A passive wireless tracking system for indoor assistive monitoring

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Abstract

This paper presents a design concept and implementation of an indoor passive tracking system that utilises an array of Wi-Fi transceivers, and without any electronic device or tag attached to the object being tracked. Such tracking is made possible by exploiting the fundamental characteristic of signal attenuation due to object blocking, i.e. shadowing, that is prevalent in a typical wireless communication system. By detecting significant signal attenuation in the system (i.e. by measuring the received signal strength value), it is possible to infer that an object is blocking the line-of-sight (LOS) link in a transceiver set and therefore transforming the existing hardware configuration into a proximity sensors network.

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