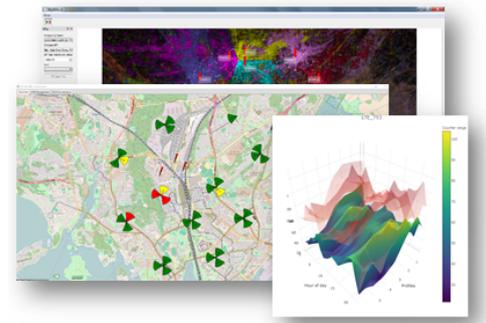


Energy Saving in 5G Mobile Networks

Motivation

The continuous increase in the demands for a better mobile communication service is encouraging research and industry to define new network design principles so that the future need on performance, capacity, and reliability can be met. For this reason, the NGMN alliance has envisioned the fifth generation of mobile communications (5G) with the purpose of reaching a much higher throughput, lower latency, ultra-high reliability, higher connectivity, and higher user mobility. This new upcoming release, however, is not only about the development of a new radio interface, but also to enable the operation in a highly heterogeneous environment. Such an environment is typically characterized by the presence of multi-layer networks, different types of access technologies, as well as a high number of small cells densely clustered together, thereby, giving a contiguous coverage. Furthermore, a 5G network should at the same time enable a 99.9 % guarantee certain services for critical infrastructures.



A 5G network also requires a comprehensive solution for the end-to-end energy efficiency, i.e., an approach that optimizes energy efficiency over the whole network. Such a solution should require little extra management effort and provide no risk to QoS.

Your Task

- Develop an energy saving management solution which utilizes analytics to learn the optimal configuration of active energy saving features.
- The solution should also take into consideration operator policies as well as network management concepts that would provide an optimal configuration.
- The solution should utilize available traffic and mobility information to ensure seamless transition between normal and energy saving states.

Requirements

- Java, experience with simulation techniques
- Knowledge about machine learning and anomaly detection
- Very good English skills

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NOKIA Bell Labs

