# Software Requirements Specification (SRS)

## 1. Introduction

### 1.1 Purpose

The purpose of this document is to define the software requirements for upgrading an existing e-commerce platform to support international expansion. This phase includes adding localization, international payment options, and laying the foundation for multi-language and multi-currency support.

### 1.2 Scope

The system to be developed is an enhancement of the current e-commerce platform. The primary objective of this phase is to implement basic localization features and support global payment gateways. Future phases will expand language support, add multi-currency transactions, and introduce region-specific regulatory compliance.

### 1.3 Definitions, Acronyms, and Abbreviations

* SRS: Software Requirements Specification
* i18n: Internationalization
* FR: Functional Requirement
* NFR: Non-Functional Requirement
* UI: User Interface
* UX: User Experience
* API: Application Programming Interface
* IP: Internet Protocol
* GDPR: General Data Protection Regulation
* PCI-DSS: Payment Card Industry Data Security Standard

### 1.4 References

* IEEE Std 830-1998: IEEE Recommended Practice for Software Requirements Specifications
* Previous SRS Document (Version 2.0) for the E-commerce Platform
* PayPal and Stripe API Documentation
* W3C Internationalization Standards

### 1.5 Overview

This document provides an overview and detailed requirements of the features to be implemented for internationalization in the e-commerce platform. It includes descriptions of functional and non-functional requirements, use cases, interface definitions, and appendices.

## 2. Overall Description

### 2.1 Product Perspective

This enhancement builds on the existing e-commerce web application, which supports single-region transactions. The new features will enable international users to interact with the platform seamlessly, respecting regional preferences and standards.

### 2.2 Product Functions

* Detect and adapt UI based on user's region and browser settings
* Manual override for selecting language and currency
* Region-specific formatting for dates, currencies, and numbers
* International shipping calculation and address validation
* Real-time currency conversion using third-party APIs
* Support for multiple time zones and regional holiday calendars
* Global tax computation based on user location
* Payment processing via international gateways (PayPal, Stripe)
* Backend admin tools for managing translations and regional settings

### 2.3 User Characteristics

* Customers: Users from various countries with diverse languages, currencies, and cultural expectations
* Admins: Internal staff who manage configurations, translations, and settings for each region
* Support Team: Agents handling inquiries and issues related to international usage
* Developers: Responsible for implementing and maintaining features

### 2.4 Constraints

* Maintain compatibility with existing backend and frontend architectures
* Ensure high performance under international traffic
* Must comply with regulations like GDPR (Europe) and CCPA (California)
* Payment providers must meet PCI-DSS compliance
* Browser compatibility (Chrome, Firefox, Safari, Edge)

### 2.5 Assumptions and Dependencies

* Users permit location detection via browser
* International shipping partners and services are integrated
* Real-time currency conversion API (e.g., Open Exchange Rates) is available and reliable
* Adequate language translations are provided or sourced by stakeholders

## 3. Specific Requirements

### 3.1 Functional Requirements

* FR1: Detect user location via IP and set default language and currency
* FR2: Allow users to manually override default region settings
* FR3: Format prices, dates, and numbers based on locale
* FR4: Integrate PayPal and Stripe for international payments
* FR5: Store and apply user preferences for future sessions
* FR6: Support localized product descriptions and checkout flow
* FR7: Admins can upload and manage translation files
* FR8: Users receive region-specific promotional content
* FR9: Log and report international transaction metrics for analytics
* FR10: Provide customer service contact options based on user region

### 3.2 Non-functional Requirements

* NFR1: Support UTF-8 encoding to handle multilingual text
* NFR2: Ensure 95% of user actions respond within 2 seconds internationally
* NFR3: Maintain uptime of 99.5% across all services globally
* NFR4: Ensure secure HTTPS connections for all communications
* NFR5: System must be scalable to handle peak load increases of 300% during holiday seasons
* NFR6: The UI should maintain usability in RTL (right-to-left) languages such as Arabic

### 3.3 Interface Requirements

* UI component for selecting language and currency (dropdowns, flags)
* Admin dashboard modules for managing locale content
* RESTful APIs for location detection, currency conversion, payment processing
* Interface with translation services (e.g., Google Translate API, in-house localization)
* Third-party tax and compliance systems (e.g., Avalara, TaxJar)

### 3.4 Performance Requirements

* Handle 10,000 concurrent international users
* Payment confirmation must occur within 5 seconds 95% of the time
* Page load time must not exceed 3 seconds for 90% of international users
* Daily transactions volume: support up to 100,000 orders/day

### 3.5 Design Constraints

* Codebase must remain compatible with React frontend and Node.js backend
* Use Tailwind CSS and existing design system components
* Must accommodate accessibility standards (WCAG 2.1 AA)
* Avoid hardcoding of strings; use translation keys and JSON resource files

## 4. Appendices

* Glossary of internationalization terms
* GDPR and PCI-DSS compliance checklist
* Overview of supported currencies and languages
* Stakeholder interview transcripts
* Competitive benchmarking against global platforms (e.g., Amazon, AliExpress)

## 5. Index

(To be completed after final documentation pass)

## 6. Change Management Log

* v1.0 – Initial Draft – April 8, 2025
* v1.1 – Added stakeholder feedback on currency formatting – April 10, 2025
* v1.2 – Included new FR for user preference storage – April 11, 2025
* v1.3 – Expanded functional requirements to include tax calculation and regional promotion – April 12, 2025
* v1.4 – Performance requirements and design constraints updated – April 13, 2025