

# Functional Scope and Execution Roadmap

## Functional Scope

The **Metro Ticket Generating System in ServiceNow** is designed to automate the end-to-end metro ticket booking and generation process. The functional scope defines the system features, capabilities, and boundaries to ensure clarity on what the solution delivers.

The system provides a centralized digital platform for passengers to book metro tickets, automatically calculate fares, generate QR-code-based digital tickets, and receive instant notifications.

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## Key Features

### 1. Service Catalog Creation

- Provides a centralized Service Catalog item for metro ticket booking.
- Allows passengers to submit ticket requests through the ServiceNow Service Portal.
- Catalog variables include:
  - Source Station
  - Destination Station
  - Passenger Type (Adult/Student/Senior Citizen)
  - Number of Tickets
  - Travel Date
  - Payment Mode
- Supports dynamic fields for improved user experience.

## **2. Form Setup and Configuration**

- Configures user-friendly forms to capture all required travel details.
- Mandatory and optional fields ensure data accuracy and completeness.
- UI Policies and Client Scripts dynamically control field visibility and validation (e.g., show student ID field if passenger type is Student).
- Prevents invalid station selections and ticket quantity errors.

## **3. Automated Fare Calculation**

- Fare is calculated automatically based on:
  - Source and destination stations
  - Distance or zone-based pricing
  - Passenger category discounts
  - Number of tickets
- Fare calculation logic implemented using Business Rules or Script Includes.
- Ensures consistent and error-free pricing.

## **4. QR Code Ticket Generation**

- Automatically generates a unique digital ticket ID for each booking.
- Creates QR codes containing ticket and travel details.
- QR codes are used for ticket validation at metro entry and exit points.
- Digital tickets eliminate the need for physical paper tickets.

## **5. Flow Designer Automation**

- End-to-end automation using Flow Designer triggered on catalog submission.
- Automates:
  - Fare calculation
  - Ticket record creation
  - QR code generation
  - Status updates
- Integrates with custom tables (e.g., u\_metro\_ticket, u\_station\_master) for structured data storage and tracking.

## **6. Notifications and Ticket Delivery**

- Automatic notifications sent to passengers via:
  - Email
  - ServiceNow notifications
- Notifications include:
  - Ticket details
  - QR code
  - Travel summary
- Keeps passengers informed throughout the booking process.

## **7. Data Storage and Reporting**

- All ticket data stored in custom tables for audit and reporting.
- Enables reporting on:
  - Daily ticket sales
  - Peak travel hours

- Station-wise traffic
- Revenue trends
- Supports data-driven decision making for metro operations.

## Functional Boundaries

- The system supports **metro ticket booking and generation only**.
- Integration with external payment gateways or metro gate hardware is optional and considered a future enhancement.
- The solution supports role-based access for:
  - Passengers (end users)
  - Station Managers
  - Metro Operations Team
  - IT Administrators

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## Execution Roadmap

The execution roadmap outlines the phased implementation of the **Metro Ticket Generating System in ServiceNow**, ensuring controlled delivery and reduced implementation risk.

### Milestone 1: Service Catalog Setup

- Create metro ticket booking catalog item.
- Define variables such as source, destination, passenger type, and number of tickets.
- Configure catalog visibility for passengers.

## **Milestone 2: Form Configuration**

- Design booking forms with all required fields.
- Implement UI policies and client scripts for dynamic field behavior.
- Validate inputs to ensure correct station selection and ticket quantity.

## **Milestone 3: Fare Logic & QR Code Integration**

- Implement automated fare calculation logic.
- Configure ticket ID generation.
- Integrate QR code generation for digital tickets.

## **Milestone 4: Flow Designer & Notifications**

- Configure Flow Designer for end-to-end automation.
- Automate ticket creation and status updates.
- Configure email and ServiceNow notifications for ticket delivery.

## **Milestone 5: Testing**

- Perform functional testing of catalog forms and workflows.
- Validate fare calculation accuracy.
- Test QR code generation and ticket notifications.
- Conduct role-based access and security testing.

## **Milestone 6: Deployment**

- Deploy configuration using update sets.
- Validate system performance in production environment.
- Provide access to end-users and monitor initial ticket bookings.

## **Outcome of Functional Scope and Execution Roadmap**

By following this functional scope and execution roadmap:

- Metro ticket booking becomes fully digital and automated.
- Manual ticketing effort and human errors are significantly reduced.
- Passengers receive instant QR-code-based digital tickets.
- Metro operations gain improved visibility into ticket transactions.
- The system supports eco-friendly, paperless ticketing.
- End-users benefit from a fast, seamless, and user-friendly booking experience.

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## **Summary**

This **Functional Scope and Execution Roadmap** document clearly defines the features, boundaries, and implementation approach of the **Metro Ticket Generating System in ServiceNow**. It serves as a structured blueprint for development, configuration, testing, and deployment, ensuring an efficient and scalable digital ticketing solution.