Research Engineer Position:
Development and maintenance of an Open RAN 5G platform

Host institution: Laboratory of Signals and Systems (L2S), CNRS, CentraleSupélec, University of Paris-Saclay, situated at 3 rue Joliot Curie

Description

The present position aims to design, implement, and operate an experimental private 5G Open RAN platform at the premises of CentraleSupélec, using a BubbleRAN solution implemented over OpenAirInterface (OAI) stacks. The platform is dedicated to teaching and research activities focused on energy-efficient network engineering. The Research Engineer will develop AI-driven xApps, rApps, and dApps to control the activation and deactivation of network elements and edge DU-CU servers, optimize energy consumption, and adapt network behavior to application requirements in real time.

Profile

The candidate should hold an MSc or PhD in Telecommunications Engineering, Computer Science, or a related field. The successful candidate will join a dynamic research team and contribute to advancing the state of the art in Open RAN, AI-driven network control, and energy-efficient 5G systems. Key responsibilities include:

- Operating and evolving a private 5G Open RAN platform based on BubbleRAN solution (OpenAirInterface).
- Designing & implementing xApps, rApps, and dApps for intelligent and energy-aware RAN control.
- Developing AI-based closed-loop control mechanisms using Non-RT RIC and Near-RT RIC.
- Managing the deactivation and energy optimization of RAN elements and edge DU-CU servers.
- Integrating application requirements and network policies into O-RAN control workflows.
- Supporting experiments on energy-efficient RAN, network slicing, and low-latency services.
- Contributing to research publications, demonstrations, project deliverables, and teaching.

The candidate should have strong programming skills in Python and/or C/C++ and an experience with Linux and virtualized environments. Familiarity with OpenAirInterface, containerization tools such as Docker and Kubernetes, and AI or machine learning techniques for network control is highly desirable. Robotics experience is appreciated. English communication skills are required, and knowledge of French is a plus.