

**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

Date	31 January 2026
Team ID	LTVIP2026TMIDS88360
Project Name	Civil Engineering Insight Studio
Maximum Marks	4 Marks

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	<ul style="list-style-type: none"> <li>• Registration through Form</li> <li>• Registration through Gmail</li> <li>• Registration through LinkedIn</li> </ul>
FR-2	User Confirmation	<ul style="list-style-type: none"> <li>• Confirmation via Email</li> <li>• Confirmation via OTP</li> </ul>
FR-3	Core AI Translation	<ul style="list-style-type: none"> <li>• Image-to-Text Translation using Gemini API</li> <li>• Context-Aware Tone Toggles (Professional/Academic/Casual)</li> </ul>
FR-4	Document & Scenario Handling	<ul style="list-style-type: none"> <li>• File Upload for Academic Paper Translation</li> <li>• Preservation of LaTeX and Citations</li> <li>• Business Brand Glossary Integration</li> </ul>
FR-5	Mobile Optimization (Travel)	<ul style="list-style-type: none"> <li>• High-Contrast UI for mobile travelers</li> <li>• Voice-to-Text Input Translation</li> <li>• Offline Phrasebook for common travel needs</li> </ul>

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The Streamlit interface must be intuitive enough for a traveler to translate a sign in under 3 clicks.
NFR-2	Security	Secure handling of API keys and encryption of user-uploaded academic or business documents.
NFR-3	Reliability	The system must maintain high translation accuracy (verified by back-translation checks) to ensure trust in professional settings.
NFR-4	Performance	Translation requests to the Gemini API should return results within 2–5 seconds to support real-time travel needs.
NFR-5	Availability	The web application should be accessible 99% of the time, especially for researchers working across different time zones.
NFR-6	Scalability	The architecture must support an increasing number of concurrent users during peak travel seasons or academic deadlines.