

**QUALITY-AWARE TRAFFIC OFFLOADING IN  
WIRELESS NETWORKS**

**MICANS INFOTECH**

# ABSTRACT

In cellular networks, due to practical deployment issues, some areas have good wireless coverage while others may not. This results in significant throughput (service quality) difference between wireless carriers at some locations. We first analyze the factors that affect the service quality and then validate the existence of service quality difference between different carriers via extensive measurements. To deal with this problem, a mobile device (node) with low service quality can offload its data traffic to nearby nodes with better service quality through Device-to-Device interfaces, such as WiFi direct, to save energy and reduce delay.



## CONT...

To achieve this goal, we propose a Quality-Aware Traffic Offloading (QATO) framework to offload network tasks to neighboring nodes with better service quality. QATO can identify neighbors with better service quality and motivate nodes to help each other using incentive schemes. To validate our design, we have implemented QATO on Android platform and have developed a web browser and a photo uploader on top of it. Experimental results show that QATO can significantly reduce energy and delay for both data downloading and uploading. Through trace-driven simulations, we also show that all users can benefit from data offloading in the long run.



## EXISTING SYSTEM

Some existing work has addressed the service quality difference at different locations. Schulman et al. proposed to defer data transmission to save energy when the service quality is low . However, this solution only works when it is known that the user will quickly move to a location with better service quality.

MICANS INFO TECH



# PROPOSED SYSTEM

In this paper, we address the service quality difference from a different perspective. Through theoretical analysis, we show that the service quality varies in different locations due to the received signal strength from the BS.

Through extensive measurements, we observe that mobile devices (nodes) within an area may have different service quality and thus different throughput (e.g., a node may consume much more energy and delay to download the same amount of data), especially when different wireless carriers are used.

MICANS INTEOTECH



# HARDWARE REQUIREMENTS

- Processor - Pentium-IV
- Speed - 1.1 Ghz
- RAM - 256MB(min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse
- Monitor - SVGA

MICANS INFOTECH



## SOFTWARE REQUIREMENTS

- Tool - Network Simulator-2
- Operating system - LINUX
- Front end - OTCL (Object Oriented Tool Command Language)

MICANS INVENTECH



# REFERENCES

- [1] 3gpp ts 27.007. <http://m10.home.xs4all.nl/mac/downloads/3GPP-27007-630.pdf>.
- [2] Alexa top sites. <http://www.alexa.com/topsites>.
- [3] Shannon-hartley theorem. [http://en.wikipedia.org/wiki/Shannon-Hartley theorem](http://en.wikipedia.org/wiki/Shannon-Hartley_theorem).
- [4] 3rd generation partnership project; technical specification group sa; feasibility study for proximity service (prose) (release 12). In TR 22.803 V1.0.0, 2012.

MICANS INFOTECH

