Repeated Cooperative Game based Network Selection in Heterogeneous Networks

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Abstract

The next generation wireless environment depends on the multiple networks supported by different operators for various applications. In heterogeneous environment users are able to connect to various Radio Access Networks to have seamless connectivity. Network selection play a vital role for users to connect to the best access network available because each access network differ in bandwidth, Cost, energy usage, coverage area. In this paper an access network selection method to select the best suitable network is proposed. Network selection decision to be made based on user’s application requirements. Different ranking methods such as SAW, MEW, GRA, TOPSIS methods are used to calculate the score for each video quality levels for different user weigthage. Game theory approaches are used for the strategy between the user and network to form cooperation, users can get better QoS at reasonable cost and each access network can increase their revenue. The user network payoff’s is modelled as a repeated prisoner’s dilemma game.

Keywords: Heterogeneous Networks, Game Theory, Prisoner Dilemma, Network Selection, QoS.
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