SEEING FOR THE BLIND

A novel device that uses echolocation and machine learning to give the blind access to greater mobility

THE PROBLEM

- 285 million people are legally blind:
  - They do not know **what** the objects around them are, or **where** they are in relation to them.

Thus, they lack a sense of spatial navigation and independent mobility

WHY IS THIS THE BEST?

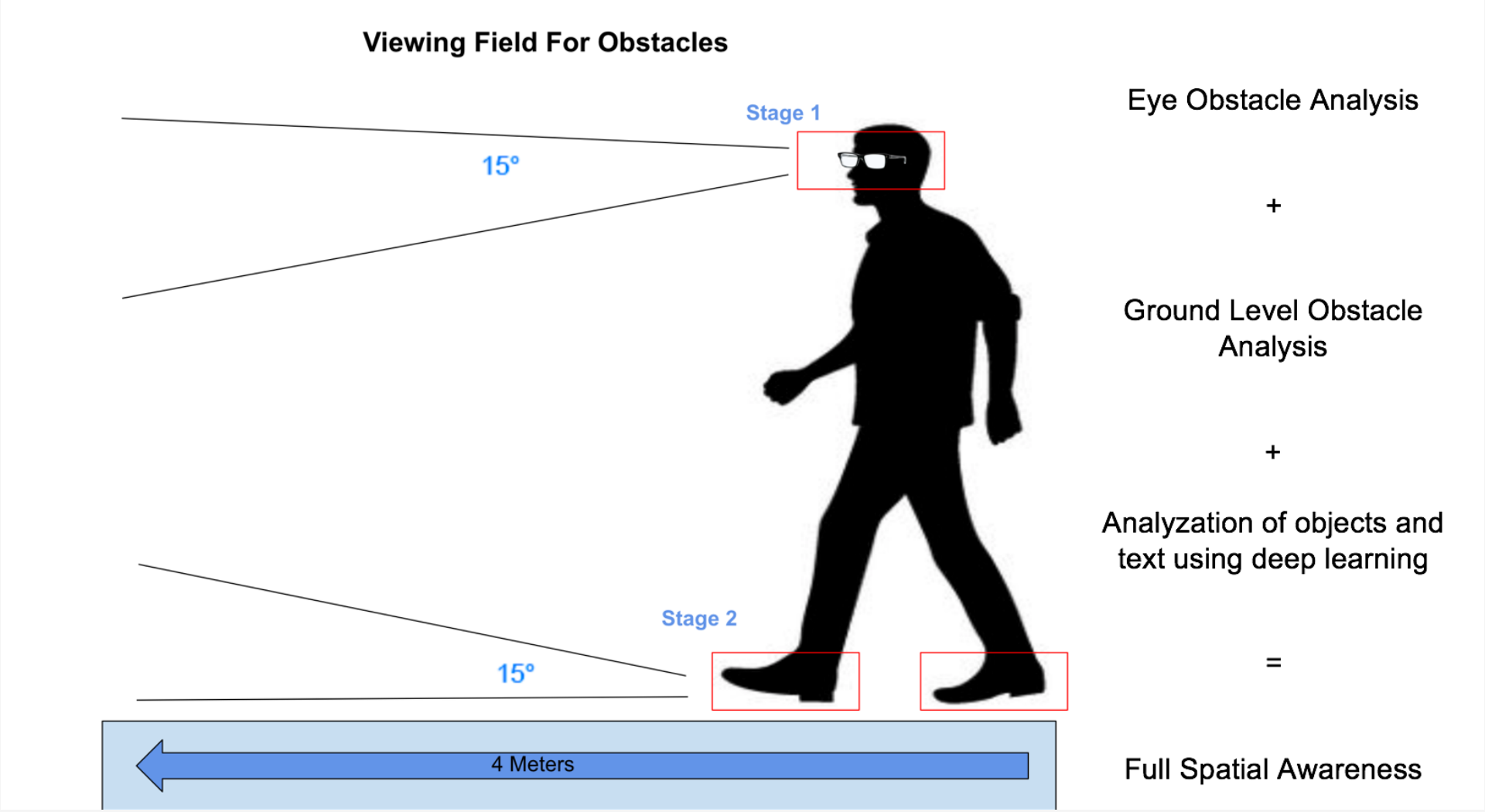
- Unlike:
  - White Canes
  - Guide Dogs
  - Human Guides
  - Facility placement
  - Sonar Glasses
  - Microsoft Object Recognition
- Seeing for the Blind:
  - Reports more distance
  - Does not tire the user
  - Reports on objects at multiple heights
  - Inexpensive
  - Portable
  - Comprehensive Spatial Analysis

CUSTOMER PROFILE

- **285** million people are legally blind, meaning their vision is inadequate enough to comprehend their surroundings
- **39** million people are fully blind, meaning they can't see whatsoever
- There are two types of blind people:
  - People who are blind after birth who have experienced sight before
  - People who are congenitally blind at birth and have never seen before

This product is aimed at both legally and fully blind users, especially towards those who are blind after birth

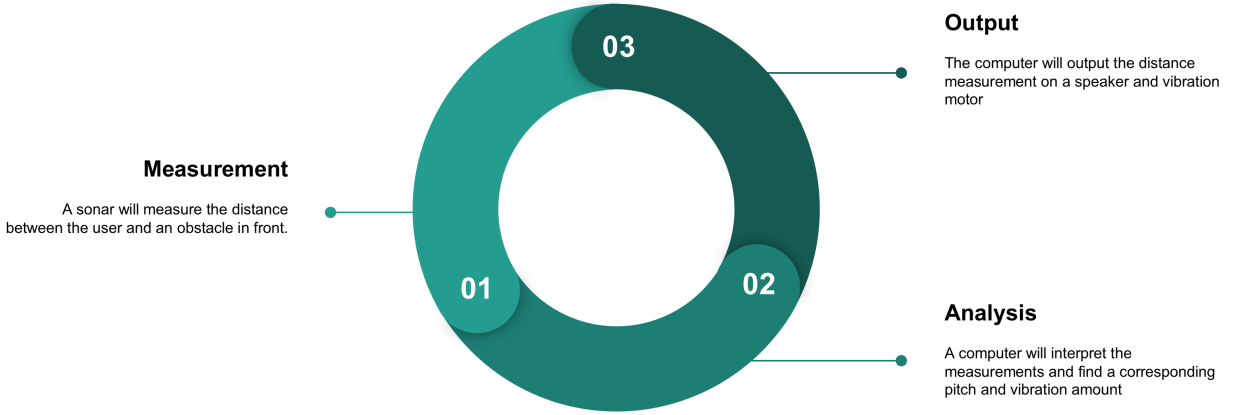
HOW IT WORKS

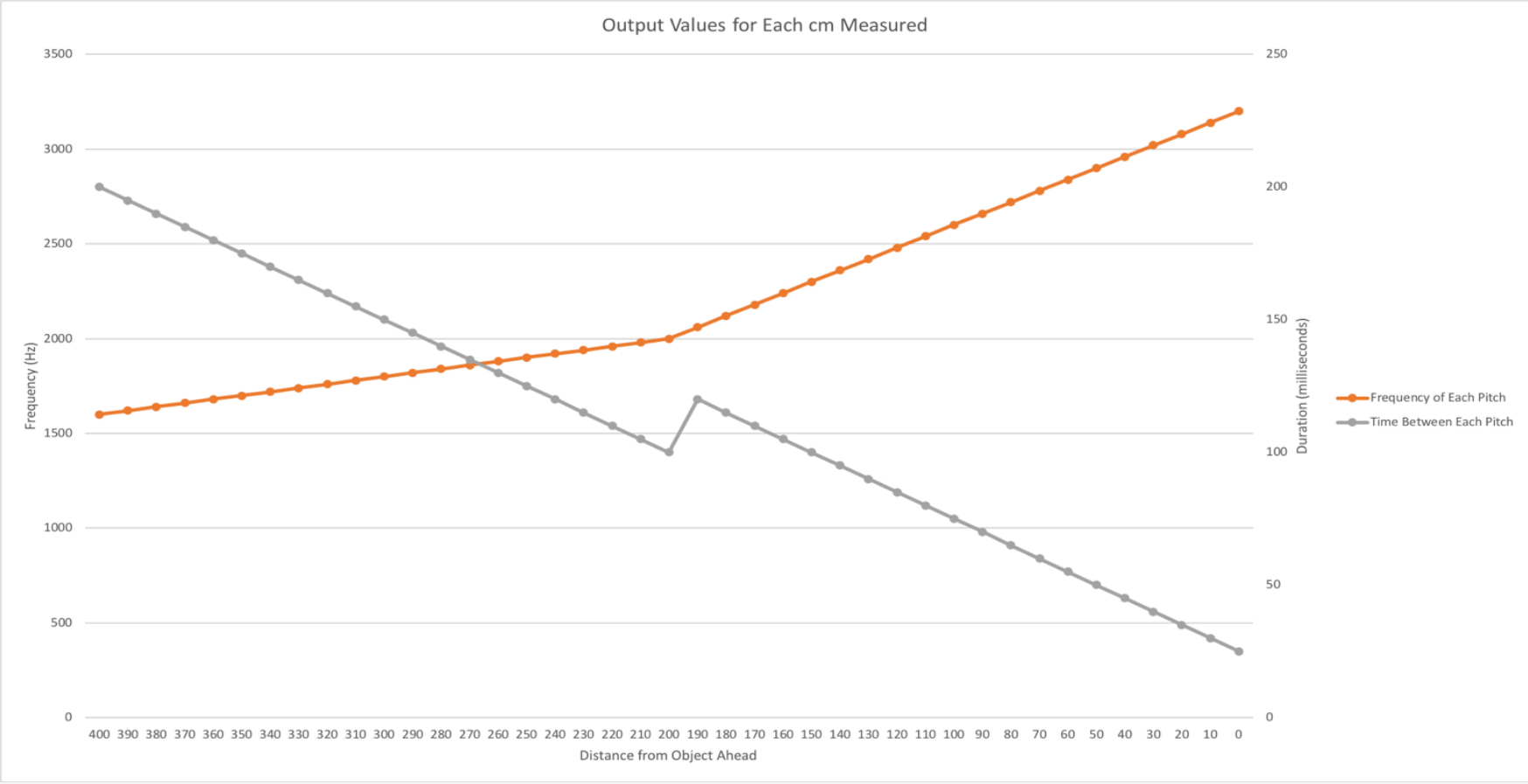


There are two main systems: **The Echolocation System** and **The Object Identification System**

THE ECHOLOCATION SYSTEM

- A sonar on a pair of glasses and shoes will measure the distance between the user and an obstacle
- The measurement will be processed and a corresponding sound and vibration value will be calculated
- An analysis of the distance will be outputted in the form of sound and vibration



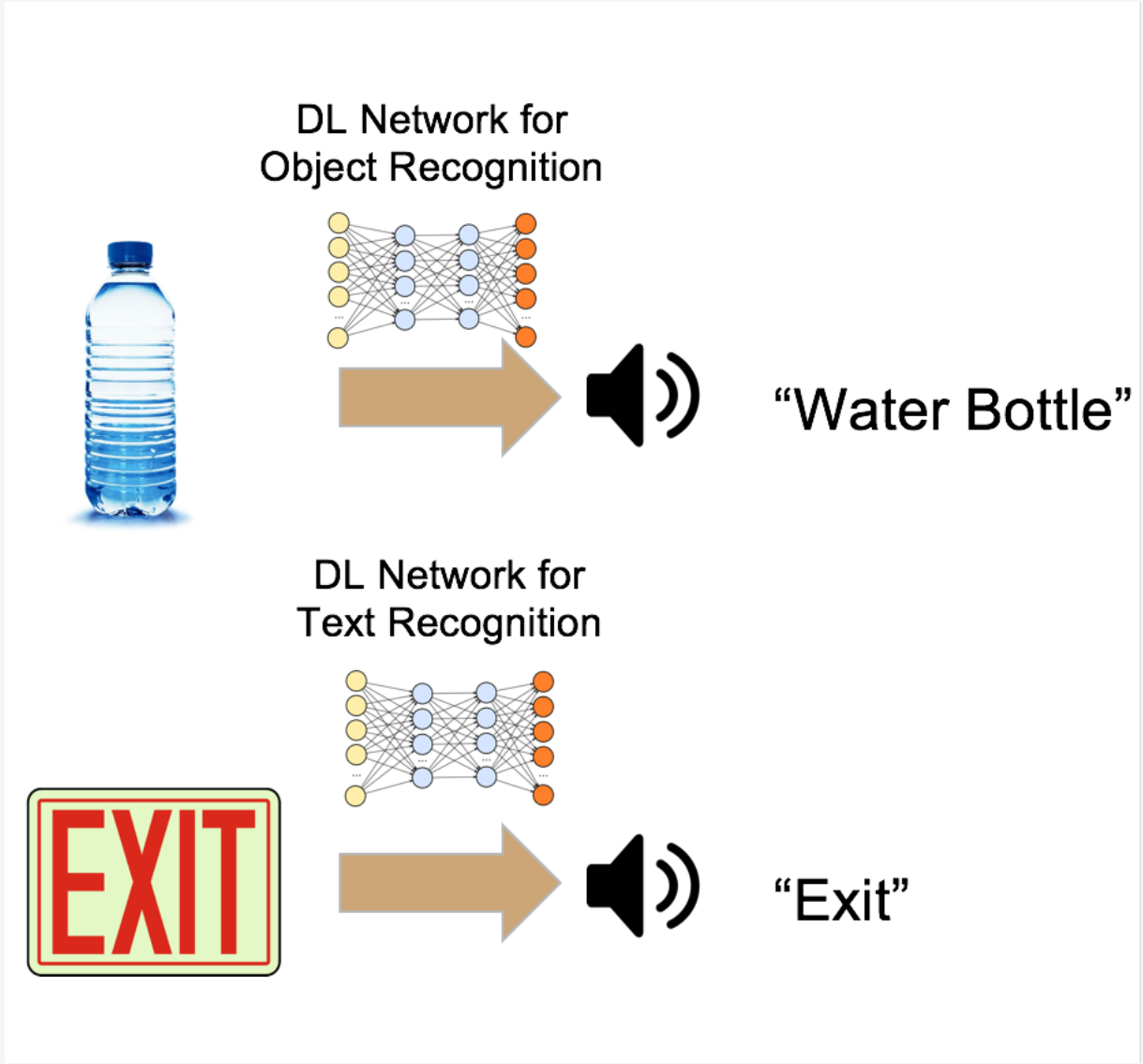


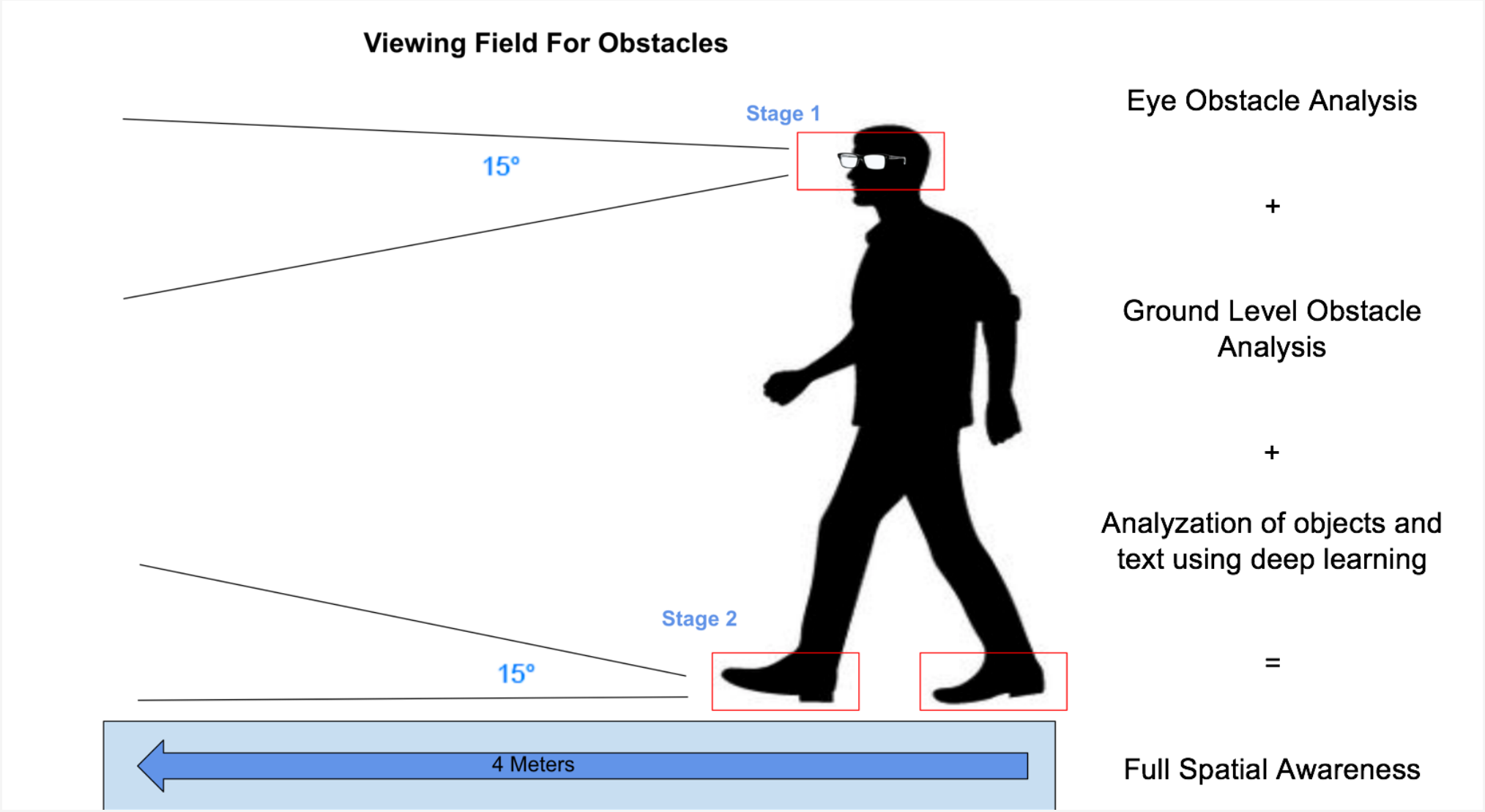
- The echolocation system is placed on both the glasses and feet for **eye level** and **ground level** obstacle analysis

- This allows the blind to understand **where** objects are in relation to them

THE OBJECT IDENTIFICATION SYSTEM

- An onboard camera takes a photo of the surrounding objects on the user's request
- The image is analyzed in a **deep learning neural network** and the object or text is identified
- The name of the object or text is read out through a speaker





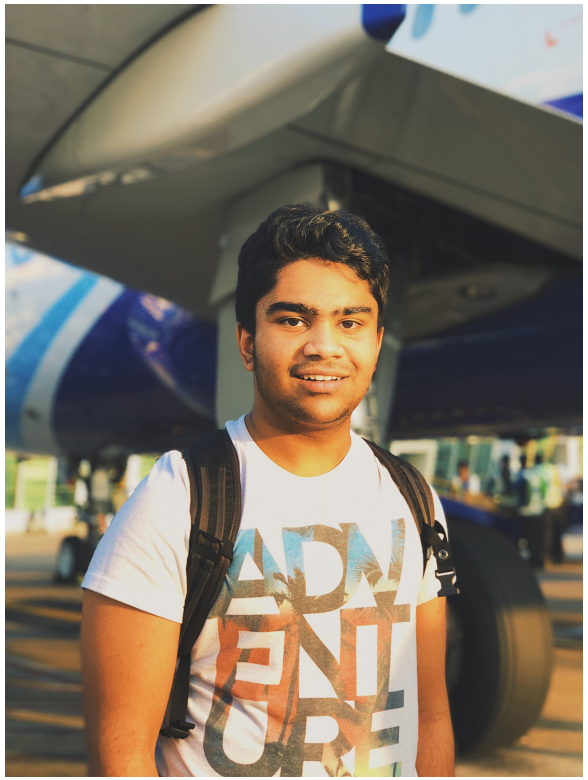
- Users knows **what** objects are around them and **where** they are
- User has a greater sense of surroundings
- User can navigate with ease

FUTURE GOALS

Grow	Develop	Distribute
Grow the neural network to recognize more objects and incorporate facial recognition	Create a production version of the device that is more compact and versatile	Sell the production model to more users

REVENUE MODEL

THE TEAM



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QUESTIONS?