



Kamal Deep Singh



Biography: Kamal D. Singh received the B.Tech. degree in Electrical Engineering from Indian Institute of Technology (IITD), Delhi, India in 2002. He obtained his Ph.D. degree in computer science from University Rennes 1, France in 2007. He then worked as a Postdoc researcher in the Dionysos group at INRIA and at Telecom Bretagne, Rennes where he developed many components of QoE estimation tools and worked on the analysis of video-based applications. He is currently an Assistant Professor at Telecom Saint Etienne / University Jean Monnet, France. His research interests include Quality of Experience (QoE), Internet of Things, Complex event Processing and Big Data.

Session Title: Grid Energy Consumption of Mixed-Traffic Cellular Networks with Renewable Energy Sources

Abstract: The usage of renewable energy has emerged as a promising solution for reducing the grid energy consumption of cellular networks. In this paper, we study the trade-off of users' satisfaction and grid energy consumption considering different types of traffic. Users' satisfaction of each type of traffic is represented by a utility function, as this allows for a better trade-off between energy consumption and users' satisfaction. The problem is formulated as a weighted sum of two objectives, power demand and average users utility. Then, we study the users' satisfaction and power demand considering two types of schedulers. Finally, we study the trade-off between grid energy consumption and users' satisfaction for different weightage of each of the two objectives. Results show that grid energy consumption can be reduced of up to 40% with only 6% degradation in terms of users' satisfaction.