REQUIREMENT ANALYSIS

1. Project Background

Urban metro rail networks are essential for managing large-scale daily transportation in growing cities. Traditional ticketing approaches—such as physical counters, paper tickets, and manual fare collection—often result in long queues, delays, higher operational costs, and excessive paper usage. These limitations reduce commuter satisfaction and increase the administrative burden on metro authorities.

The **Metro Ticket Booking System in ServiceNow** is designed to modernize this process by introducing a fully digital, automated, and scalable ticketing solution.

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2. Problem Statement

Existing metro ticketing systems face several challenges:

- Long waiting times at ticket counters
- Manual fare calculation errors
- Heavy dependence on paper-based tickets
- Limited visibility into ticketing data
- High operational workload for metro staff

These issues highlight the need for a centralized, automated, and user-friendly digital platform.

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3. Proposed Solution

The Digitized Metro Ticket Booking System leverages **ServiceNow's Service Catalog, Flow Designer, automation scripts, and notification services** to provide an end-to-end digital ticketing experience.

Passengers can:

- Book metro tickets online
- Select travel and passenger details
- Receive QR-code-based digital tickets instantly

Metro authorities benefit from automated operations, improved transparency, and better data control.

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4. Project Purpose

The primary goal of this project is to **digitize and automate metro ticket booking** using ServiceNow, replacing manual and paper-based processes with a secure digital workflow.

The system:

- Eliminates manual ticket issuance
- Ensures accurate and consistent fare calculation
- Reduces operational effort
- Encourages digital and eco-friendly practices

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5. Business Goals and Value

5.1 Business Objectives

- Reduce passenger waiting time through online booking
- Automate fare calculation and ticket generation
- Improve operational efficiency
- Promote digital payment methods (UPI, Debit/Credit Cards, Wallets)
- Centralize ticket transaction data
- Enable data-driven decision-making

- Support sustainability through paperless ticketing

5.2 Business Benefits

- Faster and more reliable commuter services
- Lower operational costs
- Enhanced revenue visibility
- Improved customer satisfaction

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6. System Scope

6.1 Functional Scope

The system supports:

- Service Catalog-based metro ticket booking
- Capture of travel details (source, destination, passenger type, ticket count)
- Automated fare calculation
- QR-code-based ticket generation
- Email and ServiceNow notifications
- Role-based access control

6.2 Stakeholders

- Passengers
- Station Managers
- Metro Operations Team
- IT Administrators

Each stakeholder interacts with the system according to assigned roles and permissions.

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7. Technology Utilization

The solution is implemented using:

- ServiceNow Service Catalog
- Flow Designer automation
- Business Rules / Script Includes
- Custom tables for ticket data
- Notification and email services

This architecture ensures scalability and future extensibility.

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8. Future Enhancement Potential

The system is designed as a scalable foundation and can be extended to support:

- Mobile application integration
- WhatsApp-based ticket booking
- Real-time passenger analytics
- Integration with metro gate hardware
- Advanced reporting dashboards

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9. Conclusion

The Metro Ticket Booking System in ServiceNow provides a **modern, automated, and efficient digital alternative** to traditional metro ticketing. By streamlining ticket booking, fare calculation, and QR code delivery, the system enhances commuter convenience while significantly reducing operational complexity. This solution lays the groundwork for smarter, greener, and more connected urban transportation systems.