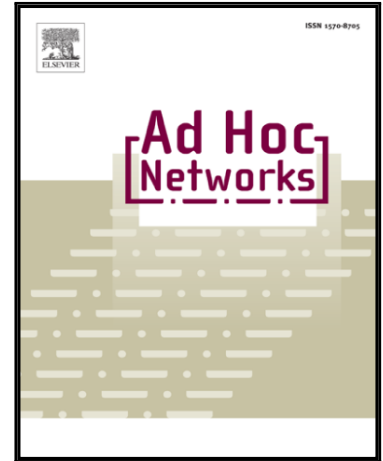


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Layered admission control algorithms with QoE in heterogeneous network

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Abstract

Aiming at the user quality of experience (QoE) problem in the LTE-A heterogeneous network integrating IEEE802.11ad, a layered admission control strategy is proposed for heterogeneous network based on QoE. The core of the strategy is vertically layering the access categories priority and horizontally layering the resource allocation based on the layered access categories priority. A dynamic access categories priority scheme is introduced centering on the admission control strategy to build the power allocation model for minimizing the transmit power of base station as well as maximizing the overall QoE. The impact of different network coverage in the heterogeneous network on user QoE is further analyzed and the resource reservation method combined with users' access priority is studied. Simulation results show that the layered admission control strategy, compared with the conventional ones, can significantly enhance the average QoE of heterogeneous networks.

Keywords: heterogeneous network, priority layering, power allocation, resource reservation, quality of experience

1. Introduction

Since multimedia and broadband wireless communication applications surge during the past few years, the 60GHz short-range wireless communication technology has been concerned widely. It is becoming one of the most potential wireless communication technologies [1] due to its advantages in spectrum range, transmission rate, information capacity and anti-jamming ability. As a significant supplement to LTE-A network, the high speed WLAN network standard of 60GHz wireless com-

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