



Functional Requirements (FRs)

FR-001 User Registration

The system shall allow travelers to register using email/password, phone OTP, Google, or Apple, completing successful account creation within 5 seconds p95 at launch.

- Given a valid identifier and credentials, When the traveler submits the sign-up form, Then the account shall be created and verified within 5 seconds p95 and the user is navigated to profile setup.
- Given an existing account, When the traveler attempts to re-register with the same identifier, Then the system shall block creation and show a clear error within 1 second.
- Given an invalid OTP, When the traveler enters the OTP, Then the system shall reject it and allow retry up to 5 attempts per hour.

FR-002 Login and Session Management

The system shall authenticate users within 3 seconds p95 and maintain a persistent session for 30 days unless the user signs out or resets the password.

- Given valid credentials, When the traveler taps Login, Then authentication completes and the home screen loads within 3 seconds p95.
- Given a logged-in session, When the traveler closes and reopens the app within 30 days, Then the user remains logged in.
- Given a password reset, When completed, Then all other active sessions shall be revoked within 60 seconds p95.

FR-003 Profile Creation and Verification

The system shall collect name, photo, bio, home city, languages, interests, and travel preferences, and optionally verify identity via phone/email at launch and government ID in a later phase.

- Given required profile fields, When the traveler saves the profile, Then validation occurs client-side within 200 ms and the profile is saved within 1 second p95.
- Given a verified identifier, When verification succeeds, Then a verified badge appears on the profile within 2 seconds.
- Given missing mandatory fields, When Save is tapped, Then the system shall prevent save and highlight missing fields.

FR-004 Trip Creation and Management

The system shall allow travelers to add trips with destination, date range, purpose, and budget tier, saving within 1 second p95.

- Given a valid destination and dates, When the traveler saves a trip, Then it is persisted within 1 second p95 and visible on the Trips screen.
- Given overlapping trips for the same destination, When saving, Then the system shall prompt to merge or keep separate within 1 second.
- Given a trip, When the traveler toggles visibility (public/private), Then matching eligibility updates within 10 seconds p95.

FR-005 Destination Search and Discovery

The system shall provide destination search with autocomplete returning results within 1.5 seconds p95 and a discovery view with curated categories.

- Given a query of at least 2 characters, When the traveler types, Then autocomplete suggestions appear within 1.5 seconds p95.
- Given a selected destination, When opened, Then top categories (spots, food, events, hotels) load initial content within 2 seconds p95.
- Given no results, When a rare or misspelled query is entered, Then the app shows helpful alternatives within 2 seconds.

FR-006 Traveler Matching

The system shall recommend travelers going to the same destination with at least 1-day date overlap and minimum 30% interest overlap, returning first results within 2 seconds p95.

- Given a public trip for Destination A on dates X–Y, When the traveler opens Matches, Then matched travelers meeting overlap thresholds are listed within 2 seconds p95.
- Given insufficient matches, When filters are expanded, Then the system shall display an empty state with actionable tips within 1 second.
- Given a new trip is added, When the traveler returns to Matches, Then recommendations refresh within 10 seconds p95.

FR-007 Match Filtering and Sorting

The system shall filter matches by age range, gender preference, languages, budget tier, and activity types and sort by overlap score or recency with results applied within 1.5 seconds p95.

- Given selected filters, When Apply is tapped, Then the match list updates within 1.5 seconds p95.
- Given sort selection changes, When the traveler switches sort order, Then the list reorders within 1 second p95.
- Given filters are cleared, When Clear is tapped, Then defaults are restored within 1 second.

FR-008 Connection Requests

The system shall allow sending, receiving, accepting, and declining connection requests, limiting each user to 20 pending outgoing requests and 50 sends per day.

- Given a match, When the traveler sends a request with a message up to 280 characters, Then delivery confirmation appears within 2 seconds p95.
- Given a received request, When Accept or Decline is tapped, Then state updates for both parties within 2 seconds p95.
- Given the user has 20 pending outgoing requests, When attempting another, Then the app blocks and explains the limit within 1 second.

FR-009 1:1 Chat

The system shall enable text chat for accepted connections with median send-to-receive latency under 500 ms and p95 under 2 seconds, including delivered/read receipts.

- Given an accepted connection, When a message is sent, Then it appears in the recipient's thread within 2 seconds p95 with a delivered indicator.
- Given a message is read, When the recipient opens the thread, Then a read indicator appears for the sender within 2 seconds p95.
- Given network loss, When sending, Then the app queues messages offline and retries automatically when connectivity resumes.

FR-010 Travel Community Feed

The system shall provide a destination and global community feed for posts (text up to 1,000 characters and up to 5 photos), likes, comments, and @mentions.

- Given a destination is selected, When the traveler opens Community, Then destination-specific posts load within 2 seconds p95.
- Given a new post, When Publish is tapped, Then the post appears in the feed within 2 seconds p95.
- Given a comment or like is added, When submitted, Then engagement counts update in real time within 2 seconds p95.

FR-011 Itinerary and Timetable

The system shall allow travelers to create a day-wise itinerary, add content or custom items, and set reminders, rendering up to 30 items/day within 2 seconds p95.

- Given an item, When Add to Itinerary is tapped, Then confirmation is shown within 1 second p95 and the item appears on the selected date.
- Given a reminder time, When the reminder triggers, Then a push notification arrives within the scheduled minute p95.
- Given an itinerary day is opened, When loaded, Then all items render within 2 seconds p95.

FR-012 Location-Based Spot Suggestions

The system shall suggest points of interest within a configurable radius (default 5 km) from the traveler's current or selected location, with first results in 2 seconds p95.

- Given location permission granted, When the traveler opens Nearby Spots, Then suggestions appear within 2 seconds p95.
- Given location permission denied, When opened, Then the app prompts to enable or allows manual location entry within 1 second.
- Given a radius change, When updated, Then results refresh within 1.5 seconds p95.

FR-013 Local Food Recommendations

The system shall recommend local cuisines and eateries for the destination with filters by price, rating, and distance, applying filters within 1.5 seconds p95.

- Given selected filters, When Apply is tapped, Then the food list updates within 1.5 seconds p95.
- Given a food place is opened, When viewing details, Then photos, hours, rating, and contact info load within 1.5 seconds p95.
- Given the traveler marks a place as tried, When tapped, Then the item is tagged and saved within 1 second.

FR-014 Time-Aware Event Suggestions

The system shall suggest events and shows relevant to the current local time and date, updating suggestions within 10 seconds p95 of clock changes.

- Given local time evening, When Events is opened, Then evening events (e.g., shows) appear at the top within 2 seconds p95.
- Given an event has started, When refreshing, Then past events are deprioritized or hidden within 10 seconds p95.
- Given no events match, When searched, Then the app displays a clear no-results state within 1 second.

FR-015 Live Event Notifications and Quick Add

The system shall notify travelers of nearby live or soon-starting events and offer one-tap add to the itinerary.

- Given notifications enabled, When an event starts within 60 minutes and within 5 km, Then a push notification is delivered within 10 seconds p95 of detection.
- Given the notification is tapped, When Quick Add is selected, Then the event is added to today's itinerary within 2 seconds p95.
- Given notifications are disabled for events, When an event is detected, Then no push is sent and no badge count increases.

FR-016 Best Month to Visit Guidance

The system shall display the best months to visit each destination based on seasonality and crowd levels, loading guidance within 2 seconds p95.

- Given a destination page, When Best Time is opened, Then recommended months and rationale display within 2 seconds p95.
- Given travel dates entered, When outside optimal months, Then an advisory appears within 1 second with alternatives.
- Given no data available, When requested, Then the app shows "data unavailable" within 1 second.

FR-017 Hotel Listings and Partnerships

The system shall list hotels for the destination with partner badges and deep links to booking, loading initial results within 2 seconds p95.

- Given Hotels is opened, When the destination is set, Then hotels list with price range, rating, and distance loads within 2 seconds p95.
- Given a partner hotel, When opened, Then the partner badge and booking link are visible and tappable within 1 second.
- Given filters applied, When price/rating filters change, Then results update within 1.5 seconds p95.

FR-018 Reviews and Feedback on Locations

The system shall allow travelers to rate spots and hotels 1–5 and write up to 300-character reviews, with postings under 1 second median and visible after moderation within 60 minutes p95.

- Given a completed visit, When a rating and review are submitted, Then the submission succeeds within 1 second median and appears after moderation.
- Given an inappropriate review, When flagged by automation or users, Then it is hidden from public view within 3 seconds p95.
- Given a review is edited, When updated, Then changes are saved within 1 second and re-enter moderation if applicable.

FR-019 Offline Maps and Itinerary Access

The system shall allow travelers to download offline map tiles for selected areas (up to 500 MB per area) and access itinerary offline.

- Given an area selection, When Download is tapped, Then the offline map completes within the displayed estimate and progress updates every 2 seconds.
- Given offline mode, When Maps or Itinerary is opened, Then the last downloaded tiles and itinerary are available within 2 seconds p95.

- Given storage is insufficient, When starting a download, Then the app warns and allows resizing within 1 second.

FR-020 Opening Hours and “Time Available”

The system shall display opening hours for POIs and indicate whether a traveler has enough time to visit based on schedule gaps.

- Given a POI with hours, When viewed, Then today’s open/close status and next open time are shown within 1.5 seconds p95.
- Given the traveler’s itinerary, When checking a POI for a free slot, Then the app suggests viable time windows within 2 seconds p95.
- Given hours are unknown, When viewed, Then the app indicates unknown and suggests calling/contacting within 1 second.

FR-021 Local Emergency Contacts

The system shall provide country and city-level emergency contacts (police, ambulance, fire, embassy/consulate) and make them accessible offline.

- Given a destination, When Emergency is opened, Then contacts display within 1 second p95 and tapping initiates a call prompt.
- Given offline mode, When Emergency is opened, Then the last synced contacts are available within 1 second.
- Given the traveler’s nationality, When embassy is requested, Then the nearest embassy/consulate details display within 2 seconds p95.

FR-022 Favorites and Bookmarks

The system shall let travelers bookmark travelers, spots, food places, events, and hotels, syncing within 5 seconds p95.

- Given an item, When the bookmark icon is tapped, Then the saved state persists within 1 second p95 and is available offline.
- Given a bookmarked list, When opened, Then items render within 2 seconds p95.
- Given a bookmark is removed, When tapped again, Then it is removed within 1 second p95.

FR-023 Notification Preferences

The system shall allow enabling/disabling categories (matches, requests, messages, events, reminders) with changes taking effect within 30 seconds.

- Given preferences are updated, When toggled, Then the setting persists within 1 second and applies within 30 seconds.
- Given all categories are off, When events occur, Then no push notifications are delivered.

- Given reminders are on, When a reminder reaches its time, Then a push arrives within the scheduled minute p95.

FR-024 Safety: Block and Report

The system shall allow blocking users (immediate suppression of visibility and messaging) and reporting users/content with predefined categories.

- Given a profile, When Block is tapped, Then the blocked user cannot view or message and confirmation appears within 2 seconds p95.
- Given a report is filed, When submitted, Then acknowledgment is shown within 2 seconds p95 and the report is stored with an ID.
- Given a blocked state, When the blocked user sends a message, Then it fails silently on the recipient and shows an error to the sender.

FR-025 Language Toggle (English/Hindi)

The system shall support runtime language switching between English and Hindi, applying to all visible UI within 1 second p95 without app restart.

- Given the language setting, When switched, Then all visible UI text updates within 1 second p95.
- Given a new session, When launched, Then the last selected language is applied at startup.
- Given untranslated text, When encountered, Then a fallback string is displayed in English and logged for localization.

FR-026 Admin Moderation

The system shall provide an admin console to review reports and community content, allowing warn, restrict, or ban actions with immutable audit logging.

- Given a report queue, When an admin takes action, Then the action and rationale are logged instantly and applied within 5 seconds p95.
- Given restricted content, When action is taken, Then content becomes hidden within 3 seconds p95.
- Given a user appeal, When status changes, Then both the user and audit log reflect the change within 5 seconds p95.

Non-Functional Requirements (NFRs)

Performance

- NFR-P-001 App cold start shall render the home screen under 3.0 seconds p95 on mid-tier Android (6 GB RAM) and under 2.5 seconds p95 on iOS at launch.
- NFR-P-002 Destination search autocomplete responses shall complete under 1.5 seconds p95 with a server response time under 300 ms p95.
- NFR-P-003 Matching results shall render first page under 2.0 seconds p95 for up to 50,000 candidate travelers per destination.
- NFR-P-004 Chat median end-to-end latency shall be under 500 ms and p95 under 2.0 seconds for text messages on 4G or better.
- NFR-P-005 Maps tiles and POI list initial paint shall occur under 2.0 seconds p95 after view load; subsequent pagination under 1.5 seconds p95.
- NFR-P-006 Push notifications (messages, requests, live events, reminders) shall be delivered within 10 seconds p95 of event trigger.
- NFR-P-007 Offline cache read operations (itinerary, emergency contacts, bookmarks) shall complete under 1.0 second p95.

Security

- NFR-S-001 Transport security shall enforce TLS 1.2+ for all API calls; insecure protocols shall be refused with informative errors.
- NFR-S-002 Authentication shall support email/password (min 8 chars, uppercase, lowercase, numeric) hashed with Argon2id or bcrypt (cost ≥ 12), phone OTP with rate limit 5 attempts/hour/identifier, and OAuth for Google/Apple.
- NFR-S-003 Authorization shall follow least-privilege role-based access control; admin endpoints require MFA and IP allowlisting.
- NFR-S-004 Data at rest containing PII (profile, messages, reports) shall be encrypted using AES-256 with KMS-managed keys rotated at least every 90 days.
- NFR-S-005 Privacy controls shall include consent capture on first launch, opt-out of analytics/marketing at any time with effect within 24 hours, and data minimization (default city-level location).
- NFR-S-006 Content safety shall apply server-side toxicity checks to bios, posts, and messages with decision time under 3 seconds p95 and automatic quarantine of flagged content.
- NFR-S-007 Secrets management shall store credentials and API keys only in a secure vault; no secrets in code or client binaries.
- NFR-S-008 Audit logs for admin/moderation actions shall be immutable, time-synced (± 200 ms), and retained for 24 months.

Reliability

- NFR-R-001 Availability for core APIs (auth, profiles, trips, matches, chat, notifications) shall be 99.5% monthly at launch and 99.9% within 90 days post-launch.
- NFR-R-002 Message delivery success shall be $\geq 99.0\%$ within 10 seconds p95; undelivered messages shall retry with exponential backoff up to 24 hours.
- NFR-R-003 Backups of primary databases shall occur daily with 30-day retention; recovery time objective (RTO) under 4 hours and recovery point objective (RPO) under 15 minutes.
- NFR-R-004 Data durability for user-generated content (messages, posts, reviews) shall be ≥ 11 nines across replicated storage zones.
- NFR-R-005 Degradation strategy shall provide read-only modes for Community and Matches during partial outages, with user messaging explaining limited functionality within 10 seconds of detection.
- NFR-R-006 Observability shall include structured logs, metrics, and distributed traces with alerting on SLO breaches within 5 minutes and on-call acknowledgment within 10 minutes p95.