Requirement Analysis

Stakeholder Analysis

Purpose

The purpose of this section is to identify the key stakeholders involved in the Metro Ticket Booking System, understand their responsibilities, expectations, and analyze how automation and digital ticketing impact their day-to-day operations.

Stakeholder	Role	Needs / Expectations	Impact of Automation
Passengers (End Users)	Daily commuters using metro services	- Simple and fast ticket booking - Instant digital ticket generation - QR code-based access - Multiple cashless payment options	✓ Reduced waiting time ✓ Instant QR-based tickets ✓ Clear visibility of booking status
Station Managers	Oversee station-level operations	- Accurate ticket verification - Reduced manual ticket checking - Better control of passenger flow	✓ Faster QR validation at entry/exit ✓ Improved crowd management
Metro Operations Team	Supervise ticketing and revenue operations	- Accurate transaction data - Minimal ticketing	✓ Centralized monitoring of ticket data

Stakeholder	Role	Needs / Expectations	Impact of Automation
		errors - Operational insights	✓ Improved operational efficiency
IT Administrators	Manage and maintain the ServiceNow platform	- Stable and secure automation - Easy system maintenance - Smooth configuration updates	✓ Lower support workload ✓ Simplified system monitoring
Finance Team	Handle revenue tracking and reconciliation	- Accurate fare collection - Digital payment records - Automated reports	✓ Improved revenue accuracy ✓ Automated financial reconciliation

Functional Requirements

Purpose

This section defines the core system functionalities required to meet business goals and provide a smooth, end-to-end digital metro ticket booking experience.

Feature	Description	Scope / Notes
Service Catalog Item	Centralized metro ticket booking interface	Enables users to select source, destination, passenger type, and ticket quantity
Dynamic Booking Forms	Conditional and responsive forms	UI policies dynamically show or hide fields based on user selections
Automated Fare Calculation	System-driven fare computation	Fare calculated based on distance/zones, passenger category, and ticket count
QR Code Ticket Generation	Digital ticket creation with QR codes	Each transaction generates a unique QR code for entry and exit validation
Flow Designer Automation	Automated workflow execution	Triggered on catalog submission for ticket creation, fare calculation, and notifications
Notifications	Automatic ticket communication	Email and ServiceNow notifications with ticket and QR code details
Custom Data Tables	Storage of ticket and station information	Tables such as u_metro_ticket and u_station_master used for audit and reporting
Reporting & Tracking	Ticket usage and revenue monitoring	Supports daily sales, peak-time analysis, and station-wise reports

Non-Functional Requirements

Purpose

This section ensures the system meets performance, security, scalability, and reliability standards suitable for a large-scale public transport environment.

Requirement Type	Description / Expectation
Performance	Ticket booking and QR generation completed within SLA; supports more than 500 concurrent users
Scalability	Designed to support future extensions such as mobile apps, WhatsApp booking, and new metro routes
Security	Role-based access control for passengers, station staff, and administrators
Compliance	Complete audit trail for bookings, payments, and ticket validations
Availability & Reliability	System uptime of 99.5%; automated notifications ensure successful ticket delivery
Maintainability	Fare rules, station data, and workflows can be updated with minimal downtime
Response Time	Portal response time maintained within 2–3 seconds for booking and ticket display

Summary

This Requirement Analysis document provides a comprehensive overview of stakeholders, functional requirements, and non-functional requirements for the Metro Ticket Booking System developed in ServiceNow.

- Clearly outlines stakeholder roles and expectations
- Defines essential system functionalities for digital ticketing
- Ensures performance, security, and scalability standards
- Aligns passengers, metro operations, finance, and IT teams on a single digital platform

By following these requirements, the implementation team can effectively configure ServiceNow catalog items, workflows, fare calculation logic, QR code generation, and reporting features to deliver a reliable, efficient, and fully automated metro ticket booking solution.