References


Assignment
Objective of the thesis
The objective of this PhD thesis is to propose new strategies towards the creation and management of dynamical slices in the context explained above. The thesis will particularly focus on the use of machine learning techniques to create an abstracted view of the network, which allows dynamical adjustment of the needed resources, while guaranteeing the quality of the supported services and QoE (quality of Experience).

Main activities
Thesis work plan
First year:
- Examining the related work on the ongoing 5G standard and particularly on slicing
- Identifying the KPIs for 5G systems
- Proposing a new strategy to significantly reduce the amount of signaling overhead
- Identifying the problems pointed-out in the thesis description and identifying new problems
- Writing a research paper survey and/or a report

Second year:
- Proposing new strategies for an efficient monitoring of the slices in the context of 5G systems
- Simulating/emulating and analyzing the proposed solutions
- Building a testbed/demo for the proposed solutions using the Nokia Innovation Steering Platform
- Writing research papers

Last year:
- Proposing new strategies for the elaboration of dynamically adjustable slices
- Simulating, emulating and analyzing the proposed solutions
- Testing experimentally the proposed solutions on the developed testbed using a Nokia Innovation Steering Platform
- Writing research papers
- Writing the thesis report

Skills
Technical skills:
- Telecommunication: good knowledge of communication systems
- Mathematics: good mathematical background (Algebra, Estimation theory, ...)
- Programming: Python,
- Artificial intelligence (optional): deep learning.

Languages:
- English
- French (optional)

Relational skills:
- Good ability to work in groups.
- A passion for innovation, novelty, curiosity.
- Good communication skills: oral fluency, clear, concise.

Other valued appreciated:
- positive, constructive spirit.
originality.

**Benefits package**
- Subsidised catering service
- Partially-reimbursed public transport
- Social security
- Paid leave
- Flexible working hours
- Sports facilities

**Remuneration**
From 1982 euros before taxes