

SLICES Research Infrastructure

www.slices-ri.eu

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ESFRI Roadmap 2021 Launch Online Event



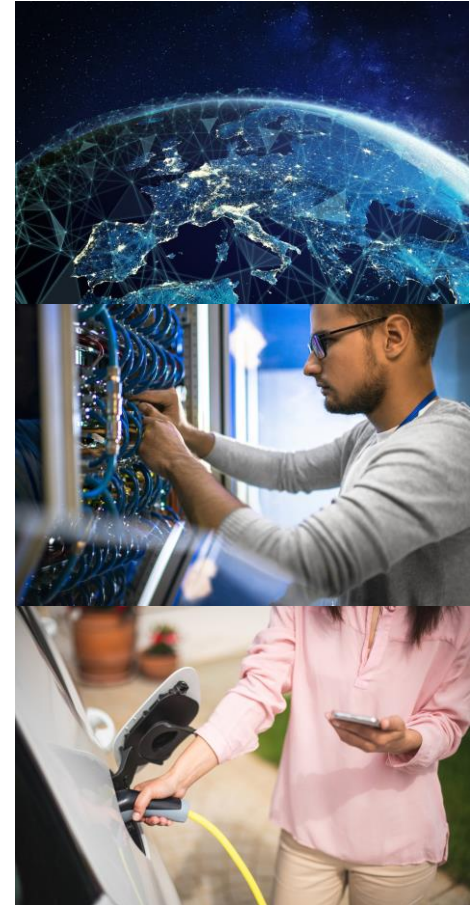
Strategy Report on Research Infrastructures

ROADMAP 2021

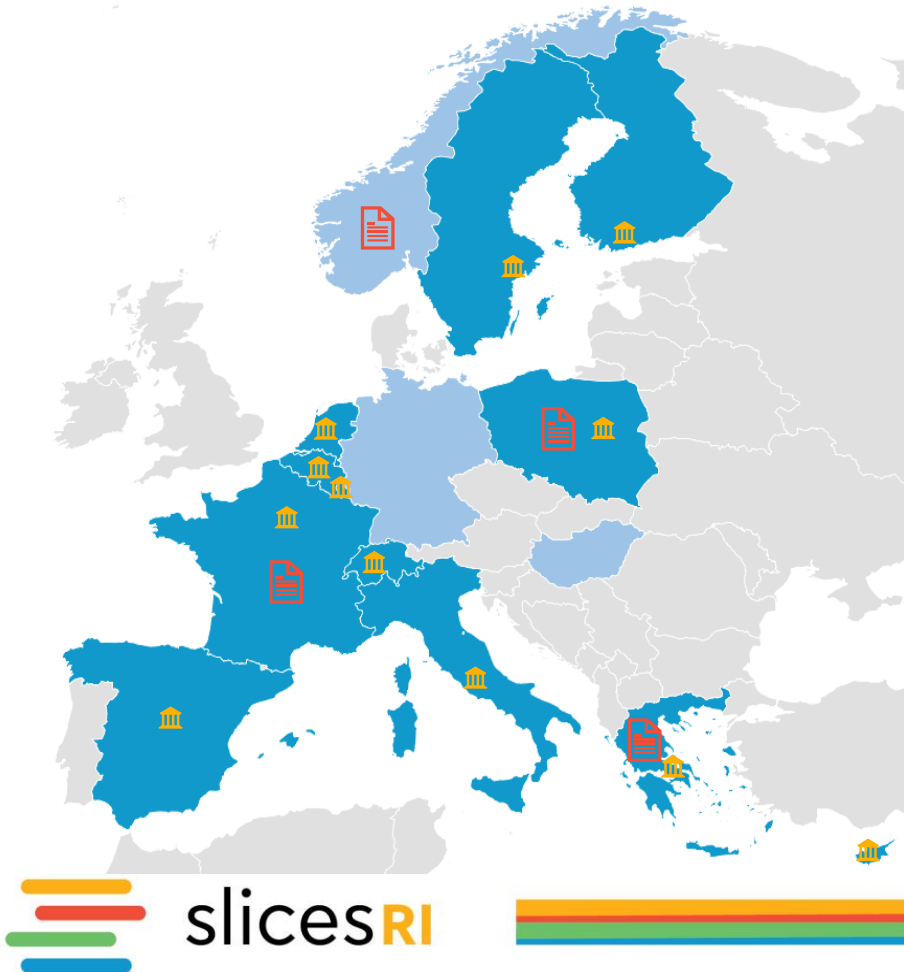
Digital Infrastructures

- *Digital Infrastructures (DIs)* are **at the heart of our society** for our daily life, work, and business.
- DIs are **highly complex**, diverse and sophisticated systems, integrating advanced technologies and software components.
- DIs involve a **large research community** (networking protocols, radio technologies, parallel and distributed computing and in particular cloud and edge-based computing architectures and services).
- Need to **complement other European initiatives** in the Digital sector, and strengthen the position of Europe in the **race started by international competitors and the tech giants**.

SLICES aims to become **the first large-scale European experimental research infrastructure for Digital Sciences**.



SLICES for research on DIs



Initiated in 2017, **25 partners** from 15 countries:

- **12 political support** from National Ministries 🏛️
- included in **4 national roadmaps** 📄

SLICES will enable **scientific excellence and breakthrough** and will **foster innovation in the ICT domain**, strengthening the **impact of European research**, while contributing to European agenda to address **societal challenges**, and in particular, the twin transition to a sustainable and digital economy.

Research topics

- New waveforms, higher frequencies up to THz.
- Spectrum and wireless management.
- Integrated sensing and communication.
- Heterogeneous radio management.

ADVANCED WIRELESS NETWORKING



- Advanced protocols and architectures (virtualization, softwarization, programmability).
- AI applied to infrastructure operation and optimization.
- Generation of data to train algorithms.
- Distribution of intelligence into (and beyond) the Edge of the network.

SMART INFRASTRUCTURE OPERATION AND MANAGEMENT



- Fog/Edge/cloud hyper converged infras
- Software component deployment.
- Distributed resource management & microservices.
- Geo-distributed data management.
- Federated deep learning.
- Datacentres infras for distributed systems, appli. and software stacks.

DESIGN & VALIDATION OF NEW DIS AND HYPER-CONVERGED INFRAS



- New challenges arising from the verticals and the ubiquitous networks.
- Interoperability, composable infrastructure services on-demand (RI as a Service).
- Seamless user experiences across technologies and domains.

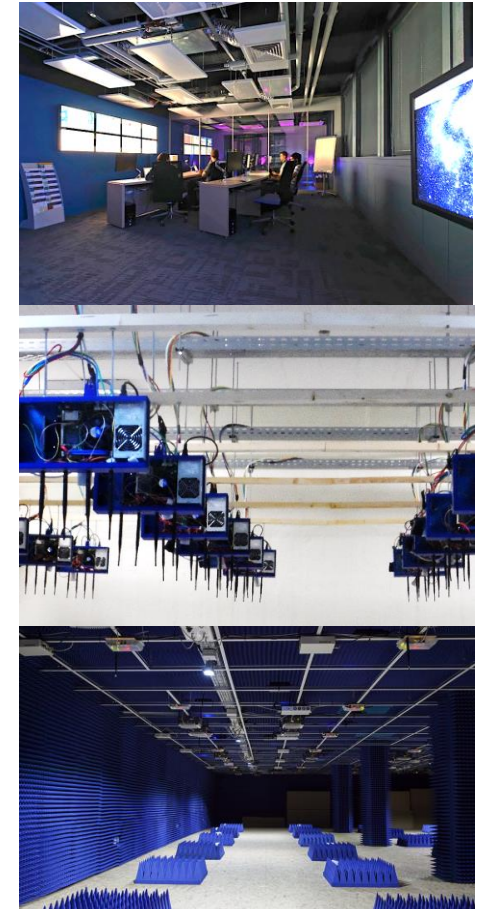
ADVANCED FUNCTIONALITIES



ENERGY EFFICIENCY AND CARBON FOOTPRINT



SECURITY AND PRIVACY



Thank you

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On behalf of SLICES consortium

