

CptS 484: Software Requirements

Theia User Manual

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[1] Installing the Theia App

The Theia app will be available to Android smartphones through the Google Play Store. Please ensure that your device has location services enabled.

1.1 Installation Steps

Installation steps are as follows:

1. Open the Google Play Store on your Android device.
2. In the search bar, type or use voice commands to search “Theia.”
3. Navigate to the Theia app page from the search results and install the app.
4. Once the app is installed, launch Theia on your smartphone device.

[2] Setting Up the Theia App

Upon first launch of the Theia app, the user will be guided through an initial setup process. The user may decide whether or not this process should be audio-guided. This choice can be changed at any time.

2.1 Initial Permissions

Ensure the device’s volume is turned up so text-to-speech instructions are audible, and allow the app to use the device’s microphone and location services for command recognition and route navigation.

2.2 Account Creation

If the user has not yet created an account, they will tap or say “account creation.” The user will then be guided through the account creation process. Steps will include the following:

1. Provide name, email address, and a secure password.
2. Read or listen to the Terms of Service (ToS) and Privacy Policy, and agree.
3. Tap the submit button, or say “submit.”

2.3 Logging In

After account creation, the user will be prompted to log in using the credentials of the account they have just created. After entering their email address and password, they will be logged in.

2.4 Caretaker Information Setup

After the user is logged in, they can set up caretaker or emergency contact information by tapping or saying “emergency contact information,” then “add emergency contact.” The steps for adding a new contact are as follows:

1. Provide name and phone number
2. Tap or say “submit.”

This person will be added as the primary emergency contact that Theia will contact in the case of emergencies.

[3] Selecting a Destination for Route Navigation

Theia provides audio-guided navigation for users. The steps to start route navigation are as follows:

1. Tap or say “select destination.”
2. When prompted, say or select the name of the room you want to go to.
3. Using GPS services, Theia will determine your current location and plot the best route to your selected destination.
4. After confirmation, the app will give clear step-by-step directions along this route.

The user can pause navigation at any time by tapping the button located along the left of the screen or by saying “pause.” The user can also request that a verbal instruction be repeated by saying “repeat.”

[4] Emergency Contact

Theia prioritizes user safety by monitoring the user’s status during navigation.

4.1 Drop Detection

If the app detects a sudden drop (e.g., the user falls or drops the phone), the Theia app will verbally ask the user for verbal confirmation of their status. The steps Theia will take after depend on the following scenarios after waiting a 20-second period for a user response.

4.1.1 User is Responsive

If the user can verbally confirm their status by saying “I am okay,” the Theia app will play clear, periodic audio cues so the user may find their device after dropping it. These audio cues will continue until the user can confirm they have retrieved their device by physically tapping a large button located on the bottom edge of the screen. This will tell Theia that the user no longer needs audio cues, and they will cease, allowing the user to continue on their navigation route.

4.1.2 User is Unresponsive

If the user cannot verbally confirm their status, the Theia app will treat the situation as an emergency. The app will send an automated alert to the user's caretaker or emergency contact and contact emergency services to provide assistance to the user.

4.2 Location Tracking

If the app detects the user has unsafely strayed out-of-bounds or the user becomes lost during a navigation route, Theia will ask the user if they are in need of assistance.

Depending on the following scenarios, Theia will provide the appropriate assistance to ensure the user can safely continue navigation. For any scenario, the app will continuously monitor the user until the situation is resolved and the user verbally confirms that they are safe.

4.2.1 User Requests Navigation Help

If the user verbally requests navigation help by saying "I am lost," the app will analyze the user's location relative to the navigation route. If the user is safely located in a room (i.e., not standing in a hallway or outside of a building), then the app will ask the user if they require talking to their caretaker or emergency contact. The app will also update the navigation route to provide a route from the room to the user's previous destination.

If the user is not safely located in a room, the app will ask the user if they want to send their location to a caretaker or emergency contact for physical assistance. If physical assistance cannot be given, Theia will ask if the user wants to contact their caretaker or emergency contact, or if they require emergency services.

4.2.2 The User is Out of Bounds

If the user is detected as out of bounds either during a navigation route or before starting a navigation route, Theia will alert the user and ask if they need assistance. If the user responds "yes," Theia will take the same steps taken when the user requests navigation help.