Running 5G networks from your home with SLICES-RI: Hardware and software hands-on

25 April 2025 at UCT Campus

Note: Names are placeholders, and the agenda may change.

Description:

Experimental research in Post-5G requires the seamless integration of software, hardware, and communication protocols. The EU SLICES Research Infrastructure (RI) provides a controlled and reproducible environment for conducting advanced experimentation. Unlike conventional testbeds that primarily offer resource access, **SLICES-RI** is structured around research blueprints. Each blueprint is designed for a specific research domain, with infrastructure implementation addressed in a subsequent phase.

SLICES-RI provides specialized blueprints for Post-5G experimentation, offering hardware, software, and methodologies for deploying custom 5G networks. These deployments can be executed and extended either on the SLICES-RI infrastructure or within an independent facility (e.g., your lab).

This session will cover the entire lifecycle of a **Post-5G experiment**, demonstrating orchestration through the tools and functionalities developed within SLICES-RI. In the hands-on, participants will deploy cloud-native 5G core networks and multiple 7.2-split radio access networks using open-source software. The process will be fully reproducible, with results automatically archived and published using the SLICES metadata model.

The workshop will begin with an introduction to 5G fundamentals, followed by best practices for ensuring reproducibility in experimental research. Participants will then collaboratively define experiments to be conducted, with the afternoon session dedicated to executing these experiments in groups.

Participants must bring a laptop with internet connectivity and an SSH client that supports key-based authentication.

Time	Session
09:00 – 09:15	Introduction to SLICES-RI experimental resources and blueprints
09:15 – 10:15	Demonstrations of different experiments over SLICES-RI and familiarization with the provided tools
10:15 – 10:45	Formation of groups among the participants and initial ideas for implementation over SLICES-RI

Time	Session
10:45 – 11:00	**Coffee Break**
11:00 – 11:30	Pitching of ideas by team leaders
11:30 – 13:00	Working in teams on the different projects
13:00 – 14:00	**Lunch Break**
14:00 – 16:00	Working in teams on the different projects
16:00 – 16:15	**Coffee Break**
16:15 – 17:00	Team presentation of key outcomes from their experiment & feedback on experimentation procedure