Network Slicing Framework Implementation in GNURadio

Network Slicing is envisioned as new concept for 5G community to provide the required level of flexibility in the network and accommodate the heterogenous applications. Combined with techniques such as Software-Defined Networking (SDN), which can further enhance the network performance, Network Slicing is one of the hot topics both in research and industry. From the implementation viewpoint there exist frameworks which enable the Network Slicing concept such as FlexRAN, 5GEmpower. However the issue of such platforms is the scalability. In order to provide a framework able to scale the network and effectively investigate the Network Slicing concept in a larger network, GNURadio which is an open source radio project can be potentially utilized.

In this work the student will focus on building a Network Slicing framework on GNURadio using existing blocks and implementing additional required blocks to achieve the required goal. The main initial focus will be on the schedulers in 4G/5G and the extension of control over a Software-Defined Radio Access Network (SD-RAN) controller which will influence the scheduling decision depending on the requirements of applications and network state.

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