

**CSE6224 Software Requirements Engineer TT3L**

**SRS**

**GROUP 1**

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## 

# Introduction

## 1.1 Purpose

The purpose of this document is to specify the software requirements for MMUAccess, a campus accessibility navigation system. The document outlines the functionality, constraints, and design requirements of the platform, which aims to assist students, staff, and visitors in navigating the university campus — especially those with accessibility needs. This document is intended for software developers, system designers, project stakeholders, and testers involved in the development and deployment of the system.

## 1.2 Scope

MMUAccess shall facilitate mainly the following operations

1. Navigation across campus with accessible route
2. Real-time updates on campus events
3. Integration with MMU’s event calendar to guide users to accessible event locations

## 1.3 Product Overview

### 1.3.1 Product Perspective

MMUAccess is a new, independent system designed specifically for Multimedia University. However, it will interact with existing university systems such as the campus facilities management database and the official event calendar system. The system is developed as a responsive web and mobile application to ensure accessibility across multiple platforms.

This product will serve as an enhancement to the university's infrastructure by supporting inclusive campus navigation. It provides real-time route adjustments and helps users with disabilities find the most suitable paths and access points.

### 1.3.2 Product Function

MMUAccess shall facilitate the following core functions:

i. Generate accessible navigation routes across the MMU campus, avoiding stairs, blocked paths, or other obstacles.  
ii. Provide real-time notifications and updates regarding campus events and their impact on navigation routes.  
iii. Integrate with MMU’s official event calendar to help users locate event venues and determine if the routes and locations are accessible.

### 1.3.3 User Characteristics

i. Students, staff, and visitors of MMU who require assistance navigating the campus, especially users with mobility, visual, or auditory impairments.  
ii. Users with varying levels of technical experience, from tech-savvy individuals to those with limited digital skills.  
iii. Administrative staff responsible for updating facility information and event accessibility details.  
iv. Users accessing the system from different devices, including smartphones, tablets, and desktop computers.

### 1.3.4 Limitation

i. The system depends on timely data updates from MMU staff for construction zones, elevator outages, and event information.  
ii. Internet connection is required for accessing real-time updates and using the application.  
iii. MMUAccess is limited to the MMU campus environment and will not provide navigation outside university grounds.  
iv. The system’s route accuracy may be affected by incomplete or outdated facility data.

## 1.4 Definition

# 2.0 References

i. IEEE Std 830-1998, *IEEE Recommended Practice for Software Requirements Specifications*.

# 3.0 Requirement

## 3.1 Functions

## 3.2 Performance Requirements

## 3.3 Usability Requirement

MMUAccess shall be designed with a strong focus on ease of use and accessibility for all users, including individuals with disabilities.

* The system shall provide a user interface with intuitive navigation and minimal learning curve.
* Users shall be able to complete core tasks (e.g., searching for accessible routes, viewing event locations) with no more than 3 interactions (clicks/taps).
* The system shall offer multi-language support, with English and Bahasa Malaysia as defaults.
* Tooltips, onboarding guidance, and help sections shall be available to assist new users.
* A high-contrast visual mode and adjustable font sizes shall be included for visually impaired users.
* System usability shall comply with ISO 9241 and WCAG 2.1 standards, aiming for at least Level AA conformance.

## 3.4 Interface Requirement

3.4.1 User Interface

The system shall provide a responsive web interface compatible with Chrome, Firefox, Safari, and mobile browsers.

* Mobile interface shall be optimized for both iOS and Android devices.
* The UI shall follow consistent design patterns, with accessible components (buttons, input fields, modals) adhering to WCAG 2.1.
* The home page shall display navigation shortcuts, recent events, and campus alerts.
* Users shall be able to access features via touch, keyboard, or voice commands.

3.4.2 Hardware Interface

The system shall be operable on common smartphones, tablets, and desktop computers with standard web browsers.

* No special hardware is required beyond typical accessibility tools (e.g., screen readers, voice-to-text).

3.4.3 Software Interface

The system shall integrate with:

* MMU Event Calendar API – for retrieving event details and locations.
* MMU Facilities Management Database – for updated campus infrastructure data.
* All external integrations shall use secure RESTful APIs with JSON format.

3.4.4 Communications Interface

* All communication between client and server shall use HTTPS for secure transmission.
* The system shall be hosted on a cloud-based platform supporting real-time updates and reliable uptime.

## 3.5 Logical Database Requirement

## 3.6 Design Constrains

## 3.7 Software System Attributes

### 3.7.1 Availability MMUAccess will be accessible around-the-clock, particularly during school hours. The system will notify users in advance of scheduled maintenance windows.

### 3.7.2 Security HTTPS will be used by the system to ensure secure communication. Facility and event data can only be updated by authorised university employees. To stop unwanted changes, user data will be encrypted and access limits will be implemented.

### 3.7.3 Accessibility The system must be usable by people with visual, auditory, and motor disabilities in accordance with WCAG 2.1 (Web Content Accessibility Guidelines). High contrast themes, screen reader compatibility, and keyboard navigation are among the features.

### 3.7.4 Reliability With a goal uptime of 99.5%, the system must run continuously. When connectivity is restored, it should continue services and gracefully handle small data failures or outages.

### 3.7.5 Maintainability In order to facilitate future updates, such as new accessibility features or third-party integrations, the codebase will adhere to modular architecture and documentation standards.

### 3.7.6 Portability Through web browsers and mobile apps, MMUAccess will work on a variety of systems, including Windows, macOS, Android, and iOS. To accommodate various screen sizes and devices, the application will be created with responsive design.

## 3.8 Supporting Information

### 3.8.1 References and Background information that supports the development of MMUAccess

* MMU Campus Map and Facilities Management Data
* MMU Official Event Calendar API documentation
* WCAG 2.1 Accessibility Guidelines (<https://www.w3.org/WAI/WCAG21/quickref/>)
* IEEE 830-1998 Standard for SRS Structure
* Comments on accessibility from student questionnaires and interviews that were done during the elicitation stage

# For users with impairments, there are currently restrictions on how to use the campus 4.0 Verification

# 5.0 Appendices

## 5.1 Assumptions and Dependencies

## 5.2 Acronyms and Abbreviations