Opportunity and Significance

This product tackles the problem of security and offers a solution that can be integrated to work hand in hand with current security surveillance systems. Any increase in security proves valuable in offering further protection for prized possessions.

Technical Approach, Accomplishments and Results

Product utilizes Arduino and Processing in tandem to operate. Program is written in the Arduino software to incorporate hardware components and sensors to retrieve required information regarding the environment. The main hardware components are the ultrasonic sensor and the servo motor which work together to observe the environment. Once the environment is quantified, the information is sent to the Processing application by means of serial connection where the environment is mapped out in the form of a sonar monitor as seen below. One main benefit of using an ultrasonic sensor to retrieve information about the environment is that the product has the ability to perform in the dark.

Next Steps for Development and Test

There are many different additions that can supplement the current product to improve the functionality. Employing better sensors and motors along with tuning of the programs can make the product perform more effectively.

There are also many different directions that can be taken in terms of the holistic development and integration of the product with current security systems. There is a potential for customization in operation by request of a customer. For example, once a change in environment is detected, the product can send an alert or notification or point attention to the current location of distress instead of producing an alarm. Art gallery security has different needs than building night surveillance security, and those needs can shape the product.

Commercialization Plan & Partners

All companies have a demand for some sort of security system. This product can fill this demand or can be integrated with a current security system already in place to increase performance. One of the main hurdles to commercialization is creating a final polished product. Sponsors and investors can aid to overcoming this hurdle in providing the monitory requirements to develop the product into its final form.

References

Some code acquired from Mechatronics at https://howtomechatronics.com/