TECHNOLOGY

Improving Smartphone Battery Life with Cooperative Relaying on LTE Networks

OVERVIEW

Background

As smartphones, tablets, and other mobile devices have become more powerful and cheaper, devices that communicate through cellular networks have become prevalent, if not ubiquitous. However, the utility of these devices are limited by battery life, which has grown at a much slower pace than processing capability, and data accessible through a wireless connection. There has been much work in finding ways to minimize power consumption in these devices, either at the single device level, or at the cell tower scale.

Innovative Technology

Researchers at the University of Maryland have developed a method to improve smartphone battery life by using cooperative relay techniques to more efficiently transmit data to a communication tower. By using existing device to device communication methods, such as Bluetooth and WiFi, user devices with low battery levels can tether to nearby devices with higher battery level. Transmitting information via a device to device connection consumes less power than transmitting directly to the nearest cell tower. The second device then acts as a proxy between the first device and the tower, forwarding information between the low power device and the cell tower. By defining when a user device has a high need to save power, it is possible to create a cooperative relay network within the range of a cell tower. Issues such as bandwidth overhead and security are addressed using features already present in the LTE protocol.

Advantages

· Reduces total number of battery depletion events for a group of users
· Cooperative based system that is transparent to the user

Applications

· LTE networks

CONTACT INFO

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Additional Information

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PATENT STATUS

Pending

CATEGORIES

- Software + Algorithm
- Information Technology
- Clean Technology
- Clean Tech

EXTERNAL RESOURCES

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