Self-tuning of scheduling parameters for balancing Quality of Experience among services in LTE

Author(s) - Institution(s):
Pablo Oliver Balsalobre, UMA
Matías Toril, UMA
Salvador Luna Ramírez, UMA
José María Ruiz Avilés, ERICSSON

Corresponding author email: pob@ic.uma.es

Corresponding WG group: WG3

Abstract:

In this paper, a self-tuning algorithm for adjusting parameters of a multiservice packet scheduler based on network performance statistics is proposed to balance Quality of Experience (QoE) across services in LTE. The aim of the algorithm is to ensure that all users achieve the same average QoE regardless of the type of service. For this purpose, the proposed heuristic algorithm iteratively changes service priority parameters to re-prioritize services so that those with the lowest QoE increase their priority. Unlike previous algorithms, the proposed one takes QoE (and not Quality of Service) into account. Met hod assessment is carried out in a dynamic system-level LTE simulator implementing a regular macrocellular scenario. Simulation results in a typical scenario show that tuning service priority parameters can increase the QoE of the worst service by up to 90% without affecting the overall network QoE.