RAN Slice in 5G COHERENT

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This is the demo from the 5G PPP project COHERENT. The COHERENT project aims to develop a unified control and coordination framework for 5G heterogeneous radio access networks (RANs), with the emphasis on software defined networking (SDN) for RAN programmability, in particular efficient radio resource modelling and management, and flexible spectrum management. The demo will show several important aspects developed from the project, including the RAN slicing and flexible radio resource management in heterogeneous radio access networks.

The objective of the demo is to show the novel concept of the RAN slicing developed in the COHERENT project, based on the OpenAirInterface platform, which is the open source LTE platform developed by the partner EURECOM. RAN slicing is an important concept in 5G to support multi-tenancy. The demo will showcase a solution provided by a newly introduced coordination framework, new RAN control components, and the combination of SDN and network function virtualization (NFV) to enable flexible and programmable network slicing in RAN.

The demo will show how to slice a cloudified radio access network that consists of a fronthaul segment between the remote radio unit (RRU) and radio cloud center (RCC) and a backhaul segment between the RCC/eNB and the RAN controller. Through the separation of the RAN control and data plane coupled with the virtualized control functions and control delegation features, real-time control and coordination applications can be implemented in support of fine-grain RAN programmability. This allows different levels of coordination among RAN infrastructure elements by dynamic placement of virtual control functions following SDN and NFV principles for adapting control over time and for easing network evolution to the future. The setup of the demo is shown in the figure below.