

# Obstacle Detection and Avoidance for the Visually Impaired

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## 1. INTRODUCTION

Our value of proposition is “Navigating for a better life”. In our questionnaire with visual impairment person. We found out that they are unable to navigate themselves through places that they are unfamiliar with. This condition is very dangerous as they might bump into anything that might cause harm to them. It will reduce the safety of the individual. With “Navigating for a better life” motto in mind. We want to have a tool to help the individual to increase their safety. With the tool, they are able to 1) identify the danger that might occur to them and prepare to take necessary action. The solution that we came out with is a sensor that attached to their daily belongings such as cane or glasses. This way, they did not need to bring any extra device with them.

## 2. STORYBOARDS



Figure 2.1 Storyboard for white cane (Touch + Infrared sensor)

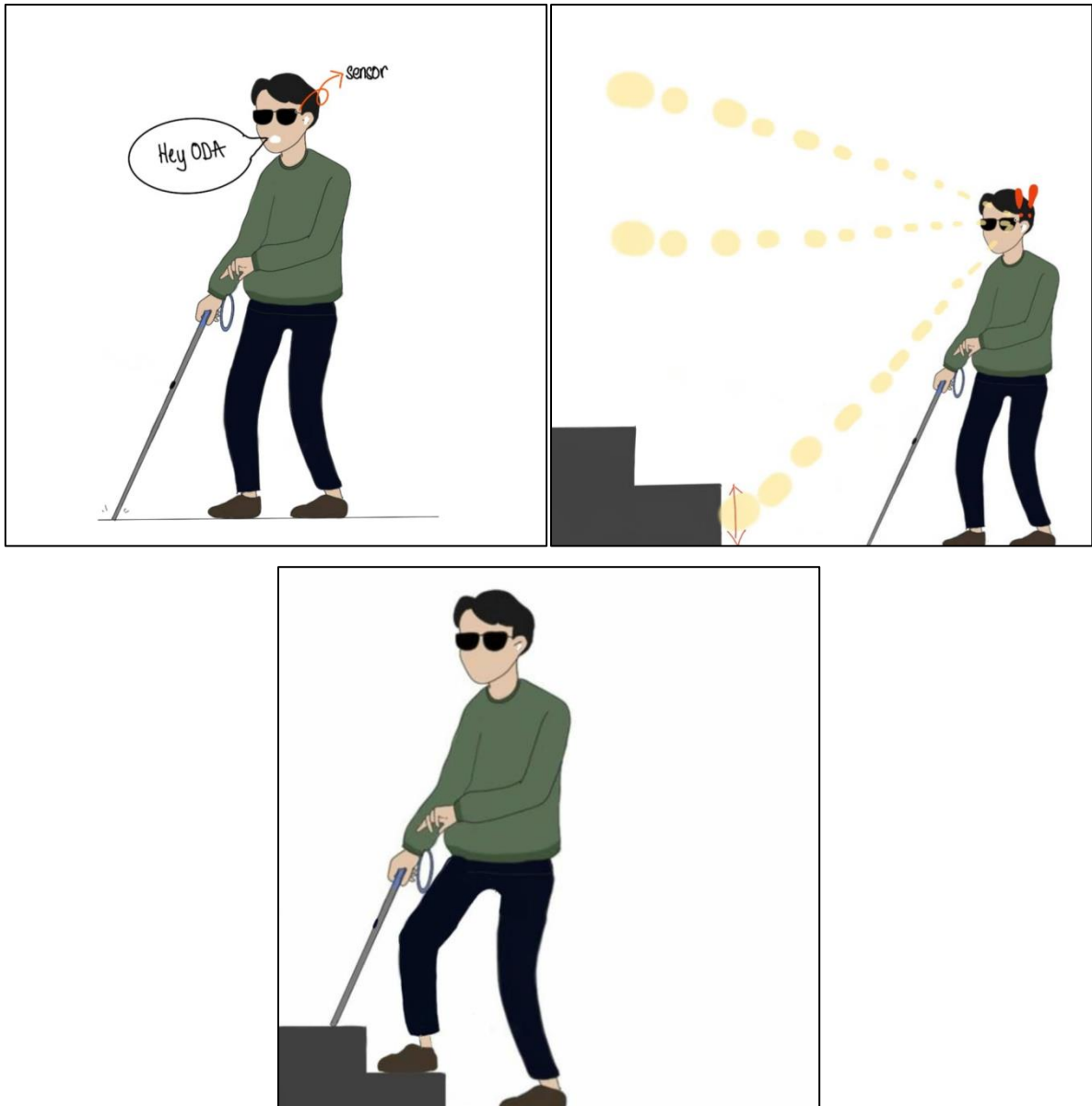


Figure 2.2 Storyboard for Glasses (Speech recognition + Infrared sensor)

### 3. WIRE FLOW DIAGRAM

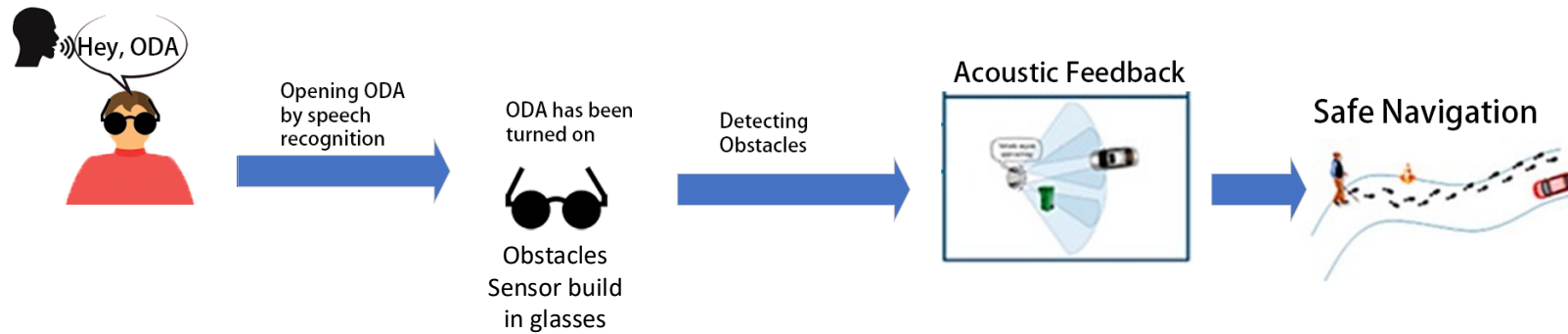


Figure 3.1 Wire Flow Diagram for speech recognition + Infrared sensor modalities

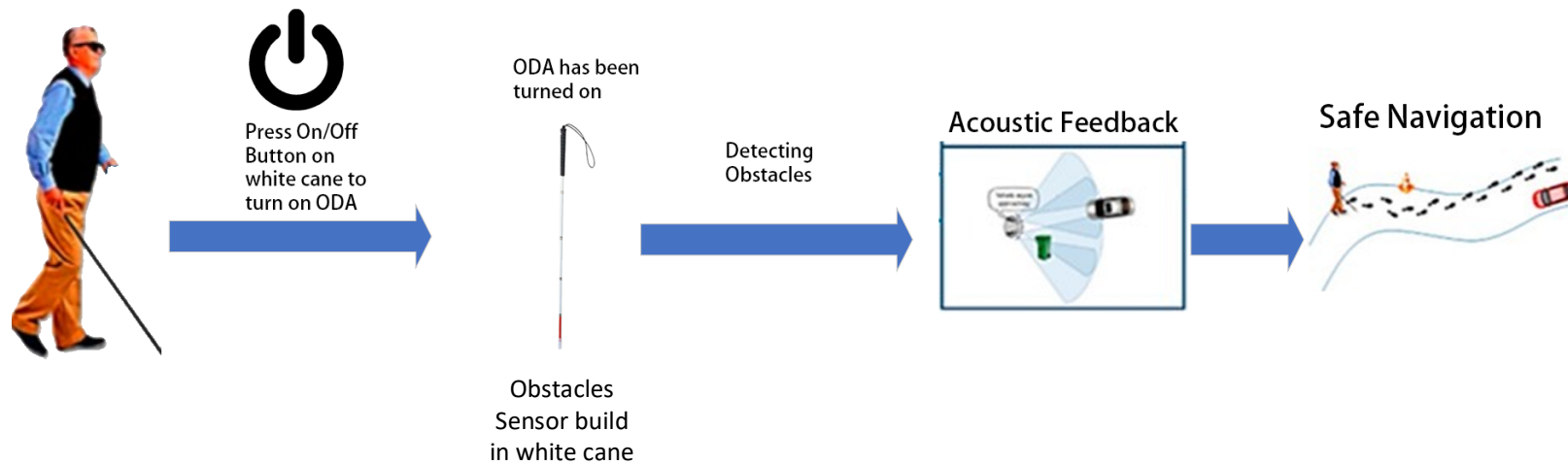
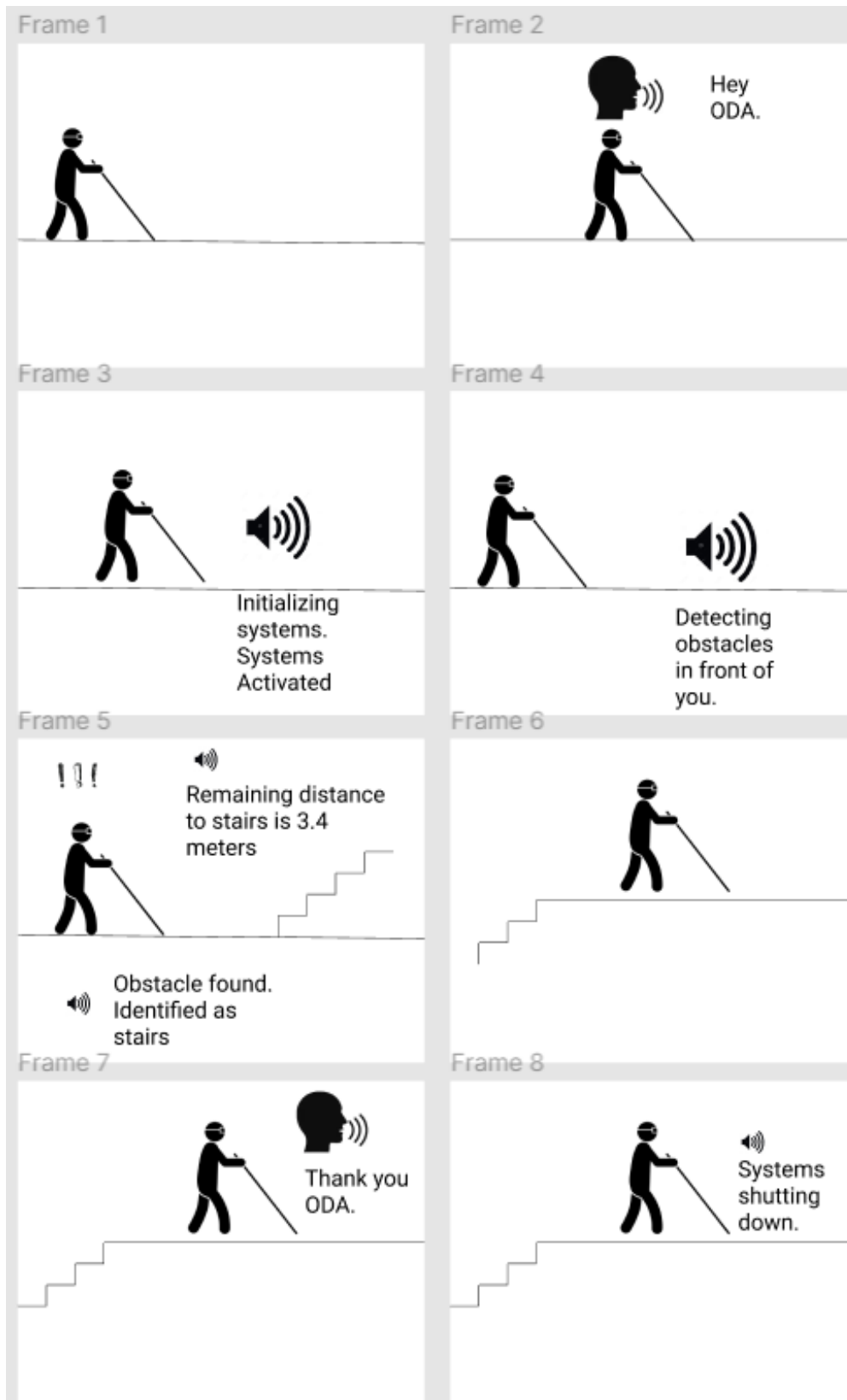


Figure 3.2 Wire Flow Diagram for Touch + Infrared sensor modalities

## 4. PROTOTYPES

### Prototype 1: ODA Glasses



Prototype 2: ODA Cane

