

A wireless sensor network design and implementation for vehicle detection, classification, and tracking

Vehicle intrusion is considered a significant threat for critical zones specially the militarized zones and therefore vehicles monitoring has a great importance. In this paper a small wireless sensor network for vehicle intrusion monitoring consists of a five inexpensive sensor nodes distributed over a small area and connected with a gateway using star topology has been designed and implemented. The system is able to detect a passage of an intrusive vehicle, classify it either wheeled or tracked, and track the direction of its movement. The approach is based on Vehicle's ground vibrations for detection, vehicle's acoustic signature for classification and the Energy- based target localization for tracking.