

Optimizing Performance of Location-Aware Applications Using State Machines

Researchers at the University of South Florida have improved location-based services systems to decrease the amount of power they consume on mobile devices.

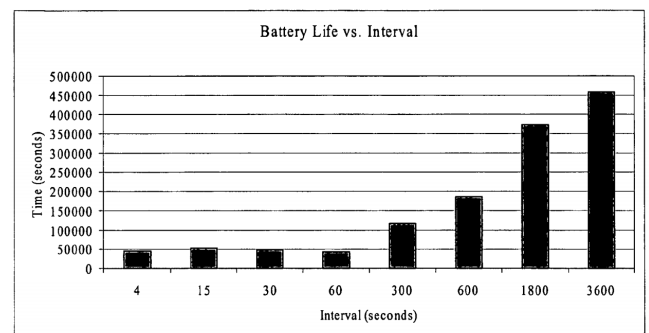
Advances in telecommunications and cell phone technology have allowed for the creation of a variety of wireless device applications. One is the Location-Based Services (LBS) application, which uses a Global Positioning System (GPS) to determine the location of the device. This location information is used to provide some service to the cell phone user, such as the delivery of real-time navigation instructions or emergency information. LBS applications can drain energy from mobile devices through their repeated processing and communication of location data to the cellular network. LBS applications are a known culprit for excess power consumption in mobile devices, thus it is desirable to minimize the processing power and energy they consume.

USF inventors have developed a method that lowers the power consumption of LBS applications by minimizing the number of location calculations made by the device. The invention uses a location aware method to increase the time interval at which location information is requested, so location is calculated less often by the device, enabling it to consume less energy. The method intelligently manages the rate of location calculation attempts. Therefore, the cell phone will consume less energy as possible, based on the real-time needs of the application. This invention is a useful improvement to mobile device technology that will enable longer device battery lives.

ADVANTAGES:

- Automatically adjusts software parameters
- Intelligently manages calculations
- Less power consumed
- Increased battery life

Minimizes Number of Location Calculations Made by Mobile Device



Increasing Location Calculation Interval Increases Battery Life

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