Traffic Steering in B5G Sliced Radio Access Networks

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In 5G and beyond wireless systems, Network Slicing (NS) feature will enable the coexistence of extremely different services by splitting the physical infrastructure into several logical slices tailored for a specific tenant or application. In sliced Radio Access Networks (RANs), an optimal traffic sharing among cells is key to guarantee Service Level Agreement (SLA) compliance while minimizing operation costs. The configuration of network functions leading to that optimal point may depend on the slice, claiming for slice-aware traffic steering strategies. This work presents the first data-driven algorithm for sliceaware traffic steering by tuning handover margins (a.k.a. mobility load balancing). The tuning process is driven by a novel indicator, derived from connection traces, showing the imbalance of SLA compliance among neighbor cells per slice. Performance assessment is carried out with a system-level simulator implementing a realistic sliced RAN offering services with different throughput, latency and reliability requirements. Results show that the proposed algorithm improves the overall SLA compliance by 9% in only 15 minutes of network activity compared to the case of not steering traffic, outperforming two legacy mobility load balancing approaches not driven by SLA.