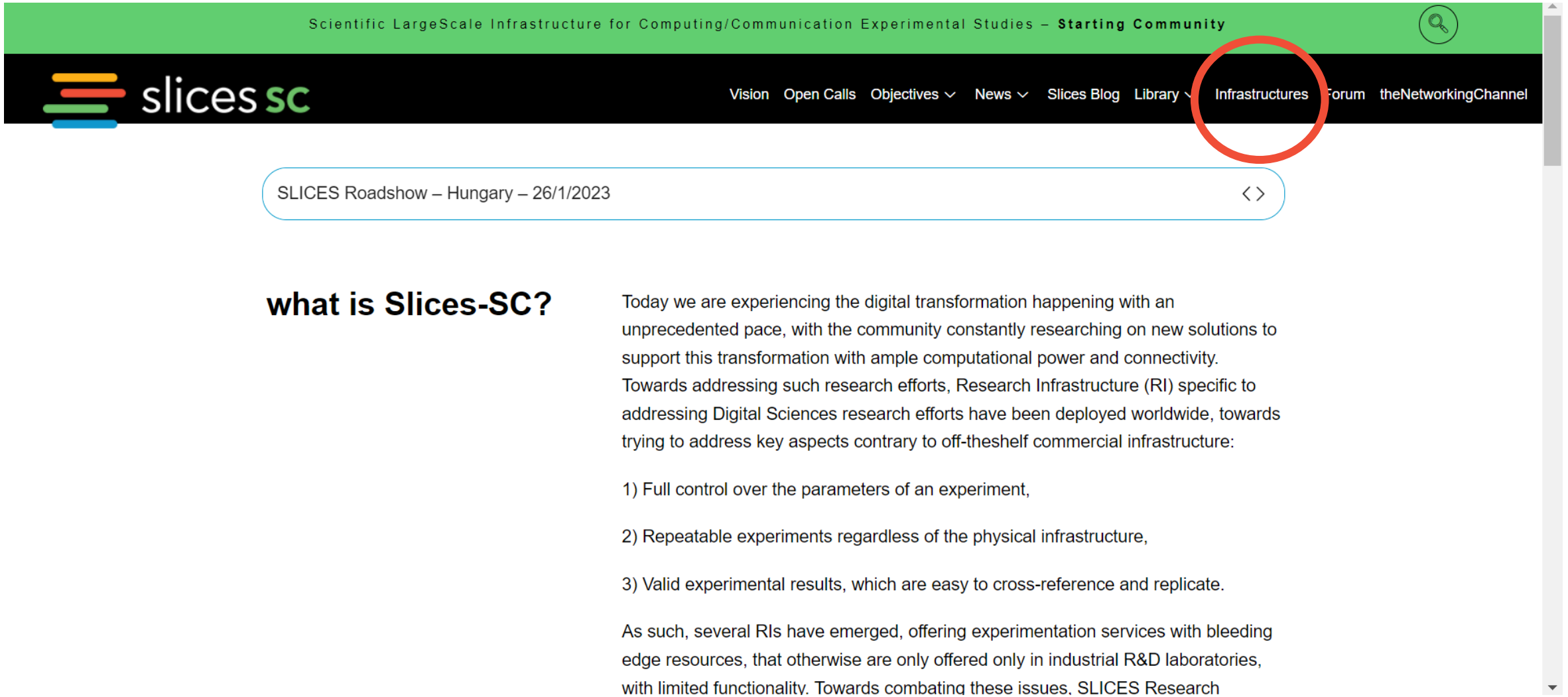
SLICES-SC web page: https://slices-sc.eu/



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Imec IDLab iLab.t infrastructure

The node at iMEC exists out of 5 testbeds at two locations in Belgium (Gent and Antwerpen) (https://doc.ilabt.imec.be):

- Virtual wall (Gent): to perform wired networking, cloud, distributed software, service backends and scalability experiments. 550+ installed servers.
- w-iLab.t (Gent): pseudo shielded environment for wireless and IoT research with over 150 wireless nodes (fixed and mobile), including software defined radios
- Officelab (Gent): a real office environment for wireless and IoT research with over 110 embedded PCs spread over the building.
- GPULab (Gent and Antwerpen): testbed with 125+ GPUs with over 570.000+ cuda cores and 1.8TB+ GPU RAM for AI research and everything which needs GPUs
- CityLab (Antwerpen): testbed for wireless networking experimentation in the unlicensed spectrum in the city of Antwerp. 50 nodes are spread over an area of 1 square km.

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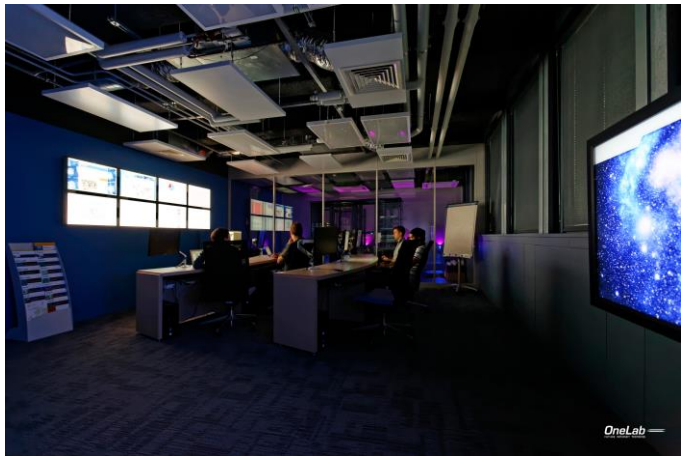
OneLab Cloud Infrastructure

- The facility is located in the campus Sorbonne Université at Paris
- Provides bare-metal, cloud compute and storage resources to run Cloud-based experiments
- Serge Fdida serge.fdida@lip6.fr



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CloudLab: Paris Cluster

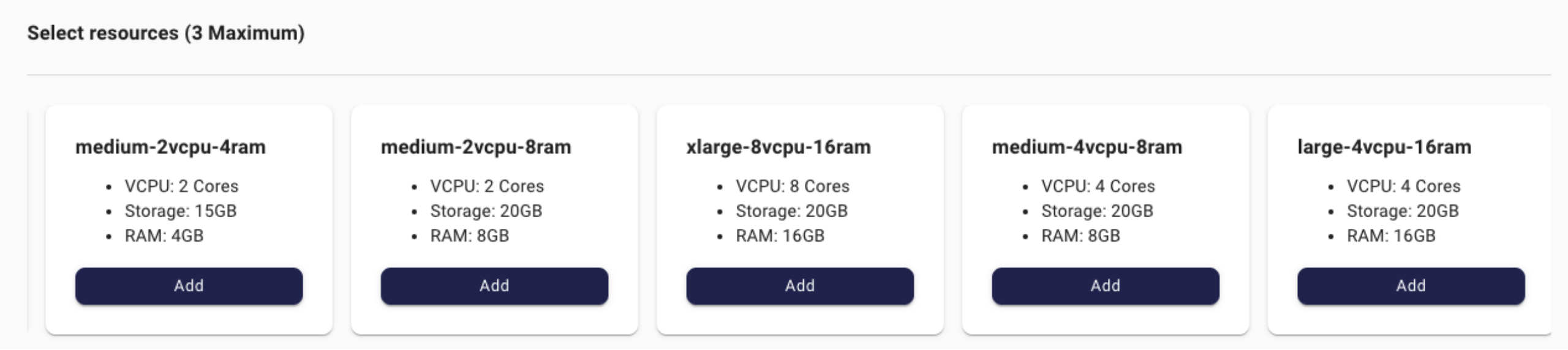
- Collaboration with the NSF's CloudLab US project
- Related to the development and deployment of Cloud Software Stack components and services
- Control over compute, storage and network resources and visibility all the way down to the bare metal
- Access all CloudLab sites infrastructure using a OneLab Credential

OpenStack Cloud Automation

- Automate the provisioning and configuration
- Provides customizable Virtual Servers on the OpenStack Cloud
- Composed of 3 controller nodes and 9 compute nodes, it provides over hundred of compute cores to experimenters.
- Connected to a 10G SFP+ network switch

Accessibility

- The resources are available in our portal
- Option to automate the resources configuration with ansible-playbooks supports
- Access via SSH directly or via a gateway



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The offer of the Polish Node for academia, industry and SMEs

Bartosz Belter bartosz.belter@man.poznan.pl

Poznan Supercomputing and Networking Center

SLICES-PL: the Polish Node of SLICES-RI

- The target RI will be based on projects from National Roadmap of Research Infrastructures in Poland:
  - **PIONIER-LAB**: National Platform for Integration of Research Infrastructures for Innovation Ecosystem
  - **5G-LAB Polska**: National Laboratory for Advanced 5G Research
  - **NLPQT**: National Laboratory for Photonics and Quantum Technologies
- All projects are currently in progress. Infrastructures in operation from Jan 2024.

PIONIER LAB
NATIONAL PLATFORM FOR INTEGRATION OF RESEARCH INFRASTRUCTURES FOR INNOVATION ECOSYSTEM

5G LAB POLSKA

NLPQT
NATIONAL LABORATORY FOR PHOTONICS & QUANTUM TECHNOLOGIES

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SLICES-PL: the Polish Node of SLICES-RI

- Currently, only limited research services and resources are available for the 2nd Open Call for Experiments in SLICES-SC:
  - Cloud services
  - Multimedia services
  - Optical and measurement equipment
- At this moment the only API for accessing resources and services is email-based.
- All requests with the description of the experiment and required resources and services should be directed to the manager of the SLICES node (Bartosz Belter bartosz.belter@man.poznan.pl) and the internal mailing list at PSNC (slices@man.poznan.pl).

SLICES-PL: the Polish Node of SLICES-RI

- **Cloud services**
  - Total: 512 vCPU, 2 TB RAM, 40 TB of disk space
  - Single reservation max 16 vCPU, 64 GB RAM, 1,25 TB of disk space
- **Multimedia services**
  - 8K Visualization Lab. A 6-meter-wide screen with native 8K resolution.
  - 8K recording set, consisting of 4 SONY F65 cameras with the ability to record and live stream of 8K signal.
  - Motion-capture equipment.
  - 3D scanning station.
  - High-order ambisonic sound equipment.

Selected examples of the use of SLICES Research Infrastructure by SMEs:

- Distributed Deep Learning Platform: https://www.fed4fire.eu/demo-stories/oc1/ddlp/
- Realtime ultrahigh definition medical collaboration platform: https://www.fed4fire.eu/demo-stories/oc1/ubimed4k/

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Open5GLab

- Open5GLab at EURECOM is one of 3 experimental 5G sites in France.
- Construction began in July 2018 and 5G experimentation is now available.
- The site is interconnected with similar sites in Europe in the 5G-EVE network.
- Open5gLab provides experimental 5G services including so-called Enhanced Mobile Broadband (eMBB) and massive machine-type communications
- It is the main experimental playground for OpenAirInterface (OAI) and Mosaic-5g (M5G) software packages.
- The site's cluster computing resource makes use of RedHat's OpenShift 4.2 Kubernetes container platform.
- The cluster is used for radio-access, core network and mobile-edge functions.
- Some bare-metal nodes with in-lab 5G-capable radio devices can be used with a Kubernetes cluster.

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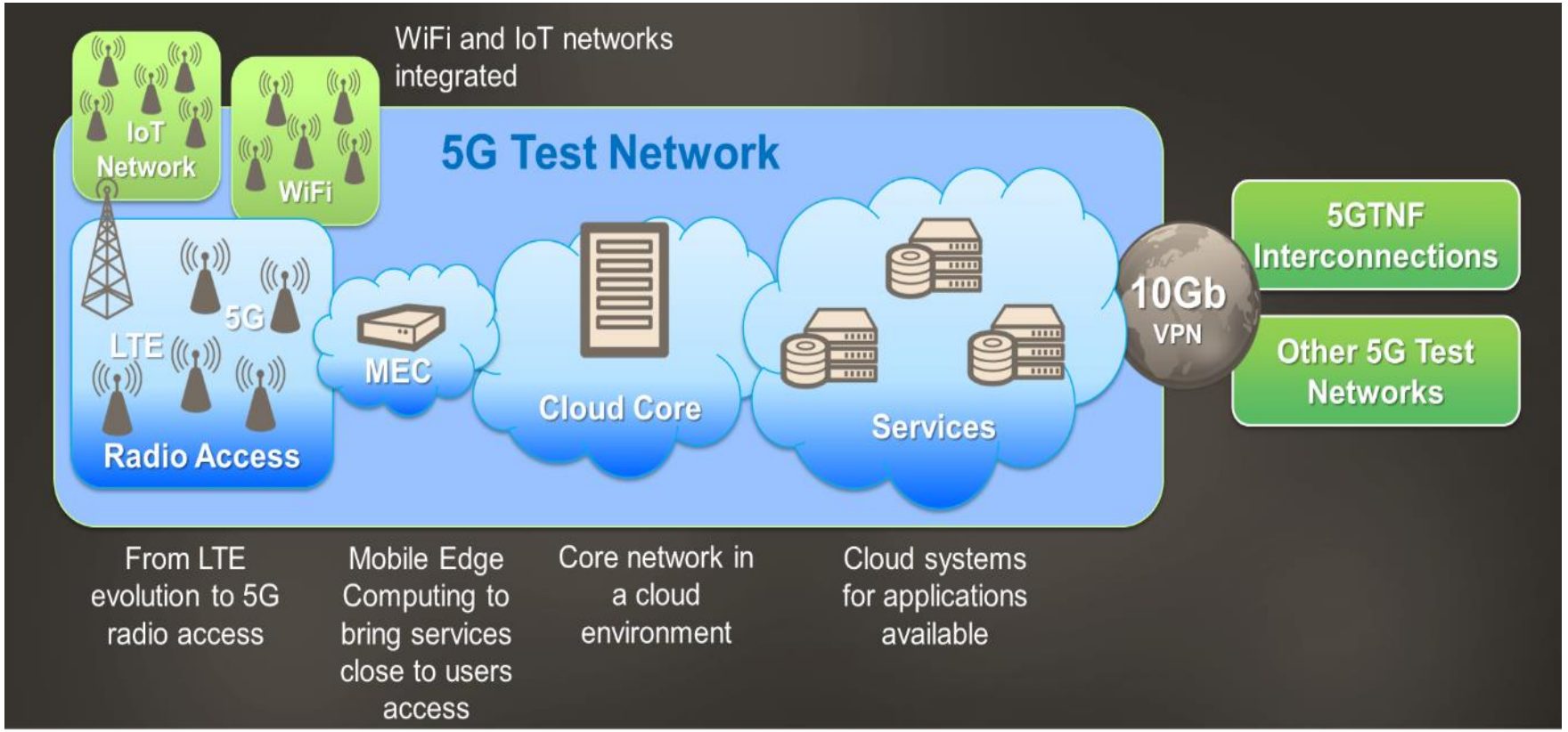
5G test network of University of Oulu, Finnland



- Full-scale 5G test network supports
  - using 5G devices,
  - higher frequency bands,
  - cognitive management functionalities,
  - system testing tools for new solutions.
- The 5G Test Network feature evolution follows 5G research and standardisation progress
- **Acting as verification platform for theoretical 5G research.**

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NITOS testbed: a heterogeneous environment for 5G and beyond experimentation

Nikos Makris

nimakris@uth.gr

Dept. of ECE, University of Thessaly

Background Information

- Founded in 1984
- Located in Volos, Thessaly, Greece
- Network Implementation Testbed Laboratory (NITlab)
  - Head: Prof. Thanasis Korakis
  - 30 researchers (research engineers, postdocs, PhD students, master students)
  - Research activities in the field of wired and wireless networking, cloud, smart cities
  - Strong participation in EU projects
  - Website: https://nitlab.inf.uth.gr

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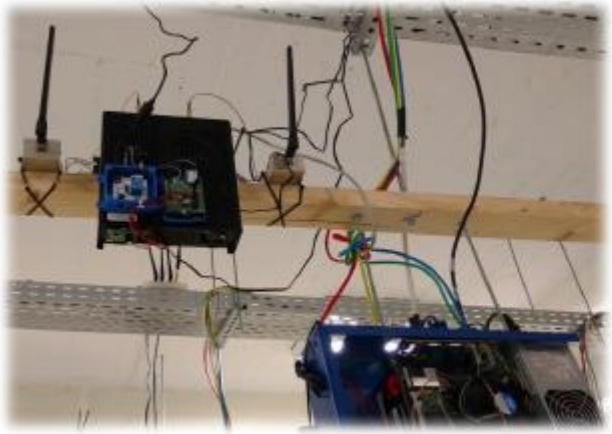
Team mission/goals

- The lab members focus their research in the following domains:
  - Research driven by experimentation with 5G, 4G, Wi-Fi, and mmWave wireless and programmable wired communication networks.
  - Research on Cloud and Edge Computing, virtualization of network and computing resources
  - Research on IoT (Internet of Things) technologies with the development of new platforms for testing wireless sensor networks, integrating various wireless communication technologies, and visualizing measurements.
  - Research on the application of Machine Learning for optimizing the network operation
- Key tool for the research is the **NITOS wireless testbed**

NITOS Testbed



Several components allow experimentation with emerging 5G and beyond technologies

- **Open-Source 5G** with Software Defined Radios
- **Edge cloud** deployments for minimized latency (<10ms for 5G access)
- Antennas with programmable attenuation for **mobility emulation**
- Point-to-multipoint mmWave units with beam-steering capabilities for **Fixed Wireless Access**

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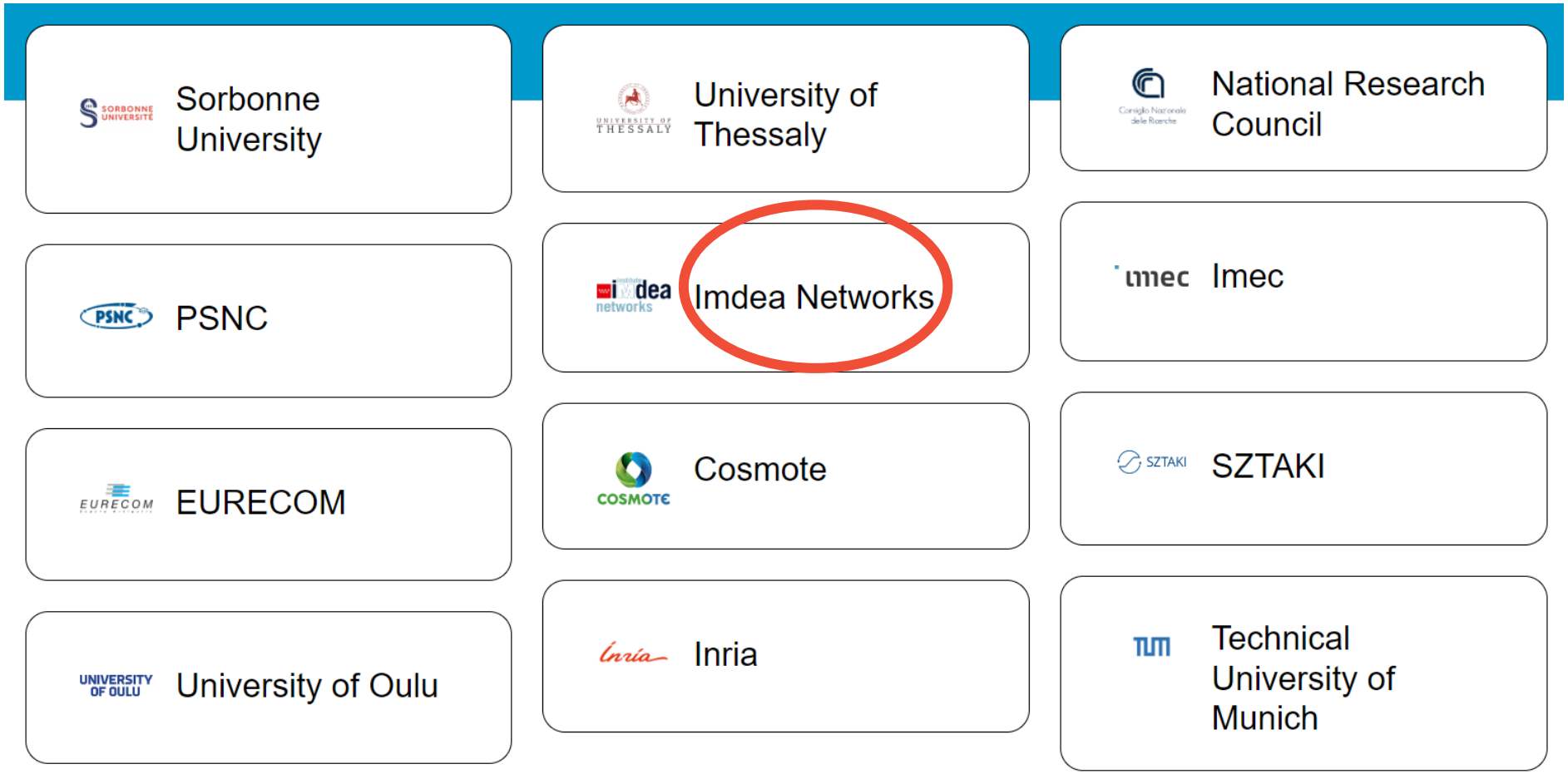

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5TONIC Facility

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University Carlos III of Madrid
IMDEA Networks

What is 5TONIC?

LTE Radio: Long Term Evolution Radio
NB-IoT: Narrowband Internet of things

5TONIC Main Site: IMDEA Networks

- Standalone building
- Access both to open ground and rooftop, for the installation of radiating elements
- Equipment center, hosting the equipment of members and collaborators
- 10 Gbps internet connection
- Auditorium and facilities for public presentations and events
- Additional facilities at Telefónica and Ericsson offices
- Access to UC3M facilities both in Leganes and Madrid city center

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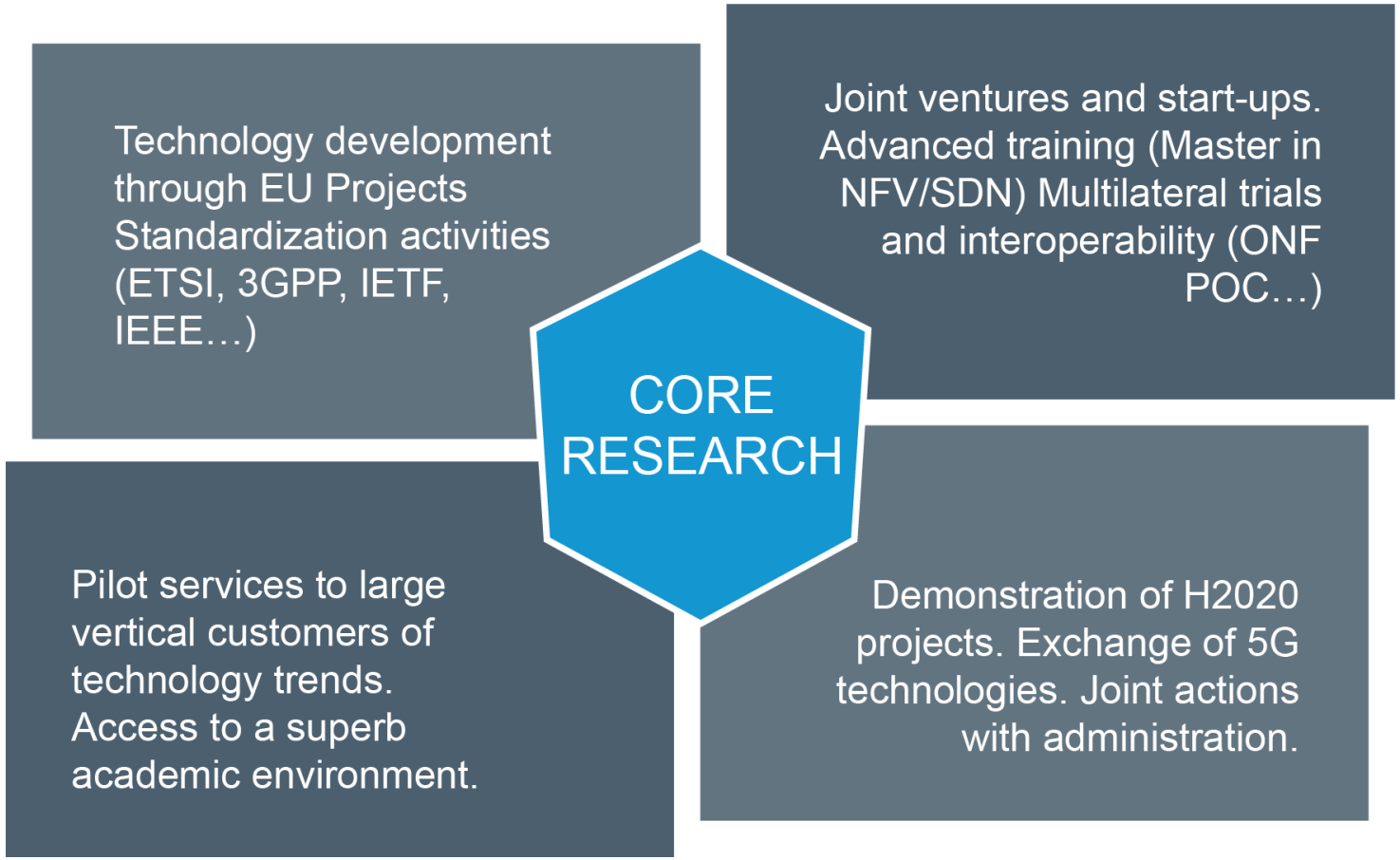
5TONIC objectives

5TONIC is an international **open co-creation laboratory** focusing in **5G/6G technologies**, founded by Telefónica, IMDEA Networks and University Carlos III of Madrid and based in Madrid



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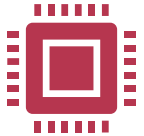
COSMOTE
Exploitation Options

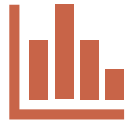
IoT Testbed/Playground – RT Mode

A “site” with various sensors (energy, environmental, door/window, activity, etc.) integrated (*)

RT data acquisition – via MQTT



(Cloud) WebGUI for sensor measurements depiction, manipulation/actuation, automations, etc.



NRT and historical sensors’ data visualization

(*) Possibility to incorporate additional sensors residing in other locations | anywhere

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R2lab: Reproducible Research Lab

Walid Dabbous, Thierry Parmentelat, Thierry Turletti, Damien Saucez

(firstname.lastname@inria.fr)

INRIA Sophia Antipolis Research Center

January 19th 2023

R2lab: Reproducible Research Lab

Hardware

- An RF isolated anechoic chamber
- 37 PCs with 2 WiFi cards
- With s/w radio devices
  (USRP, limesdr, LoRa…)
- 2 COTS mobile phones
- To come: RRU & P4 switches

Experimental features

- Wholesale reservations
- Full control of nodes
- OS images store

Software

- OpenAirInterface for 4g/5g
- GnuRadio for USRP
- nepi-ng experiment controller

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For more information

- The R2lab web site:
  - https://fit-r2lab.inria.fr/
- Several tutorials are available at:
  - https://fit-r2lab.inria.fr/tutorial.md
- Publications related to R2lab can be found at:
  - https://fit-r2lab.inria.fr/papers.md
- To sign up:
  - https://fit-r2lab.inria.fr/tuto-010-registration.md
- Contacts:
  - fit-r2lab-users@inria.fr, Thierry.Parmentelat@inria.fr.

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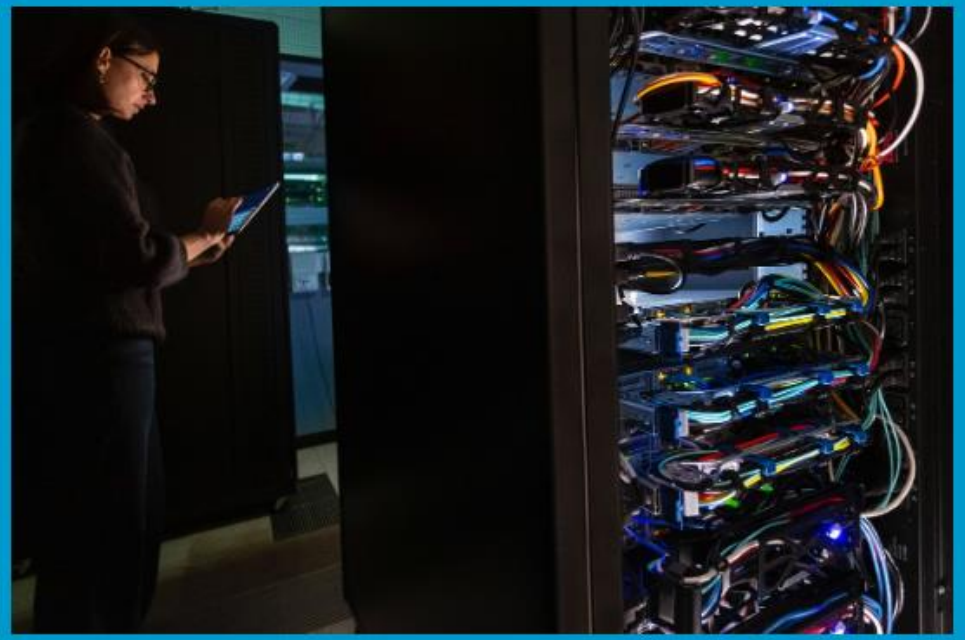
SLICES-ITA

The SLICES-ITA infrastructure node is a combination of heterogeneous testbeds independently operated by CNR, CNIT and CINI. In the following, we provide a brief description of these testbeds. It is important to point out that, while CNR, CNIT and CINI are all members of the SLICES initiatives, only CNR participates in the SLICES-SC project. Thus, transnational and virtual access activities will primarily be supported using CNR facilities.



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protocollo.iit@pec.cnr.it

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On behalf of SLICES consortium

Thank you

www.slices-ri.eu

For more information, please contact:
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serge.fdida@sorbonne-université.fr

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