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Team 03

Phase 2 Interim - Team 3

What We Are Doing in Phase 2

In Phase 2, we will expand on our Phase 1 work by creating more detailed documentation and formal models using RE-Tools. We will also build a working prototype and update our questionnaire. The goal is to improve our system definition and make it easier to explain, test, and validate. We'll do this by using structured diagrams, real user feedback, and a focused demo during our presentation.

Documents We Will Deliver

We will start by updating the Vision Document to reflect the new Phase 2 goals, including safety, technical feasibility, sensor usage, and HIPAA compliance. This document will clearly explain why Theia is needed and how it helps blind users navigate safely indoors.

We will revise the WRS (Requirements Specification) Document to add any new or refined functional and non-functional requirements. We'll improve clarity, traceability, and consistency with Phase 1.

We will also include a Process Specification, describing how our team has worked across both phases. We'll explain which tasks we completed, how requirements were elicited and validated, and who was involved. We will model this using IDEF0 diagrams created in RE-Tools to show the flow of our requirements engineering process.

Models and Diagrams

Using the RE-Tools toolkit from UTD, we will build all required system models and diagrams:

- Use Case Diagrams to show how users interact with key features like navigation, voice input, and emergency alerts.
- Class Diagrams to define the internal structure of the system.
- Sequence Diagrams to show how events happen in order, such as starting navigation or handling a fall.
- Problem Interdependency Graph (PIG) to show how problems and goals are related.
- Softgoal Interdependency Graph (SIG) to map out quality goals like privacy, responsiveness, and accessibility.

These diagrams will help us formalize the system and explain both functional behavior and non-functional tradeoffs.

Questionnaire

We will revise and extend our Phase 1 questionnaire. New questions will focus on user preferences related to privacy, sensor behavior, voice interaction, and system feedback. This will help us validate that our new and updated requirements are meaningful and useful to real users.

Prototype

For our demo, we will create an interactive prototype using Figma. This tool allows us to design clean, clickable app screens that simulate real user interactions. We chose Figma because it is fast, reliable, and perfect for live demos—it doesn't require code and runs in any browser.

The prototype will include:

- A login and registration flow
- A screen for location input and destination selection
- A user settings page (language, emergency contact, etc.)

- Navigation through the app interface

To showcase Theia in action, we will include a preset walkthrough of the ECSS building at UTD. This use case will be hardcoded into the prototype and will simulate Theia providing step-by-step directions through audio or text, such as “Walk forward 10 steps, turn right at the elevator.” This will allow us to clearly demonstrate the app’s purpose, even with a limited working version.

Tools We Will Use

We will use RE-Tools for all formal modeling including SIG, PIG, IDEF0, and UML diagrams. We will use Figma to create a polished, clickable prototype that’s easy to present. Google Docs or Word will be used for all document writing and edits.

Summary of Our Plan

We will begin Phase 2 by updating our Vision and WRS documents with all new goals, issues, and refinements. We’ll model our system and team process in RE-Tools, identify and resolve issues using richer notations, and update our questionnaire. Our interactive Figma prototype will include login, settings, location input, and a guided ECSS path. All materials will be reviewed and finalized for submission and presentation.