



& ThoughtWorks®

AGILE HARDWARE INNOVATION

How we created a great device in only 5 weeks !

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WHAT IS ORIENTATION & MOBILITY

Our training includes all aspects of daily travel, utilizing:

- Long cane training
- Wayfinding technology
- Public Transport training
- Orientation to local travel routes
- Safe road crossings



Kerb Design



ROAD CROSSING STRATEGIES AND THEIR ISSUES

Tactile Ground Surface Indicators (TGSI's)



Audio Signals

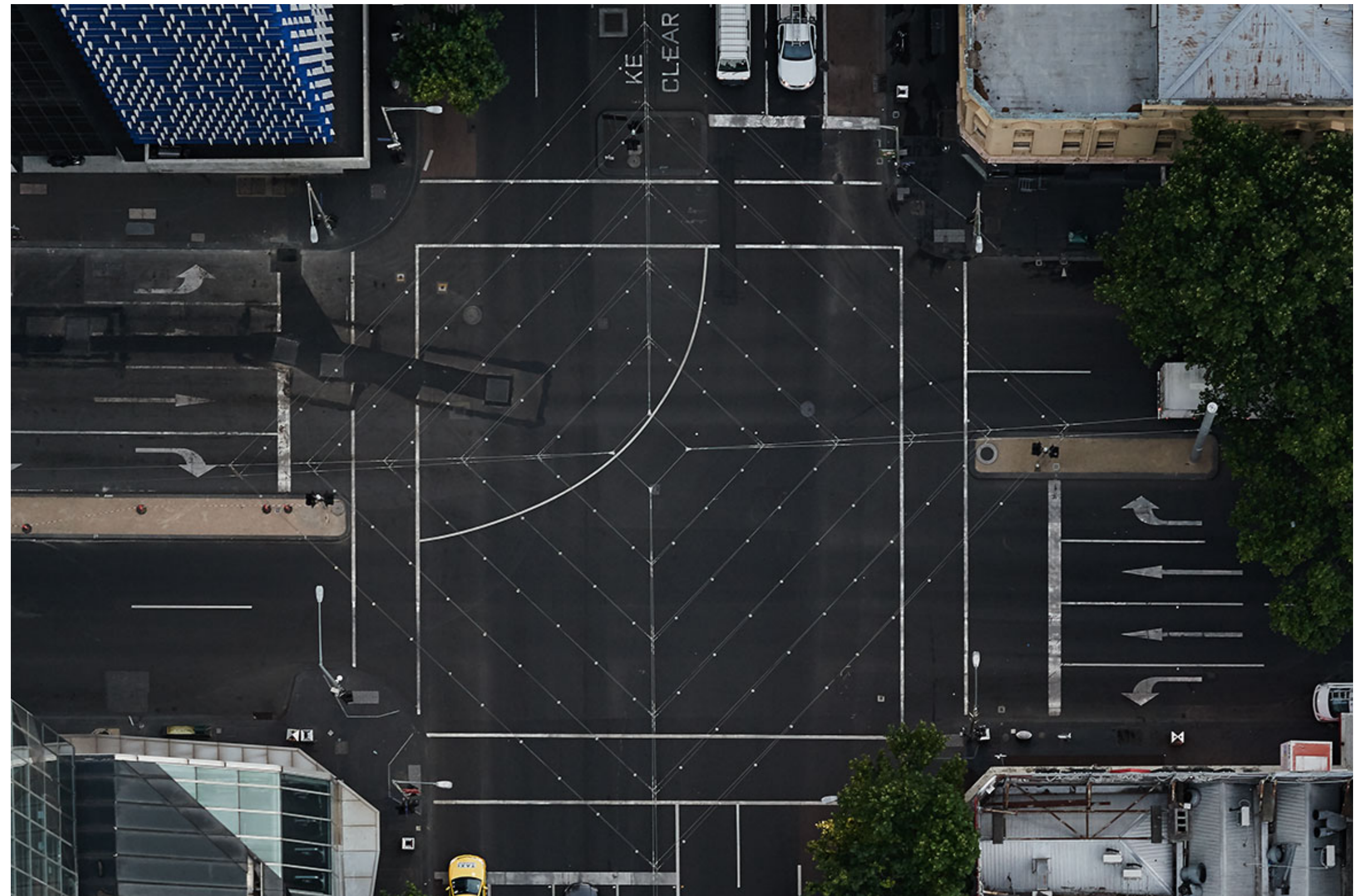
Some clients use the sound of the audio signal as a spot to aim for :

- Not always loud enough to hear from the other side*
- Not all intersections are fitted with an audio output*
- Not useful to clients with a hearing loss.*

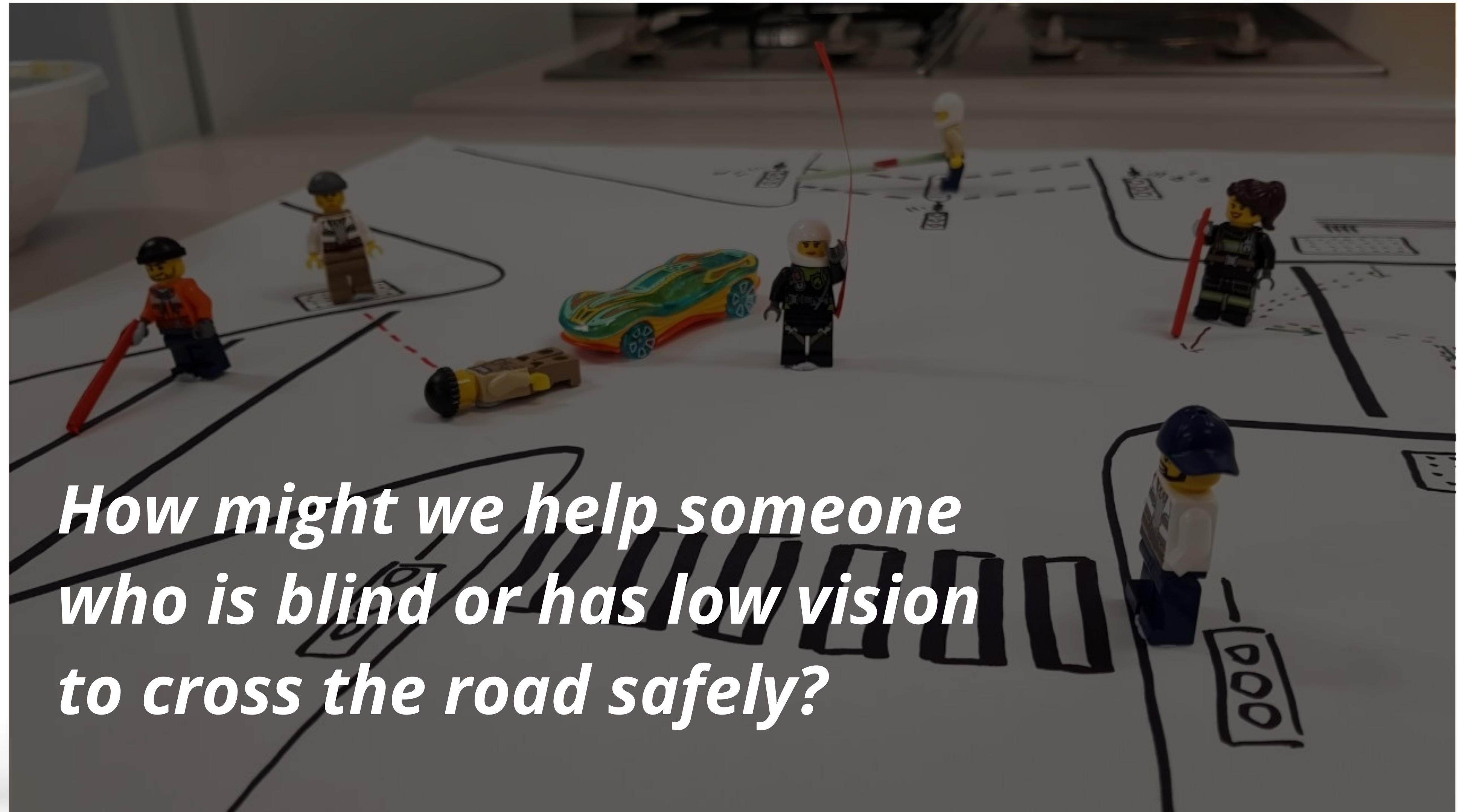


Straight line walking

- A major issue for any independent traveller.
- Very hard to correct, even with intensive training.
- Something that can be easily demonstrated.....



HOW MIGHT WE



How might we help someone who is blind or has low vision to cross the road safely?

IN FIELD DISCOVERY

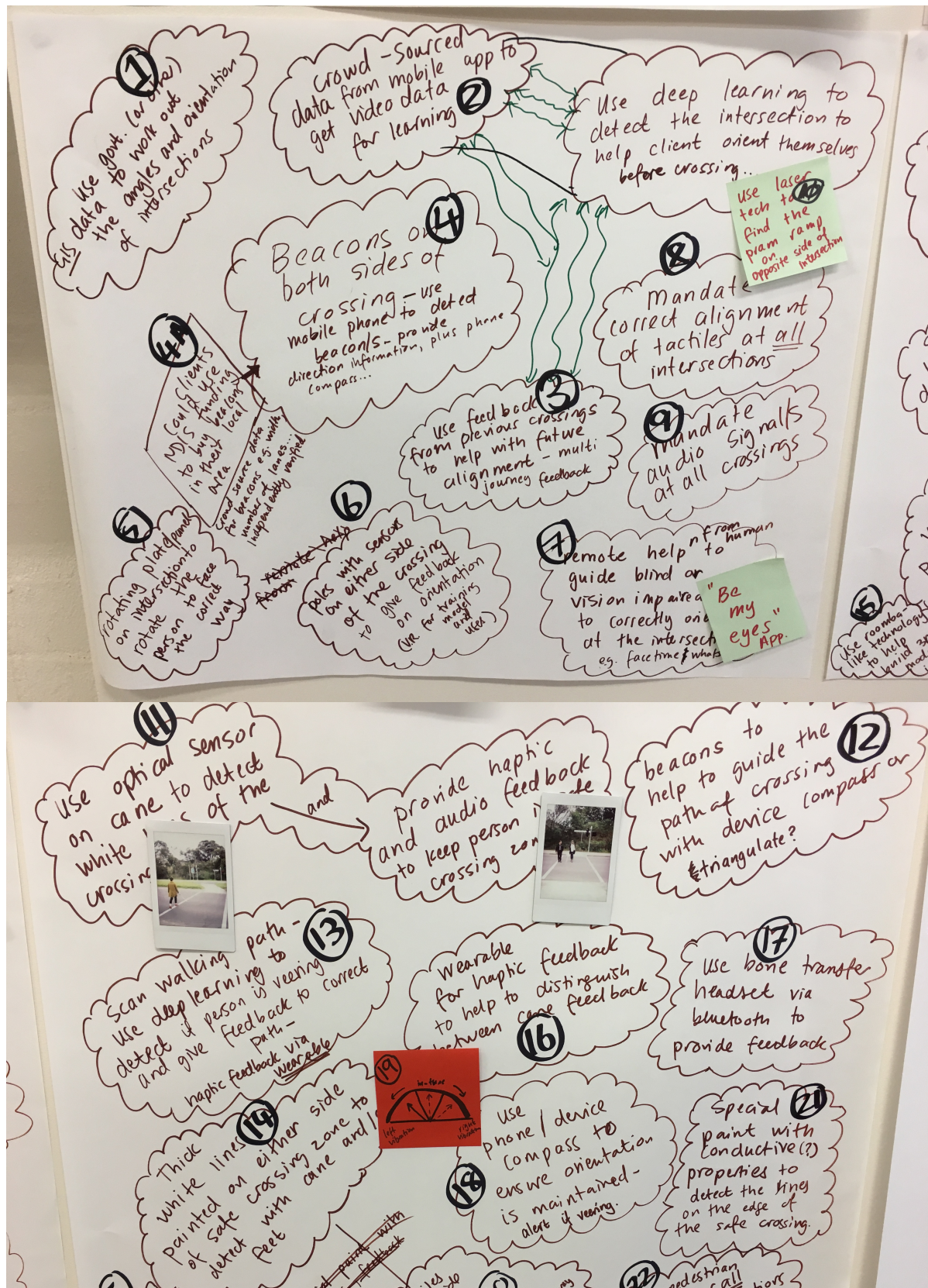




Heidelberg

How might we help the blind to avoid veering off when crossing road ?

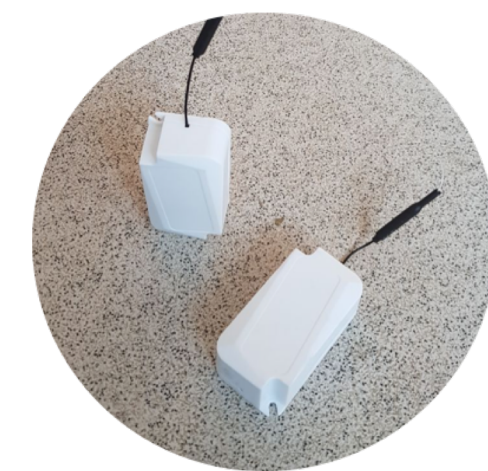
Ideated 26 ideas



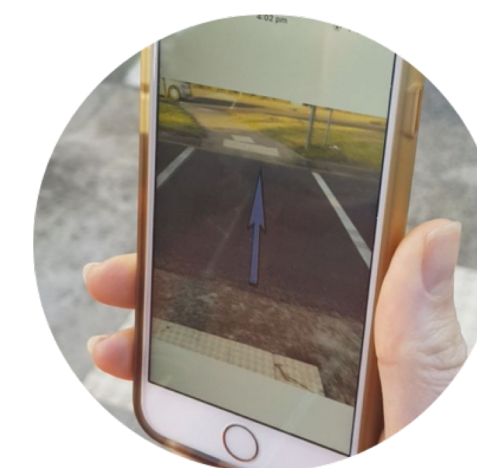
Ranking

	AFFORDABLE	EASY TO USE	RELIABLE	NOT TOO MANY DEVICES	UNOBTRUSIVE NOT BULKY
1	✓	✓	?	✓	✓
2	✓	✓	X	✓	✓
3	✓	✓	X	✓	✓
4	?	✓	?	✓	✓
5	X	✓	X	✓	✓
6	X	✓	?	✓	✓
7	✓	✓	✓	✓	?
8	X	✓	✓	✓	✓
9	X	X/✓	X	✓	✓
10	✓	X	X	✓	X
11	✓	✓	?	✓	✓
12	?	?	?	✓	✓

Top3 ideas



Beacon & Compass



Machine Learning

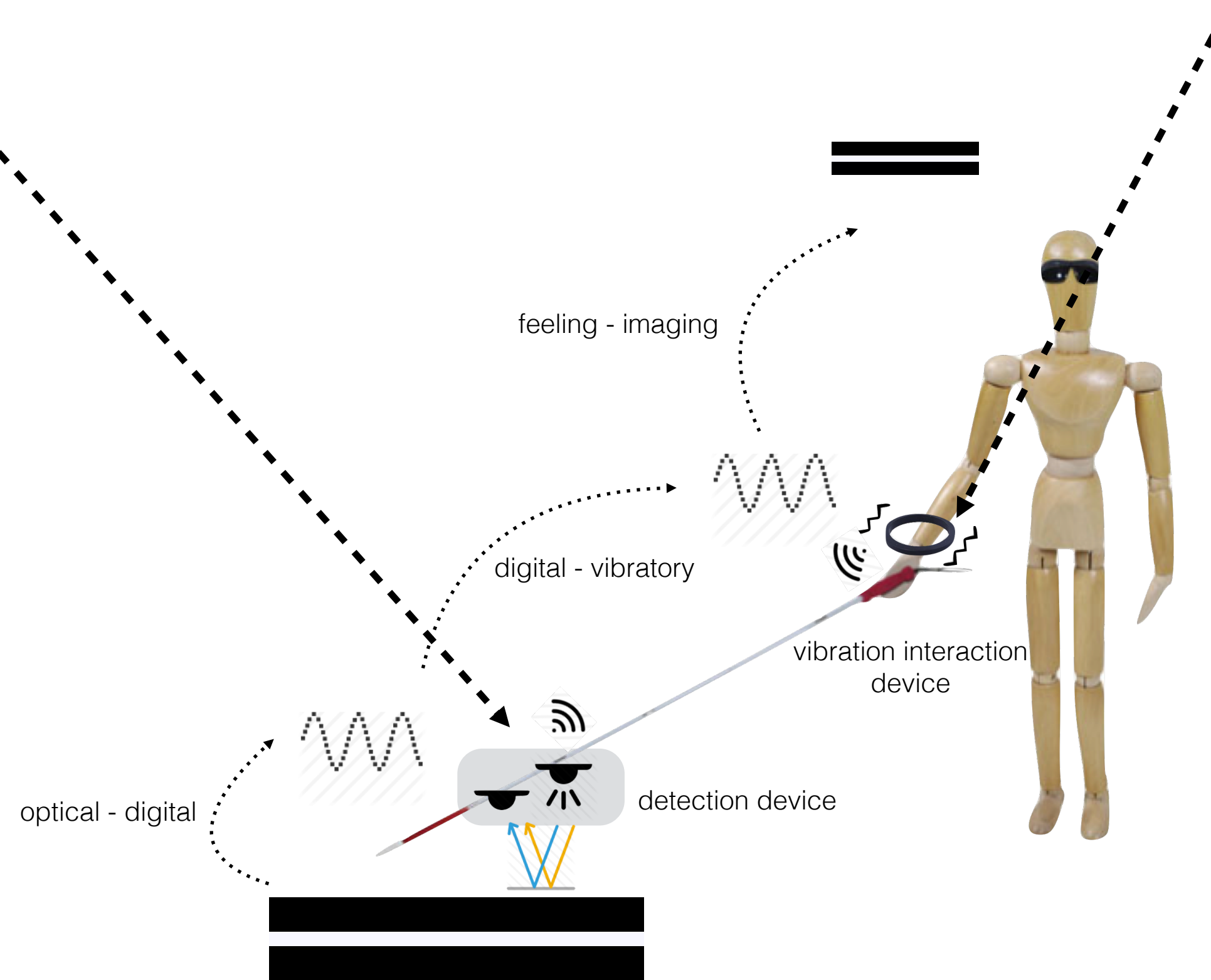


Optical Sensor

SOLUTION - OPTICAL SENSOR

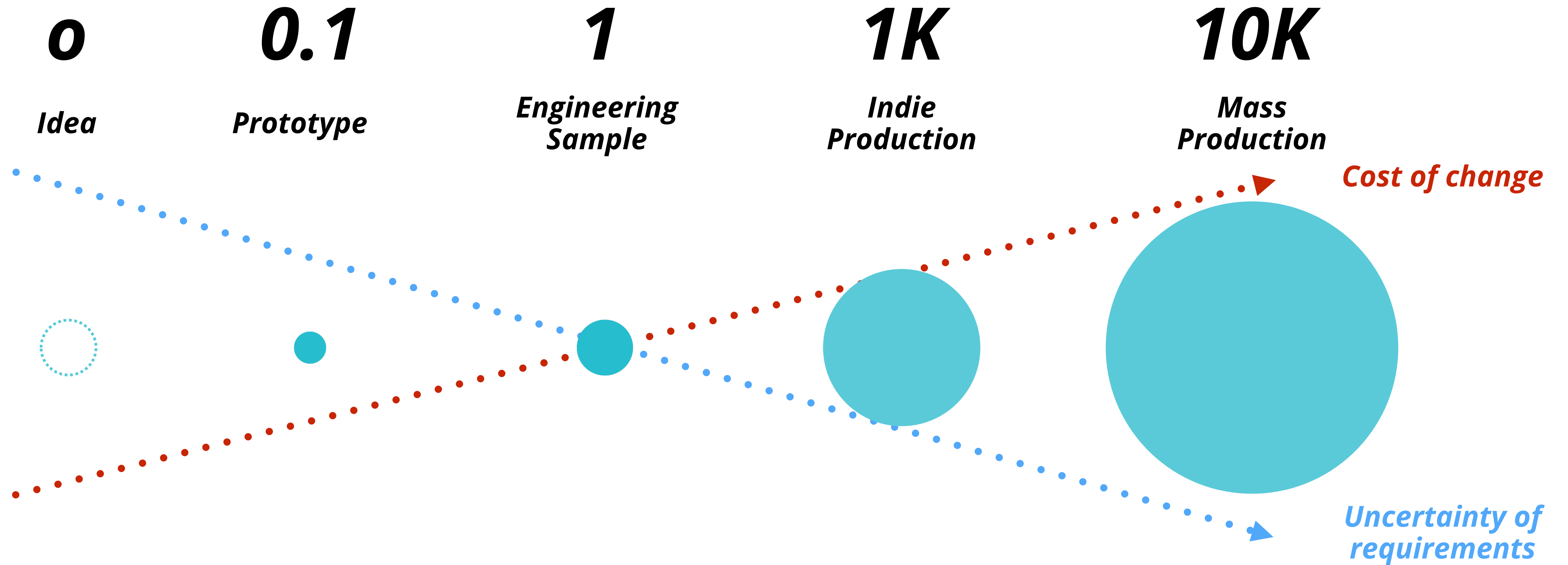
Detection device

Interaction Device



● SW ● HW

AGILE HARDWARE DEVELOPMENT

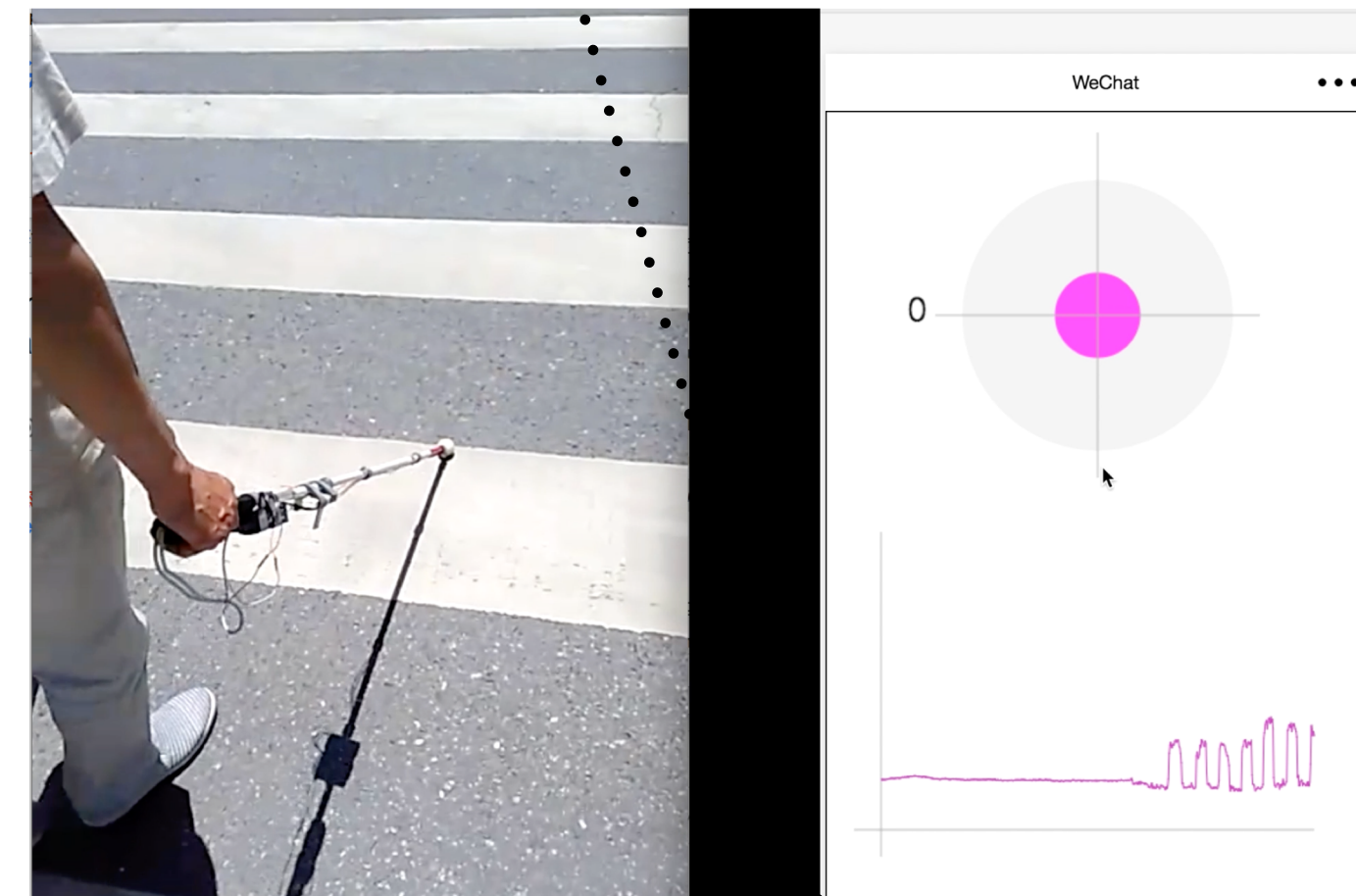


WEEK 1 - BUILD OPTICAL SENSOR AND OBTAIN MEASUREMENT DATA

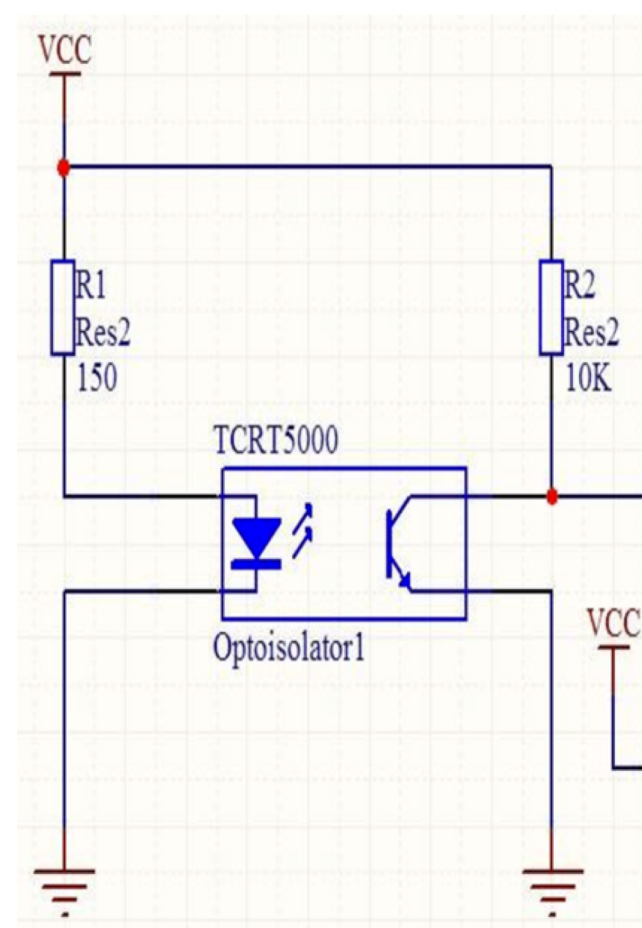
A. Select infrared receiver and emitter



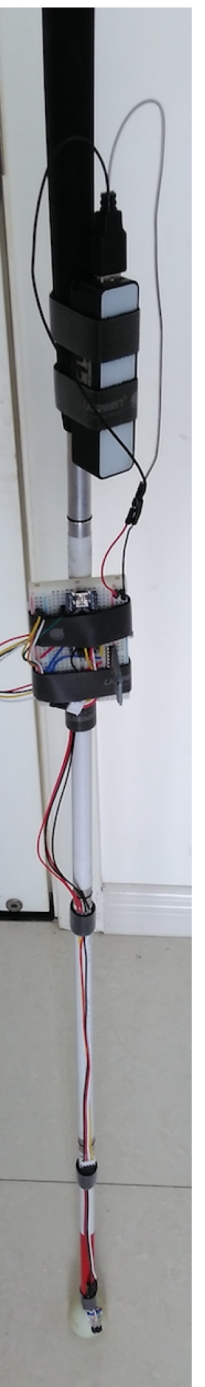
D. Build test app & data transferring with bluetooth



B. Build measurement circuit & firmware



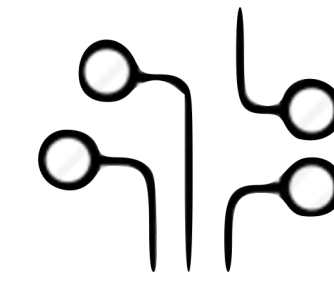
C. Build prototype of detection device



WEEK 2 - BUILD PROTOTYPE OF INTERACTION DEVICE

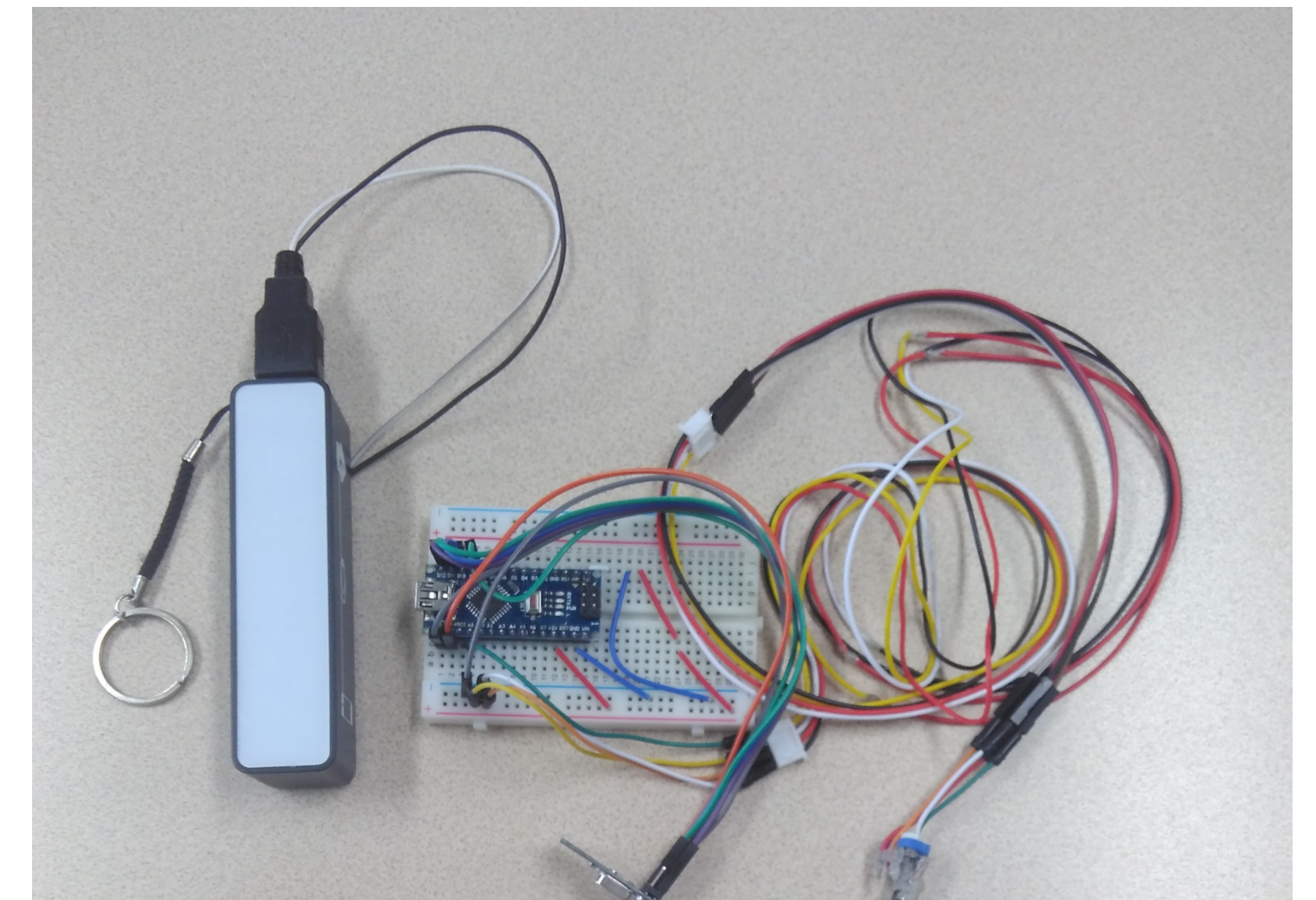
A. Select power, vibration and wireless module

B. Build circuit & firmware

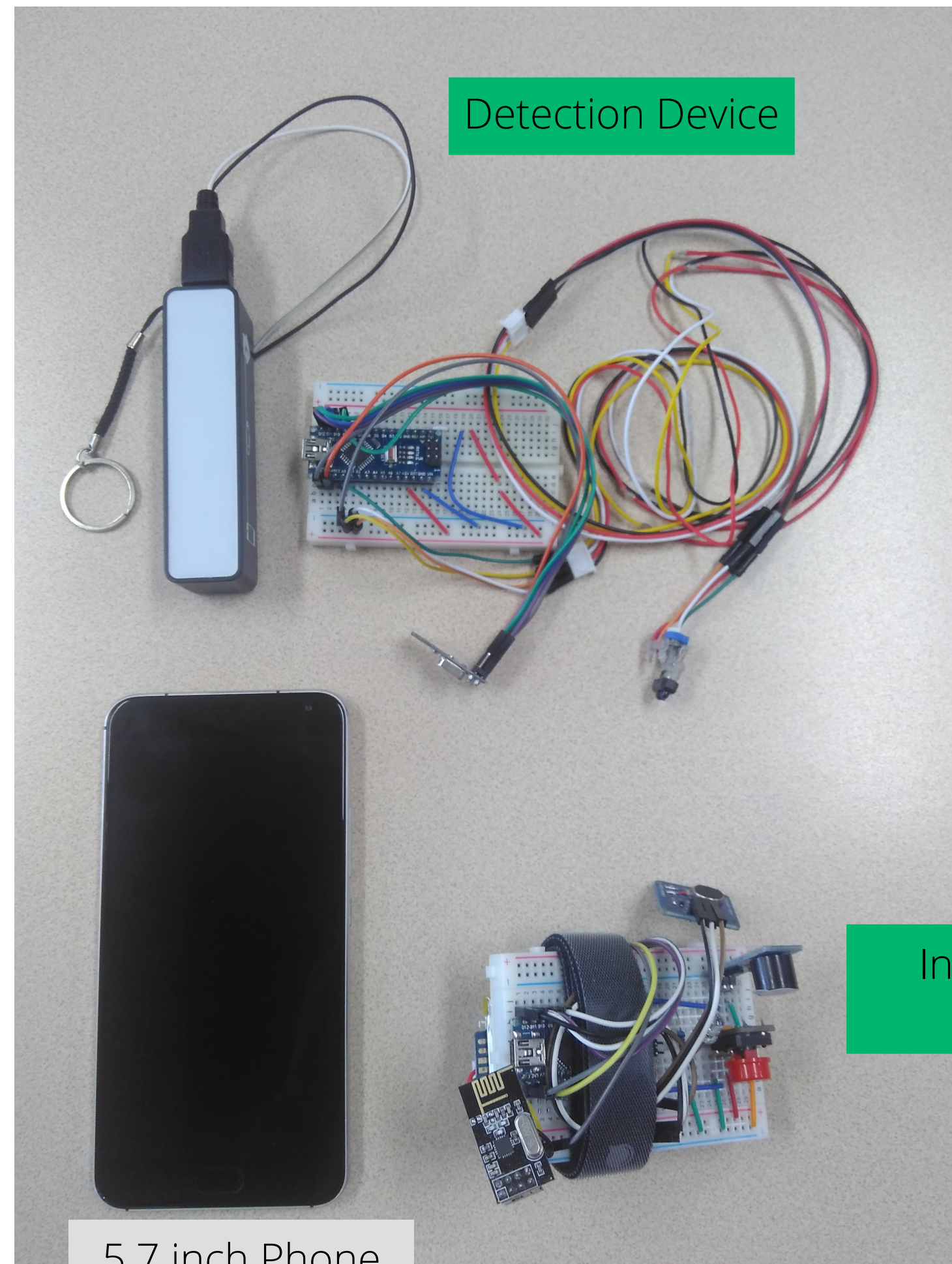


C. Build prototype of interaction device

D. Test & Fix



WEEK 3 - MAKE IT COMPACT AND SMALL, PROTOTYPE V2

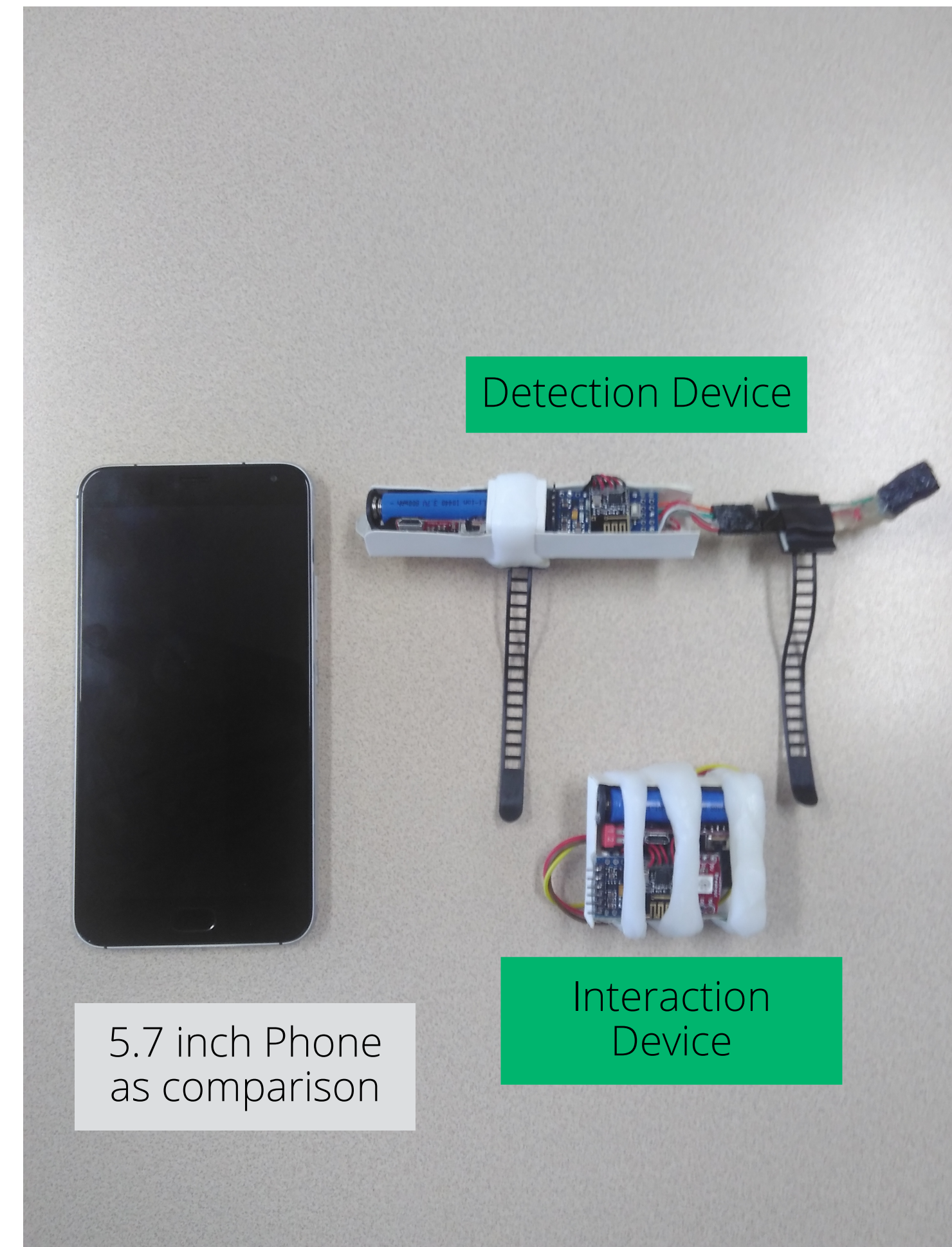


Detection Device

Interaction Device

5.7 inch Phone as comparison

Prototype V1



Detection Device

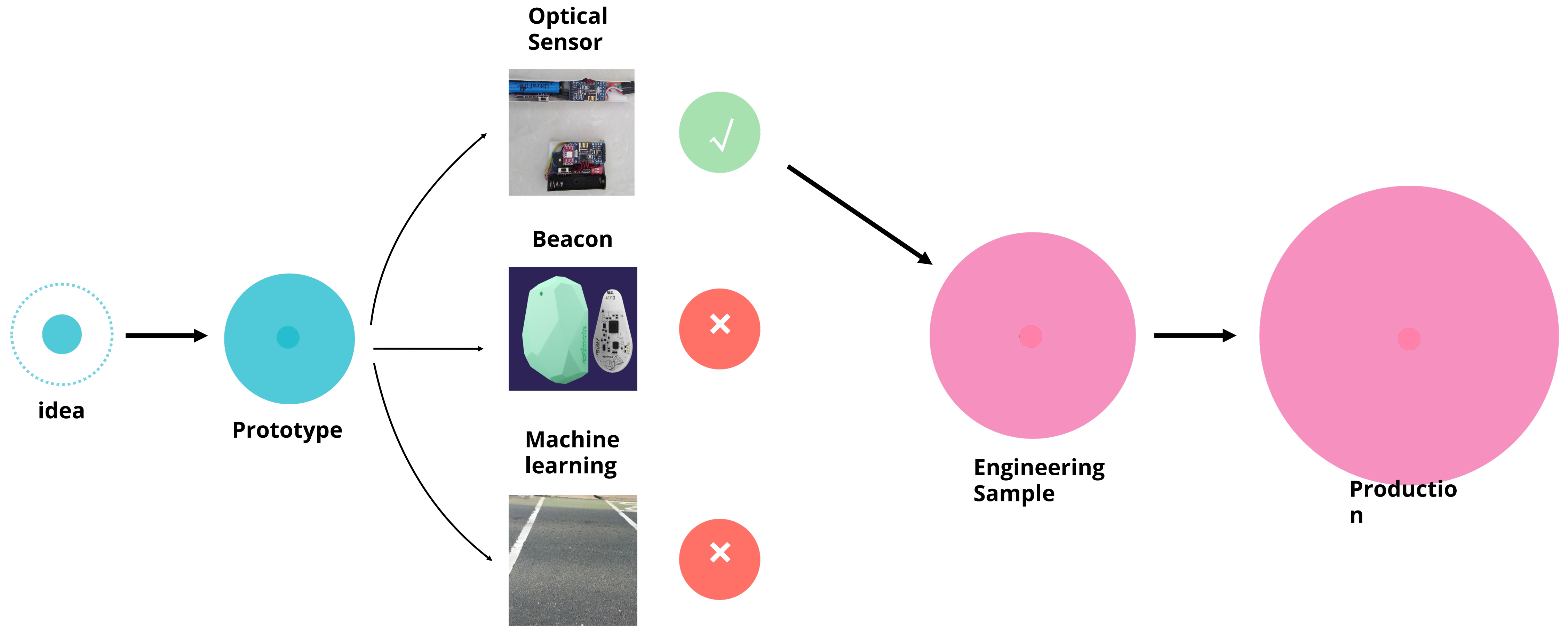
Interaction Device

5.7 inch Phone as comparison

Prototype V2



THE RESULT OF TESTING



HOW CAN YOU HELP?

- Are you a developer?
- Do you have experience in product development?
- If you think you can get in anyway please contact us at www.guidedogsvictoria.com.au
- You can always donate!



THANKS

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