Questionnaire II - Everywhere Locator Phase II

User Feedback and Validation Study

Version: 2.0
Date: November 2025
Project: Everywhere Locator - A-to-B Indoor Navigation System
Study Purpose: Validate Phase II prototype requirements and gather user feedback on smart glasses integration, navigation features, and system usability
Document URL: https://github.com/phamleduy04/se4351-mobile-f25/blob/main/docs/Project%202/Questionnaire%202.md

---

Overview

Thank you for participating in this study to evaluate the Everywhere Locator navigation system. This questionnaire is designed to gather your feedback on the prototype, including your experience with the smart glasses hardware, navigation features, audio guidance, and overall system usability.

Estimated Time: 20-30 minutes

Important Note: Your security and privacy are our highest priority. This study follows all applicable regulations including HIPAA. Your responses will be kept confidential and used only for improving the Everywhere Locator system.

Instructions:

- Answer all questions honestly based on your experience with the system
- For rating scales: 1 = Strongly Disagree/Very Difficult, 5 = Strongly Agree/Very Easy
- Feel free to provide additional comments in the open-ended sections
- If a question does not apply to you, you may skip it

Section 1: User Background Information

1.1 Personal Information

Q1.1.1 - Age Range

Please select your age range:

- Under 18 years
- 18-25 years
- 26-35 years
- 36-45 years
- 46-55 years
- 56-65 years
- Over 65 years

Q1.1.2 - Vision Status

Which best describes your vision status?

- Completely blind (no light perception)
- Legally blind (can perceive light but limited vision)
- Severely low vision
- Other (please specify): __

Q1.1.3 - Duration of Vision Impairment

How long have you had your current vision status?

- Less than 1 year
- 1-5 years
- 5-10 years
- More than 10 years
- Born with this condition

1.2 Navigation Experience

Q1.2.1 - Current Navigation Methods

Which of the following do you currently use for indoor navigation? (Check all that apply)

- White cane
- Guide dog
- Human assistance/guide
- GPS or smartphone apps
- Memorized routes
- Other (please specify): __

Q1.2.2 - Comfort with Technology

On a scale of 1-5, how comfortable are you with using technology on your smartphone?

- 1: Very uncomfortable
- 2: Somewhat uncomfortable
- 3: Neutral
- 4: Somewhat comfortable
- 5: Very comfortable

Q1.2.3 - Previous Voice Assistant Experience

Have you used voice assistants before (e.g., Siri, Google Assistant, Alexa)?

- Yes, regularly
- Yes, occasionally
- No, but I understand how they work
- No, and I am unfamiliar with them

Section 2: Smart Glasses Hardware Experience

2.1 Hardware Comfort and Fit

Q2.1.1 - Glasses Comfort

On a scale of 1-5, how comfortable were the smart glasses to wear?

- 1: Very uncomfortable
- 2: Somewhat uncomfortable
- 3: Neutral
- 4: Somewhat comfortable
- 5: Very comfortable

Additional comments on comfort: __

Q2.1.2 - Wear Duration

How long did you wear the smart glasses continuously during the test?

- Less than 5 minutes
- 5-15 minutes

- 15-30 minutes
- 30-60 minutes
- More than 60 minutes

Q2.1.3 - Weight and Fit

On a scale of 1-5, how would you rate the weight and fit of the smart glasses?

- 1: Too heavy and poorly fitting
- 2: Heavy and somewhat uncomfortable
- 3: Acceptable weight and fit
- 4: Light and comfortable
- 5: Very light and extremely comfortable

Q2.1.4 - Pressure Points

Did you experience any discomfort from pressure points (nose, ears, temples)?

- No discomfort at all
- Minimal discomfort
- Moderate discomfort
- Significant discomfort
- Severe discomfort (unable to wear)

2.2 Hardware Connection and Reliability

Q2.2.1 - Connection Stability

On a scale of 1-5, how stable was the Bluetooth connection between the glasses and your phone?

- 1: Constantly dropping connection
- 2: Frequent disconnections
- 3: Occasional disconnections
- 4: Mostly stable with rare disconnections
- 5: Always stable, no disconnections

Q2.2.2 - Connection Time

How long did it take to establish initial connection between glasses and phone?

- Less than 10 seconds
- 10-30 seconds

- 30-60 seconds
- More than 1 minute
- Connection would not establish

Q2.2.3 - Reconnection Experience

If the connection was lost during use, how quickly did it reconnect?

- Reconnected immediately (less than 5 seconds)
- Reconnected quickly (5-10 seconds)
- Reconnected within acceptable time (10-20 seconds)
- Took a long time to reconnect (more than 20 seconds)
- Did not reconnect automatically
- Connection did not drop during use

Q2.2.4 - Battery Life

On a scale of 1-5, how satisfied were you with the smart glasses battery life?

- 1: Battery died too quickly
- 2: Battery life was short
- 3: Battery life was adequate
- 4: Battery life was good
- 5: Excellent battery life for extended use

2.3 Hardware Integration with Navigation

Q2.3.1 - Video Transmission Quality

On a scale of 1-5, how would you rate the quality of video being captured by the smart glasses camera?

- 1: Very poor quality
- 2: Poor quality
- 3: Acceptable quality
- 4: Good quality
- 5: Excellent quality

Q2.3.2 - Camera Positioning

Did the camera positioning in the smart glasses provide adequate coverage of your surroundings?

- No, very limited field of view
- Limited field of view
- Adequate field of view
- Good field of view
- Excellent field of view

Q2.3.3 - Hardware Reliability During Navigation

Did you experience any hardware failures or issues during navigation testing?

- Yes, multiple failures
- Yes, one or two failures
- No failures, but minor glitches
- No failures or glitches
- Did not test with hardware

Section 3: Navigation Features Feedback

3.1 Voice Command Input

Q3.1.1 - Voice Command Clarity

On a scale of 1-5, how well did the system understand your voice commands?

- 1: Rarely understood commands
- 2: Often misunderstood commands
- 3: Understood most commands
- 4: Understood nearly all commands
- 5: Understood all commands accurately

Q3.1.2 - Voice Command Ease of Use

On a scale of 1-5, how easy was it to use voice commands to specify your destination?

- 1: Very difficult
- 2: Difficult
- 3: Neutral
- 4: Easy
- 5: Very easy

Q3.1.3 - Destination Confirmation

When you specified a destination, did the system confirm what it understood before proceeding?

- Yes, always with clear confirmation
- Yes, usually with confirmation
- Sometimes with confirmation
- Rarely with confirmation
- No confirmation provided

3.2 Route Calculation and Planning

Q3.2.1 - Route Planning Time

On a scale of 1-5, how would you rate the speed of route calculation?

- 1: Too slow (more than 10 seconds)
- 2: Slow (5-10 seconds)
- 3: Acceptable (3-5 seconds)
- 4: Fast (less than 3 seconds)
- 5: Very fast (less than 1 second)

Q3.2.2 - Route Overview Before Navigation

Did the system provide a summary of the planned route (total distance, number of turns, estimated time) before starting navigation?

- Yes, comprehensive overview
- Yes, but limited information
- Minimal overview
- No overview provided
- Not applicable

Q3.2.3 - Route Quality

On a scale of 1-5, how would you rate the quality of the calculated route?

- 1: Route was incorrect or unsafe
- 2: Route had significant issues
- 3: Route was acceptable
- 4: Route was good

- 5: Route was optimal and safe

3.3 Turn-by-Turn Navigation

Q3.3.1 - Navigation Instruction Clarity

On a scale of 1-5, how clear and easy to understand were the turn-by-turn navigation instructions?

- 1: Very unclear and confusing
- 2: Unclear with frequent confusion
- 3: Mostly clear
- 4: Clear and easy to follow
- 5: Very clear and easy to follow

Q3.3.2 - Advance Warning for Turns

Did the system provide sufficient advance warning before upcoming turns?

- No warning provided
- Warning came too late
- Warning was somewhat timely
- Warning was timely
- Warning was provided well in advance

Q3.3.3 - Distance and Direction Information

Did the system provide helpful information about distances and directions? (e.g., "turn right in 50 feet")

- No distance or direction information
- Minimal information
- Some helpful information
- Good information
- Comprehensive and helpful information

3.4 Landmark Recognition and Position Verification

Q3.4.1 - Landmark Recognition Effectiveness

On a scale of 1-5, how effective was the system at recognizing landmarks in your environment?

- 1: Did not recognize any landmarks

- 2: Recognized very few landmarks
- 3: Recognized some landmarks
- 4: Recognized most landmarks
- 5: Recognized all expected landmarks

Q3.4.2 - Position Confirmation

Did the system confirm your current position using landmarks?

- Yes, always with clear confirmation
- Yes, usually with confirmation
- Sometimes with confirmation
- Rarely with confirmation
- No position confirmation provided

Q3.4.3 - Confidence in System Position Tracking

On a scale of 1-5, how confident were you that the system knew your correct location during navigation?

- 1: No confidence, system seemed lost
- 2: Low confidence
- 3: Moderate confidence
- 4: Good confidence
- 5: High confidence, always knew location

Section 4: Audio Feedback Evaluation

4.1 Audio Clarity and Quality

Q4.1.1 - Audio Output Clarity

On a scale of 1-5, how clear and understandable was the audio output from the system?

- 1: Very unclear and difficult to understand
- 2: Often unclear
- 3: Mostly clear
- 4: Clear and easy to understand
- 5: Very clear and natural sounding

Q4.1.2 - Audio Volume Level

Was the audio volume appropriate for your testing environment?

- Too quiet, hard to hear
- Somewhat quiet
- About right
- Somewhat loud
- Too loud, uncomfortable

Q4.1.3 - Audio Speed

On a scale of 1-5, how would you rate the speed of audio playback?

- 1: Too fast, hard to understand
- 2: A bit fast
- 3: Just right
- 4: A bit slow
- 5: Too slow, takes too long

4.2 Audio Feedback Content

Q4.2.1 - Turn-by-Turn Instruction Quality

On a scale of 1-5, how helpful were the turn-by-turn audio instructions for navigation?

- 1: Not helpful at all
- 2: Somewhat unhelpful
- 3: Neutral
- 4: Helpful
- 5: Very helpful for successful navigation

Q4.2.2 - Distance and Time Estimates

Did the system provide distance and time estimates for upcoming segments?

- Never provided estimates
- Rarely provided estimates
- Sometimes provided estimates
- Usually provided estimates
- Always provided helpful estimates

Q4.2.3 - Information Quantity

On a scale of 1-5, how would you rate the amount of information provided by the audio feedback?

- 1: Way too much information (overwhelming)
- 2: Too much information
- 3: Just right
- 4: Not enough information
- 5: Way too little information (insufficient)

4.3 Audio Customization

Q4.3.1 - Volume Control

Did the system allow you to adjust the volume of audio output?

- Yes, easy to adjust
- Yes, but difficult to adjust
- Limited adjustment options
- No volume control
- Did not test this feature

Q4.3.2 - Speech Speed Control

Did the system allow you to adjust the speed of spoken instructions?

- Yes, easy to adjust
- Yes, but difficult to adjust
- Limited adjustment options
- No speed control
- Did not test this feature

Q4.3.3 - Customization Preferences

On a scale of 1-5, how important is it to you to customize audio settings (volume, speed, verbosity)?

- 1: Not important
- 2: Somewhat unimportant
- 3: Neutral
- 4: Somewhat important
- 5: Very important

Section 5: Safety and Comfort Assessment

5.1 Safety Perception

Q5.1.1 - Safety Confidence

On a scale of 1-5, how safe did you feel using the Everywhere Locator system?

- 1: Very unsafe
- 2: Somewhat unsafe
- 3: Neutral
- 4: Somewhat safe
- 5: Very safe

Q5.1.2 - Obstacle Detection Effectiveness

On a scale of 1-5, how effective was the system at detecting obstacles in your path?

- 1: Did not detect any obstacles
- 2: Detected very few obstacles
- 3: Detected some obstacles
- 4: Detected most obstacles
- 5: Detected all obstacles in path

Q5.1.3 - Obstacle Warnings

Did the system provide timely warnings about obstacles in your path?

- Never warned about obstacles
- Rarely warned about obstacles
- Sometimes warned too late
- Usually warned in time
- Always warned well in advance

Q5.1.4 - Safety Disclaimer Understanding

Before using the system, were you informed that it is an assistive aid and not a replacement for a cane or guide dog?

- No, not informed
- Vaguely mentioned

- Clearly explained
- Thoroughly explained with questions answered
- Not applicable

Q5.1.5 - Comfort with Navigation Alone

On a scale of 1-5, how comfortable would you be using this system to navigate alone in a real-world setting?

- 1: Not comfortable at all
- 2: Somewhat uncomfortable
- 3: Neutral
- 4: Somewhat comfortable
- 5: Very comfortable

5.2 Physical Comfort

Q5.2.1 - Overall Physical Comfort

On a scale of 1-5, how physically comfortable was using the Everywhere Locator system?

- 1: Very uncomfortable
- 2: Somewhat uncomfortable
- 3: Neutral
- 4: Somewhat comfortable
- 5: Very comfortable

Q5.2.2 - Glasses-Related Discomfort

Did wearing the smart glasses cause any of the following? (Check all that apply)

- Headaches
- Eye strain or discomfort
- Pressure on nose or ears
- Excessive heat
- No discomfort

Q5.2.3 - Phone Handling

Did carrying and using the phone alongside the glasses cause any discomfort?

- Yes, significant discomfort
- Yes, some discomfort

- Neutral
- Minimal discomfort
- No discomfort

Q5.2.4 - Extended Use Comfort

On a scale of 1-5, do you think you could comfortably use this system for extended periods (1 hour or more)?

- 1: Definitely not
- 2: Probably not
- 3: Maybe
- 4: Probably yes
- 5: Definitely yes

5.3 Environmental Factors

Q5.3.1 - Lighting Conditions

The system was tested in what type of lighting conditions?

- Very bright (outdoor or bright indoor)
- Bright indoor
- Average indoor lighting
- Dim indoor lighting
- Very dim or dark

Q5.3.2 - Performance in Different Lighting

On a scale of 1-5, how well did the system perform in the lighting conditions where you tested it?

- 1: Very poor performance
- 2: Poor performance
- 3: Acceptable performance
- 4: Good performance
- 5: Excellent performance

Q5.3.3 - Crowded Environments

How busy or crowded was your testing environment?

- Very quiet and empty (few or no other people)

- Relatively quiet (occasional people)
- Moderately busy
- Very busy (many people)
- Not tested in various environments

Section 6: Overall Satisfaction

6.1 System Satisfaction

Q6.1.1 - Overall System Rating

On a scale of 1-5, how would you rate the overall Everywhere Locator system?

- 1: Poor
- 2: Fair
- 3: Good
- 4: Very Good
- 5: Excellent

Q6.1.2 - Feature Satisfaction

Which features were most satisfying? (Check all that apply)

- Voice command input
- Turn-by-turn audio guidance
- Landmark recognition
- Obstacle detection
- Audio customization
- Hardware integration (smart glasses)
- Route planning
- Overall navigation accuracy

Q6.1.3 - Feature Improvement Needed

Which features need the most improvement? (Check all that apply)

- Voice command recognition
- Turn-by-turn instruction clarity
- Landmark recognition accuracy

- Obstacle detection
- Audio quality
- Hardware reliability
- Connection stability
- Navigation accuracy

6.2 Likelihood to Use

Q6.2.1 - Willingness to Use Again

Would you be willing to use Everywhere Locator again for navigation?

- Definitely not
- Probably not
- Maybe
- Probably yes
- Definitely yes

Q6.2.2 - Recommendation to Others

Would you recommend Everywhere Locator to other visually impaired individuals?

- Definitely not
- Probably not
- Maybe
- Probably yes
- Definitely yes

Q6.2.3 - Real-World Use

Do you think you would use Everywhere Locator in real-world navigation situations?

- Definitely not
- Probably not
- Maybe
- Probably yes
- Definitely yes

6.3 Comparison to Alternatives

Q6.3.1 - Comparison to Current Methods

Compared to your current navigation methods (cane, guide dog, human assistance, GPS apps), how does Everywhere Locator compare?

- Much worse
- Somewhat worse
- About the same
- Somewhat better
- Much better

Q6.3.2 - Preferred Navigation Method

If available, would you prefer to use Everywhere Locator over your current navigation methods?

- Definitely prefer current methods
- Prefer current methods
- No strong preference
- Somewhat prefer Everywhere Locator
- Strongly prefer Everywhere Locator

Q6.3.3 - Complementary System

Do you see Everywhere Locator as:

- A replacement for your current navigation methods
- A complementary tool to use alongside current methods
- Not useful for your navigation needs
- Unsure

Section 7: Open-Ended Feedback

7.1 Strengths and Positives

Q7.1.1 - Best Aspects of the System

What did you like most about the Everywhere Locator system? Please describe in 2-3 sentences.

Q7.1.2 - Most Helpful Features

Which feature or aspect of the system was most helpful for your navigation? Why?

7.2 Areas for Improvement

Q7.2.1 - System Challenges

What challenges or difficulties did you experience using Everywhere Locator? Please be specific.

Q7.2.2 - Specific Improvement Suggestions

What specific improvements would you suggest for the Everywhere Locator system?

Q7.2.3 - Missing Features

Are there any features you think the system should include that it currently lacks?

7.3 Hardware Feedback

Q7.3.1 - Smart Glasses Experience

Please describe your overall experience with the smart glasses hardware. What worked well and what could be improved?

Q7.3.2 - Hardware Improvements

What improvements would you suggest for the smart glasses hardware?

7.4 Audio Feedback and Navigation Guidance

Q7.4.1 - Audio Instruction Quality

How would you describe the quality of the audio instructions? Were they clear, helpful, and easy to follow?

Q7.4.2 - Audio Preferences

Did you have any preferences regarding the audio output (e.g., speech speed, detail level, accent)?

7.5 Safety and Accessibility

Q7.5.1 - Safety Concerns

Did you have any safety concerns while using Everywhere Locator? If yes, please describe.

Q7.5.2 - Accessibility Observations

Were there any accessibility features or barriers you noticed? How could the system be more accessible?

7.6 General Comments

Q7.6.1 - Additional Comments

Please provide any additional comments or feedback about Everywhere Locator that you have not mentioned above.