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COS Capstone Homework 4

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Title: Wandering Prevention Using Proximity Beacons

Introduction

One of the many concerns that caretakers have to worry about is a resident wandering off. This is especially true for residents suffering from dementia. Addressing this concern about wandering has been approached from many angles but none have produced a solution that is as non-invasive as iBeacons embedded in everyday items such as shoes or canes. iBeacons use Smart-Bluetooth technology to transmit data packets up to 200 meters. One current solution is an alarm based security measure for a door. This method is primarily used in care homes but makes the resident feel like they are in a jail cell. Another common solution is to install locks that are flush with the door near the top or the bottom of the door. These locks can help trap someone with dementia indoors because learning how to operate new locks can be difficult for those suffering from dementia. These current solutions make residents feel like prisoners in their own homes, this new solution will attempt to solve this problem. Moving away from “jailing” methods you could look at tracking methods. Solutions that use tracking utilize the GPS in a cell phone. These tracking solutions don’t work the moment the resident sets their cell phone down and forgets it in another room before they wander.

By embedding the beacons inside of objects that residents will use everyday they become part of the routine, and are significantly less likely to be left behind than a cell phone that gets set down and forgotten. Because this solution does not prevent them from performing any activities or going anywhere they will not feel “jailed”. These beacons will communicate with a central hub in their home. The hub is responsible for monitoring the presence of beacons and what to do if one goes missing. The central hub can listen for as many beacons as necessary, and using local internet solutions will be able to contact caregivers or emergency services should a resident go missing. This solution is invisible to the residents, and will reduce the lag time between a resident going missing, and authorities being notified.