Homemade Security System

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***Abstract*—Ik hou zo erg veel van mijn leven :3 .**
***Index Terms*—home security, IoT, wireless, Bluetooth,**

I. Introduction

This project came to be as a schoolassignment. The team was tasked with the researching, designing and prototyping of a home-made security system for use in homes or offices.

II. Project Definition

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A. Problem Definition

aids

B. Requirements

- wireless
- low-power
- reliable

C. Riskanalysis

anus asd

III. State of the Art

Some securtity solutions already exist, such as: Verisure, SimplySafe and Nest. These solutions are a complete package-deal. They include a sensors which are easy to install for novice users and often offer subscription services

IV. Design

The system consists of three physical parts.

- Sensor
- Arming panel
- Hub

Each sensor module has their own sensor, Bluetooth Low Energy(BLE) module, battery and a microcontroller. For this project, two sensor modules to detect movement in house are used. The first sensor module uses a Reed sensor. The other sensor module uses a Passive infrared(PIR) sensor. When a sensor module detect a change, it will send the data over BLE to the Hub.
HUB STUFF HERE
ARMING PANEL STUFF HERE
Wired to Hub with i2c. why? state of art as reference
Image here?

V. Result

The sensor modules are most of the time in power-down sleep mode to reduce power usage. To wake a sensor module, a pin change interrupt is used. The pin change interrupt will be triggered when a sensor detect a change. The sensor module will then send the data from the sensor over BLE to the Hub. After sending the data, it will go back to sleep.