

Cooperative Communication of Energy Harvesting Synchronized-OOK IR-UWB Based Tags

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Abstract : Energy harvesting tags with cooperative communication capabilities are emerging as possible infrastructure for internet of things (IoT) applications. This paper studies about the \ cooperative transmission strategy for a network of energy harvesting active networked tags (EnHANTs), that is adapted to the available energy resource and identification request. We consider a network of EnHANT-equipped objects to communicate with the destination either directly or by cooperating with neighboring objects. We formulate the the problem as a Markov decision process (MDP) under synchronised On/Off keying (S-OOK) pulse modulation format. The simulation results are provided to show the the performance of the cooperative transmission policy and compared against the greedy and conservative policies of single-link transmission.

Keywords : cooperative communication, transmission strategy, energy harvesting, Markov decision process, value iteration

Conference Title : ICECECE 2015 : International Conference on Electrical, Computer, Electronics and Communication Engineering

Conference Location : Miami, United States

Conference Dates : March 09-10, 2015