

# Call Admission Control Techniques for 3GPP LTE: A Survey

**Abstract** — Radio resources in a wireless communication network are normally shared among multiple users. When the number of users admitted into the network exceed the capacity of the network, a network congestion is said to occur. Network congestion causes degradation of Quality of Service (QoS) and Grade of Service (GoS), which results in users' dissatisfaction. Thus, it is of uttermost importance to proactively prevent network congestion. Call Admission Control (CAC) is a radio resource management (RRM) technique that can be employed to prevent network congestion, thereby ensuring the GoS/QoS of admitted calls. In addition to preventing network congestion and ensuring QoS/GoS, it is sometimes necessary to meet other network or users' requirements. This survey outlines different call admission control schemes used to achieve specific objectives for different deployment scenarios.

**Keywords** — Markov Decision Process, Reinforcement Learning, Dynamic Programming, Call Blocking, Call Dropping, link-level QoS

Authors:

[Matthew K. Luka](#)

Dept. of Electrical and Electronics Engineering, Modibbo Adama University of Technology, Yola, Nigeria

[Aderemi A. Atayero](#)

Dept. of Electrical and information Engineering, Covenant University, Ota, Nigeria

[Oluwadamilola I. Oshin](#)

Dept. of Electrical and information Engineering, Covenant University, Ota, Nigeria

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