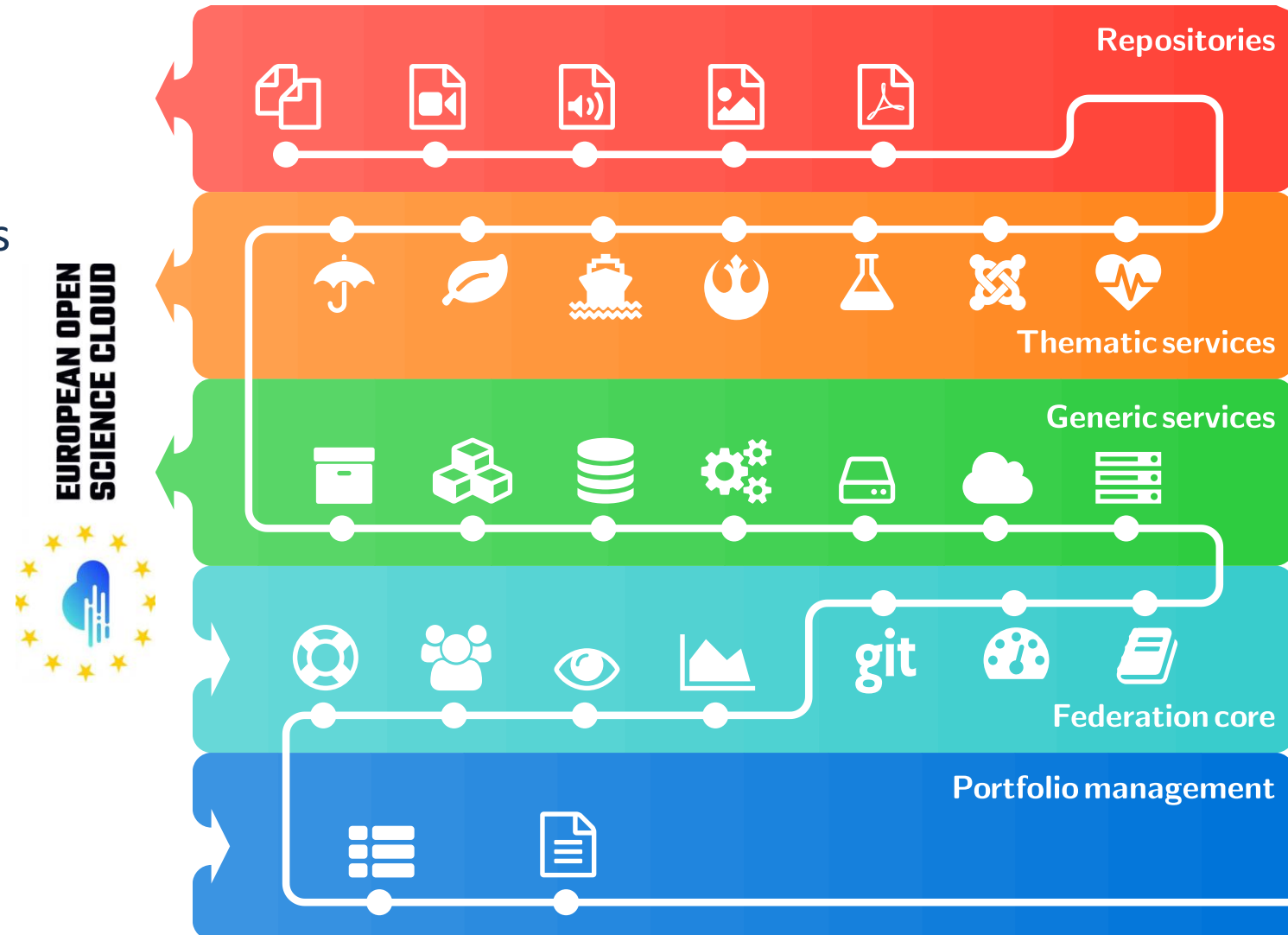
- ❑ HPC Resources
  - ❑ CPU
  - ❑ GPU
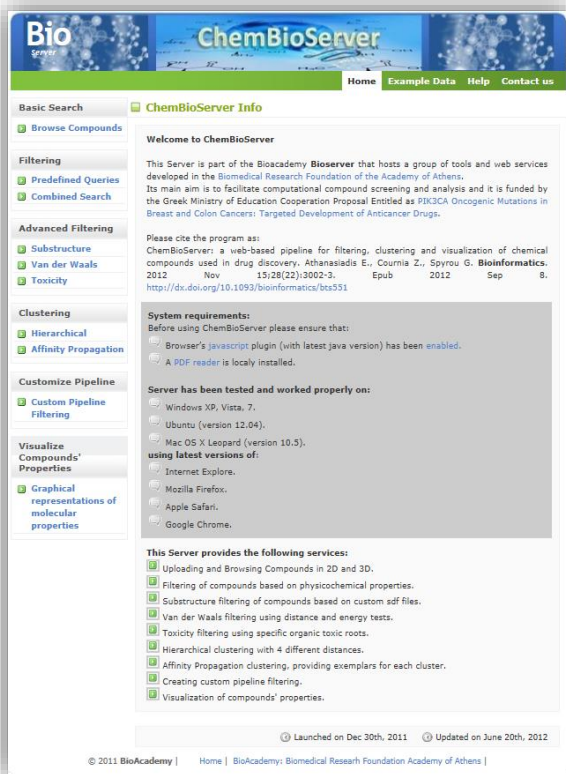 - ❑ Xeon Phi

- ❑ Cloud Virtual Machines

- ❑ Generic Storage

- ❑ Data management services (Archival, Repository, Data discovery, Hadoop on-demand, Data analysis service, Simple storage)
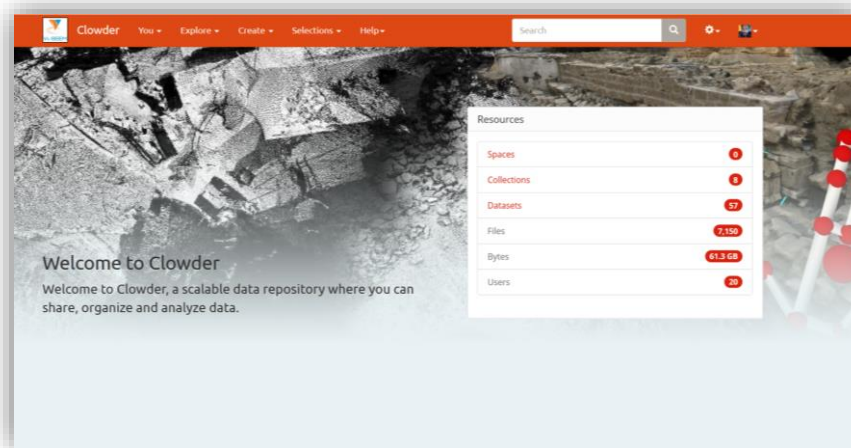
EOSC thematic services: examples (WP5)

ChemBioServer

Service for filtering, clustering and visualization of chemical compounds used in drug discovery
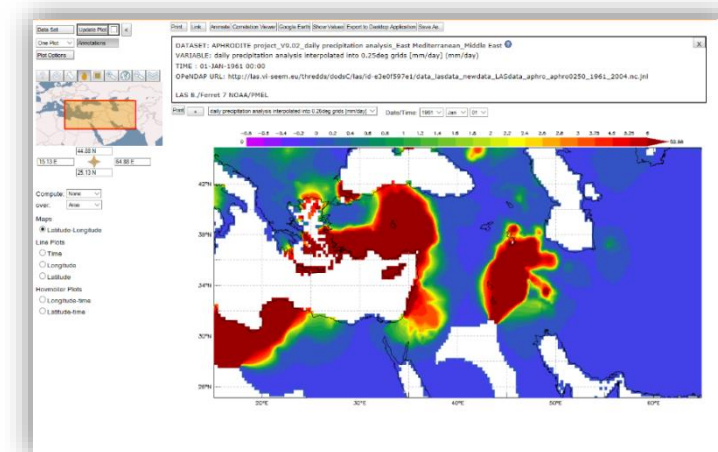

DCH Clowder

A Digital Culture Heritage repository which also offers integrated interactive visualization tools

Live Access Server

A web server providing flexible access to geo-referenced scientific data, offering visualization & post-processing capabilities for climate data

EOSC repositories: actions (WP5)

National

- ❑ Type of repository (CRIS, registry, database, etc)
- ❑ Maturity (in beta vs in production; maintenance, software versions)
- ❑ Types of content/ data (literature, data, OER, digitisations, etc)
- ❑ Services integrated (internal vs external; PIDs etc)
- ❑ Best practices adoption (Open & FAIR, policy, training)

- ❑ Enhance discoverability (indexed by registries)
- ❑ Contribute to OpenAIRE/ EOSC Research Graph (OpenAIRE compatibility; information contextualisation)
- ❑ Enrich collections (Broker)
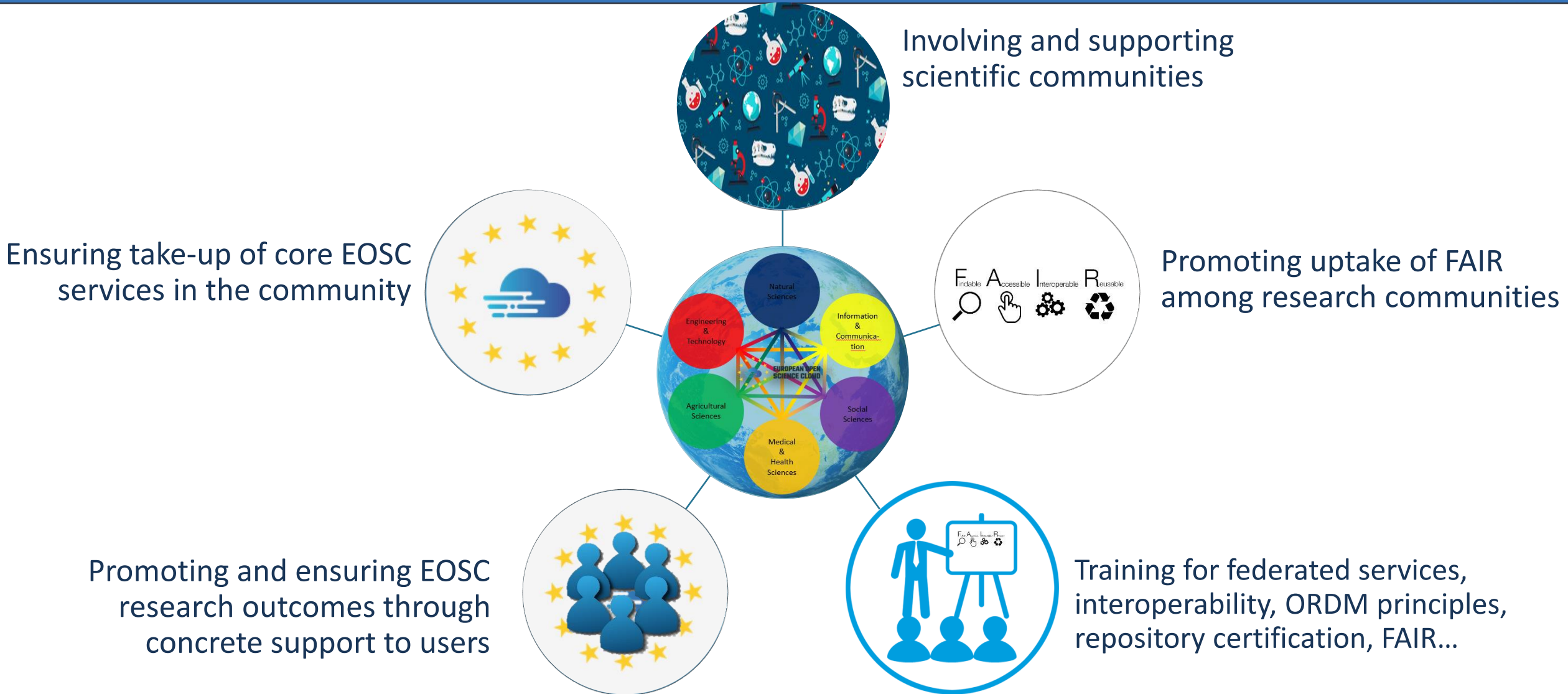- ❑ Certification (in collaboration with FAIRsFAIR)

Institutional

**45 candidates
Certification
NOADs cooperation**

Involving and supporting scientific communities

Promoting uptake of FAIR among research communities

Ensuring take-up of core EOSC services in the community

Training for federated services, interoperability, ORDM principles, repository certification, FAIR…

Promoting and ensuring EOSC research outcomes through concrete support to users

Communication, marketing, sustainability, innovation (WP7)

Communication platform

Website: https://ni4os.eu

Calendar: https://ni4os.eu/calendar

Agenda tool: http://events.ni4os.eu

Social media: 🐦 @NI4OS_eu 📘 @NI4OS

Promotional material

Brochure, posters, presentation, roll up banners, web banners
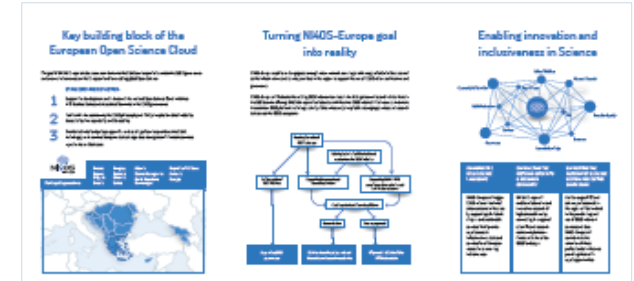
Dissemination events

30 national events
(600 persons targeted)
1 regional event
(200 persons targeted)

Sustainability and innovation

Find solutions for sustainable and long-term impact of project results
Manage knowledge and results so as to create added value for different stakeholders

A continuing effort of integration to ERA

- ❏ e-Infrastructure and related services built over the last 15 years with a number of projects

- ❏ Targeting EU countries in the region, countries on path to accession and ENP
  - ❏ EU members (Greece, Cyprus, Bulgaria, Romania, Hungary, Croatia)
  - ❏ Western Balkans
  - ❏ Eastern Mediterranean, Turkey
 - ❏ Easter Partnership countries (incl. Southern Caucasus)

A strong and wide partnership

- ❑ Main service provider partners
  - ❑ National Research and Education Networks
  - ❑ National Grid, HPC and emerging Cloud Initiatives – consortium of computing/data providers per country
- ❑ OS communities
- ❑ Affiliated "stakeholder" partners
  - ❑ Research institutes, universities, schools, SMEs
- ❑ Policy makers
  - ❑ Ministries, research councils
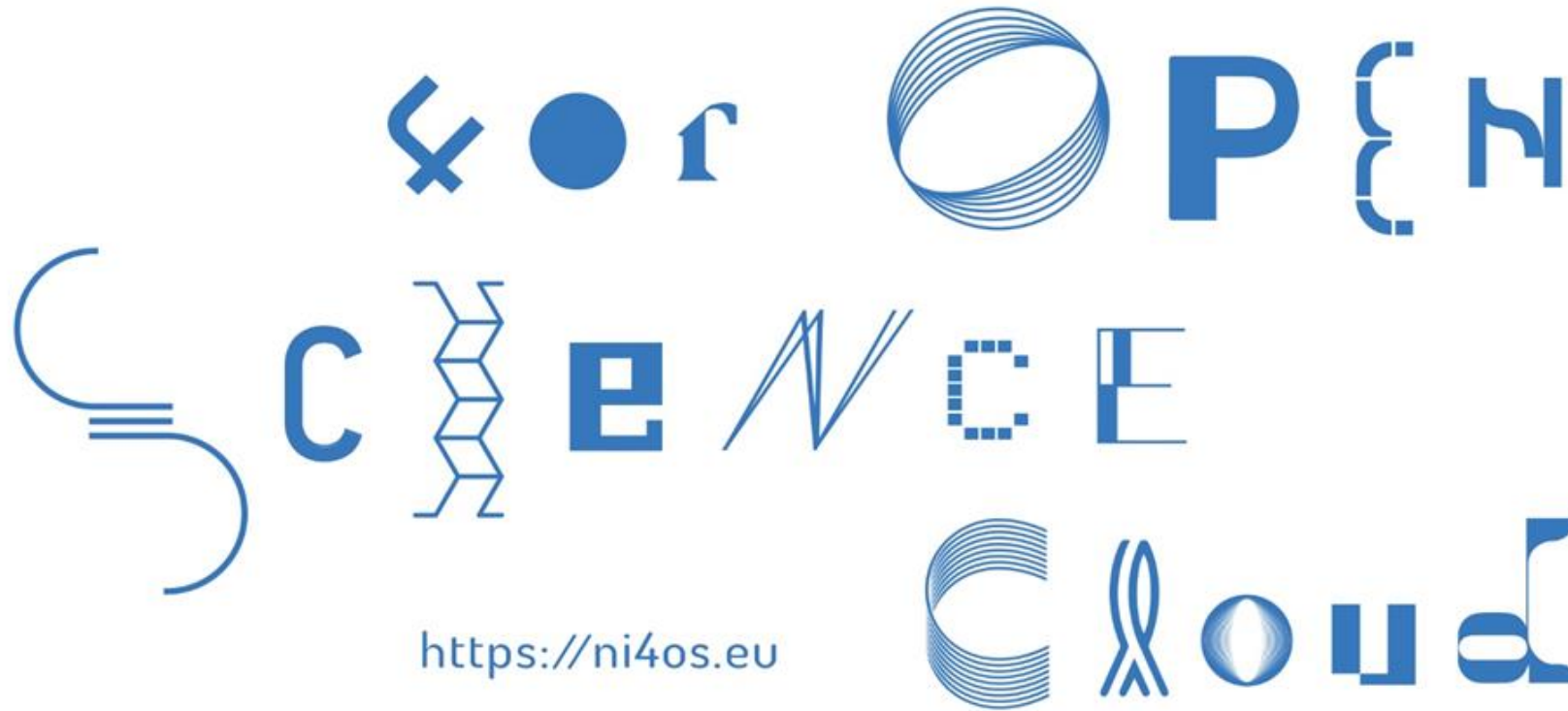
15+ years of collaboration!

Conclusion
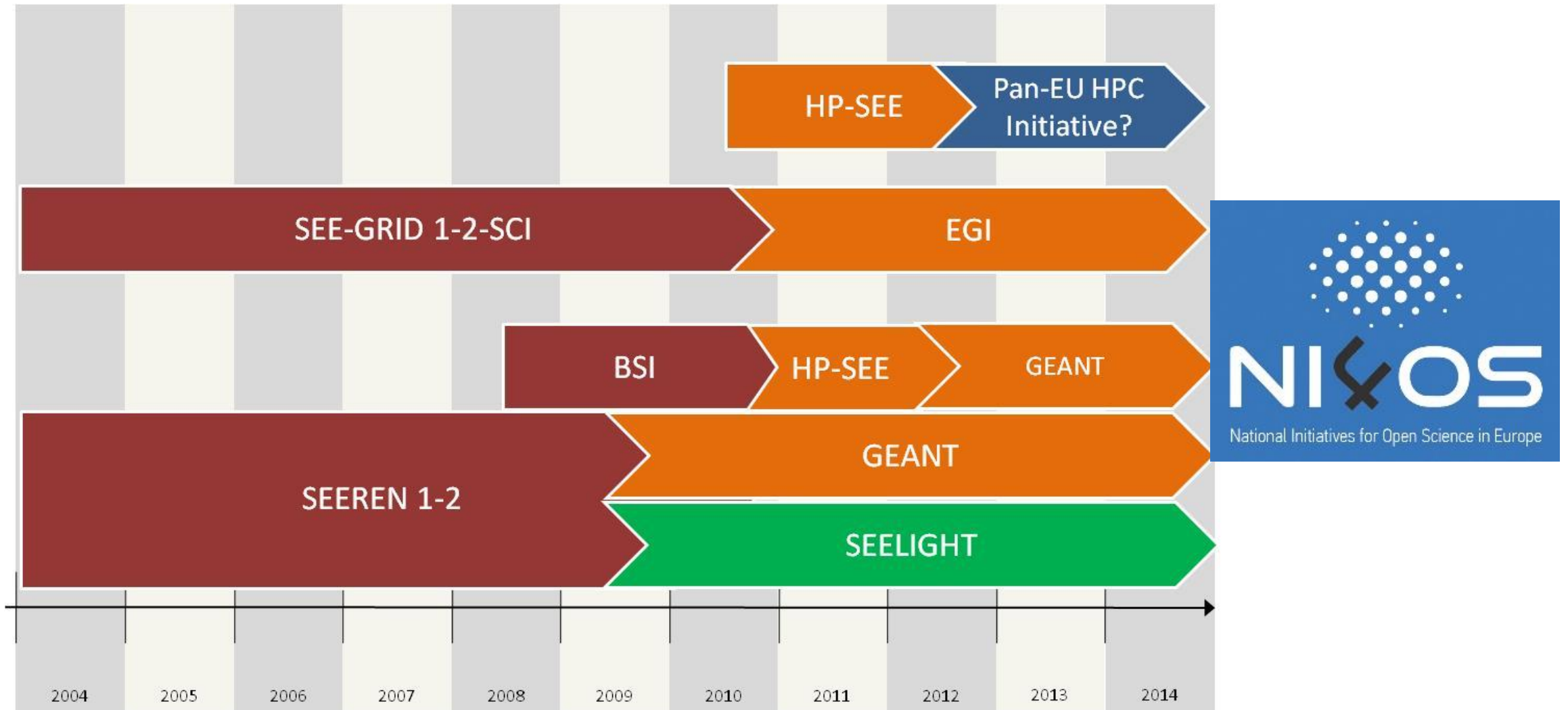
- Regional technical cooperation built a state of the art e-Infrastructure and services, used by cross-border communities

- Now evolving towards European Open Science Cloud

- Close cooperation with governments to secure national support for EOSC e-Infrastructures and buy-in for EC initiatives

- Joint regional collaboration strategies and agendas

- Synergy and complementarity between national, regional and EU actions and funds

- Regional dimension is important to keep it on par with EU efforts, to support countries on the path to EU accession and to prevent brain drain from the region

- National and EC support for the countries of the region to join EOSC initiatives needed

- Continued EC funding for the region (matching the national funding) is crucial to keep the momentum and to prevent 2-speed Europe

Conclusion

- ❑ These initiatives are pieces of the puzzle to sustain regional R&D, R&E, ICT development
  - ❑ Increasing the retention of talented scientists and engineers in the region
  - ❑ Easing the digital divide between the region and rest of EC
  - ❑ Making available the benefits of the Information Society and Open Science for all citizens
  - ❑ Pursuing joint R&D efforts among countries in the region
  - ❑ Regional political stability and cohesiveness

Thanks!

https://ni4os.eu

 @NI4OS_eu   @NI4OS