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UBIQUITOUS INDOOR GEOLOCATION: A CASE STUDY OF JEWELLERY MANAGEMENT SYSTEM

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Abstract. Addressing and geolocation for indoor environments are important fields of research in the recent years. The problem of finding location of objects in indoor spaces is proposed to solve in two ways. The first, is to assign coordinates to objects and second is to divide space into cells and detect the presence or absence of objects in each cell to track them. In this paper the second approach is discussed by using Radio Frequency Identification technology to identify and track high value objects in jewellery retail industry. In Ubiquitous Sensor Networks, the reactivity or proactivity of the environment are important issues. Reactive environments wait for a request to response to it. Instead, in proactive spaces, the environment acts in advance to deal with an expected action. In this research, a geo-sensor network containing RFID readers, tags, and antennas which continuously exchange radio frequency signal streams is proposed to manage and monitor jewellery galleries ubiquitously. The system is also equipped with a GIS representation which provides a more user-friendly system to manage a jewellery gallery.