Solution Brief: Driver Information Assistance Hub

Problem

Contemporary public transit faces increasing demands for efficiency, passenger satisfaction, and, most critically, safety. However, bus operators - particularly in regions like Europe and Africa—are challenged by traditional operational models that lead to inflexible route planning, delayed incident response, and reactive maintenance. At the same time, passengers often lack access to accurate real-time information, resulting in a suboptimal travel experience.

Challenges

Vibration and Shock

Buses experience continuous vibration and occasional shocks during operation; the stable operation of in-vehicle AI hardware is needed.

Integrated with In-vehicle Devices

The Driver Console Unit serves as the core in-vehicle device, needs to connect various subsystems and facilitates two-way communication with the Remote Center to ensure drivers receive the latest route assignments and incident notifications.

Real-time Bus Location Tracking and Data Exchange Efficiency

It is necessary to achieve real-time bus location tracking by Driver Console Units and to allow vehicles to exchange data in real-time between them.

Solution

At the core of our solution is the ARBOR IOT-800N-G350, a powerful 8-inch Android Driver Console Unit (Panel PC), designed to address the challenges of the in-vehicle environment, GPS positioning, and system integration.Its compact design integrates a multi-core processor, a high-resolution display, and comprehensive connectivity (4G/LTE, Wi-Fi, Bluetooth, GPS). Featuring industrial-grade ruggedness, it delivers efficient, reliable computing and precise positioning services even in the harshest environments, making it a perfect solution for smart vehicle applications.

▲ IOT-800N-G350

Key Advantages

Real-time Monitoring and Route Optimization: Utilizes Positioning Satellites (GPS) to track bus locations in real-time, transmitting data to a Data Analytics center and Traffic Center. This data is used for dynamic adjustments and optimization of route planning, enabling quick incident response.

Predictive Maintenance: Collects Vehicle Information (Car Info) (e.g., engine, brake, and air conditioning performance) and applies Data Analytics for predictive judgments, proactively identifying potential issues to enable preventive maintenance.

Enhanced Passenger Experience: The Remote Center collaborates with the Driver Console Unit to send real-time bus locations and estimated arrival times to passenger mobile applications and station displays. The displays also update route information in real-time.

Efficient Information Transmission and Control: The Driver Console Unit serves as the core in-vehicle device, connecting various subsystems and communicating bi-directionally with the Remote Center.

Benefits

- **Optimized Operations & Proactive Maintenance:** Real-time GPS tracking and vehicle data collection.
- **Enhanced Passenger Experience:** Ensures passengers receive accurate, real-time arrival times and route updates
- **Rugged & Seamless Integration:** Highly rugged device designed and rich I/O ports

Contact our team of experts today to learn how the IOT-800N-G350 can revolutionize your smart transportation project.