

End-to-End Programmability in 5G Networks

The 5th. generation of mobile communication systems (5G) will provide a common platform for offering a variety of networking services, ranging from enhanced mobile broadband to media delivery and industrial applications. Supporting these services requires, among other things, a flexible and end-to-end programmable infrastructure, which enables agile service composition and scaling in a cost- and resource-efficient manner. Furthermore, as end-to-end services are increasingly deployed in a distributed cloud environment, this programmability should span all relevant domains, including radio access network (RAN), various (transport) network domains and distributed processing, in an orchestrated manner. Software defined networking (SDN) and network function virtualization (NFV) are technologies of choice for fulfilling these flexibility and programmability requirements.

This talk will present an overview of some of major topics in programmable 5G networks. This includes an overview of 5G systems and corresponding architectural options and use cases, programmable transport, RAN and core networks based on SDN/NFV, network virtualization and slicing, cross-domain orchestration and end-to-end programmability, as well as relevant research challenges and future directions.