

# **Scope of Work (SoW) – KSRTC Budget Tourism Cell (BTC)**

## **1. Introduction**

Kerala State Road Transport Corporation (KSRTC) proposes to implement a comprehensive digital platform for its Budget Tourism Cell (BTC), covering both web and mobile applications. The solution will deliver a seamless customer experience through AI-enhanced booking, personalized itineraries, integrated transport and tourism services, and real-time digital engagement tools.

The platform shall not only provide tour package booking capabilities but also support future scalability, including cross-selling with allied government and private service providers, advanced AI analytics, and integrated payment systems.

## **2. Objectives**

The key objectives of this project are to:

1. Provide a single-window digital tourism platform for BTC packages, transport services, accommodation, and allied services.
2. Enhance the customer journey through AI-driven personalization, real-time updates, and multi-channel engagement.
3. Enable seamless integration with KSRTC's core systems and external partners such as IRCTC, KSINC, and private vendors.
4. Generate new revenue streams for KSRTC through advertisement slots and allied service bookings.
5. Ensure scalability, high availability, and compliance with national IT security standards (MeitY, ISO).

## 3. Detailed Scope of Work

### 3.1 Core Functional Modules

The platform shall include the following mandatory modules:

- **Tour Package Management**
  - Hosting and management of 1500+ packages across KSRTC units and districts.
  - Depot-specific customization for itineraries, fares, and seating layouts.
  - Option to create specialized packages (corporate tours, student trips, wedding charters, gender-specific tours).
- **Booking & Reservation Engine**
  - Real-time online booking with multiple secure payment options.
  - Fail-safe payment gateway integrated with the central BTC account and 64 unit-level accounts.
  - Features to generate e-tickets, invoices, and downloadable itineraries.
- **Customer Engagement Tools**
  - Review and rating system for services.
  - Push notifications, email, and SMS confirmations.
  - Trip weather forecasts, Google Maps integration, and social media sharing.
  - AI-powered chatbot & voice-based virtual assistant.
- **Search & Discovery**
  - Advanced filters (budget, duration, activity type, location).
  - AI-driven recommendations based on traveler history and seasonal trends.

### 3.2 AI-Enhanced Features

The system must incorporate the following AI capabilities:

- **Personalized Package Suggestions** – AI suggests tours based on preferences and travel history.
- **Dynamic Itinerary Generator** – Auto-adjusts itineraries considering weather, traffic, and crowd levels.
- **Predictive Pricing & Availability Alerts** – Customers receive notifications on optimal booking times.
- **Sentiment Analysis on Reviews** – Prioritizes relevant customer feedback for decision-making.
- **Fraud Detection in Payments** – AI-driven monitoring to prevent fraudulent transactions.
- **Depot Performance Insights** – AI ranks depots based on punctuality, service quality, and customer feedback.

### 3.3 System Integration Requirements

The solution must integrate seamlessly with the following:

- **KSRTC Core Systems** – Existing online ticketing, ETM dashboards, and financial systems.
- **Government & External Partners:**
  - **IRCTC** – Two-way API integration for train + bus tourism packages.
  - **KSINC & Inland Waterways** – Houseboats, ferries, and waterway tourism bookings.
  - **Restaurants & Snack Bars** – Tie-ups for dining options within BTC packages.
  - **Allied Rentals** – Future-ready APIs for cabs, e-bikes, cycles, and travel accessories.

### 3.4 Administrative & Back-Office Modules

The platform shall provide a robust **admin interface** with the following features:

- **Centralized Dashboard** – Revenue, booking reports, and package analytics.
- **Depot-Level Access** – Role-based permissions for package creation and monitoring.
- **Request & Fleet Management** – Assignment of buses, staff, and fleet utilization monitoring.
- **Cancellations & Refunds** – Auto-refund workflows with customer notifications.
- **Advertisement Integration** – Slot-based advertisement engine to generate additional revenue.
- **Audit Logs & Security** – Comprehensive logging of admin activities for accountability.

### 3.5 Technology Architecture proposed

- **Frontend (Web)** – ReactJS for responsive and dynamic user interface.
- **Mobile Application** – Flutter framework for Android and iOS hybrid app.
- **Backend** – NodeJS & SQL for robust server-side and database management.
- **AI/ML** – Python-based open-source large language models (LLMs).
- **DevOps** – Jenkins-based CI/CD pipeline for automated deployment.
- **Cloud Hosting** – Government-compliant cloud (MeitY empanelled, ISO 27001, SOC 2, ISO 20000-1).
- **Disaster Recovery & Backup** – Multi-zone data backup with failover capability.

## 4. Deliverables

1. **Requirement Finalization & Solution Design** – BRD, HLD, and wireframes.
2. **Web Application** – Fully functional BTC portal with SEO-optimized UI.
3. **Mobile Application** – Hybrid app with AI-driven travel companion features.
4. **Admin Dashboard** – Central and depot-level management system.

5. **Integration Services** – APIs for KSRTC, IRCTC, KSINC, and allied vendors.
6. **Testing & CI/CD Setup** – Automated test cases, deployment pipelines.
7. **Training & Documentation** – User manuals, admin guides, FAQs, knowledge base.
8. **Support & AMC** – Post-go-live maintenance for 3–5 years.

## 5. Timelines

Phase	Activity	Duration	Deliverable
Phase 1	Requirement Analysis & Design	1 Month	BRD, HLD, Wireframes
Phase 2	Development & Unit Testing	2 Months	Web + Mobile Beta
Phase 3	Integration & UAT	1 Month	UAT-ready platform
Phase 4	Deployment & Go-Live	1 Month	Production system
Phase 5	Support & AMC	36–60 Months	SLA-driven support

## 6. Training & Change Management

- Conduct centralized workshops for BTC staff and depot representatives.
- Train 50 master trainers at divisional level, who will cascade training to depot users.
- Provide online manuals, wikis, and continuous knowledge base updates.
- Change management framework to ensure user adoption and minimize resistance.

## 7. Assumptions

- KSRTC will provide licenses for SMS gateway, email services, and domain name.
- Data migration from existing systems (if any) will be jointly planned.

- Initial deployment will be in English and Malayalam; regional language support can be added in subsequent phases.

## **8. Post-Implementation Support**

- 24x7 monitoring of application and infrastructure.
- Bug fixes, patches, and updates under AMC.
- AI features to be enhanced progressively in N+3 months cycles.
- Quarterly review meetings with KSRTC for roadmap planning.