Field Technician Routing & Navigation System

1. Overview

The **Field Technician Routing & Navigation System** is designed to streamline the process of identifying and locating downed network points reported by customers. The system minimizes delays by automatically collecting location data and prioritizing issues, enabling technicians to **navigate directly to the problem site using Google Maps** without needing to contact customers. It helps technicians easily reach the location of technical problems, reducing confusion and travel time.

"Existing systems that use a similar procedure:"

"TeleBirr sends a confirmation link via SMS (number 127), providing details of the transaction amount and the recipient's information."

2. Process Flow

1. **Customer Reports Issue**: A customer experiencing network issues calls the customer service number **994**.
2. **Agent Logs the Ticket**: The 994 agent registers the issue and generates a **Ticket Tracking (TT) number**.
3. **Agent Sends Link & TT Number**: The agent sends a confirmation link via SMS to the customer's mobile device and also shares the TT number.
4. **Customer Shares Location**: The customer clicks the link sent via SMS, confirming and submitting their GPS location to the system.
5. **System Logs Location**: The system associates the received location with the TT number and stores it.
6. **Prioritization Engine**: The system ranks downed network points based on predefined criteria (e.g., customer count, area importance).

7. **Technician Dashboard**: Technicians view a prioritized list of incidents with exact map locations.
8. **Navigation to Site**: Using Google Maps integration, technicians are directed to the problem site.

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3. Key Features

- **Automatic Detection**: System identifies downed points in real time.
- **Priority Sorting**: Ensures critical network issues are resolved first.
- **Customer Location Capture**: GPS data is submitted through confirmation links.
- **Google Maps Integration**: Enables direct navigation to the site.
- **Efficient Workflow**: No customer follow-up needed to get directions.

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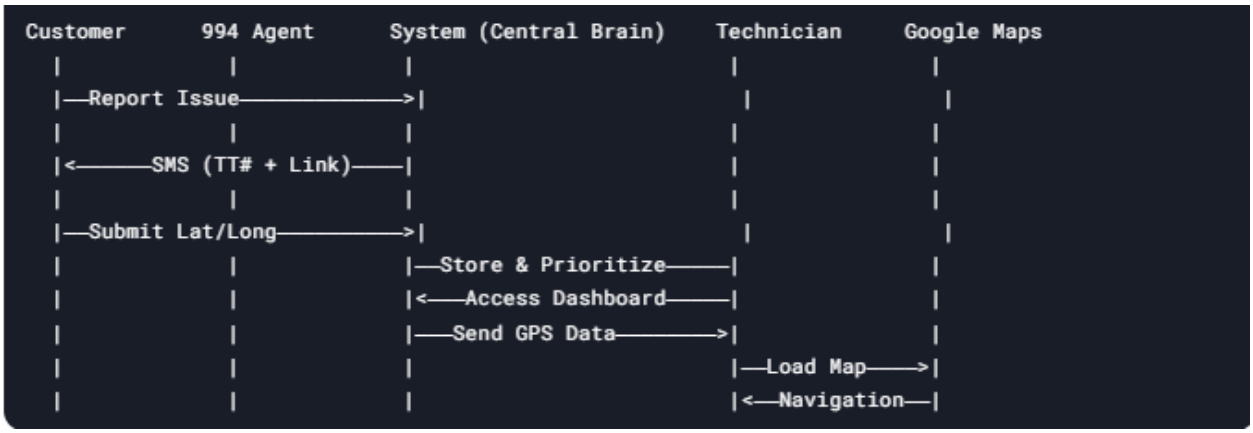
4. System Components

- **Frontend (Technician Interface)**: Displays prioritized list and Google Maps links.
- **Backend Server**: Handles ticket logging, location capture, data storage, and prioritization.
- **Database**: Stores TT numbers, customer locations, issue statuses.
- **Mobile Web Interface**: Used by customers to confirm and submit GPS position via the SMS link.

5.System Model Diagram

Sequence Diagram



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6. Benefits

- **Reduces Technician Travel Time**
- **Increases Location Accuracy**
- **Improves Customer Experience**
- **Reduces Operational Load on Call Center**
- **Helps Technicians Easily Navigate to the Problem Site**

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7. Future Enhancements

- **Live Technician Tracking**
- **Automated Repair Logs**
- **Customer Feedback System**
- **Real-time Outage Heatmaps**

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8. Contact

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