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## **Energy-Efficient Localization and Tracking of Mobile Devices in Wireless Sensor Networks**

Wireless sensor networks (WSNs) are effective for locating and tracking people and objects in various industrial environments. Since energy consumption is critical to prolonging the lifespan of WSNs, we propose an energy-efficient Localization and Tracking (eLOT) system, using low-cost and portable hardware to enable highly accurate tracking of targets. Various fingerprint based approaches for localization and tracking are implemented in eLOT. To achieve high energy efficiency, a network-level scheme coordinating collision and interference is proposed. On the other hand, based on the location information, mobile devices in eLOT can quickly associate with the specific channel in a given area, while saving energy by avoiding unnecessary transmission. Finally, a platform based on TI CC2530 and the Linux operating system is built to demonstrate the effectiveness of our proposed scheme in terms of localization accuracy and energy efficiency.