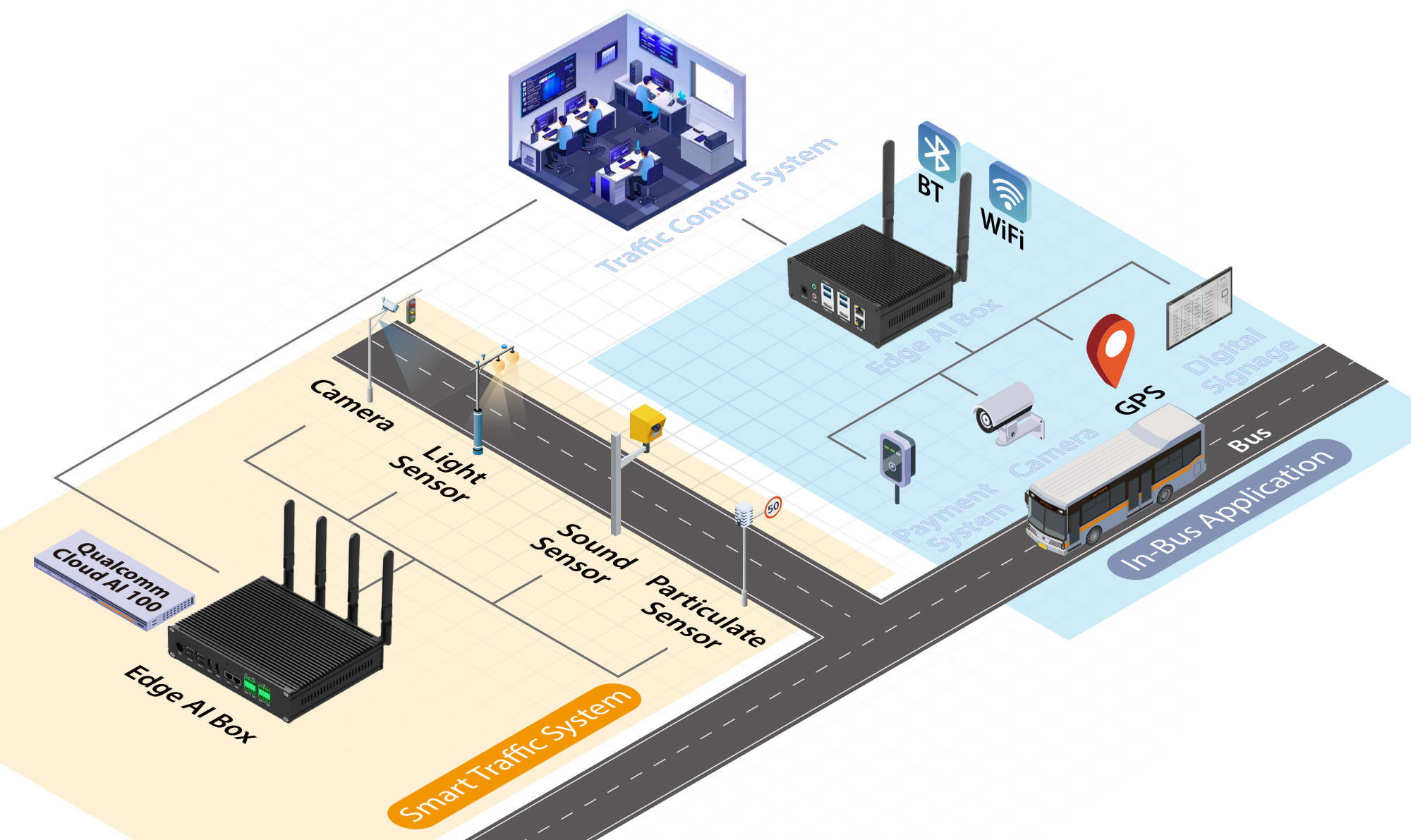# INTEGRATED SMART BUS AND TRAFFIC MANAGEMENT SYSTEM WITH SYSGRATION EDGE AI BOX

IN-BUS APPLICATION

Each bus is equipped with a Sysgration Edge AI Box, featuring the AIX-600 with Qualcomm® QCS6490 Kryo 670 Octa-Core up to 2.7GHz and Adreno 643 GPU, delivering 12 TOPS of AI performance. This box processes data locally to manage information from various sensors, the in-bus payment system, and digital signage, ensuring real-time processing with minimal reliance on cloud infrastructure. Inside the bus, digital screens display real-time updates such as the next stop, route details, advertisements, and emergency alerts, with content dynamically updated based on location and other factors processed by the edge computing hub. The electronic payment system supports contactless payments, mobile wallets, and NFC cards, processing transactions locally for quick validation and periodically syncing with central servers for record-keeping and analytics. Data from sensors like GPS and passenger-counting cameras is sent to the edge computing hub, which uses it to update signage and optimize bus operations, including notifying passengers of delays and adjusting fares as needed.

SMART TRAFFIC SYSTEM

The system employs advanced technologies to enhance urban management through intersection traffic and pedestrian flow analysis, dynamically adjusting traffic light timings for smoother movement. It also enforces traffic laws by recording and automatically reporting vehicle violations, monitors environmental laws by detecting excessive noise and vehicles emitting black smoke, and identifies hazardous material spills and oil leaks from vehicles. Powered by the AIX-800 with Qualcomm® QCS8550 Kryo 585 Octa-Core up to 3.2GHz and Adreno 650 GPU, offering 48 TOPS of AI performance, and expanded by Qualcomm® Cloud AI 100 DM.2e with 70 TOPS, the system efficiently handles complex AI inferences with low power consumption and supports simultaneous multi-model inference. Its rich I/O interface ensures extensive connectivity options for diverse device integrations, including smart streetlight control.