ScanViS®

REVOLUTIONIZING PUBLIC TRANSPORTATION:

A Data-Driven Transformation Leveraging AI and 5G Technologies for Hong Kong's Largest Bus Company

INTRODUCTION

Hong Kong's largest franchised bus operator has consistently embraced new technologies to improve its operations and customer satisfaction over the years. With an extensive network of 373 routes, including 67 cross-harbor routes, and a fleet of over 3,900 licensed buses, the company has been committed to enhancing efficiency and passenger experience. In line with this goal, the company has identified the need for an autonomous solution to accurately understand bus occupancy, moving away from traditional manual counting methods.

COLLABORATION AMONG INNOVATIVE MINDS

To address the challenge of obtaining accurate bus occupancy statistics and further improve passenger experience, ScanViS and SmarTone Solutions, the enterprise solutions arm of SmarTone, Hong Kong's leading mobile operator, have collaboratively embarked on a journey. Together, they are dedicated to developing, evaluating, and implementing an innovative solution. This cutting-edge endeavor harnesses the power of 5G, AI, machine learning, and IoT technologies, marking a pivotal step toward redefining the standards of urban mobility.
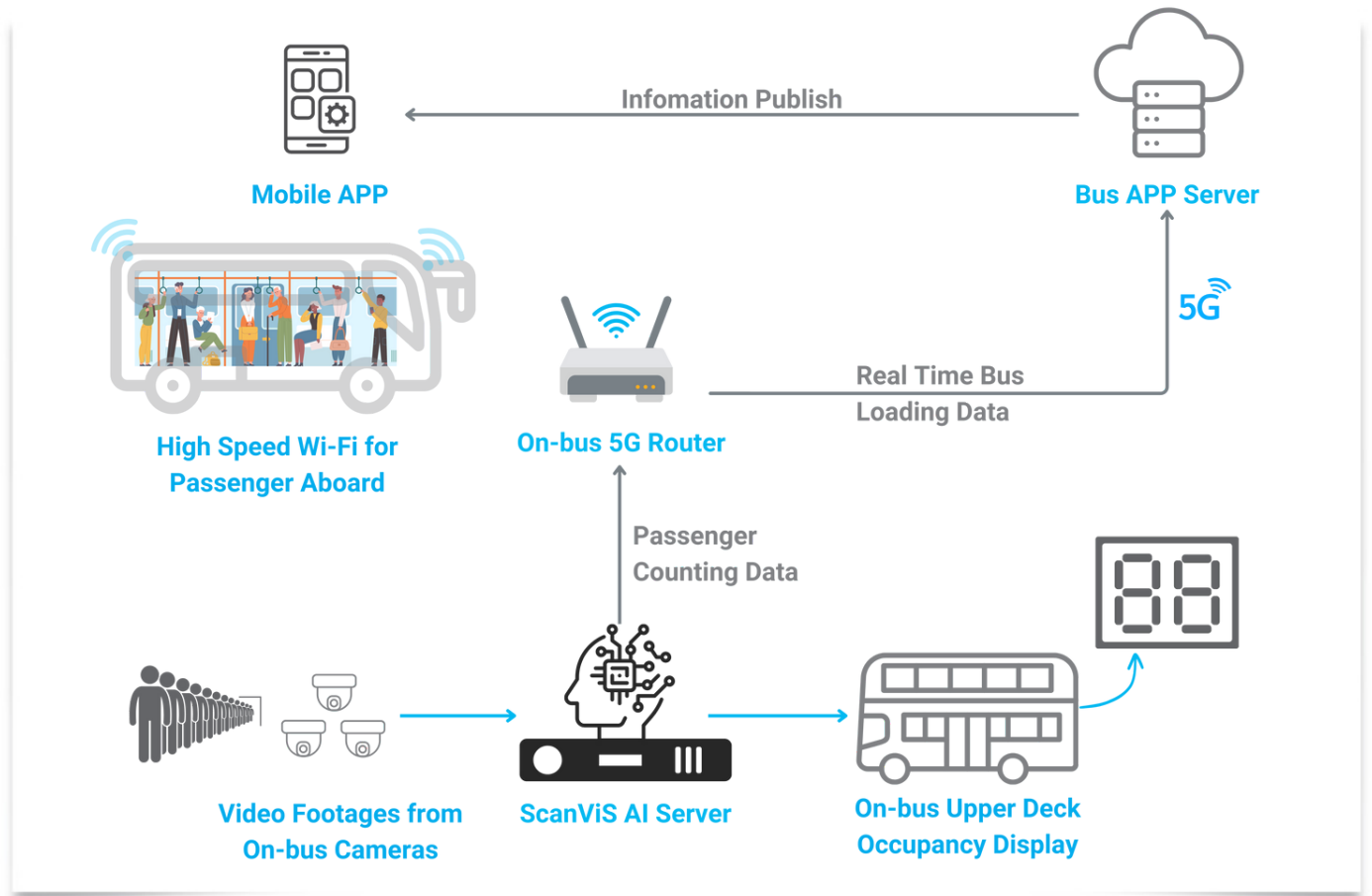
THE SOLUTION

ScanViS introduced a customized AI algorithm designed specifically for the task of autonomously understanding bus occupancy. Considering the unique deployment considerations and limitations on the buses, the algorithm was purposefully trained to automate the process and eliminate the need for manual intervention. Seamlessly integrating with the bus company's existing cameras, the algorithm enables real-time video footage analytics. Leveraging advanced computer vision technology, the ScanViS AI passenger counting solution accurately monitors and calculates various metrics, including the live count of passengers boarding and alighting the bus, as well as distinguishing between the upper and lower decks.

This valuable information is then transmitted to the bus company's service platform via SmarTone's 5G network, allowing for further analysis and utilization in bus occupancy management. Passengers can conveniently access this information through the bus company's mobile app, empowering them to make informed decisions about their travel plans based on real-time bus occupancy updates.

SOLUTIONS OVERVIEW

Mobile APP

Bus APP Server

Infomation Publish

5G

Real Time Bus Loading Data

High Speed Wi-Fi for Passenger Aboard

On-bus 5G Router

Passenger Counting Data

Video Footages from On-bus Cameras

ScanViS AI Server

On-bus Upper Deck Occupancy Display

RESULTS & VALUES BROUGHT BY THE INNOVATION

01

Enhanced passenger experience: The integration of real-time passenger flow data into the bus mobile application empowers passengers to make informed travel plans. They can access up-to-date information on bus occupancy, allowing them to avoid crowded buses and choose less congested alternatives. This feature provides transparency and visibility into passenger load, enhancing the overall travel experience and reducing discomfort due to overcrowding.


02

Improved safety and efficiency during boarding: The ScanViS AI Passenger Counting Solution incorporates digital displays inside the bus, providing real-time information on seat availability on the upper deck. Passengers can quickly identify the number of remaining seats, improving boarding and alighting efficiency. This feature not only enhances passenger satisfaction but also contributes to their safety by reducing the risks associated with passengers moving up and down the stairs.

03

Data-driven operational optimization: The ScanViS AI Passenger Counting Solution enables comprehensive monitoring and analysis of passenger loads, providing valuable insights for transportation planners. By accurately capturing passenger flow information, the solution facilitates optimized bus routes and schedules. This data-driven approach ensures efficient resource allocation, minimizes overcrowding, and enhances the overall passenger experience. Real-time data allows for timely adjustments during special holidays or events, optimizing bus deployment and ensuring a smooth transportation experience.
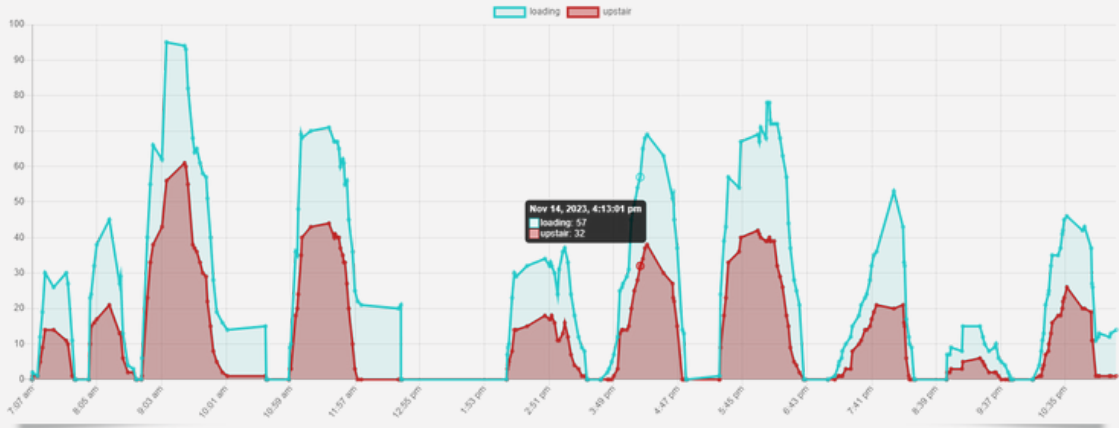

04

Improved safety and security: The solution enhances passenger safety by monitoring crowds in stations, terminals, and vehicles. It enables effective congestion management and proactive measures to prevent safety compromises. Real-time data and analytics quickly identify security threats, enabling rapid emergency responses and ensuring a secure and comfortable city experience for passengers.

05

Time and cost-efficient implementation: The ScanViS team focused on simplicity and automation for ease of implementation. The solution maximizes the use of existing on-bus cameras, eliminating the need for additional installations or replacements. The AI algorithm is optimized to accommodate various camera locations and lighting conditions. The streamlined installation process optimizes project schedules and cost structures, meeting the expectations of the bus company and partners.
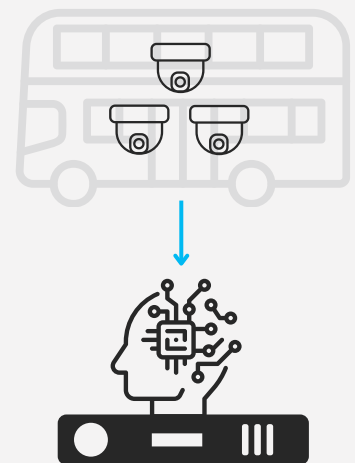
SUMMARY

The ScanViS AI Passenger Counting Solution has been successfully implemented in over 2,300 buses in Hong Kong, showcasing its effectiveness and potential for improving public transportation. Trial testing has shown a high accuracy rate of over 90%, ensuring reliable and precise passenger counting. Passengers have provided positive feedback in internal surveys, validating the solution's impact on their travel experience.

To build upon these successes, plans are underway to implement the solution across the entire bus fleet. This expansion will further enhance the accuracy of passenger counting and provide valuable data for optimizing bus routes and schedules. By leveraging the power of AI technology, the solution is set to make significant contributions toward improving public transportation and meeting the evolving needs of passengers.

In conclusion, the ScanViS AI Passenger Counting Solution has proven its worth through successful implementation and positive passenger feedback. With plans for further expansion, it is poised to revolutionize public transportation by improving accuracy, efficiency, and overall passenger satisfaction.

ABOUT SCANVIS

ScanViS, a subsidiary of Comba Telecom Systems Holdings, is a renowned provider of cutting-edge technology solutions. The company has a proven track record of delivering outstanding results. With notable expertise in artificial intelligence (AI), ScanViS has achieved remarkable success through its deployment of AI Control Systems for the prestigious Mobile World Congress (MWC) from 2019 to 2023 and the renowned Hong Kong Large-Scale Jewellery Show in 2023. Furthermore, ScanViS has extended its AI solutions to numerous projects across Europe and South America, solidifying its reputation as a global leader in AI technology.

sales@scanvis-ai.com

www.scanvis-ai.com

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