Delay Aware Resource Allocation for 5G Wireless Networks with Wireless Power Transfer

ABSTRACT

- We propose a framework to consider these requirements simultaneously by applying the notions of effective capacity, effective energy efficiency, and simultaneous wireless information and power transfer.
- At first, we define the effective capacity and the effective energy efficiency of SWIPT in multiuser orthogonal frequency division multiple access systems by considering two practical schemes of SWIPT time switching and power splitting.

EXISTING SYSTEM

- For 5G wireless networks, low latency and high energy efficiency are two of the most critical key performance indicators.
- The next 5G communication systems should support tremendous growth in the number of users while guaranteeing quality of service.
- This requires an unprecedented amount of energy, which poses green and sustainable growth concerns.

PROPOSED SYSTEM

- Afterwards, we formulate two resource allocation problems to maximize the effective capacity and effective energy efficiency respectively, subject to three constraints minimum harvested power, average sum transmit power, and delay quality of service.
- Numerical results illustrate that there is a fundamental trade off between harvested power and the performance in terms of effective capacity and effective energy efficiency.

HARDWARE REQUIREMENTS

- Processor - Intel core i3
- RAM - 2B
- Hard Disk - 20 GB

SOFTWARE REQUIREMENTS

- Operating System : LINUX
- Tool : Network Simulator-2
- Front End : OTCL (Object Oriented Tool Command Language)

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