

Bevezetés a SLICES ESFRI programba

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SZTAKI

Prepared with the help of the SLICES
community



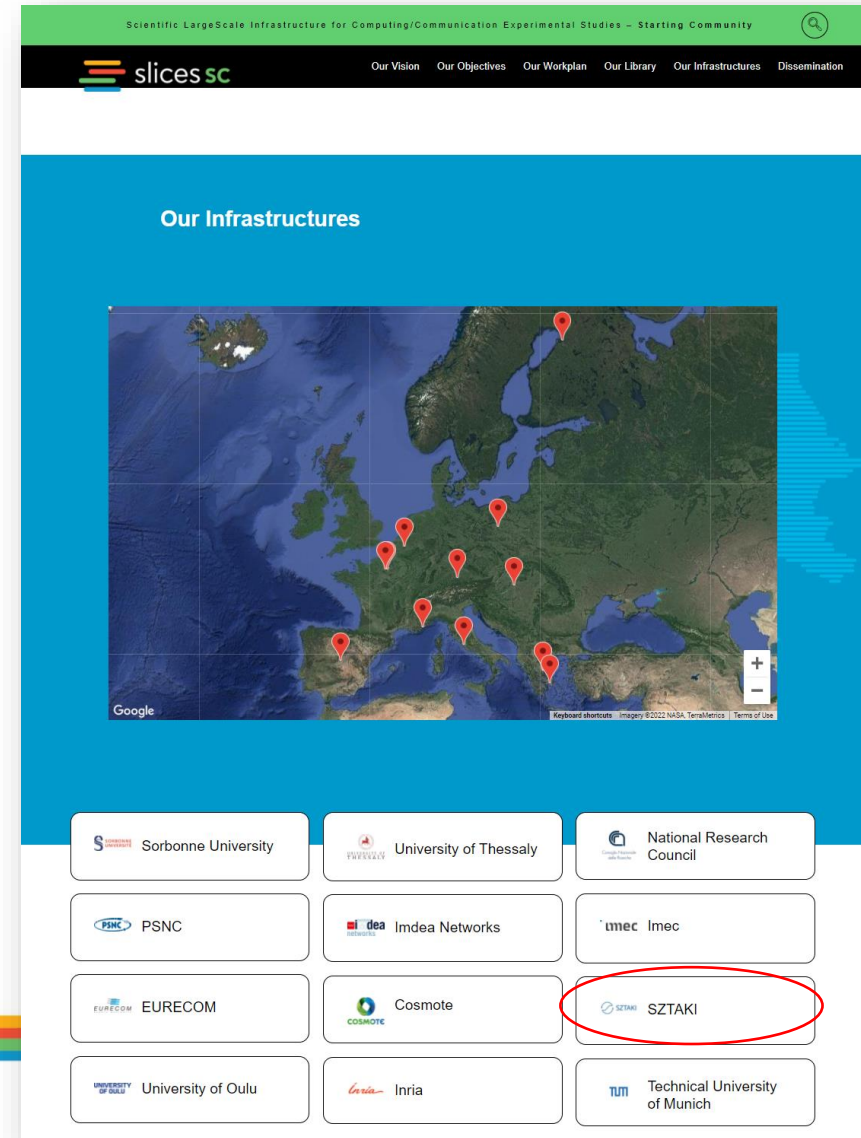
The SLICES ESFRI program

- What is ESFRI?
- ESFRI, **the European Strategy Forum on Research Infrastructures**, is a strategic instrument to develop the scientific integration of Europe and to strengthen its international outreach.
- **SLICES**
European Scientific Large-Scale Infrastructure for
Computing/Communication Experimental Studies
- **SLICES is the first ESFRI program in the field of information technology**



ESFRI SLICES program

- Az ELKH (SZTAKI) Cloud 2020-ban felkerült a ***Kutatási Infrastruktúrák Európai Stratégiai Fórumának*** (ESFRI) legújabb, 25 éves időtávot átölelő roadmap-jére,
- hogy a SLICES kezdeményezésben
- a digitális tudományokhoz biztosítson páneurópai, kísérleti célú infrastruktúrát
- a jövő Internetének kidolgozásához.

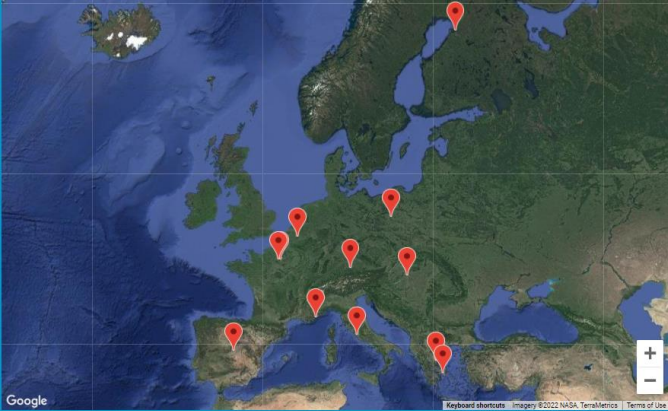














Scientific LargeScale Infrastructure for Computing/Communication Experimental Studies - Starting Community

slices sc

Our Vision Our Objectives Our Workplan Our Library Our Infrastructures Dissemination

Our Infrastructures



 Sorbonne University	 University of Thessaly	 National Research Council
 PSNC	 Imdea Networks	 Imec
 EURECOM	 Cosmote	 SZTAKI
 University of Oulu	 Inria	 Technical University of Munich



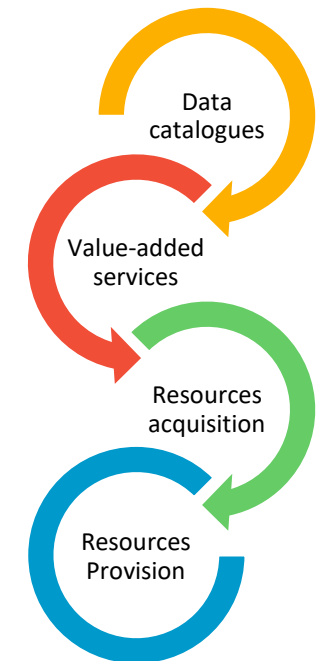
→ <http://slices-sc.eu>



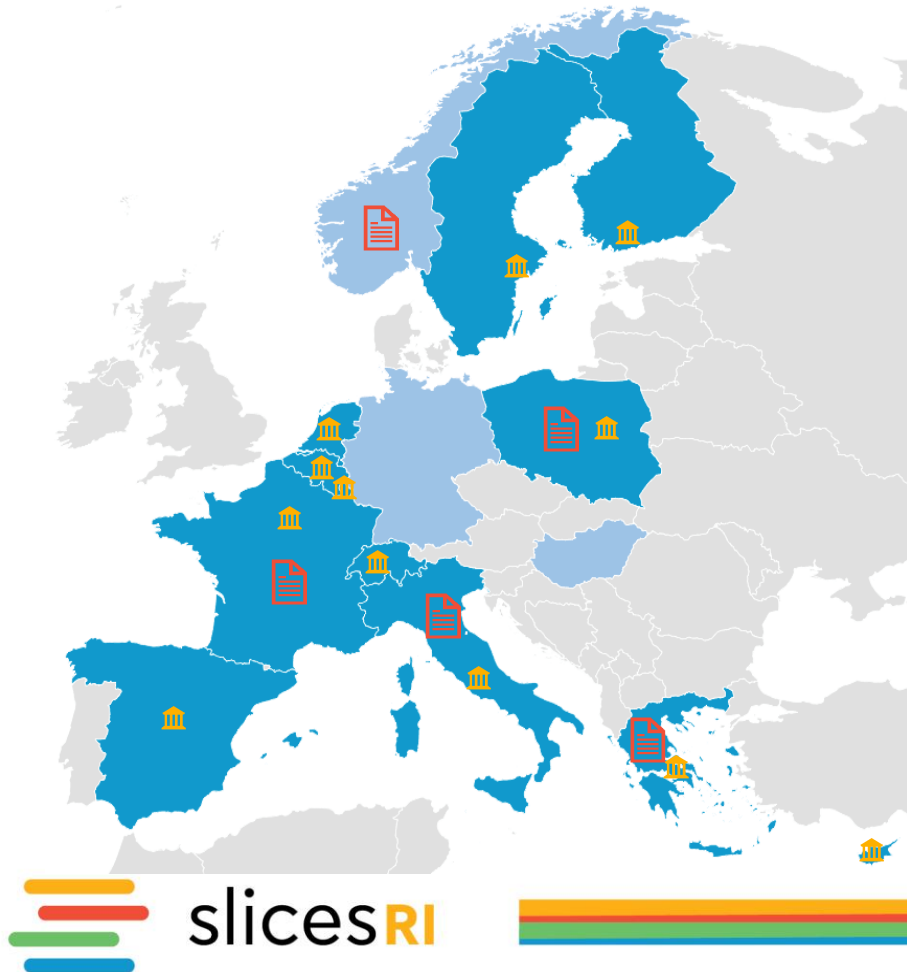
SLICES dióhéjban

- 2017-ben indult program
- A **SLICES** egy **RI** (kutatási infrastruktúra) azzal a céllal, hogy az akadémiai és ipari kutatói közösséget támogassa a **következő generációs digitális infrastruktúrák** tervezésében, fejlesztésében és megvalósításában:
 - A **SLICES-RI** egy **elosztott RI**, ami számos specializált eszközt biztosít a digitális infrastruktúrák kihívást jelentő kutatási területein, a **hálózati, számítási és tárolási erőforrások** országok, és telephelyek közötti aggregálásával
 - **Tudományos területek:** hálózati protokollok, rádiótechnológiák, szolgáltatások, adatgyűjtés, párhuzamos és elosztott számítástechnika és különösen felhőalapú és edge computing alapú számítástechnikai architektúrák és szolgáltatások

what we offer



SLICES a digitális infrastruktúra kutatások támogatására



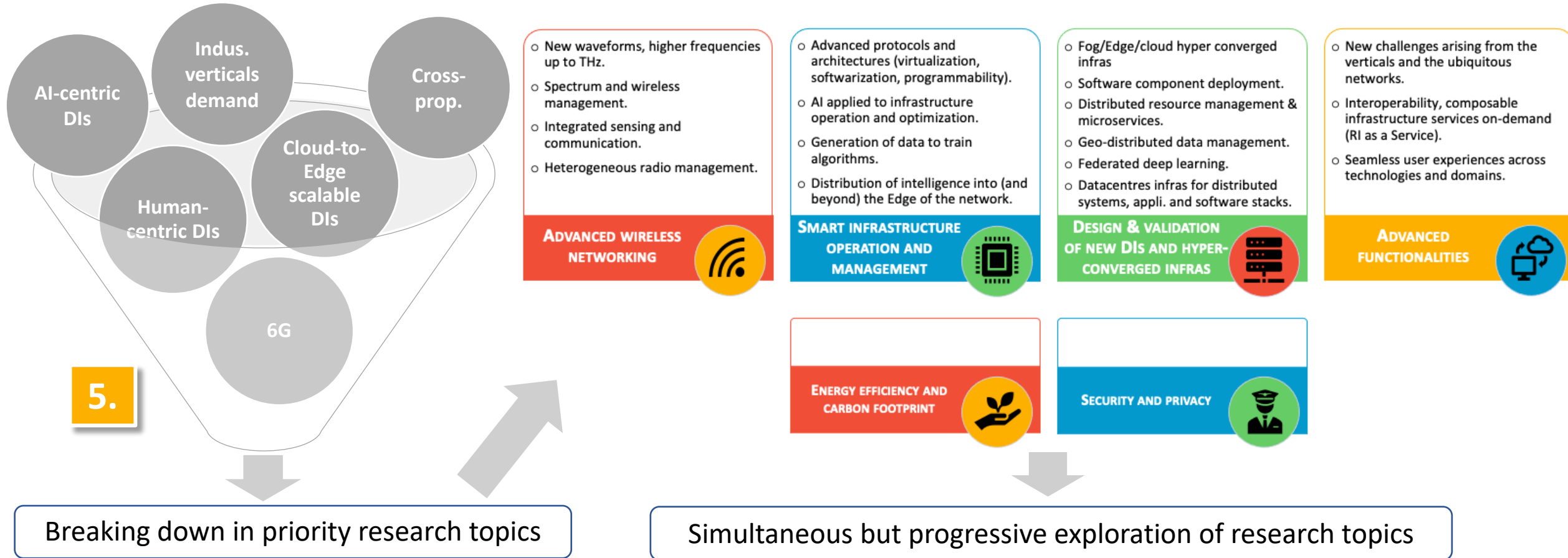
25 partner 15 országból:

- **12 politikai támogatás** Nemzeti Minisztériumokból
- **5 nemzeti roadmap**



Prioritisation of research topics

What's the methodology behind it?



Prioritisation of 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

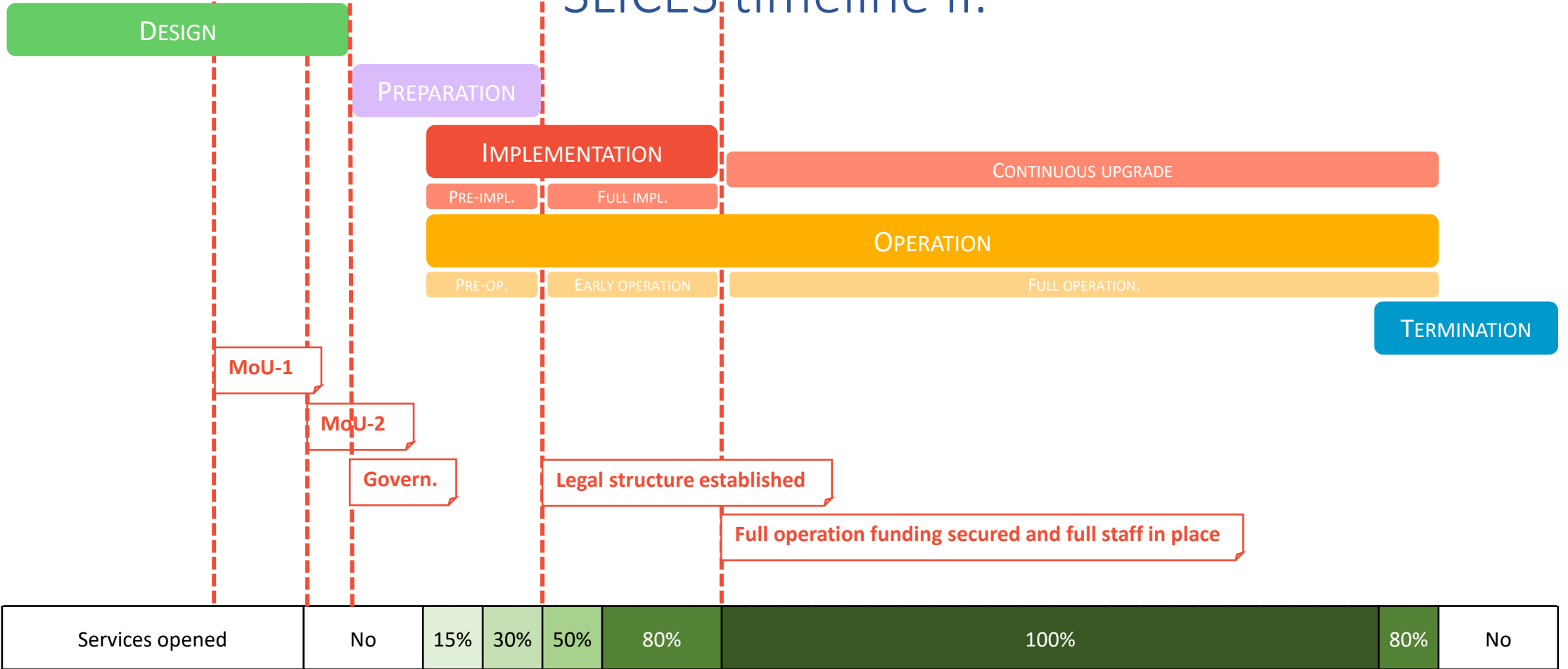


SECURITY AND PRIVACY



2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042		
S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2

SLICES timeline II.



links



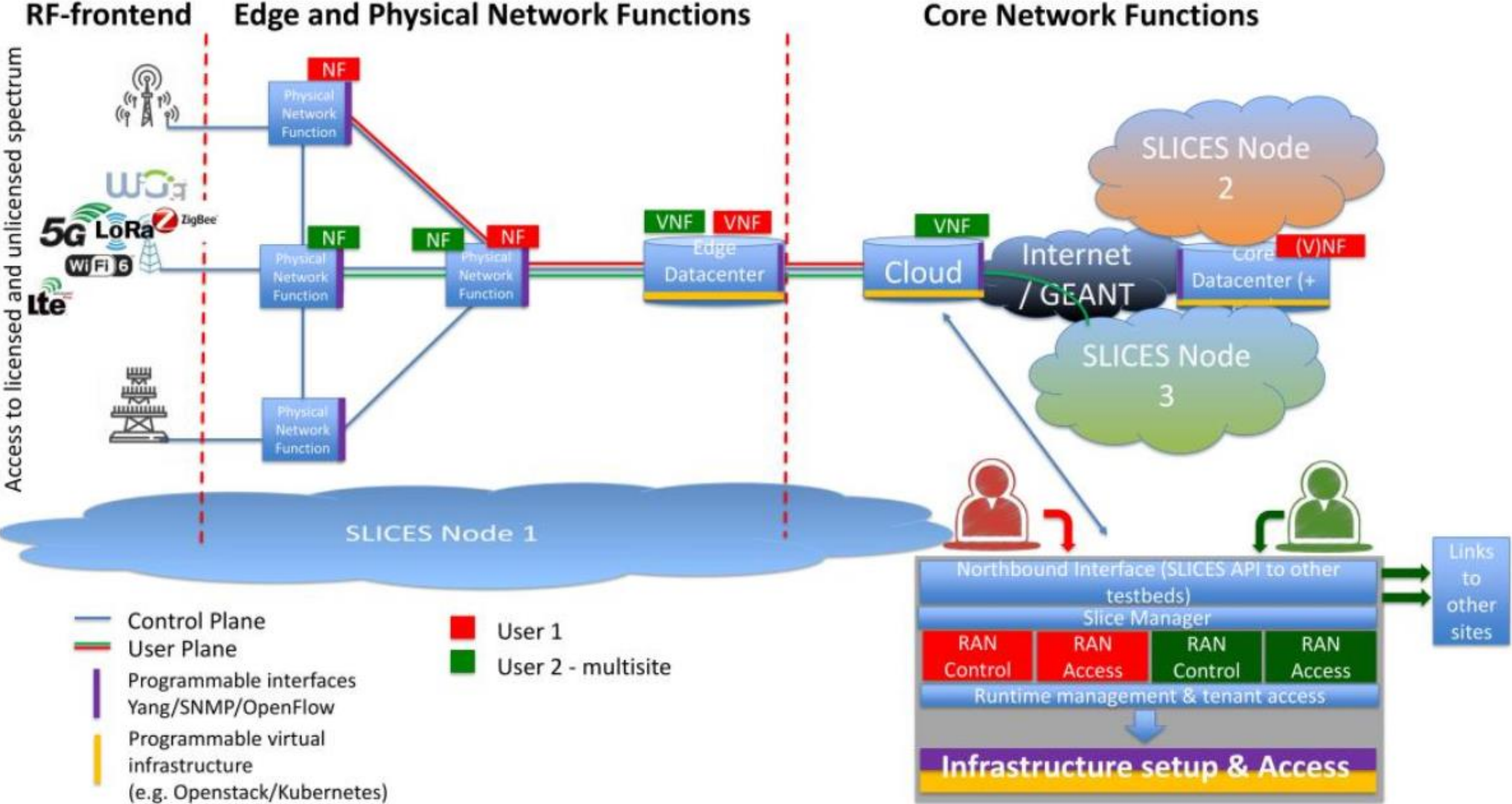


Figure 1: SLICES Architecture Layout Overview



SLICES Roadshow – Hungary – 26/1/2023















what is Slices-SC?

Today we are experiencing the digital transformation happening with an unprecedented pace, with the community constantly researching on new solutions to support this transformation with ample computational power and connectivity. Towards addressing such research efforts, Research Infrastructure (RI) specific to addressing Digital Sciences research efforts have been deployed worldwide, towards trying to address key aspects contrary to off-theshelf commercial infrastructure:

- 1) Full control over the parameters of an experiment,
- 2) Repeatable experiments regardless of the physical infrastructure,
- 3) Valid experimental results, which are easy to cross-reference and replicate.

As such, several RIs have emerged, offering experimentation services with bleeding edge resources, that otherwise are only offered only in industrial R&D laboratories, with limited functionality. Towards combating these issues. SLICES Research

SLICES Ris

 Sorbonne University	 University of Thessaly	 National Research Council
 PSNC	 Imdea Networks	 Imec
 EURECOM	 Cosmote	 SZTAKI
 University of Oulu	 Inria	 Technical University of Munich

Thank you

www.slices-ri.eu

On behalf of SLICES consortium



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www.slices-ri.eu

SLICES-RI - February 22, 2022