# SPEC-08: Alden UI Module

## 1. Background

The **Alden UI Module** is a peer in the Hearthlink ecosystem, providing a focused dashboard for monitoring and interacting with core system components. It offers global navigation among modules, persistent controls, and specialized panels—Observatory, Diagnostics & Repair, Personality & Mood, and Interaction—without serving as an overseer of other modules.

## 2. Requirements (MoSCoW)

#### **Must have**

- Radial module navigation menu to switch between peer modules
- Persistent system controls: voice toggle, help access, accessibility options
- Responsive layout: supports 1024×768 minimum, multi-DPI, multi-monitor
- Persistent chat window for message input and transcript
- Accessibility compliance: keyboard navigation, ARIA landmarks, screen-reader support

#### **Should have**

- Dynamic panel sizing based on content density
- Light/dark theme toggle persisted per user preferences

#### **Could have**

- Keyboard shortcuts for panel switching (e.g., Ctrl+1 for Observatory)
- Drag-and-drop panel reordering

#### Won't have (this increment)

- Module launch or welcome flows (handled by system launcher)
- · In-panel tutorials or guided onboarding

### 3. Method

### **Architecture Diagram**

```
@startuml
package "Alden UI" {
    [RadialModuleNav] --> [PanelFrame]
    [SystemControlsBar] --> [PanelFrame]
    [PanelFrame] --> [PersistentChatWindow]
```

```
}
@enduml
```

### **Data Schema**

# 4. UI Components & Wireframes

### 4.1 Radial Module Navigation

```
[ Hearthlink Glyph ]
         *
         * * *
         * Alden Alice Synapse *
         * Vault Sentry Mimic *
         *
```

Component	Function	Data/API Call
RadialModuleNav	Displays peer modules in an arc; onClick navigates module	POST /ui/navigate { moduleId }

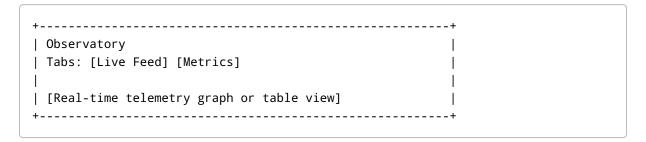
### **4.2 System Controls Bar**

```
[Voice][Help][Accessibility] [Theme Toggle]
```

Component	Function	Data/API Call
VoiceToggleButton	Toggle voice input mode	PUT /user/preferences/voice
HelpButton	Opens help modal	N/A
AccessibilityButton	Opens accessibility settings modal	<pre>GET/PUT /user/preferences/ accessibility</pre>

Component	Function	Data/API Call
ThemeToggleButton	Switch between light/dark theme	PUT /user/preferences/theme

### **4.3 Observatory Panel**



Sub-Component	Function	Data/API Call
LiveFeedTab	Streams live events (redraws on each update)	GET /sentry/events/stream
MetricsTab	Shows aggregated metrics (charts, counters)	GET /observatory/data
TelemetryChart	Renders data using Recharts for trends	Data from metrics API

## 4.4 Diagnostics & Repair Panel

Diagnostics & Repair	1	
·	!	
Buttons: [Run Diagnostics] [Repair Actions]		
[Diagnostic logs output area]		

Sub-Component	Function	Data/API Call	
RunDiagnosticsButton	Initiates system diagnostics	POST /diagnostics/run	
RepairActionsList	Lists available repair actions with status	GET /diagnostics/actions	
LogsOutputPane	Streams real-time diagnostic logs	<pre>GET /diagnostics/logs? session={id}</pre>	

# 4.5 Personality & Mood Panel

+	<del>-</del>
Personality & Mood	I
	I

[Mood Indicator: 😊/ 😐/ 🙁 ]   [Trait Overview]		
1		
[Editable list of persona traits and weights]	1	
+	+	

Sub- Component	Function	Data/API Call
MoodIndicator	Shows current persona mood via icon	<pre>GET /mimic/personas/{id}/ traits</pre>
TraitListEditor	Editable list for traits; inline JSON-schema validation	<pre>PUT /mimic/personas/{id}</pre>

#### 4.7 Full-Screen Wireframes

#### Alden Main Screen Full Wireframe

#### **Panel Expansion Example**

# 5. API Endpoints API Endpoints

Method	Path	Description	Auth Scope
POST	/ui/navigate	Switch to another module	ui.navigate
GET	/user/preferences	Retrieve user UI preferences	user.prefs.read
PUT	/user/preferences	Update user UI preferences	user.prefs.write
GET	/alice/sessions/{id}/messages	Load chat history	alice.message.read
POST	/alice/sessions/{id}/messages	Send chat message	alice.message.write

# 6. Implementation

- 1. Integrate RadialModuleNav and SystemControlsBar into React/Tailwind codebase.
- 2. Implement adaptive CSS Grid for PanelFrameContainer and responsive behaviors.
- 3. Develop Chat components linked to Alice APIs.
- 4. Persist AldenUIState through user preferences service.
- 5. Conduct WCAG 2.1 AA accessibility audit.
- 6. Write unit and E2E tests for navigation, theming, and chat flows.

### 7. Milestones

Milestone	Timeline	Owner
RadialNav & Controls Setup	Week 1	Frontend Team

Milestone	Timeline	Owner
Panel Layout & Responsiveness	Week 2	Frontend Team
Chat Window Integration	Week 3	Full-stack Team
Accessibility & Theming	Week 4	Accessibility Lead
Testing & QA	Week 5	QA Team

## 8. Gathering Results

- Module navigation latency <100 ms.
- UI preferences persisted correctly across sessions.
- Responsive layout verified at 1024×768 and multi-DPI.
- Accessibility compliance at AA level.

## 9. Dynamic & Responsive Rules

- **Panel sizing:** Each panel adjusts its grid span based on content density (e.g., Diagnostics spans two columns when showing logs).
- **Breakpoints:** At viewport widths <800 px, panels stack vertically; chat and controls remain fixed.
- Animation timing: Radial menu opens with a 200 ms ease-out fade and 150 ms option slide.
- **Z-ordering:** SystemControlsBar and PersistentChatWindow always overlay panels; modals appear above all.

## 10. References & Dependencies

- UI Blueprints: appendix\_c\_ui\_blueprints.md
- Integration Blueprints: appendix\_b\_integration\_blueprints.md
- CSS Guidelines: include spacing/typography tokens from design system
- Accessibility Guidelines: VOICE\_ACCESS\_POLICY.md sections on UI
- DevOps Guide: \_DEVELOPMENT\_OPERATIONS\_GUIDE.md