



**TRAVELMATE**  
TRAVEL MADE SIMPLE

## Project Specifications

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# 1. Project Description

## 1.1. Project Name

Intelligent Mobile Travel Guide System (IMTGS)

## 1.2. Project Context

Urban travelers, tourists, and individuals relocating to new cities often face difficulty locating essential amenities, understanding unfamiliar surroundings, and navigating efficiently using fragmented mobile services. Existing applications provide isolated functions, such as maps, reviews, or booking platforms, but do not integrate situational awareness, personalized discovery, and consolidated information delivery into a single, coherent system.

The organization intends to introduce a mobile platform that enables users to explore nearby amenities, obtain route guidance, access contextual information such as weather and local updates, and manage personal bookmarks for frequently visited locations. The system is designed to operate across common mobile platforms, utilizing a flutter-based front-end and cloud-enabled backend services, with seamless integration to external mapping and location APIs.

This project adopts the Enterprise Team subtype of the Eliciting method, where internal project members collaborate with stakeholders to systematically elicit, prioritize, and document authentic business and technical requirements into a Project Specification before initiating the tender process. Stakeholder inputs are organized using a Requirements Tree to ensure contextual relevance and meaningful granularity.

The Project Specification will be submitted to the CFO to activate the tender process for vendor selection.

## 1.3. Project Goals

The primary goal of this project is to design and procure a reliable and user-friendly intelligent travel guidance system that improves the users ability to navigate unfamiliar locations, discover nearby amenities, and access the details of the location as well as bookmark favourite places.



## 2. Requirements Tree

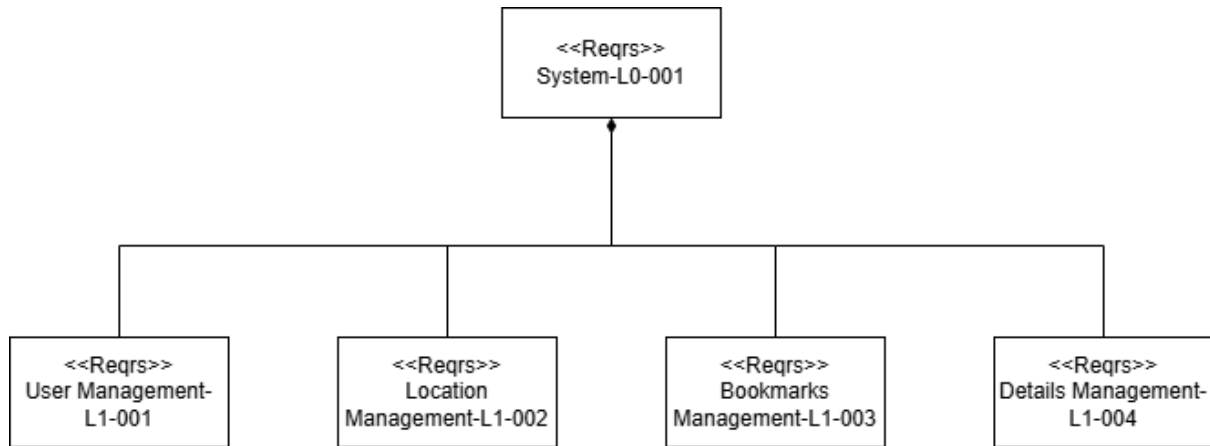


Fig.1.Reqs Tree

### Level 0 - System goals

- System-L0-001
  - Enable travellers to navigate efficiently in foreign countries

### Level 1 - Function goals

- User Management-L1-001
- Location Management-L1-002
- Bookmarks Management-L1-003
- Details Management-L1-004



### 3. Business Operations Requirements

Precedence Levels (Most to Least): Essential - 3, Desirable - 2, Acceptable - 1

#### 3.1. Assumptions

**a. REQ-OPS-000 (Context):**

The system must support digital travel assistance by enabling tourists and individuals relocating to new cities to locate amenities, navigate efficiently, and access contextual information through a mobile platform operating across common smartphones.

**b. REQ-OPS-001 (Core Purpose):**

The solution shall facilitate location-based discovery, navigation guidance, and contextual awareness by integrating mapping services, amenity listings, weather updates, and user bookmarking into a single intelligent mobile travel guide.

- I. **Assumption 01:** It is assumed that users possess Android or iOS mobile devices capable of running Flutter-based applications.
- II. **Assumption 02:** It is assumed that external mapping and location services (e.g., Google API) are available for navigation and place discovery.

**c. REQ-OPS-002 (Operational Load Management):**

To support peak usage scenarios (e.g., holidays, travel seasons), the hosting environment must be provisioned to handle moderate increases in concurrent user activity without degradation of navigation or search performance.

- I. **Rationale:** Ensures reliable user experience during high travel demand periods.
- II. **Precedence:** Desirable (2)

#### 3.2. User Management (User Management-L1-001)

**a. REQ-USR-001 (User Registration & Authentication):**

The system must allow users to register and authenticate to enable access to personalised services such as bookmarking and profile management.

- I. **Precedence:** Essential (3)

**b. REQ-USR-002 (User Registration & Login):**

The system must allow users to register and authenticate to access personalised services such as bookmarking and profile management.

- I. **Precedence:** Essential (3)

**c. REQ-USR-003 (Profile Management):**

Users shall be able to view and manage their personal profile information, including basic account details and saved preferences.

- I. **Precedence:** Desirable (2)

**d. REQ-USR-004 (Administrative User Support):**

Administrators must be able to assist users with account-related issues, including login problems or profile access constraints.



- I. **Rationale:** Ensures continuity of service and user trust.
- II. **Precedence:** Desirable (2)

**e. REQ-USR-005 (Role-Based Access Control – RBAC):**

The system must enforce separation between administrative functions and user-facing features, ensuring that only authorised administrators can manage system-level configurations.

- I. **Rationale:** Prevents unauthorised modification of system data.
- II. **Precedence:** Essential (3)

**3.3. Location Management — Location Management-L1-002**

**a. REQ-LOC-001 (Amenity Discovery):**

The system shall enable users to discover nearby amenities based on their current or selected location.

- I. **Precedence:** Essential (3)

**b. REQ-LOC-002 (Search & Location Preview):**

The search function must allow users to search for places manually and preview basic information about locations before navigation.

- I. **Constraint:** The interface must support mobile-responsive vertical scrolling to ensure usability on handheld devices.
- II. **Precedence:** Desirable (2)

**c. REQ-LOC-003 (Operational Load Handling):**

The system must be capable of supporting moderate increases in concurrent location search and navigation requests during peak usage periods.

- I. **Rationale:** Prevents service degradation during high-demand scenarios.
- II. **Precedence:** Desirable (2)

**3.4. Bookmarks Management — Bookmarks Management-L1-003**

**a. REQ-BMK-001 (Bookmark Creation):**

Users must be able to bookmark locations of interest for future reference.

- I. **Precedence:** Essential (3)

**b. REQ-BMK-002 (Bookmark Viewing & Removal):**

Users shall be able to view and remove bookmarked locations from their personal list.

- I. **Precedence:** Essential (3)

**3.5. Details Management — Details Management-L1-004**

**a. REQ-DTL-001 (Location Details Display):**

The system shall display essential details for selected locations, including basic information and contextual updates such as weather.

- I. **Precedence:** Essential (3)



**b. REQ-DTL-002 (Search & Preview Standard):**

The system shall allow users to preview location details prior to navigation using a mobile-responsive vertical scrolling interface.

- I. **Precedence:** Desirable (2)

**c. REQ-DTL-003 (Recommendation Support):**

The system may recommend locations based on frequently searched places or relevance to the selected city.

- I. **Precedence:** Acceptable (1)

**3.6. Company Finance Constraints & Rules**

**a. REQ-FIN-001 (Budget Constraint):**

The total project budget shall not exceed **SGD 250,000**.

- I. **Precedence:** Essential (3)

**b. REQ-FIN-002 (Operational Cost Constraint):**

The system shall be designed to minimise long-term operational and maintenance costs following release, including costs related to infrastructure, integrations, and support.

- I. **Precedence:** Essential (3)

**c. REQ-FIN-003 (Procurement Scope Constraint):**

The project shall be defined and delivered within a scope suitable for external vendor procurement, comparison, and evaluation through a formal tender process.

- I. **Precedence:** Essential (3)

**3.7. Regulatory & Compliance**

**a. REQ-REG-001 (Governance & Approval Constraint):**

System development and deployment shall comply with organisational governance, review, and approval processes before production release.

- I. **Precedence:** Essential (3)

## **4. IT Technical Requirements**

This section defines tools and technology required to develop and operate the **Intelligent Mobile Travel Guide System (IMTGS)**.

### **4.1. Platform Accessibility**

#### **ITR-01 Device compatibility**



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The system shall be compatible with Android and iOS devices. These versions ensure the app meets modern security standards and is accessible to the vast majority of current smartphone users.

## **4.2. Data & Storage**

### **ITR-02 Persistent user data storage**

The system shall store user profiles, search history, and bookmarked locations in a centralised storage to ensure information is available and saved between uses.

### **ITR-03 Data consistency**

The system shall ensure that when a user saves a "Favorite" or updates their profile, the information is updated immediately and accurately across the system.

## **4.3. External Services & Connectivity**

### **ITR-04 Internet requirement**

The system shall require an active internet connection (Wi-Fi or Mobile Data) to update maps and live information.

### **ITR-05 Map and location integration**

The system shall connect to the Google Maps API to provide travelers with live navigation, routing, and specific details about local places (e.g., restaurants, hospitals).

### **ITR-06 Live information feeds**

The system shall connect to external data providers to retrieve real-time weather forecasts and local news relevant to the traveler's selected city.

## **4.4. System Reliability & Safety**

### **ITR-07 Multi-user support**

The system shall be capable of handling multiple travelers using the app simultaneously without a loss in performance.

### **ITR-08 Information security**

The system shall prevent unauthorised access to user information through appropriate access control measures.

### **ITR-09 Content moderation**

The system shall include a management tool for TravelMate staff to monitor and "police" user comments and feedback to ensure the guide remains helpful and safe.





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## 4.5. Codification

To ensure clear communication and tracking, every requirement in this document is assigned a unique identifier (ID). These IDs should be used in all discussions and project reviews to avoid confusion.

- **BOR-xx (Business Operations Requirements):** These refer to the business goals and human processes of TravelMate defined in Section 3.
- **ITR-xx (IT Technical Requirements):** These refer to the technology, devices, and security standards defined in Section 4.

**Note:** Codification applies only to specific requirement statements. Supporting descriptions, project schedules, and financial tables are not codified.



## 5. Financials

### 5.1. Payment Schedule

To ensure transparency and accountability, payment is linked to key project milestones.

**Exact cost breakdowns are confidential and redacted for security.** Thus, only percentages are shown. Please see the table below for the breakdown.

Milestone	Description	Payment (%)
Project Signing	Project initiation and planning.	15%
Requirements Specification Completion	Requirements specification delivery and approval.	10%
UI/UX & Prototype Delivery Completion	Delivery of interface and functional prototype.	20%
Back-End Implementation & API Integration Completion	Backend development and API integration.	25%
Testing & Quality Assurance Completion	Testing and system validation.	15%
Final Deployment & Live Support	Deployment and post-launch support.	15%
Total:		100%

Fig.2. Payment Schedule

### 5.2. Project Estimated Costing

The project estimated costing for IMTGS ranges approximately between **SGD 80,000** and **SGD 200,000**. This is based on the scope and complexity of the project as a medium-to-high complexity enterprise mobile application that includes cross-platform development using Flutter, backend development, third-party API integration, testing, and deployment.



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## 6. Scheduling

### 6.1. Project Schedule

The project schedule is structured around key deliverables to ensure timely delivery. Please see the table below for the breakdown.

Week	Deliverable	Due Date
4	Project Specification (PS)	30/01
6	Analysing Report	13/02
9	Software Requirements Specifications (SRS)	06/03
11	Validating Report	20/03
13	Post-Agile RCM Report	03/04

Fig.3. Project Schedule



## 7. Sign-Off

### 7.1. Document Authentication

This Project Specification document has been validated and is ready for formal approval from designated stakeholders. The document represents the collaborative efforts of the team and reflects business and technical requirements elicited through systematic stakeholder engagement.

#### Authenticator Signature:

Name	Title	Signature and Date
[Project Manager Name]	Project Manager	<hr/> Date: <hr/>

### 7.2 Designated Approvers (Pending Signatures)

The following stakeholders are designated to provide formal approval before the document is submitted to the CFO for tender process initiation.

Stakeholder	Title/Role	Signature	Date
Chief Technology Officer	CTO	<hr/>	<hr/>
Head of IT Infrastructure	IT Director	<hr/>	<hr/>
Business Operations Manager	Operations Manager	<hr/>	<hr/>
Legal Compliance Officer	Compliance Officer	<hr/>	<hr/>
Chief Financial Officer	CFO - Final Approval	<hr/>	<hr/>



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## 8. Requirements Modelling

### 8.1. Modelling Approach

Requirements modelling provides visual representations of system functionality, data flows, and user interactions. The following models are provided to support stakeholders understanding and vendor implementation.

### 8.2. Use Case Diagram

The Use Case Diagram illustrates the primary interactions between system actors and the use case functionalities. The visual model provides a comprehensive overview of system capabilities from the user perspective.

## Use Case Diagram



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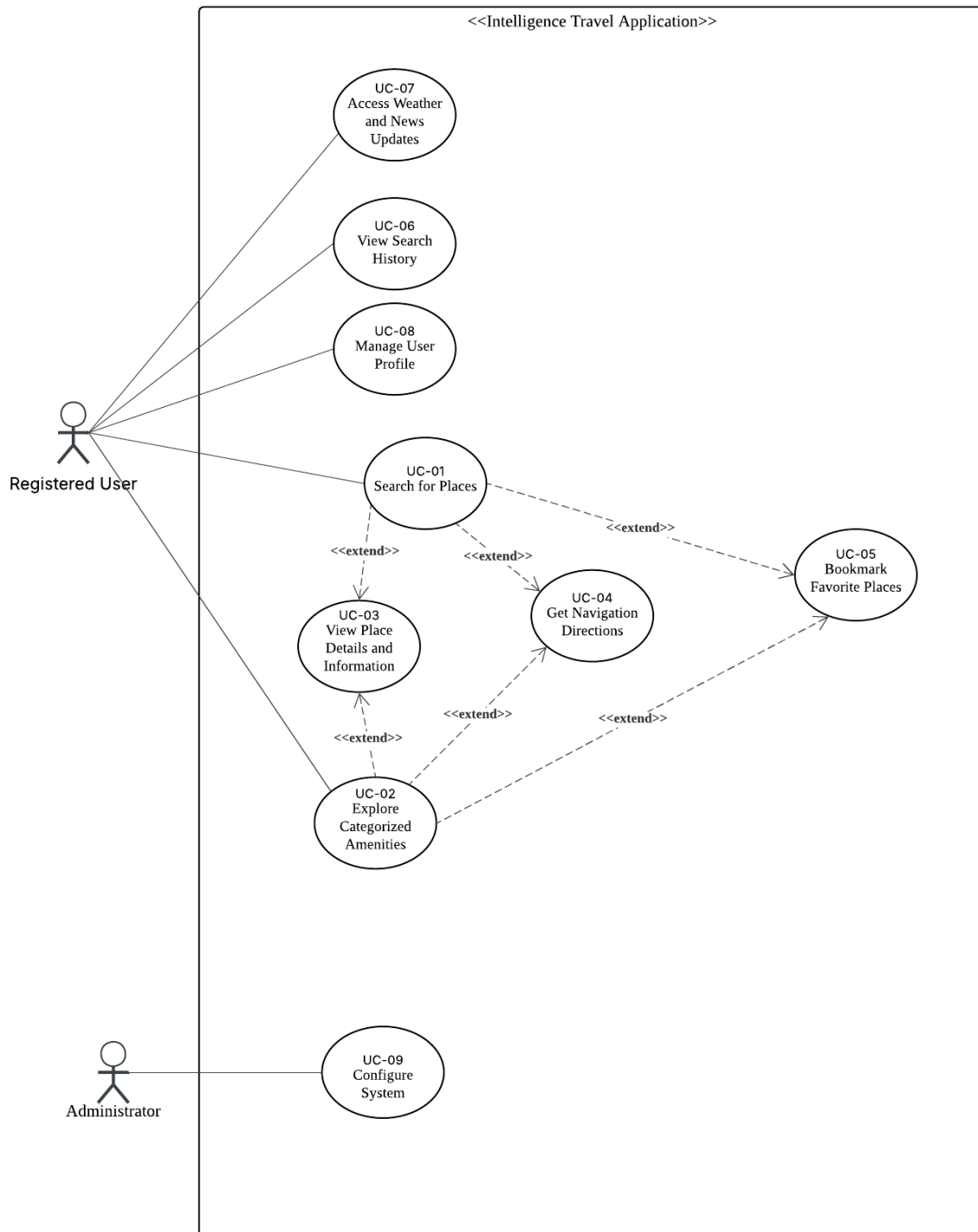


Fig.4. Use Case Diagram



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**Primary Actors:**

- Registered User: An individual with authenticated account access to the full system.
- System Administrator: Personnel responsible for system configuration, monitoring, and maintenance.

**Key Use Cases:**

- UC - 01: Search for Places - Users query system for specific locations or services
- UC - 02: Explore Categorized Amenities - Users browse places by predefined categories
- UC - 03: View Place Details and Information - Users access comprehensive location data
- UC - 04: Get Navigation Directions - Users obtain routing and navigation
- UC - 05: Bookmark Favorite Places - Users save locations for future reference
- UC - 06: View Search History - Users review previously searched locations
- UC - 07: Access Weather and News Updates - Users obtain contextual information
- UC - 08: Manage User Profile - Users update personal information and preferences
- UC - 09: Configure System - Administrators manage system settings and track system metrics



## 9. Addenda

## 9.1. Gantt Chart

