



Travel Mate & Guide SRS

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Executive Summary

Travel Mate & Guide is a mobile application that connects solo travelers heading to the same destination, enabling discovery, matching, connection requests, in-app chat, safety features, and trip planning with local content such as events, food, hotels, points of interest, and guides. The app supports runtime language toggle between English and Hindi.

Business Objectives

- Increase successful traveler connections by enabling relevant matches and frictionless communication.
- Improve trip planning efficiency with curated local content and itinerary tools.
- Enhance traveler safety with identity, controls, and reporting.

Stakeholders

- Product Owner
- Engineering (Mobile, Backend)
- Design and UX
- Data and Analytics
- Trust & Safety
- Customer Support
- Marketing and Growth

User Personas

- Solo Traveler: Wants to find companions for shared itineraries and activities.
- Local Guide: Offers tours or advice and seeks visibility and bookings.
- Safety-Conscious Traveler: Prioritizes verified profiles and moderation.
- Planner: Builds itineraries and uses reminders and notifications.

Scope

- In scope includes user onboarding, profiles, destination discovery, matching, connection requests, 1:1 chat, local content modules (events, food, hotels, POIs, guides), itineraries, reminders, runtime language toggle (English/Hindi), notifications, safety and reporting, and basic admin moderation.
- Out of scope includes payments, group video calls, complex marketplace bookings, and web app.

Assumptions

- Initial platform is Android and iOS with a shared codebase.
- Push notifications are available on user devices.
- Location services are granted by users for proximity-based features.
- Backend services and databases are provisioned with basic monitoring.

Constraints

- Mobile app built with Flutter and Firebase services for authentication, database, messaging, and push notifications.
- GDPR-compliant data handling for EU users with consent flows.
- Server-side APIs limited to cost-effective cloud services in first year.

Success Metrics

- Achieve 40% match-to-connection rate within 60 days of launch.
- Achieve 70% message read rate within 24 hours during first 90 days.
- Attain 99.5% monthly API availability starting at GA.
- Reach 30% weekly active users among registered users within 90 days.

User Journeys

- Onboard and Verify: User installs app, selects language, signs up, verifies email or phone, and completes profile with interests and trip dates.
- Discover and Match: User searches destinations, sees travelers with overlapping dates/interests, and applies filters to view matches.
- Connect and Chat: User sends connection requests, receives acceptance, and starts in-app chat with safety controls.
- Plan and Remind: User adds events/POIs to an itinerary and schedules reminders with push notifications.
- Safety and Report: User blocks or reports inappropriate behavior and receives confirmation of action taken.

Functional Requirements

- FR-01 Registration: Users shall sign up via email, phone OTP, Google, or Apple at MVP, with successful account creation in less than 5 seconds for 95% of attempts by GA.
- FR-02 Authentication: Users shall log in within 3 seconds for 95% of attempts, with session persistence of 30 days unless user signs out, at MVP.
- FR-03 Language Toggle: Users shall switch app language between English and Hindi at runtime without restart, applying to all visible UI within 1 second for 95% of switches at MVP.
- FR-04 Profile Creation: Users shall create a profile with name, photo, bio, home city, languages, interests, and travel preferences, with mandatory fields validated client-side within 200 ms at MVP.
- FR-05 Identity Verification: Users shall optionally verify identity via email or phone OTP at MVP and government ID check in R2 within 90 days post-GA, with verified badge displayed.
- FR-06 Destination Search: Users shall search destinations by city or landmark with autocomplete returning results within 1.5 seconds for 95% of queries at MVP.
- FR-07 Trip Planning Input: Users shall add upcoming trips with destination, date range, and purpose, saved within 1 second for 95% of saves at MVP.
- FR-08 Matching Engine: The system shall recommend travelers with at least 30% interest overlap and at least 1-day date overlap within the same destination, producing first results within 2 seconds for 95% of requests at MVP.
- FR-09 Match Filters: Users shall filter matches by age range, gender preference, languages, budget tier, and activity types with applied results in under 1.5 seconds for 95% of cases at MVP.
- FR-10 Connection Requests: Users shall send connection requests with a short message up to 280 characters, with delivery confirmation in under 2 seconds for 95% of requests at MVP.
- FR-11 Connection Limits: Users shall be limited to 20 pending outgoing requests to reduce spam, enforceable in real time at request creation at MVP.
- FR-12 Accept or Decline: Recipients shall accept or decline requests, with state change reflected to both parties within 2 seconds for 95% of actions at MVP.
- FR-13 1:1 Chat: Users with an accepted connection shall exchange text messages up to 2000 characters, with send-to-receive latency under 500 ms median and under 2 seconds p95 at MVP.
- FR-14 Chat Media: Users shall send images up to 10 MB with automatic compression under 2 seconds on-device and upload under 5 seconds on 4G p95 at R2 within 90 days post-GA.
- FR-15 Read Receipts: Chat shall display sent, delivered, and read indicators updated within 2 seconds of state change p95 at MVP.
- FR-16 Notifications: Users shall receive push notifications for new matches, requests, messages, and reminders within 10 seconds p95 from event trigger at MVP.

- FR-17 Notification Preferences: Users shall enable or disable categories of notifications with changes taking effect within 30 seconds at MVP.
- FR-18 Local Content Browse: Users shall browse events, food, hotels, POIs, and guides for a selected destination with first content load under 2 seconds p95 at MVP.
- FR-19 Content Filters: Users shall filter content by category, price, rating, distance, and date with applied results under 1.5 seconds p95 at MVP.
- FR-20 Content Details: Users shall view content details including photos, description, ratings, location, opening hours, and contact data, rendered within 1.5 seconds p95 at MVP.
- FR-21 Itinerary Add: Users shall add any content item or custom item to their itinerary with confirmation within 1 second p95 at MVP.
- FR-22 Itinerary View: Users shall view a day-wise itinerary with up to 30 items per day rendered within 2 seconds p95 at MVP.
- FR-23 Reminders: Users shall schedule reminders for itinerary items with configurable lead time and receive push notifications at the exact scheduled minute p95 at MVP.
- FR-24 Favorites: Users shall bookmark travelers and content with saved state persisted within 1 second p95 and accessible offline at MVP.
- FR-25 In-App Safety: Users shall block users, preventing profile visibility and messaging immediately, with confirmation within 2 seconds p95 at MVP.
- FR-26 Reporting: Users shall report profiles, chats, or content with predefined categories and optional text, with report stored and acknowledgment shown within 2 seconds p95 at MVP.
- FR-27 Moderation Dashboard: Admins shall view and act on reports with actions including warn, restrict, or ban, with action audit logged instantly at MVP.
- FR-28 Rate and Review: Users shall rate guides and content 1–5 and add a 300-character review, with median posting under 1 second and moderation checks performed within 60 minutes p95 at R2 within 90 days post-GA.
- FR-29 Location Awareness: Users shall optionally share approximate location at city-level for better matching and nearby content, refreshed no more than once every 30 minutes at MVP.
- FR-30 Offline Caching: The app shall cache last viewed content lists and itinerary for offline access, with cache size capped at 100 MB and eviction least-recently-used at R2 within 90 days post-GA.
- FR-31 Session Management: Users shall be logged out remotely upon password reset with effect within 60 seconds p95 at MVP.
- FR-32 Data Export: Users shall request export of their personal data and receive a machine-readable file within 48 hours at GA.
- FR-33 Delete Account: Users shall delete their account with irreversible action after a 7-day grace period and data purge within 30 days, with progress status shown at GA.
- FR-34 Help and Support: Users shall access FAQs and submit a support ticket with confirmation within 1 minute and first response within 24 hours p95 at GA.

- FR-35 AB Experiments: Product shall enable server-driven configuration for ranking and feature flags with treatment assignment occurring within 1 second of app start at GA.

Data Entities

- User: id, email, phone, name, photo, languages, interests, bio, verification status, createdAt, lastActive.
- Trip: id, userId, destination, startDate, endDate, purpose, budgetTier, visibility.
- Match: id, userA, userB, destination, overlapScore, status, createdAt.
- Connection Request: id, fromUser, toUser, message, status, createdAt, respondedAt.
- Message: id, chatId, fromUser, toUser, contentType, content, sentAt, deliveredAt, readAt.
- Content Item: id, type, title, description, photos, location, rating, price, hours, contact.
- Itinerary Item: id, userId, date, time, contentId, customTitle, note, reminderAt.
- Report: id, reporterId, subjectType, subjectId, category, text, status, createdAt, resolvedAt.
- Admin Action: id, adminId, actionType, targetType, targetId, reason, createdAt.

Non-Functional Requirements

- NFR-01 Performance: App cold start shall complete to home screen under 3 seconds on mid-tier Android devices and under 2.5 seconds on iOS p95 at GA.
- NFR-02 Scalability: System shall support 100k MAU and 500 concurrent chat sessions with p95 chat latency under 2 seconds at GA.
- NFR-03 Availability: Core APIs shall maintain 99.5% monthly uptime starting at GA and 99.9% by R2.
- NFR-04 Reliability: Message delivery success shall be at least 99.0% within 10 seconds p95 at GA.
- NFR-05 Security: All data in transit shall use TLS 1.2+ and all PII at rest shall use AES-256 encryption with keys rotated at least every 90 days at GA.
- NFR-06 Privacy: The app shall request consent for data processing and tracking on first launch and allow opt-out at any time, with consent logs retained for 24 months at GA.
- NFR-07 Access Control: Role-based access shall restrict admin features to authorized staff with least privilege and audit every privileged action with immutable logs at GA.
- NFR-08 Compliance: The system shall comply with GDPR rights for access, rectification, and erasure with SLA of 30 days per request at GA.
- NFR-09 Localization: 100% of user-facing strings shall be externalized and translated for English and Hindi with no hard-coded text at MVP.
- NFR-10 Accessibility: The app shall meet WCAG 2.1 AA equivalents for contrast and scalable text and support screen readers for all interactive elements at GA.
- NFR-11 Observability: The system shall emit structured logs, metrics, and traces with SLOs tracked weekly and alerts triggered within 5 minutes of SLO violation at GA.

- NFR-12 Battery and Data: Background operations shall not exceed 2% daily battery usage and 10 MB per day data usage without explicit user action at GA.
- NFR-13 Maintainability: Mobile codebase shall maintain unit test coverage of at least 60% and critical modules at 80% with CI checks blocking merges below thresholds at GA.
- NFR-14 Disaster Recovery: Daily backups shall be retained for 30 days and restoration time objective shall be under 4 hours with data loss under 15 minutes by R2.
- NFR-15 Content Quality: Content freshness for events shall be under 24 hours stale p95 and for POIs under 30 days stale p95 at GA.

Security and Safety Requirements

- SEC-01 Authentication Security: Passwords shall require minimum 8 characters with uppercase, lowercase, and numeric, and be hashed with bcrypt or Argon2 at GA.
- SEC-02 OTP Rate Limiting: OTP attempts shall be limited to 5 per hour per identifier with exponential backoff at MVP.
- SEC-03 Abuse Prevention: Connection requests per user per day shall be capped at 50 and per recipient at 5 from the same sender at MVP.
- SEC-04 Content Moderation: Text toxicity checks shall run on new bios and messages server-side with a decision time under 3 seconds p95 and automatic quarantine when flagged at GA.
- SEC-05 Reporting SLA: Moderation shall review 90% of abuse reports within 24 hours and 100% within 72 hours at GA.
- SEC-06 Data Minimization: Location stored shall default to city-level unless user opts into precise coordinates for features explicitly requiring it at GA.

Integration and APIs

- INT-01 Auth Providers: Integrate Firebase Authentication for email, phone, Google, and Apple with provider uptime 99.9% SLA leveraged at MVP.
- INT-02 Realtime Messaging: Use Firebase Realtime Database or Firestore for chat with offline persistence on-device enabled at MVP.
- INT-03 Push Notifications: Integrate FCM and APNs with delivery success at least 95% within 10 seconds p95 at MVP.
- INT-04 Geocoding and Maps: Integrate map SDK for autocomplete and display with calls limited to 5 per second per user at GA.
- INT-05 Content Ingest: Provide server APIs to ingest curated events, food, hotels, POIs, and guides with import jobs completing within 30 minutes for 10k items at GA.

Mobile UX Requirements

- UX-01 Onboarding: On first launch, users shall see a 3-screen intro describing matching, chat, and safety, skippable in under 5 seconds at MVP.
- UX-02 Navigation: Primary navigation shall include Home, Discover, Matches, Chat, and Itinerary tabs visible at all times at MVP.
- UX-03 Empty States: Each core screen shall present instructive empty states with a clear next action at MVP.
- UX-04 Error Handling: User-facing errors shall be actionable, human-readable, and recoverable with retry within the same screen at MVP.

Analytics and Telemetry

- AN-01 Event Tracking: Track key events including sign_up, login, trip_add, match_view, connection_send, connection_accept, message_send, itinerary_add, reminder_fire at MVP.
- AN-02 Funnel Reporting: Provide weekly reports for onboarding, matching, and messaging funnels with conversion rates and p95 latencies at GA.
- AN-03 Privacy Controls: Users shall opt out of analytics with effect within 24 hours and exclusion verified in reports at GA.

Operational Requirements

- OPS-01 CI/CD: Automated build, test, and deploy shall run on each main-branch commit with median pipeline completion under 15 minutes at GA.
- OPS-02 Feature Flags: All new user-impacting features shall be controllable via remote config with instant rollout and rollback at GA.
- OPS-03 Incident Response: Pager-based on-call shall acknowledge alerts within 10 minutes and mitigate SEV-1 incidents within 60 minutes p95 at GA.
- OPS-04 Rate Limits: Public APIs shall enforce per-IP and per-user rate limits with informative 429 responses and retry-after headers at GA.

Release Plan

- MVP Scope includes FR-01 to FR-13, FR-16 to FR-23, FR-25 to FR-27, FR-31, FR-33, FR-35, NFR-01 to NFR-05, NFR-09, INT-01 to INT-03, UX-01 to UX-04, AN-01, OPS-01 to OPS-02.
- R2 Scope within 90 days post-GA includes FR-05 ID check, FR-14 media, FR-28 reviews, FR-30 offline caching, NFR-03 uplift to 99.9% availability, NFR-14 disaster recovery, AN-02, OPS-03 to OPS-04.

Acceptance Criteria Examples

- AC-01 For a valid email and password, login completes and navigates to Home within 3 seconds p95 under a 100 ms server response time and median network RTT of 150 ms.
- AC-02 When two users have overlapping dates for Paris and at least three shared interests, each shall see the other in top 10 results within 2 seconds p95 after applying default filters.
- AC-03 When a user schedules a reminder for 9:00 AM local time, a push notification arrives by 9:00 AM with no more than 59 seconds variance p95.
- AC-04 When a user blocks another, future messages from the blocked user are rejected with an error visible only to sender and no new notifications are delivered from that user.

Risks and Mitigations

- Risk: Spam and misuse of connection requests may degrade trust. Mitigation includes rate limits, verification, and toxicity filters.
- Risk: Low content quality may reduce user retention. Mitigation includes curation, freshness SLAs, and user ratings.
- Risk: Push delivery variability across OEMs may delay notifications. Mitigation includes high-priority channels and in-app polling fallback.

Glossary

- MAU: Monthly Active Users.
- GA: General Availability launch.
- p95: 95th percentile.
- R2: Release two after GA.
- POI: Point of Interest.