

# Appendix A (Interview Protocol and Demographics Questionnaire)

## Introduction

Tell me a little bit about yourself

- Can you tell me a little bit about circumstances that prompt you to get out and about?

What are the different aids that you use for navigation?

- What are the different technologies that you use for navigation? (Can you open your smartphone and run through the different apps that you use for navigation)
- What about non-smartphone services? (AIRA, GPS hardware)

Can you tell me a little bit about the phone that you use?

- What are some of the activities you do using the phone?

## App/Non-smartphone services adoption (for every app/service that you use)

- How did you hear about/learn about the app/non-smartphone service?
- What prompted you to install the app/non-smartphone service?
- Can you recall your initial experiences with the app/non-smartphone service? What was easy to learn? What was difficult to figure out?
- Is the use of this app/non smartphone service the same as the first week of installation? If, no what has changed and why?
- What did you do before you took to this technology/non-smartphone service?

## App/non-smartphone services usage

- What circumstances prompt you to use app/non-smartphone service? Are there specific app/non-smartphone service you use for specific scenarios? Can you tell me a little more about it?
- How do you use the app/non-smartphone service? (Perhaps describe the last time they used it?) Can you describe the last time you used the smartphone or service?
- What do you like about the app/non-smartphone service?
- What are features in the app/non-smartphone service that you use? Why do you use the specific features?
- What are some challenges you experience while using the app/non-smartphone service?
- What sort of errors have you encountered while using the app/non-technology service? How did you recover from that? Can you describe the last time you encountered such a situation?
- Do you use multiple apps/non-smartphone services together during the same journey? Can you say a little more?
  - What circumstances prompt you to use them together?
  - What are the advantages of using them together? Any challenges?
  - What apps/non-smartphone services do you use with other aids (guide dogs, white cane)?
    - What circumstances prompt you to use them together
    - What are the benefits of using them together? What are the challenges of using them together?
  - What apps/non-smartphone services when you get out with companions and guides (when you take human assistance to get around)? Can you say a little more?
    - Who do you take assistance from? When do you take assistance?
    - What are the benefits and challenges of using them together?

## Abandonment

- Are there any app/non-smartphone services that you have previously used for navigation that you no longer use? Can you say a little bit more? (Also include apps that people don't use often or have forgotten exist on the phone)
- How did you hear about the app/non-smartphone service?
- What prompted you to install it?
- What did you use it for – for how long?
- What prompted you to uninstall/stop using the app/non-smartphone service?

## Demographics

1) Gender

Male

Female

Non-binary

Prefer not to disclose

Prefer to self-describe: \_\_\_\_\_

2) In what year were you born: \_\_\_\_\_

3) What accessibility settings do you use on the phone? (multiple)

VoiceOver

Talkback

Screen Magnifier

Other: \_\_\_\_\_

4) What is the speed of your screen-reader (VoiceOver)?

5) Are you aware of VoiceOver actions?

Yes

No

6) How frequently do you use VoiceOver actions?

Very Frequently

Frequently

Occasionally

Rarely

Very Rarely

7) How would you describe your current vision?

Totally Blind

Legally Blind

Low Vision

Other: \_\_\_\_\_

8) For how long have you had your visual impairment? \_\_\_\_\_

9) Which navigation tools do you use to get around? (multiple)

Point of interest tools: FourSquare, BlindSquare, Yelp

Turn by Turn: Google Maps, Apple Maps, Bing Maps

Visual Interpreter tools: AIRA, BeMyEyes

Spatial Awareness: Soundscape

Crowd based tools: TapTapSee, VizWiz

Computer Vision/AI Tools: SeeingAI, Google Lookout

Dedicated GPS devices/hardware

Social: Facebook, Twitter, SMS messaging, phone calls, video calling

10) Which aids do you use to get around? (multiple)

White cane

Human assistance

Guide Dog

Other: \_\_\_\_\_

11) How often do you navigate/undertake trips outside of your home?

more than once a day

daily (about once a day)

weekly (1-2 times a week)

monthly (1-2 times a month)

almost never

12) Which of the following best describes the place you navigate in most frequently?

Urban (A city/ densely developed territory)

Sub-urban (A residential area on the outskirts of a city)

Rural (Countryside located away from cities)

## **Appendix B (Diary Study Questions)**

1) What locations in the below list did you travel to today? (multiple)

Home

Work

Restaurants

Coffee Shop

Bank

Hospital

Post Office

Other: \_\_\_\_\_

2) How frequently do you navigate to the location?

Very frequently (>5 times every week)

Frequently (>3-5 times every week)

Occasionally (>2-3 times every week)

Rarely (>1 - 2 times every week)  
Very Rarely (First/Only time)

3) What tools did you use to navigate to the location? (low-tech, smartphones and non-smartphone tech)

4) What features did you use in the tech tools?

5) Why did you find those features useful?

6) Was there anything challenging in using the tool/navigating to the location?

## **Appendix C (Codebook – Final Version)**

- Phone use on the go
  - Phone affordances
  - Battery concerns
  - Guide Dog use
  - White cane use
- Orientation Tools
  - Advantages
  - Challenges
- Turn by Turn Tools
  - Advantages
  - Challenges
- Visual Interpreter Tools
  - Advantages
  - Challenges
- Complementary/Contradictory/Multi app scenarios
- Error Scenarios
- Tool preferences + affordances
- Accuracy and Reliability
- App Interface Accessibility
- App/Tool comparison
- Route Preparation
- Route Validation
- Transit Integration
- Alternate Interactions