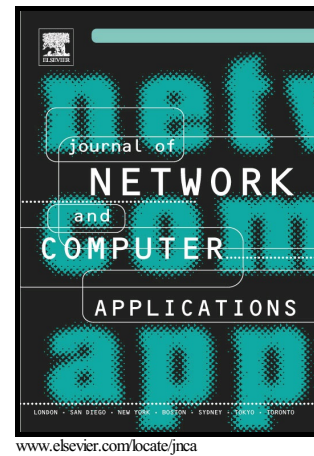


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# Energy Efficient Wireless Communication Technique Based on Cognitive Radio for Internet of Things

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## Abstract

Due to the drastic growth and an upsurge in the wireless communication devices in the world in recent years, there is a high demand of uninterrupted and intelligent connectivity in a self-organizing manner amongst the users. It becomes more challenging for the emerging users because of scarcity of bandwidth. To overcome the unforbidden challenges in the advanced technologies like smart cities, 5G and Internet of Things (IoT), Cognitive Radio provides the solution to achieve high throughput and continuous connectivity for reliable communication. A primary challenge in the Cognitive Radio (CR) technology is the identification of dependable Data Channels (DCHs) for Secondary Users (SUs) communication amongst the available channels, and the continuation of communication when the Primary Users (PU) returns. The objective of every SU is to intelligently choose reliable DCHs, thereby ensuring reliable connectivity and successfully transfer of data frames across the cognitive networks. The proposed Reliable, Intelligent and Smart Cognitive Radio protocol consumes less computational time and transmits energy with high throughput, as compared to the benchmark Cognitive Radio MAC (CR-MAC) protocols. This paper provides new applications of CR technology for IoT and proposes new and effective solutions to the real challenges in CR technology that will make

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