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Adaptive call admission control for QoS provisioning in multimedia wireless networks

(Article)

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Abstract

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In this paper, we propose a new framework called adaptive quality of service (AdQoS) to guarantee the quality of service (QoS) of multimedia traffic generally classified as real-time and non-real-time. AdQoS supports future generation wireless networks because it implements a traffic-based admission control, bandwidth reallocation and reservation schemes to support the different multimedia traffic. The objectives that AdQoS framework tries to accomplish are minimum new call blocking and handoff dropping rates. The key feature of this framework is the bandwidth reallocation scheme. This scheme is developed to control the bandwidth operation of ongoing connections when the system is overloaded. The performance of the system is evaluated through simulations of a realistic cellular environment. Simulation results show that our proposed scheme reduces the new call blocking probabilities, the handoff dropping probabilities and reduces significantly the probability of terminated calls while still maintaining efficient bandwidth utilization compared to conventional schemes proposed in the literature. © 2002 Elsevier Science B.V. All rights reserved.

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Author keywords

Call admission control Mobile networks Quality of service Reservation Wireless networks

Indexed keywords

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Wireless telecommunication systems

Engineering uncontrolled terms: Mobile networks

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