Future Networks Research lab

National University of Science and Technology POLITEHNICA Bucharest

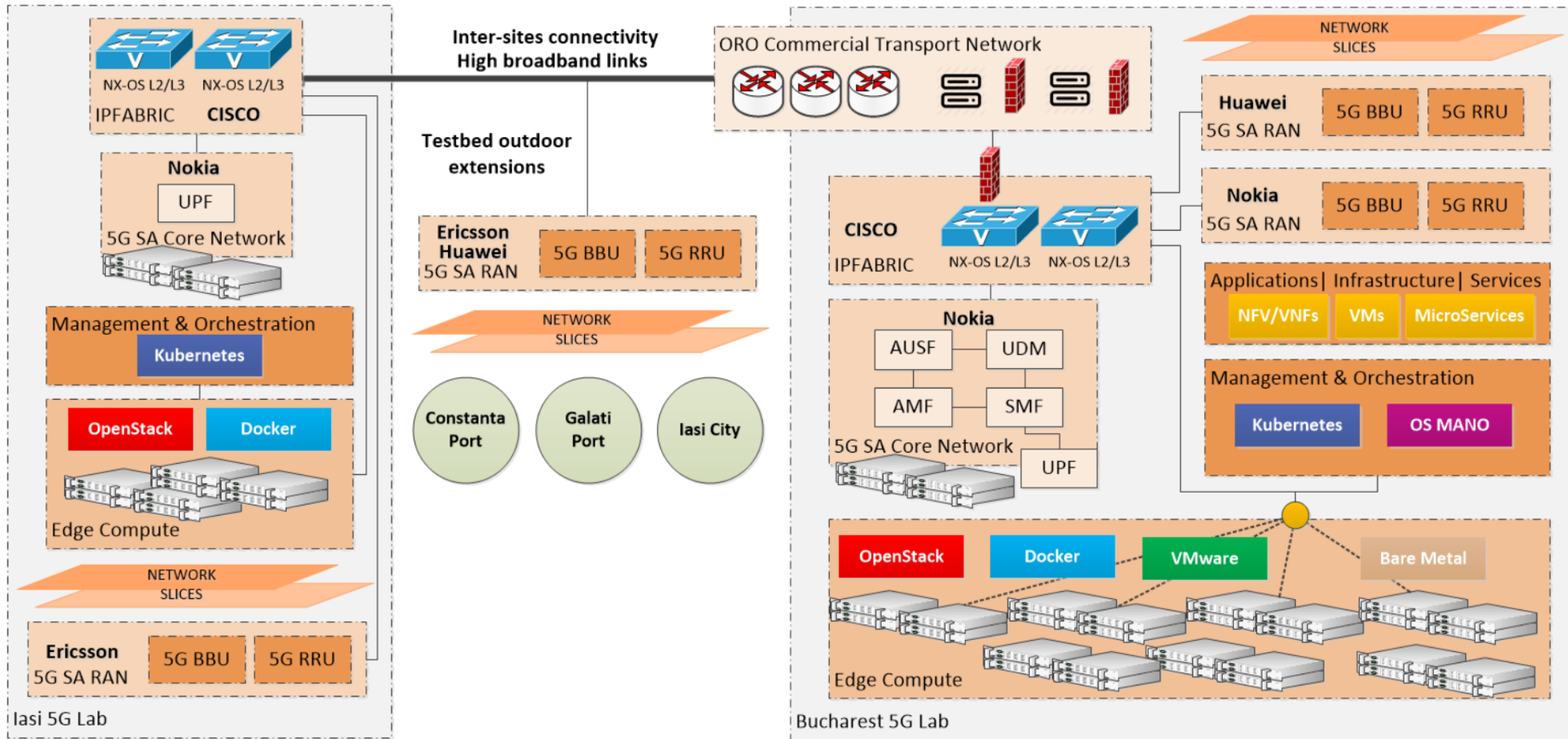Razvan Craciunescu – Vicedean of School of Electronics, Telecom, IT
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Private 5G SA Indoor Infra

Iasi 5G Lab

- NX-OS L2/L3 | NX-OS L2/L3
- IPFABRIC **CISCO**
- **Nokia** — UPF — 5G SA Core Network
- Management & Orchestration — Kubernetes
- OpenStack | Docker
- Edge Compute
- NETWORK SLICES
- **Ericsson** 5G SA RAN — 5G BBU | 5G RRU

Inter-sites connectivity High broadband links

Testbed outdoor extensions

- **Ericsson Huawei** 5G SA RAN — 5G BBU | 5G RRU
- NETWORK SLICES
- Constanta Port | Galati Port | Iasi City

ORO Commercial Transport Network

Bucharest 5G Lab

- **CISCO** IPFABRIC — NX-OS L2/L3 | NX-OS L2/L3
- **Nokia** — AUSF | UDM — AMF | SMF — 5G SA Core Network — UPF
- OpenStack | Docker | VMware | Bare Metal
- Edge Compute

- NETWORK SLICES
- **Huawei** 5G SA RAN — 5G BBU | 5G RRU
- **Nokia** 5G SA RAN — 5G BBU | 5G RRU
- Applications | Infrastructure | Services — NFV/VNFs | VMs | MicroServices
- Management & Orchestration — Kubernetes | OS MANO

5G NR Antenna

5G NR Antenna

UPB CAMPUS

5G SA Indoor Lab

Private 5G SA Outdoor Infrastructure

Future Networks Research lab – Why partner with us ?

5G and 6G Testbed Development, - creating and enhancing testbeds with cutting-edge software and hardware, including next-generation RAN and Core elements, and programmable Data Center solutions.

Implementation of **ISAC solution**.

Dynamic Network Slicing and Programmability, capabilities for efficient resource allocation and implementing programmability to support emerging use cases.

Automation and Orchestration, leveraging AI autonomous network management for facilitating the deployment and management of network services

Security and Resilience, performing security assessments and implementing solutions for intrusion detection, malware prevention, and robust threat response.

Designing and implementation of **Mission Critical** solutions.

Smart City and Climate Neutrality is a major area of interest, contributing to smart mobility, environmental monitoring, and **digital twin solutions**

<u>Future Networks</u> implemented Projects

- **Opportunistic Radar (ISAC) for automotive,** IPCEI ME/CT 2026-2028
- **5G Connect Danube Delta**, CEF project 2024-2027 – implementing 5G in DanubeDelta
- **AI Attack and Defense** for the Smart Healthcare (MSCA 2025-2028)
- Research Collaboration and Mobility for **Beyond 5G Future Wireless Networks** (MSCA 2020-2025)
- MObility and Training fOR **beyond 5G Ecosystems** (MSCA 2020-2025)
- A Massive MIMO Enabled IoT Platform with Networking Slicing for **Beyond 5G IoV/V2X** and Maritime Services (Norway funds 2020-2023)
- **5G** and LoRa R&D development (Industry Research Project 2022)
- Testing **5G off-the shelf devices** (Industry Research Project 2023)
- Testing operator's **LTE-m network for IoT devices** (Industry Research Project 2021)

Let's Collaborate on the Sept Calls!

WPleader, TaskLeader for project in

B01: Collection, Generation and Validation of Datasets suitable for training AI Models for 6GNetworks and for AIaaS

C01 : SNS experimental infrastructure

CSA 01/02/03

Strong Team in AI security!

Strong team in community development, public policies for telecom,

Strong Infrastructure.

We can bring SMEs, Industry and public authorities from RO.

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