

Mobility In Software-Defined Telecom Networks

Network Applications and Services

Background and challenges

The fifth generation of networks is being architected to support low-latency operations and services. Thus, technologies such as Software Defined Networks (SDN), Network Functions Virtualization (NFV) and Mobile Edge computing (MEC) are being introduced as the main enablers of 5G network. Operators are targeting less than 1ms of latency and zero interruption time of the service. Fulfilling such demand in a mobile environment calls for radical changes in both users mobility management and cloudified service allocation.

Description and main innovation

To ensure a continuous, QoS-aware service for mobile users, we attempt to move the service instance preceding to the users' mobility taking advantage of the cloudified feature of 5G services. This instigates the following:

- Development of a new mobility prediction mechanism taking into consideration multiple parameters such as user's mobility history, RSSI and network traffic statistics.
- The development of a new decision-making algorithm to estimate whether the service should be migrated or not. Such decision must take into consideration both user's and provider's interests.
- Making the best decision on when and where to migrate the service based on both the mobility prediction and the decision-making algorithms.

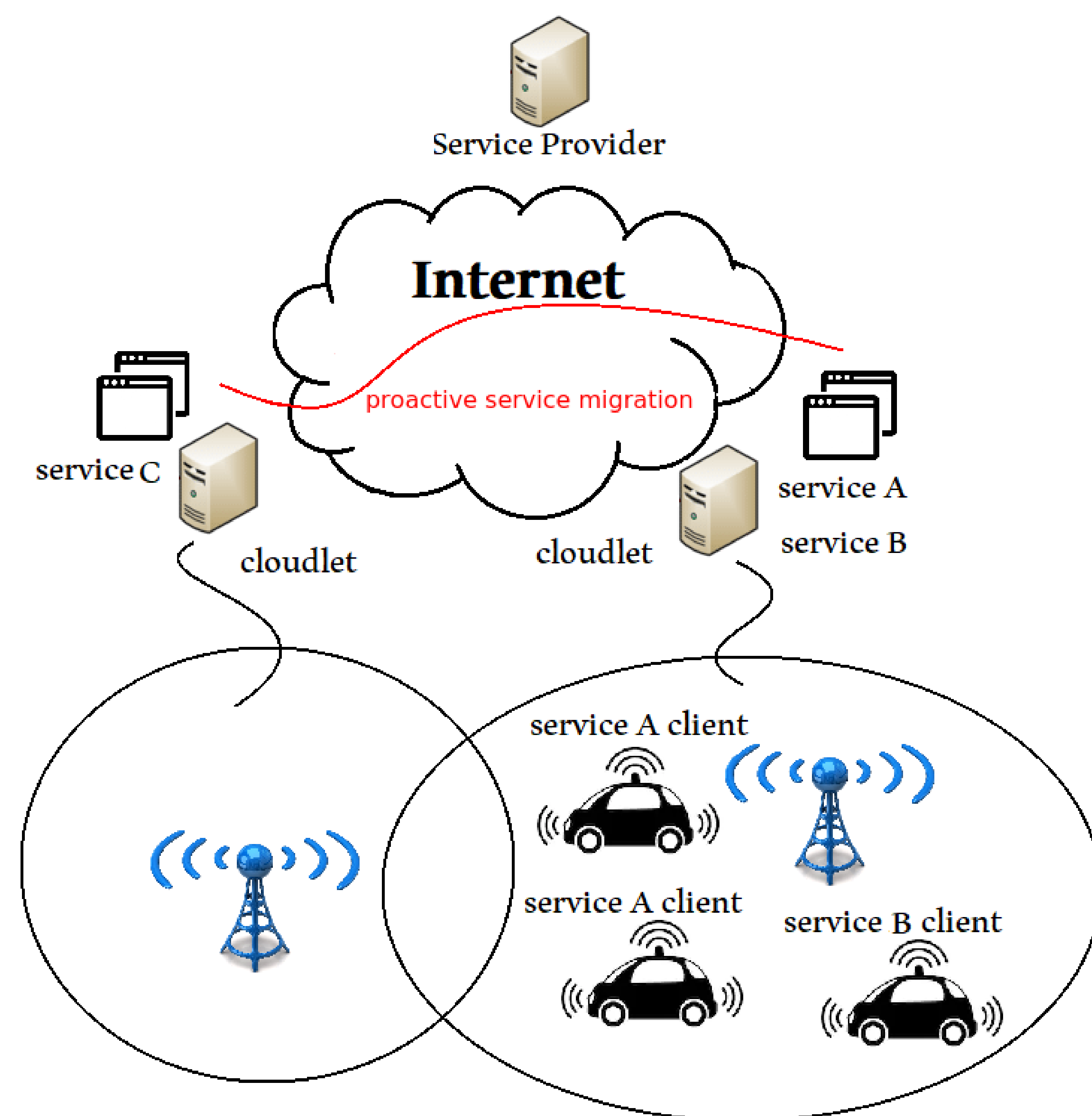


Figure 1: Motivational Scenario

Achievements

- Survey paper under development titled "QoS-aware Service Continuity in the Virtualized Edge".
- Ongoing implementation on a simulation platform, namely Omnet++ simulation platform.
- Grant by FCT, SFRH/BD/136361/2018.