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# **Performance Analysis for 3G**

## **Cellular Mobile Network**

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## **Abstract**

*In our project we presented a model for analyzing the QoS performance measures in a wireless mobile network. We integrate the physical layer and radio link layer parameters to analyze the call-level and packet-level performance.*

*In data link layer call admission control (CAC) is responsible for deciding whether an incoming call can be accepted or not so that the performances of the ongoing calls do not deteriorate below the acceptable level. Also, an adaptive channel allocation (ACA) scheme is used to maximize the utilization of the radio resources. We use a discrete time Markov chain (DTMC) to model and analyze the radio link level queueing performance with call admission control and adaptive channel allocation for a user in the steady state.*

*We obtained several of call-level QoS measures (e.g., new call blocking probability, handoff call dropping probability) and packet-level QoS measures (e.g., packet dropping probability and average packet delay).*