



SOLUTION BROCHURE

ebblo Horizon

Intermodal Transport Control System for Public Transport Providers





ebblo Horizon

Enhancing every stage of the journey

Public transport operators and authorities face complex and unique challenges on a daily basis – traffic congestion, service delays, irregular headways, inefficient fleet usage, and costly SLA breaches, on a daily basis.



Managing incidents in real time, optimising dispatch, coordinating intermodal connections, and ensuring vehicle uptime are no longer optional – they're mission-critical. Add to that the need for secure, real-time passenger information to ensure public safety, and the complexity skyrockets.

That's why intelligent transport systems with real-time visibility, efficient control, and data-driven decision-making are essential to streamline operations, cut costs, and deliver the reliable service passengers expect.

ebblo Horizon is our latest, purpose-built Intermodal Transport Control System (ITCS) designed to solve the operational challenges of public transport operators and authorities while delivering improved efficiencies and service reliability.

ebblo Horizon is a cloud-native, modular solution, built on a microservices-based architecture. It brings together the benefits of modern technologies such as scalability, high availability, and resilience, while being underpinned by over 50 years of technological expertise in the public transport domain.

With ebblo Horizon, you can:



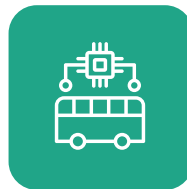
Equip your teams with real-time visibility and efficient control of your operational processes



Seamlessly integrate on-bus hardware with peripheral systems to support all stages of travel



Address service disruptions with speedy resolutions



Leverage AI/ML to deliver highly accurate journey predictions



Enable easy communication between the control centre and drivers without disrupting the journey



Benefit from comprehensive, real-time insights to monitor performance and boost the efficiency of your public transport network.

ebblo Horizon in action – Robust innovation to solve mobility challenges

The ebblo Horizon product suite brings together powerful, integrated solutions that enhance every stage of the transport journey. Designed to simplify operations, elevate passenger experiences, and support future mobility, our secure, scalable solution grows with your needs.





Advantages for Public Transport Authorities

- Efficient management of franchised operations with multiple operators
- Optimised operational costs through accurate validation of trip data
- New structures and IT solutions for services and fares



Advantages for Public Transport Operators

- Greater efficiency, lower costs
- Improved service reliability
- Real-time overview of the current situation
- Rapid reaction to problems
- Support for standard interfaces
- Reliable communication with drivers and passengers
- Reporting and statistics



Advantages for Public Transport Passengers

- High on-time services
- Short trip times
- Optimised transfers
- Comprehensive real-time information about arrivals, departures, and incidents





Real-time tracking and operations control

Empower your service controllers and dispatchers to complete their daily tasks with ease and efficiency through real-time tracking of your vehicle fleet. Enable them to immediately spot problems and take action to resolve issues.

The **Horizon Control Centre** is the heart of our ebblo Horizon ecosystem and now easily accessible through our newly refreshed web client, with an intuitive user interface and multi-language support. From here, service controllers and dispatchers have real-time visibility of the vehicle fleet as well as a comprehensive overview of all aspects of the transport network, such as schedules, routes, blocks, trips, stops, and driver information, and more.



The Horizon Control Centre enables service controllers to track operational status of vehicles, monitor schedules and headways, provide instructions to divert vehicles, arrange additional vehicles, and communicate with drivers through voice or text in case of emergency.



With a built-in prediction engine, they can monitor poorly performing routes or vehicles by comparing against timetables and accurate predictions.



Transfer protection information helps them ensure that passengers can enjoy the benefits of seamless transfers.



Effective incident management

Improve the quality of response to unexpected incidents through our Horizon-IDS (Intelligent Decision Support). With pre-defined checklists and incident response procedures, service controllers and dispatchers can execute standardised actions in swift response to incidents and avoid costly mistakes.

With Horizon Control Centre, you have complete visibility of your operations at all times. The system detects potential incidents early, thus minimising disruption before it escalates. When disruptions do occur, ebblo Horizon helps restore normal operations fast. Automated workflows, action templates, forms, and checklists guide dispatchers step by step, reducing recovery time and limiting the need for additional vehicles or drivers—delivering significant cost savings.

Technical vehicle faults are recorded automatically and sent directly to the control centre. This speeds up maintenance, reduces vehicle downtime, and helps you operate with fewer resources while keeping services reliable.



Driver safety with robust on-board systems and seamless device integration

Automate routine driver tasks and keep operations secure with real-time precision delivered through our on-board computers. With satellite positioning for accurate positional control and arrival predictions, intuitive touch-screen displays for driver terminals, and easy voice communication, enable drivers to get the right information they need to complete the journey safely.

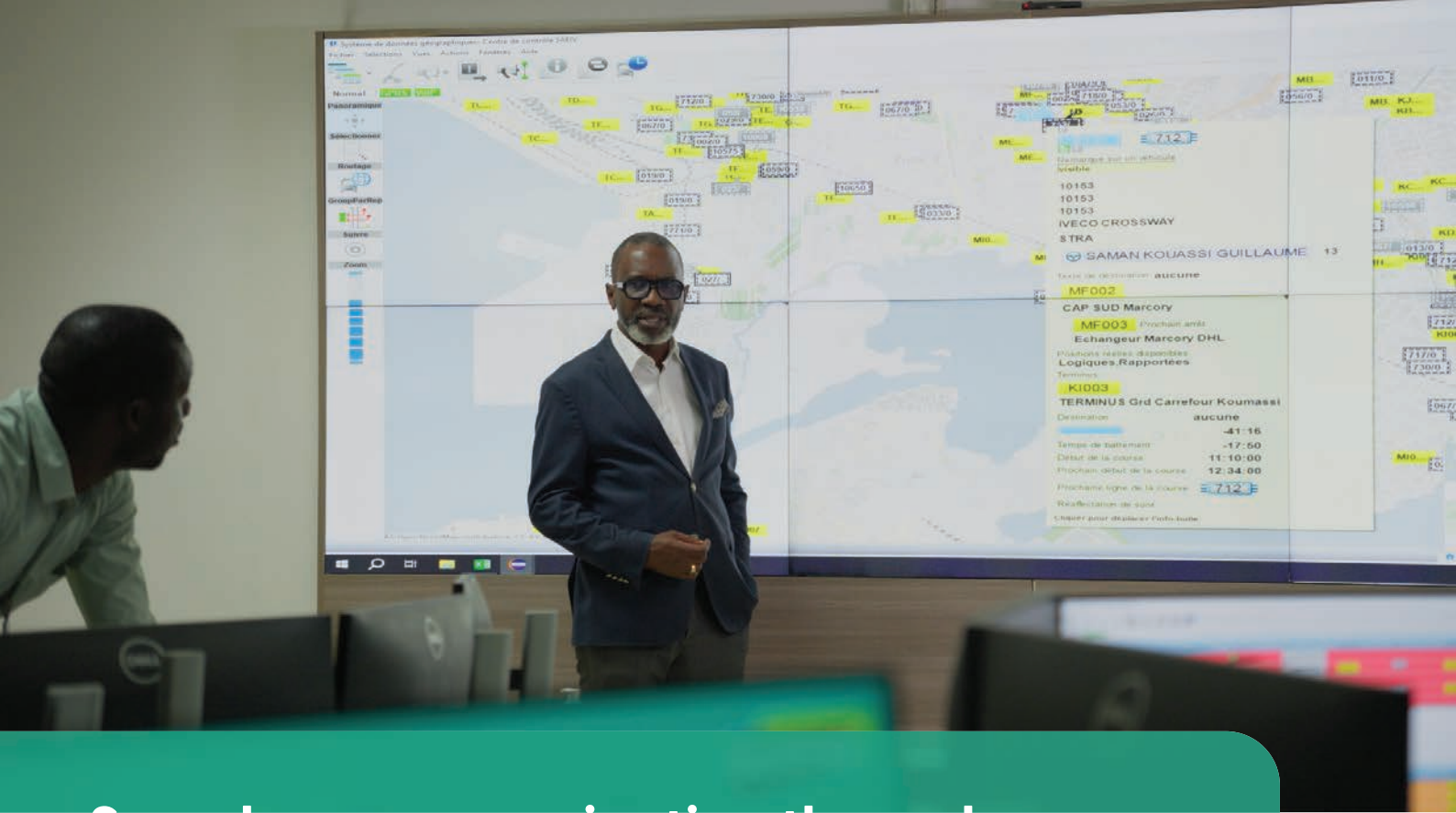
The on board computers use GNSS positioning to compare a vehicle's planned timetable position with its actual location, automatically determining whether the service is on time, early, or late and supporting headway management by assessing vehicles against predetermined time intervals. This information is transmitted to the control centre in real time, enabling service controllers to take timely corrective action and provide instructions to the drivers. At the same time, drivers benefit from critical information available through the terminal to view timetables, headway, navigational guidance, as well as communicate easily with service controllers.



The ebblo on-board computers are Linux-powered and tailored for both road and rail vehicles. They offer multiple interfaces including ITxPT, SIRI, and VDV for integrating a wide range of vehicle peripheral devices, such as ticketing machines, passenger counters, video surveillance systems, voice tools, passenger information displays, CAN FMS, and more.



The on board computer manages secure communication and controls vehicle systems such as stop indicators and audio announcements. In addition, integrations with passenger counting system enables more accurate resource planning and timetable optimisation based on actual demand. Integration with traffic light pre-emption devices enables traffic lights to give priority to buses and trams, thus reducing travel times and optimising resources.



Seamless communication through voice and data networks

Enable your service controllers to easily communicate with drivers through voice capabilities integrated within the ebblo Horizon solution.

ebblo Horizon offers reliable voice communication between the control centre and vehicles through Voice over IP (VoIP) with fallback mechanisms that are transparent to the users and ensure guaranteed communications. Voice integration is supported through the Asterisk platform. Service controllers can quickly and flexibly communicate by simply selecting vehicles, routes, or groups and clicking a talk icon, with the system automatically connecting the call to the correct vehicles without requiring any manual actions.





Centralised data management

Simplify management of data to be delivered to hundreds (or thousands) of on-board units, quickly and easily, without the need for technicians to visit every vehicle. Easily integrate with third-party software applications for creating routes, timetables, duty rosters, and driver scheduling to create and distribute a consistent and centralised data supply, thus minimising impact to your existing digital landscape and reducing manual data management costs.

The **Horizon Data Management** tools are central to the efficient management of your fleet of vehicles. Network data including routes, timetables, and drivers is consumed from various sources through open interfaces such as VDV and GTFS, to create a robust and centralised data supply. This data supply is then distributed to target devices on the vehicles in real time to allow easy management of equipment and software on vehicles. It allows for the management of data and statistics, as well as the updating of timetables, software and drivers on the vehicle devices. Incremental changes to the data supply can also be distributed to the vehicles without impacting service.





Increased passenger satisfaction with real-time passenger information

Deliver enhanced passenger experiences through smoother connections, real-time journey information, accurate arrival and departure times. With traffic light priority, transfer protection, and real time information across every channel, every journey is more comfortable and stress-free.

ebblo Horizon captures and delivers accurate information for passengers in real time. Dynamic, automated, visual, and acoustic passenger information is provided at stops and within vehicles - which also includes messages from the control centre. The solution uses open interfaces such as SIRI and ITxPT to deliver the correct information to on-board TFT display signs, audio announcements, and on-street stop signs.

This information can also be made available to digital channels like mobile apps and websites to inform passengers about imminent departures before they leave home or while en route.



Data-driven decision making with business intelligence

Turn data into clear and meaningful insights with KPI dashboards and BI reports – with real-time as well as historical data – to highlight trouble spots in operational processes and generate actionable information as a decision-making basis for senior management.

Horizon Insights is our Business Intelligence solution with a library of pre-defined reports as well as self-reporting capabilities, boosted by machine learning frameworks. It uses both real-time collected data as well as statistical planning data to provide comprehensive reports and dashboards on service quality, mileage, duty rosters, transfer protection, passenger counting, and operational performance.



During daily operations, on board computers and the control centre automatically collect detailed operational data, which Horizon Insights analyses to provide clear visibility into vehicle, trip, and route performance, as well as specific problem areas. Intuitive spatial visualisations using GIS maps make complex, distance based data easy to understand, helping you identify trends, improve quality and efficiency, and support continuous optimisation.



Automatically recorded operating data also forms the foundation for effective dispatch and service planning. Statistical evaluations and long term analyses highlight incident patterns by location, time, and type, enabling targeted improvements and the elimination of recurring trouble spots. These insights help validate the success of operational changes over time, ensuring resources are used efficiently and services continue to improve.



Enhanced franchise management

Effectively deploy franchise business models with transport authorities and multiple operators. Streamline, automate, and optimize the financial reconciliation process between public transport authorities and operators by validating mileage claims with accurate trip data.

ebblo Assure brings a data and rules-based mechanism to effectively manage contractual agreements between public transport authorities and operators, where operators are paid based on operated mileage while the reward or penalty is based on the quality of service.

ebblo Assure allows transport authorities the capability to define the minimum standard or service quality for a route, as agreed in their contracts with operators. Similarly, it also allows operators to fill in the gaps in the actual trip data so that they do not lose money against the operated mileage. Using real-time data, back-office calculations to extrapolate missing data, and auto-coding to reduce manual effort, ebblo Assure simplifies the process through which authorities can process payment claims raised by operators.

“The LTA is absolutely thrilled by the results of the Bus Contracting Model. Bus customer satisfaction ratings are through the roof and are well over 90%. We have never looked back and have never regretted it. Because we took the revenue and asset risks away from the operators, all they need to do is turn up and operate their services well. We are now in full control of service decisions and what is best for Singaporeans”

Jeremy Yap - Deputy Chief Executive of Public Transport, Policy and Planning, Singapore Land Transport Authority.



Management of zero-emission fleets

Easily integrate electric vehicles in your transport network, monitor charge levels, and use battery range predictions to optimise performance of electric fleets.

ebblo Horizon provides seamless support for EV fleets, helping you to accelerate your efforts for sustainable travel. The on-bus hardware communicates with the vehicle CAN interface to capture real-time data and makes this available in the control centre for visibility of State of Charge (SoC), State of Health (SoH), and Battery Range Prediction to service controllers. Critical alerts such as low SoC, over-voltage, high temperature, brake faults, motor issues, etc. are displayed in the events table for service controllers to take prompt action.

By integrating status information of vehicle chargers through charging management systems over the VDV-463 interface, you can monitor availability of charging stations as well as remaining time to charge. Horizon Insights is also tightly integrated with depot systems and offers a wide range of real-time KPI dashboards for energy consumption and operating mileage as well as holistic insights in charge management schedules.



A Reliable Partner **You Can Trust**



● *Sample of our global footprint*

Including the following selected authorities and operators:





Elevating Public Transport

ebblo helps public transport providers move confidently into the future. Our advanced Intelligent Transport Control Systems (ITCS) adapt as mobility evolves – powered by future-proof technologies and decades of expertise. We deliver robust, best-in-class solutions, scalable platforms and next generation architectures – ensuring flexibility, control, and security. Our solutions streamline operations, improve accuracy, and enable cleaner, faster, and more accessible and barrier-free networks – making public transport the natural choice for everyone. With proven reliability and transformative innovation, ebblo is your trusted partner for what's next.

ebblo is part of Modaxo, the global collective of people transportation technology companies within Constellation Software Inc. (TSX: CSU).

Ready for what's next?

Transform your public transport operations with innovation engineered for change.

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