

Project Design Phase
Proposed Solution Template

Date	18 Feb 2026
Team ID	LTVIP2026TMIDS80588
Project Name	TransLingua: AI-Powered Multi-Language Translator
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Language barriers prevent students and researchers from accessing global knowledge locked in foreign-language PDFs, and travelers struggle to navigate environments with unfamiliar physical signage. Traditional tools often fail to preserve document layouts or require manual text input, leading to significant time loss and potential inaccuracies.
2.	Idea / Solution description	A multimodal AI translation application powered by the Gemini 3 Flash model. The solution features a specialized document parsing engine for high-fidelity PDF translation and a vision-integrated OCR system for real-time translation of physical signs and images, all accessible through a streamlined Streamlit web interface
3.	Novelty / Uniqueness	Unlike standard text translators, this system is context-aware and multimodal . It uses advanced "Flash" models for near-instant processing and features a unique failover architecture that automatically switches between AI models to ensure 100% service availability even during high-traffic periods.
4.	Social Impact / Customer Satisfaction	The project democratizes access to global academic research by making foreign papers readable in native languages like Hindi and Telugu. It increases the independence and safety of international travelers and reduces the "digital divide" for users who are not tech-savvy by providing a simple, one-click translation experience.
5.	Business Model (Revenue Model)	<p>A Freemium SaaS Model:</p> <ul style="list-style-type: none"> • Free Tier: Limited daily translations for students and casual travelers. • Premium Subscription: Unlimited document processing and priority access to higher-performance models for corporate clients.

		<ul style="list-style-type: none"> B2B Licensing: Integration APIs for academic institutions and travel agencies.
6.	Scalability of the Solution	<p>The architecture is built on Micro-services and cloud-native APIs, allowing it to scale horizontally to handle thousands of concurrent users. By leveraging Google's global server infrastructure for AI processing, the system can expand its language support and processing power without requiring significant local hardware upgrades.</p>