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1 Introduction

Mobile networks are a key element of today's society, enabling communication, access and information sharing. Moreover, traffic forecasts predict that the demand for capacity will grow exponentially over the next years, mainly due to video services. However, as cellular networks move from being voice-centric to data-centric, operators' revenues are not able to keep pace with the predicted increase in traffic volume.Such pressure on operators' return on investment has pushed research efforts toward designing for 5G novel mobile network solutions able to open the door for new revenue sources. In this context, the network slicing paradigm has emerged as a key SG disruptive technology addressing this challenge. Network slicing for 5G allows mobile network operators (MNOs) to open their physical network infrastructure platform to the concurrent deployment of multiple logical self-contained networks, orchestrated in different ways according to their specific service requirements; such network slices are then (temporarily) owned by tenants. The availability of this vertical market multiplies the monetization opportunities of the network infrastructure as (i) new players may come into play (e.g., automotive industry, e-health) and (ii) a higher infrastructure capacity utilization can be achieved by admitting network slice requests and exploiting multiplexing gains. With network slicing for 5G networks, different services (e.g., automotive, mobile broadband, or haptic Internet) can be provided by different network slice instances. Each of these instances consists of a set of virtual network functions that run on the same infrastructure with a tailored orchestration. In this way, very heterogeneous requirements can be provided on the same infrastructure, as different network slice instances can be orchestrated and configured separately according to their specific requirements. Additionally, this is performed in a cost-efficient manner as the different network slice tenants share the same physical infrastructure.

2 Fundamental parts

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2.1 Modularization

2.2 SDN-VNF

2.3 Orchestration

3 Network slicing

3.1 Services

3.2 Example

3.3 Actual realizations

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