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Home Security Device Implementing Dual Sensory Technology

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Introduction

Home security is important to allow the public to feel at ease and secure within their homes. Between January 2016 and December 2016 there were reported 200,659 (an increase of 4%) burglaries an increase compared to 2015 [1]. With burglaries on the rise I believe home security is important and with the design of such a device could potentially lower this figure.

Aims & Objectives

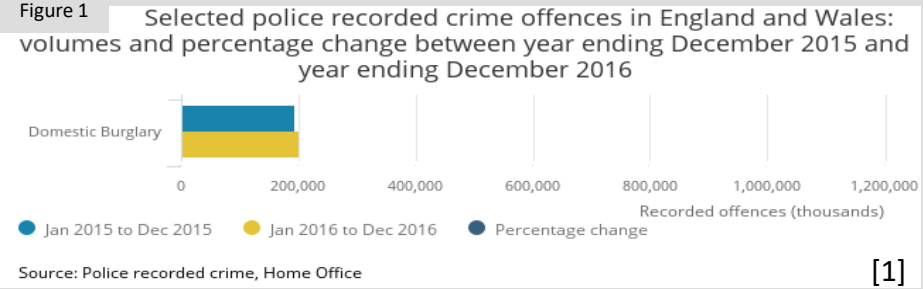
The aim of this project is to design and fabricate a home security device/system to reduce the rate of burglaries.

- To be affordable for all members of the public.
- Implementation of dual sensor technology particularly infrared and microwave as shown
- For outdoor/indoor usage.
- To notify user of prolonged sensor activity.
- Implement Microprocessor Technology

Chosen Technologies

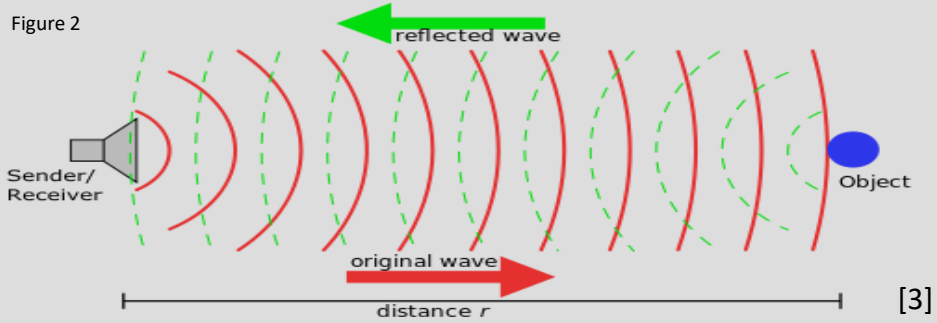
The reasoning behind choosing dual technology and particularly microwave and infrared is because they both compliment each other weaknesses with their own strengths. Implementing both technologies will produce a device which has higher accuracy and overall be more reliable.

Figure 1



[1]

Figure 2



[3]

Figure 3

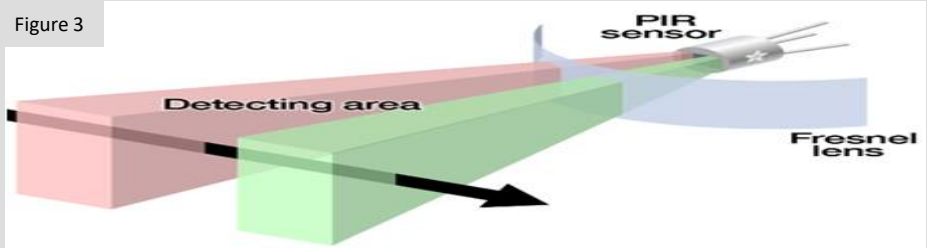
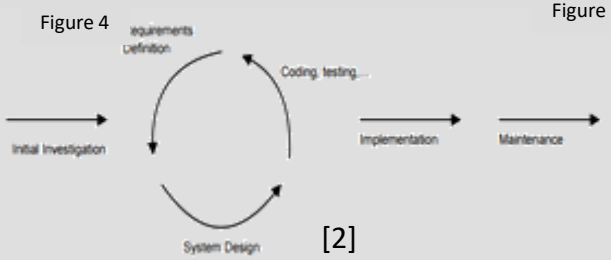
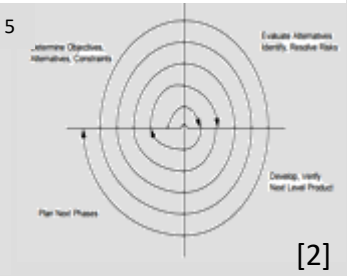


Figure 4



[2]

Figure 5



[2]

Development Methodology

- Spiral

Breaking down the project into smaller steps (spiral cycle) providing more ease of change during the development process. Another reason on choosing this methodology is its flexibility allowing other development methods to be implemented such as the "Prototype" development method for specific areas of the project. [2]

- Prototype

A strength for implementing the prototype strategy is that it provides quick implementation of an incomplete but functional application, to fabricate the device I have chosen will present a lot of unknowns such as technology I'm not experienced with, however if the end result is functional and meets my aim and objectives the overall project will be a success. [2]

References

[1] "Crime in England and Wales - Office for National Statistics." [Online]. Available: https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/bulletins/crimeinenglandandwales/yearendingdec2016. [Accessed: 05-Oct-2017].
[2] CMS, "Selecting a Development Approach," CMS, 27 03 2008. [Online]. Available: https://www.cms.gov/research-statistics-data-and-systems/cms-information-technology/xlc/downloads/selectingdevelopmentapproach.pdf. [Accessed 03 05 2017].
[3]"496px-Sonar_Principle_EN.svg.png (496×266)." [Online]. Available: https://upload.wikimedia.org/wikipedia/commons/thumb/0/07/Sonar_Principle_EN.svg/496px-Sonar_Principle_EN.svg.png. [Accessed: 05-Oct-2017].