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Offline beacon selection-based rssi fingerprinting for location-aware shopping assistance: A preliminary result (Article)

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Abstract

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The location determination in an obstructed area can be extremely challenging particularly when the Global Positioning System (GPS) is blocked. When this happens, users will encounter difficulty in navigating directly onsite, especially within an indoor environment. Occasionally, there is a need to integrate with other sensors in order to establish the location with greater intelligence, reliability, and ubiquity. The use of positioning integration may be useful since it involves as many beacons as necessary to determine positioning. However, the implementation of the integration in the mobile devices platform may lead high computation which in turn could increase power consumption. In this paper, an offline beacon selection-based RSSI fingerprinting is proposed in order to lessen the computation task during the location determination process, as it may cause huge power consumption in mobile devices. By reducing the number of beacons that will be processed, the number of RSSI fingerprinting searches of the location in the spatial database also reduced. Lastly, the preliminary results are presented to illustrate the performance of an indoor environment set-up. © Springer International Publishing Switzerland 2015.

Author keywords

Global Navigation System; Wireless LAN and Beacon Selection

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