

Bachelor's Thesis

Multi-cell RAN control coordination

Software-Defined Networking (SDN) is proposed as a technique to increase the network performance by decoupling the control from the data plane of commodity hardware. Recently, SDN has been proposed as a solution to further improve the Radio Access Network (RAN) side of the network. To this aim the notion of SD-RAN controllers has emerged and there is a vast amount of ongoing research on the performance, evaluation and use of such entities.

In this thesis, the student will have a hands-on experience with FlexRAN controller which is one of the main state-of-the-art SD-RAN controllers. The goal is to enable control of FlexRAN over multiple cells (i.e., eNB/gNB) and ensure a logical flow among the messages exchanged among them. The final evaluation will require a demonstration of the Proof-of-Concept and a set of measurements regarding the cell and SD-RAN controller performance.

Prerequisites

- Programming skills in C/C++ is a must, Python knowledge is a plus.
- Knowledge about SDN, RAN, network slicing is a plus.

Advisors

Arled Papa