



# Bus-News

M A G A Z I N E



**Inside:**

**Why Would You Get on a Bus?**



**On-Bus Accessible  
Information: This Is Your Stop!**

ISSUE ONE 2024

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# Letter from the Editor



Dear Readers,

In this issue, Tim Rivett from RTIG (Real Time Information Group) – a UK-based group aiming to support the development of bus passenger information systems – writes about the new Accessible Information Regulations introduced by the government that make on-vehicle passenger information mandatory for bus operators to provide. I think this legislation is a gamechanger.

In his piece, **On-Bus Accessible Information: This Is Your Stop!**, he specifically focuses on how this provision will help the blind, visually impaired or hard of hearing, making public transport more accessible.

This is a sentiment I very much share. However, I wish to add to it. While this group undoubtedly has the greatest need, this information will make buses accessible to a much wider group. At the moment, if there is no passenger information on the bus and you are not very familiar with the bus route and its stops, you won't know where to get off. Visiting friends in a different city? How will you know the right stop if you've not done that journey before? You might

take a taxi instead.

A personal recent anecdote: I was on the upper level of a double decker that had completely fogged up from the inside, making it impossible to see out. Fortunately, I was trying to get to my local stop but even then it was stressful as I couldn't really tell where I was.

I also want to highlight accessibility for children: my son tried taking the bus independently to his sports class and was always very stressed about not overlooking the right stop – he had to look out the window the whole time to not miss it. Furthermore, the bus drivers were always unaware of the stop he wanted as it wasn't one of the top ones listed on the timetables. As a result, they couldn't assist him.

Making on-vehicle passenger information mandatory is an extremely welcome development that cannot come soon enough. It will make taking the bus much more accessible to all members of society and will greatly decrease the barrier to entry to passengers new to taking the bus.

Our next Bus-News magazine will be published on 28 October 2024.

If you want to be featured on the Bus-News website or in our e-magazine, please **email** Andrew Lush or call +44 7432 725001.

Please enjoy this issue of our Bus-News magazine!



Josephine Cordero Sapién,  
editor-in-chief

## Meet the Team!

ANDREW LUSH

Director

al@a2bglobalmedia.com

JOSEPHINE CORDERO  
SAPIÉN

Editor-in-chief

jcs@a2bglobalmedia.com

NICOLA BROWN

Head of Sales

nb@a2bglobalmedia.com

ZOE GRIFFEY

Head of Design

zg@a2bglobalmedia.com

TIANA MAY

Principal Journalist

tm@a2bglobalmedia.com

a2b Global Media Ltd  
The Generator Hub, The Gallery  
Kings Wharf  
The Quay, Exeter  
EX2 4AN

Office: +44 (0)1392 580002  
Mobile: +44 (0)7432 725001  
Email: [info@a2bglobalmedia.com](mailto:info@a2bglobalmedia.com)  
Website: [bus-news.com](http://bus-news.com)

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# 2024

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# On-Bus Accessible Information: This Is Your Stop!

By Tim Rivett - General Manager at RTIG-Inform



Around 14 million people in Great Britain are disabled, and on average they rely on using local bus and coach services more than most to make the journeys many take for granted. For some, a lack of on-board travel information can be a major barrier to travelling confidently and independently. More broadly, on-board information has the potential to improve the journey experience for all passengers. Many transport operators and authorities have taken steps to provide this information, but over half of vehicles remain unequipped to provide it. This is why the government has introduced the Accessible Information Regulations. These new rules will make the provision of audible and visible information a requirement on board local services across Great Britain, which will help everyone to travel with confidence.

For some passengers, most notably those who are visually impaired, deaf or hard of hearing, people with cognitive or learning impairments, and some autistic people, a lack of information about a vehicle's location and direction of travel can make travelling by bus or coach an anxiety inducing experience. In their 2014 "Destination Unknown" survey, the Guide Dogs for the Blind Association found that 70% of visually impaired respondents had missed their stop because the driver forgot to tell them when to get off, and 68% would use buses more frequently if audio-visual announcements were provided on board. We know however, that accessible onboard information benefits a range of people, not just those who are disabled, making services simple to use for regular passengers and first timers alike.



*“Getting on a bus without the audio announcements is quite stressful. I become quite anxious really because you don’t know where you are. For my regular bus journeys I try to sort of locate different landmarks, so there may be a bend in the road or a hump or a roundabout and that gives you sort of some indication of where you are, but then you don’t know exactly if when you’ve got off the bus, you’re in the right place.*

*Having the audio announcements, you know exactly where you are, they’re absolutely fantastic. Those bus stops that I never knew existed, roads I didn’t know existed. You know exactly where you are. It takes all the stress out of the journey and sometimes because I’ve got a guide dog people want to talk to you and with the audio announcements you can relax, it doesn’t matter. Without the announcement you have to concentrate and with just one second lapse in concentration and you just don’t know where you are.” Sight Loss Council Volunteer Julie Stevens<sup>1</sup>.*

Providing audible and visible information on board transport services is not a new concept. The provision of announcements and visual displays has been a requirement for new railway rolling stock since 1998, and since the early 2000s several operators and

authorities have begun providing it on buses. For over fifteen years, most bus services in London have incorporated audible and visible information on the route and upcoming stops.

As of 2022/23, 49% of vehicles operating local services in England have the necessary equipment installed. This figure drops to 29% for England outside London, 37% in Wales, and 35% in Scotland. There remain many areas where disabled passengers cannot board a bus with confidence that onboard information will enable them to alight in the right place. Mandating its provision is therefore about consistency of experience, ensuring that wherever disabled people and other passengers travel in Great Britain they can be sure of accessing the information they need.

*“It is so important to make transport accessible for our blind and partially sighted community as we are heavily reliant on public transport for our daily life, and to access social and work opportunities. Making transport accessible enables us to be more confident, safe, active and independent.” Sight Loss Council Volunteer Member Vidya Nathan.*

<sup>1</sup>An extract from the blind spot, a podcast from Thomas Pocklington Trust used with permission.





The Accessible Information Regulations require operators to equip vehicles, so information is provided about a local bus or coach service to passengers travelling on board them in both audible and visible formats. The regulations make provision for people who rely on hearing aids to access audible information. Audible information must be available to somebody using a hearing aid in conjunction with an Audio Frequency Induction Loop (T-switch on a hearing aid) when they are seated in a priority seat or wheelchair space.

To ensure the information provides real-life benefits, the Department for Transport has worked closely with disabled passengers, user groups and the bus and coach sector, whilst giving operators the flexibility to choose solutions suitable for their services.

Information that will be provided to passengers includes the route, the next stop and warnings about diversions. Audio information can be digitally produced or pre-recorded.

The regulations do not dictate the technology to be used. This is to allow for operators to innovate and

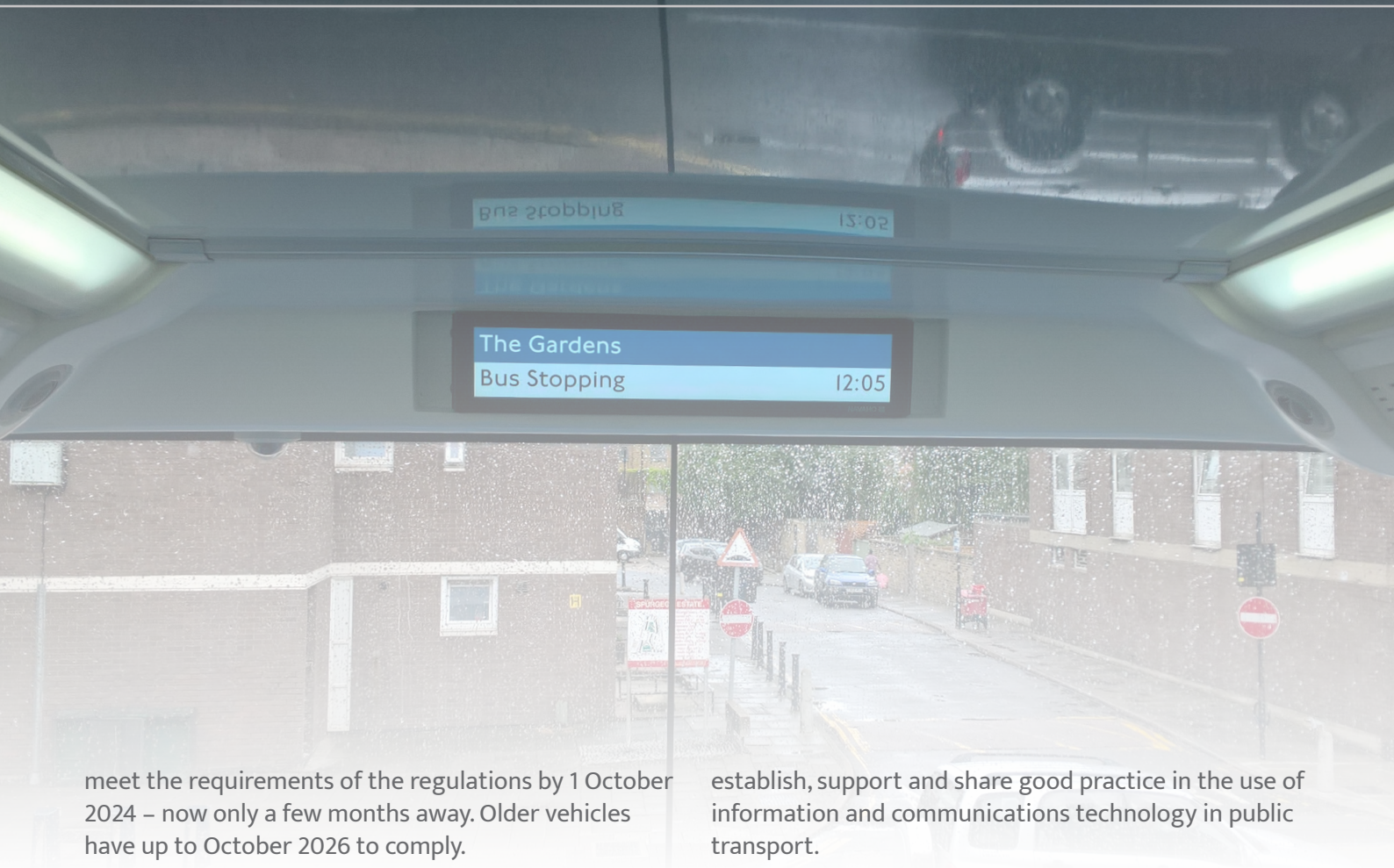
*“It is so important to make transport accessible for our blind and partially sighted community as we are heavily reliant on public transport for our daily life, and to access social and work opportunities. Making transport accessible enables us to be more confident, safe, active and independent.”*

**Vidya Nathan, Sight Loss Council Volunteer Member**

ensure that the regulations do not become outdated as technology advances, whilst specifying the minimum specification and information that a passenger can expect and rely upon wherever they are traveling. Operators who have already equipped their vehicles are already innovating and providing information such as the next few stops on maps, points of interest and using local celebrities to provide the audio.

The requirement is being phased in based on the age of the vehicle over the next two years, with the newest vehicles, those first used after 1 October 2019, having to





meet the requirements of the regulations by 1 October 2024 – now only a few months away. Older vehicles have up to October 2026 to comply.

establish, support and share good practice in the use of information and communications technology in public transport.

Where an operator has already invested in audio-visual information this is recognised in the regulations, and where the existing investment does not fully comply with the requirements in the regulation, then operators have until 2031 to update systems.

With members from public authorities, transport operators, consultancies and the systems industry, we have an impartial perspective and support the common good. We have an excellent relationship with national Government and work closely with other industry groups.

New vehicles introduced after October 2024 have an additional requirement to include visible information which can be seen by a wheelchair user when travelling in a rearward facing wheelchair space.

[rtig.org.uk](http://rtig.org.uk)

The government has allocated £4.65m to support small operators to comply with the regulations, RTIG has been asked to manage the grant on behalf of the Department for Transport.

In the coming weeks RTIG will be launching a grant scheme to support the cost of fitting vehicles with audio visual equipment. This will be targeted at the smallest operators. Once further information on the grant, the timings and process will be available at [rtig.org.uk/aig](http://rtig.org.uk/aig).

### About RTIG

RTIG is a community organisation which seeks to

If you want to find out more about RTIG contact:

**Tim Rivett**

[tim.rivett@rtig.org.uk](mailto:tim.rivett@rtig.org.uk)

+44 (0)7479 950850



improving public transport through technology

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# Why Would You Get on a Bus?

By Tiana May

Fixed-route bus services are the most common form of public transportation worldwide, primarily because they are a cost-effective and flexible option to implement. However, compared to heavy and light rail routes, the bus is often seen as an unreliable and less desirable option. To ensure these services are increasingly beneficial and attractive, it is therefore paramount for the industry to consider user feedback and preferences for how they are delivered.

With this in mind, the UK Department for Transport (DfT) recently released the results of its National Travel Attitudes Study (NTAS) Wave 9, which aims to provide

valuable insights into the nation's perceptions of bus services. Conducted between August and September 2023, the survey focuses on attitudes towards zero-emission buses, bus fare caps and the demand for additional services.

## Zero-Emission Buses

A significant outcome of the study highlighted the public support for zero-emission buses. Indeed, 37 percent of respondents said they would be more likely to travel by bus if a zero-emission vehicle were available. Furthermore, a notable 74 percent

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of respondents across various demographics voiced support for reducing air pollution and improving local air quality through the use of zero-emission buses.

These results suggest that transitioning to zero-emission buses is not only beneficial for reducing direct emissions but can also help improve public perceptions and encourage more people to travel by public transport.

However, the transition to zero-emission buses can also prompt **concerns about additional disruptions and a decrease in reliability**. Be this as it may, 47 percent of respondents disagreed with the statement that “zero-emission buses are less reliable than diesel vehicles,” while 16 percent agreed. Consequently, as technologies continue to develop and a greater number of zero-emission buses are rolled out, it is important that operators and manufacturers work to ensure this statement gains less and less relevance, so that passengers perceive the bus as consistently becoming more, rather than less reliable.

## Bus Fare Caps

Alongside reliability, cost is a primary factor to consider when choosing a mode of transport. The UK’s introduction of the **2 GBP single bus fare cap** for services outside London is thus a significant incentive for encouraging more people to use public buses.

However, the NTAS survey revealed mixed awareness about this scheme, with 50 percent of respondents acknowledging the cap on single bus fares but an equal percentage remaining unaware of the offering.

Of the respondents outside of London who were aware of the bus fare cap, 39 percent stated that they had chosen to use the bus over other types of public transport as a direct result of the cap. Meanwhile, 40 percent said they used the bus more because of the fare cap.

These results show that for a significant proportion of people, pricing strategies can effectively shape public transportation habits. This therefore supports the government’s recent decision to extend the 2 GBP scheme until the end of 2024.

## Demand-Responsive Bus Services

With technology continuing to help shape transportation, the study also explored attitudes towards demand-responsive bus services, which transport passengers when and where they choose rather than following a fixed route and timetable. Approximately 34 percent of respondents expressed a likelihood to use such services, emphasizing the importance of flexibility and personalised scheduling. Those who already use the bus weekly displayed a higher inclination to do so, with 45 percent of these

*Background Image: © Canva*



respondents expressing that they would use demand-responsive buses.

A primary concern regarding the implementation of these services included preferences for booking methods and the readiness of individuals to embrace digital technologies. Indeed, while 69 percent expressed confidence in using apps or technology to book bus journeys, 20 percent still preferred traditional methods such as a call centre. This was particularly relevant for participants aged 70 and above, 46 percent of whom would prefer to book a bus by calling a call centre. As demand-responsive bus services are introduced, it is therefore important that these options enhance rather than limit accessibility and mobility for all by not relying solely on digital solutions.

### Enhancing Bus Stops and Stations

The NTAS study also examined the demand for additional services near bus shelters or stations. In relation to this topic, 58 percent of respondents expressed a preference for local services such as

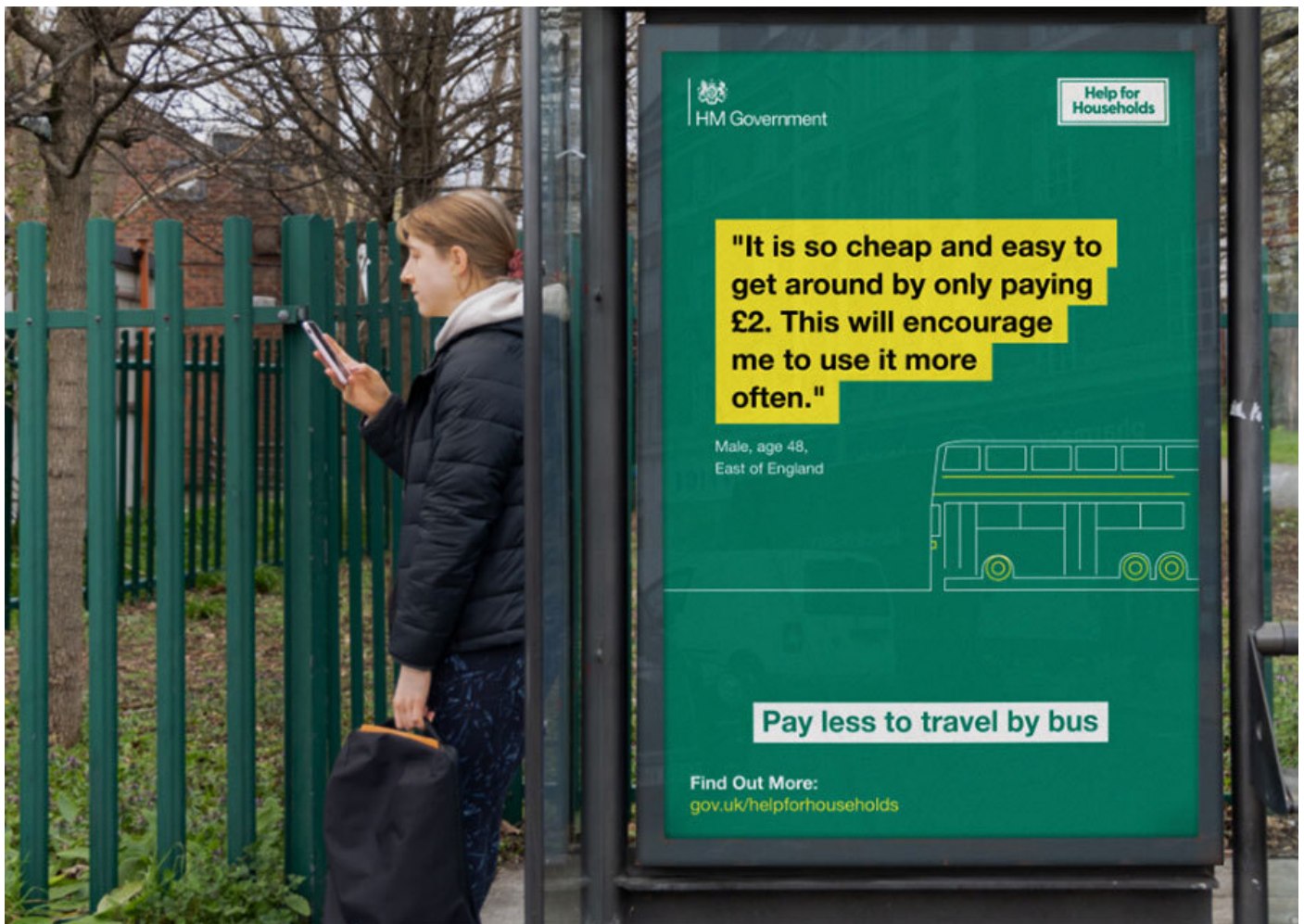
convenience stores and post offices, suggesting a wider vision for bus stops to act as community hubs.

Additionally, 38 percent desired secure long-term cycle lockers. This underlines the growing interest in sustainable and multimodal transport for end-to-end journeys.

Overall, the NTAS Wave 9 provides a valuable insight into the evolving attitudes towards bus services in the UK. The future of bus transport is indubitably linked to sustainability, affordability and technological innovation. As attitudes towards these trends continue to develop, policymakers and transportation authorities must therefore remain aware of public perceptions in order to deliver a resilient and responsive public transit system.

The comprehensive results from the National Travel Attitudes Study (NTAS) Wave 9 can be found [here](#).

Read more from Tiana May, Principal Journalist at [www.bus-news.com](http://www.bus-news.com).



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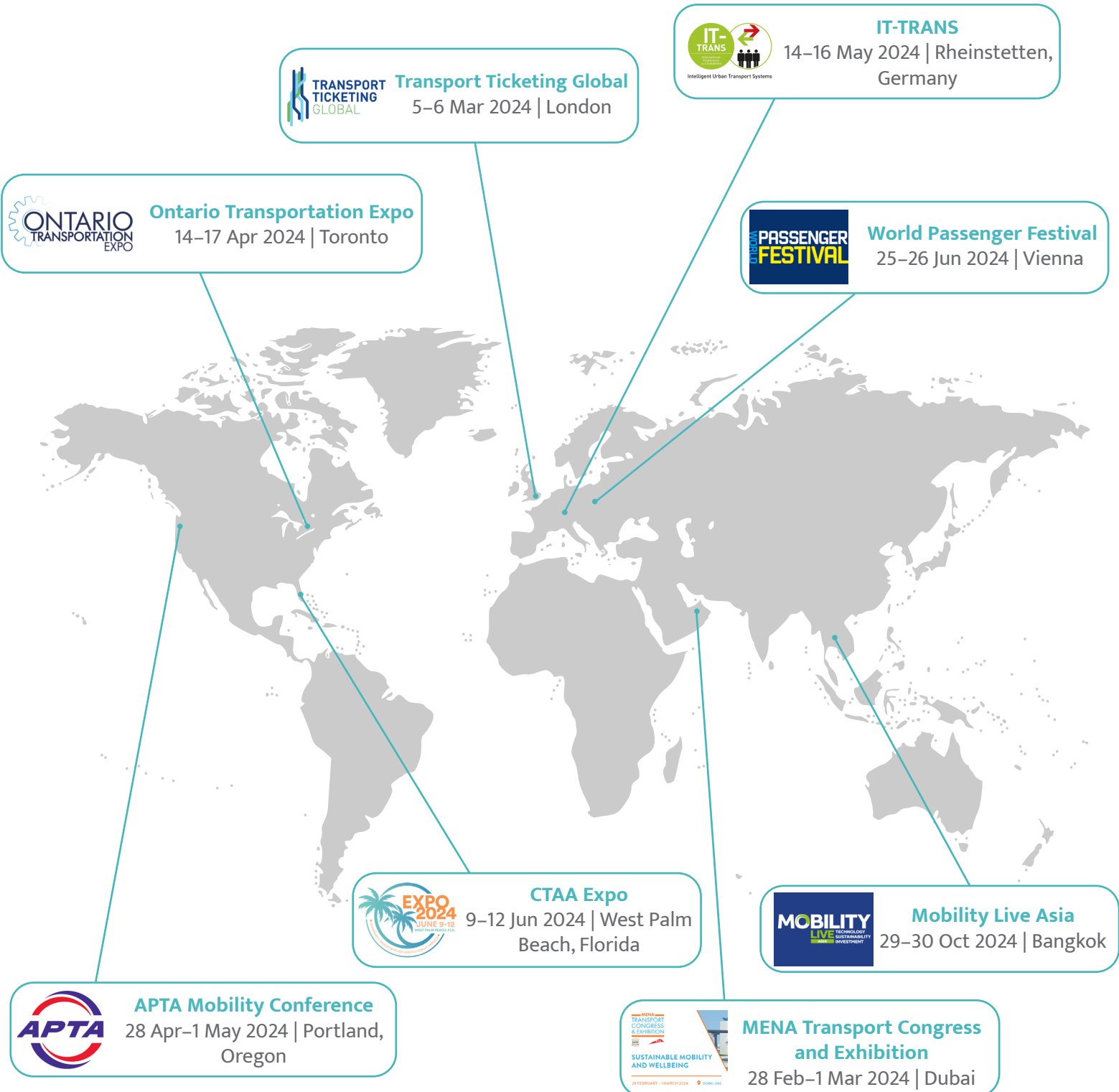
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March 2024–October 2024





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Digital Solutions

# Snapper Services

## Navigating the Future: Enabling the Citizen-Centred Smart City

By Miki Szikszai, CEO of Snapper Services

The vision of a human-centred, open, inclusive and diverse city has redefined urban landscapes across the globe.

Since its conception in the 1970s, the smart cities concept has evolved from a technology-centric strategy to a citizen-focused environment. Adam Greenfield’s collection of essays **“The city is here for you to use”** is an on-point summary of the current vision for the smart city.

Councils and urban authorities are prioritising health and safety, mobility, economic and educational opportunities as well as governance as they evolve their cities in line with the complex and ever-changing nature of human society. Today, **the leading smart city exemplars target high quality of life, sustainable economic growth and transportation networks**. The **IMD Smart City Index 2023** has Asia and Europe as the leading regions, with so-called ‘second-tier’ cities ahead of the pack.

An increasing number of councils are moving away from a centrally controlled and managed urban environment towards one that easily adapts and responds to the complex web of human, social and environmental interactions. This includes a particular focus on developing superior public transit services.

These promising trends combine citizen participation, committed urban development professionals, and advanced technologies to continuously improve mobility within a city.



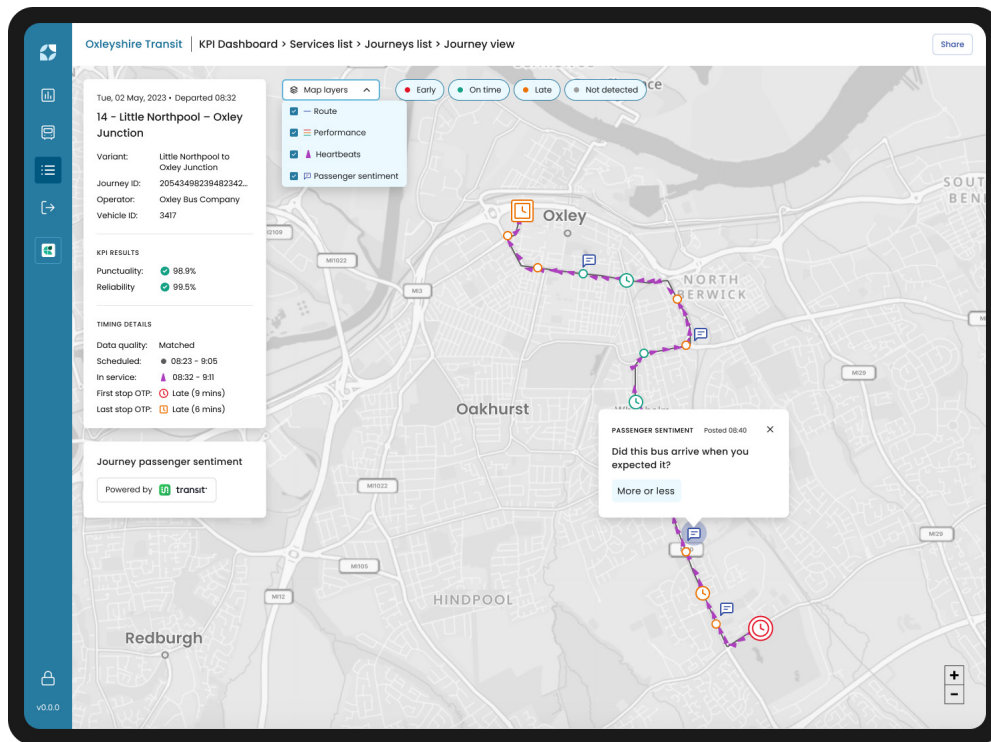
Miki Szikszai,  
CEO of Snapper Services

Enabling citizen-centred smart cities means understanding where we are now and how the intersection between the rapidly emerging micromobility domain, demand-responsive transport (DRT) and fixed-schedule mass transit will play a role if we are to move towards truly accessible, sustainable and well-connected cities.

### Connected City Landscapes

Connected cities have truly arrived, with governments and transit operators across the globe harnessing the power of new technology to improve the lives of citizens. Central to these efforts are the trustworthy, open data systems that are a foundation of smart cities.

There are prominent examples in Asia Pacific, where, for instance, **Tokyo has topped a list of the world’s future-ready cities** thanks to its ability to adapt according to residents’ needs. Similarly, South Korea’s capital, Seoul, has been **recognised for its Smart Seoul**



**platform**, which has boosted digital inclusion across everything from mobility and education to safety and communication. Canberra was rated #3 in the IMD Smart City Index following its integrated transport planning approach, recently **prototyping a green light rail track** that will improve urban mobility while reducing heat from concrete tracks.

We can also see the new technologies emerging that could simplify complicated transit systems. This includes AI, which can be deployed to optimise signal timings and reroute vehicles to reduce congestion, **with Germany demonstrating the role this can play in traffic management.**

**Transport for London (TfL) has improved the experience for passengers**, by using machine learning to analyse passenger data and movement, to reduce train and station congestion. These have led to very low-cost changes to help improve journeys, like highlighting when it might be better to get off at an earlier stop and walk above ground.

## Enabling a Dynamic and Accessible Future

While successful use of advanced technologies shows promise, there's more to be done to support the

creation of the next generation of smart cities. The goal is a city that all members of society can use, not just those with access to the latest technology.

One of the biggest steps will be understanding how fixed-schedule transit services can best intersect with micromobility and DRT, adapting routes and distributing resources based on real or forecasted demand.

In a truly dynamic city, planners will be able to seamlessly leverage these different transit modes, which will all have a role to play in creating a cost-efficient public transit network that supports Net Zero targets and fully serves the population, including vulnerable members of society and areas with lower demand.

With these transit modes meeting varying needs and preferences, a truly future-oriented city will be able to synthesise data from users and providers of all different service types and make better planning decisions such as where to locate micromobility parking spaces, considering their city as a whole.

This will allow for developing tailored services that adjust in line with demand to meet residents' requirements – whether that's bus routes that are planned to better facilitate scooter use for last-mile



journeys, or an adjusted fixed network route that takes into account when DRT would be more efficient and cost-effective at a given time of day or season.

## Collaboration Is Key

The only way to achieve this is through a genuinely collaborative approach, which is key to unlocking the potential of cities. The complexity of more intelligent transit systems means multiple technology providers need to collaborate – with each other and with the public sector – to gather, share, analyse and respond to the wealth of data that exists.

There are clear signs that government legislation will facilitate this collaboration. One example is the Finnish government’s Act on Transport Services, which ensures that “essential data on transit services can be made open”. In a similar vein, the European Commission has adopted a vision to have a European Digital Transformation by 2030, which aims to promote interoperability and bring 100% of public services online.

These efforts are important given that no two cities or regions are the same, which means interoperable solutions that can be used flexibly will prove important in the future.

With a collaborative approach built on standardised data shared via APIs, cities can determine which processes can benefit from automation and, by maintaining sovereignty of their citizens’ data, AI solutions can be appropriately applied to improve all modes of transit. Our vision to create excellent transit experiences is central to everything we do at **Snapper Services**, with our focus on enabling

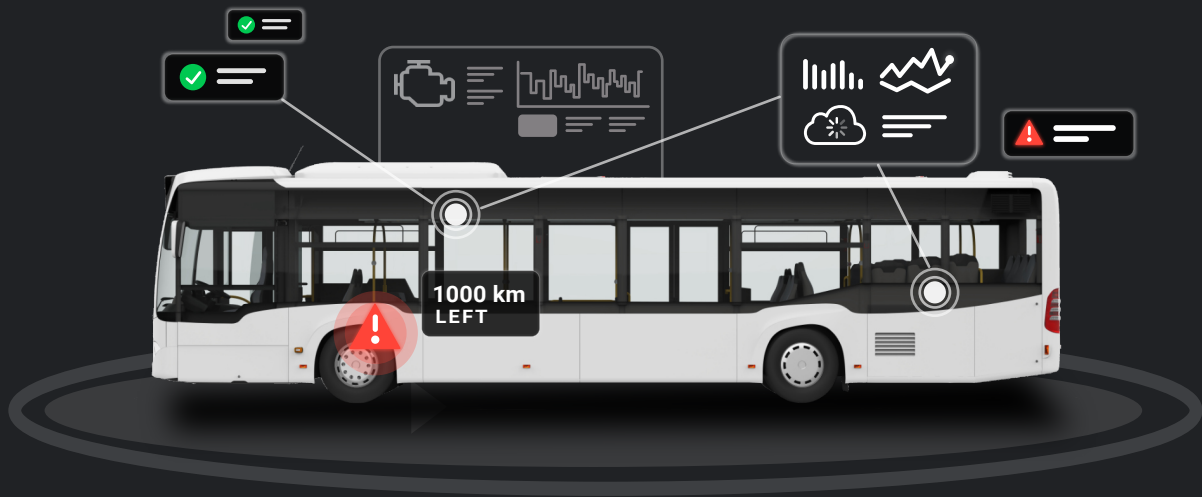
operators and authorities to continuously improve the performance of their networks. This includes our launch of **Mosaiq** in 2023, which enables public transit operators and authorities to identify inefficiencies across routes, extend capabilities, understand impact on passengers and have complete visibility over their operations.

Our belief is that providing operators with the tools to enable a culture of continuous improvement will play a vital role in creating citizen-centred smart cities that respond to the ever-changing needs of society. Combining standardised data, the latest technology and the collaborative efforts of the private and public sector will result in transit services that foster and serve more inclusive, happier and healthier communities.



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stratio

# Stratio

## Roadmap to Reliability: The Role of Bus Maintenance Software



In the rapidly evolving landscape of public transportation, where reliability is paramount, success depends on addressing industry challenges proactively.

To thrive in such an environment and meet government regulations, while providing excellent service to passengers, public transport operators should explore the implementation of predictive maintenance.

Broadly speaking, the industry has made significant improvements in terms of management and efficiency. This progress translates into the availability of solutions that simplify how operators monitor fleet conditions, schedule servicing and keep vehicles on the road for longer.

This article explores the capabilities of bus maintenance software and highlights the advantages of incorporating predictive maintenance technology into transport operators' processes.

### Cost Savings and Cost Avoidance

One of the many benefits of predictive maintenance is its potential for cost savings and avoidance. By anticipating faults, operators can optimise maintenance scheduling and track maintenance tasks, resulting in a reduction of unexpected breakdowns and fewer costly emergency repairs.

By proactively monitoring the condition of critical components and systems, operators can ultimately extend the intervals between preventative



maintenance checks and parts replacements, leading to substantial savings.

## Compliance Benefits

Ensuring compliance with safety regulations and service-level agreements is non-negotiable for public transport operators. To comply, operators must provide an efficient, safe and reliable transport service.

Predictive maintenance enables real-time monitoring of a vehicle's condition and allows operators to forecast maintenance needs, minimise downtime and optimise maintenance productivity, leading to increased service reliability. This, in turn, enhances passengers' experience. Commuters can rely on transportation services to run smoothly with fewer disruptions and delays as a result of a well-maintained fleet.

The reduction of lost kilometres due to mechanical failures, in particular, can help operators stay below the threshold set by their SLAs and avoid regulatory fines.

## Optimised Maintenance Productivity

Efficiency in maintenance operations is crucial to ensure the smooth functioning of a bus fleet. It fosters a better allocation of resources and improves the work order and inventory management.

By relying on software to plan maintenance operations, teams can prioritise tasks based on urgency and importance, ensuring that the right vehicles get repaired and fixed, thus improving productivity. Furthermore, as repetitive tasks – such as odometer readings and fluid level checks – are automated, allowing maintenance teams to focus on higher-priority tasks.

## Real-Time Data and Analytics

In the digital age, real-time data is invaluable. Predictive maintenance solutions allow operators to leverage data not just to anticipate faults before they occur, but also to perform diagnostics remotely, without having to recall a vehicle into the workshop.

Maintenance managers who rely on predictive maintenance report using the real-time visibility over their fleet to prevent unnecessary vehicle tows and overspending on emergency repairs. This type of

approach also speeds up the resolution of mechanical issues as engineers possess contextual information regarding the fault before they are physically examining the vehicle.

## Why Predictive Maintenance Integration Matters: A Case Study with Arriva Czech Republic

Opting for a bus maintenance software is already a firm step to leave behind reactive maintenance. However, to achieve operational excellence, maximise cost savings and offer reliable services, the integration of a predictive maintenance technology is key. Stratio's predictive maintenance solution harnesses the power of data and AI to provide operators with predictive insights, preventing breakdowns, reducing unplanned downtime and ensuring optimal efficiency.

Arriva Czech Republic serves as an interesting case study for the successful implementation of predictive maintenance. By deploying Stratio's predictive maintenance solution, Arriva CZ has achieved a net savings in total operational costs of 0.7% per kilometre and is increasing the reliability of its service.

### Arriva return on investment results

*Benefits achieved per year*

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**0,7% /Km**

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- ▼ 66,6% Towing reduction
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- ▼ 13,9% Engineering cost reduction
- ▲ 33,3% Planned vs Unplanned maintenance ratio
- 100% Engineering dead kms mitigation

You can find out more about how predictive maintenance can help your fleet by visiting [www.stratioautomotive.com](http://www.stratioautomotive.com)

# stratio



Wireless So

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# Solutions & IP-based Systems for the Bus Sector





# HID

## Improve Fare Revenues and the Passenger Experience by Upgrading to a Modern, Future-Proofed Ticketing Infrastructure

By Arthur Tay, Product Marketing Manager – Access-IS Business Unit within HID

Growing consumer demand for ‘smart ticketing’ solutions is being driven by rapid urbanisation as well as technological advances such as RFID and near-field communication (NFC).

Today’s solutions are used in mass transit applications ranging from ticket vending machines (TVMs), gates and turnstiles to stand-alone platform validators and on-board products. Transportation authorities and operators who have not adopted these technologies operate with an outdated ticketing infrastructure that puts them at risk of irritating passengers and losing revenue. They must modernise or risk losing passengers – perhaps permanently.

Contactless ticketing has slowly been incorporated into public transportation over the past 20 years, which accelerated during the pandemic. As ridership continues its rebound, now is the time for transit authorities and operators to upgrade their aging ticket-reading hardware and move towards a more digital or mobile paradigm that will enhance the passenger experience and maximise revenue. The latest readers give passengers a single point of presentation for any ticket, regardless of orientation, and the ability to make contactless payments, all via a single interface. They also offer a range of benefits to operators, today and into the future.

### What Consumers and Operators Want

Passengers want to go beyond physical tickets. Most resent the inconvenience of having to buy tickets in person, and a growing number also want to access their digital tickets from an app and add them to their digital wallets. Many want to use the same method of payment on a mass-transit trip that they use when shopping or entering a hospitality venue.

Public-facing transportation ticketing systems must address these preferences. Each category of passengers has different needs, learning curves and technology access and every group must be accommodated.

*The latest contactless ticketing technologies enhance the passenger experience while maximising revenue*





*Ticket readers should support NFC/RFID tickets that can be read in any orientation*

Transit authorities have their own needs, including reducing ticket fraud and using transit journey information to make data-driven, real-time operational decisions. They also need to optimise passenger throughput, and they want a path to contactless payments so they can reduce the expenses associated with handling cash.

Supporting these needs shouldn't require a rip-and-replace ticketing system deployment. Operators can't afford any disruptions during the transition to a new system, nor can they complete the cut-over process so quickly that people have insufficient time to gradually adapt to and adopt the new capabilities, at their own speed.

## Benefits of Upgrading to Modern Ticket-Reading Technology

There are multiple benefits to be realised from using, upgrading and expanding the capabilities of a ticketing hardware system:

### Increased Ridership and Maximised Revenue

Expanding the ticketing system to include state-of-the-art, multi-format ticket readers and validators enables more convenient and enhanced transit journeys. Accepting tickets from all media is especially important for citywide systems where the population's ticket medium of choice can be highly diverse.

### Delighted Customers

Passengers want an efficient, technology-driven fare payment and ticketing experience using a single point of presentation for barcode, NFC and contactless EMV

payments, making it easier and faster to board or pass through barriers, regardless of their preferred ticket medium.

### Greater Operational Efficiency

Investing in the right ticket-reading hardware and contactless payment infrastructure allows for efficient upgrades and additional enhanced features. With digital fare payment hardware and mobile apps, it is also significantly quicker and more efficient to roll out new fares and ticket types.

### Revenue Protection

New ticket-reading technologies effectively cut down on ticket fraud. The latest systems and devices can automatically detect tickets that have already been used or those that have expired. Additionally, cashless transactions eliminate fraud committed by employees and passengers.

### Actionable Data

Migrating to a contactless digital ticket reading system allows data to be gathered about when and how passengers travel. It also enables transit operators to efficiently track payments, create fare caps and discounts, carry out refunds and collect and use transaction data. The latter capability enables operators to make smarter decisions and improve route planning to maximise ridership and system revenues.

### Improved Passenger and Driver Health and Safety

COVID-19 has reminded us that eliminating personal contact in processing tickets reduces risks to the health and safety of passengers and transit operators.

### Compatibility with the Latest Secure Ticketing Standards

Upgrading ticketing hardware is critical for transit operators to ensure compatibility with common standards such as ITxPT as well as appropriate open, secure ticketing standards, such as Calypso®. Calypso-certified ticketing hardware supports the necessary security and interoperability requirements of contactless ticketing systems to ensure long-term usability.



*On a bus, the driver can clearly see the ticket type and its validity, and passengers can also present their mobile app to a vehicle-mounted validator*

## Best Practices for Deployment

Transit authorities should choose ticket readers that support converged technology including open-loop contactless payment cards, scanned QR/barcodes (1D and 2D symbologies) and virtual barcodes on a smart device, as well as closed-loop RFID. Additionally, readers should support NFC/RFID tickets that can be read, in any orientation, on a phone, tablet or wearable. Such readers reduce customer transaction time.

Readers and validators also must offer a high level of usability at every step of the passenger journey. This includes giving users a single window to present the chosen ticket medium using an intuitive and quick interface for data reading and writing. Devices that read barcodes rapidly regardless of presentation angle also enables efficient passenger processing.

The addition of contactless payments provides the convenience and speed of a single touchpoint for ticket validation and payments. On a bus, the driver can clearly see the ticket type and its validity, and passengers can also present their mobile app to a vehicle-mounted validator. Ticket validation and boarding become simple, fast and efficient processes – even when the driver is busy operating the vehicle.

Another key consideration is support for open architectures and other future-proofing measures. Non-proprietary, open-architecture readers and validators maximise flexibility and long-term usability by working with any ticketing software and payment service provider. Mass transit operators can install ticketing devices with all the built-in capabilities they will need in the future, knowing they can enable these features when needed without having to replace or upgrade hardware.

Security is also important. To ensure devices incorporate the latest cryptographic elements and secure communication for closed and open-loop payments, select ticket readers and validators that are ready for EMV Level 1 and EMV Level 2 industry standards.



The final consideration is ease of installation. Look for features like the use of a single cable connection to the host, and the consolidation of ticket reading and payment into one module or reader to conserve space and minimise maintenance.

## Meeting Expectations While Improving Operations

With the right system, operators can meet passenger expectations and improve operations. They will also be prepared for developments like payment via wearable devices and adding transportation to the NFC-enabled badges and IDs that university students and employees already use for physical access to parking facilities and buildings. A well-designed and future-proofed digital and mobile ticketing system with modern readers and validators as well as contactless payment support will enable transport authorities to meet these and other needs in the decades to come.

Watch our [video](#).

Click [here](#) for more information.

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Your bankcard is your ticket to the city

# One step to open-loop EMV fare collection in public transport



## Contactless EMV payments



Bankcards



Smart phones



Smart watches

Open-loop innovation lets users **enjoy the freedom of diversity** anywhere in the world with a simple tap of their bankcard.



🏠 Directory

Digital Solutions

# switchio

## Pay&Go Trial: Budapest Transit's Digital Transformation Continues

### Switchio in Budapest

In co-operation with Mastercard and K&H, the public transport operator in Budapest, BKK, has commenced a pilot scheme for an innovative contactless fare payment platform powered by Switchio.

As of 20 June 2023, passengers on the 100E airport shuttle bus have been the first commuters in the country to enjoy the unmatched speed and convenience of cEMV payments in public transportation.

The trial follows a successful pilot phase and marks a major step in the ongoing digital transformation of public transit in the Hungarian capital. The data obtained in the trial will help refine the solution prior to widescale deployment.

Situated on the banks of the mighty Danube, Budapest is a vibrant, bustling European metropolis.

The city serves as Hungary's political, economic, cultural and historical centre, with a dynamic blend of past and present making it an attractive destination not only for





foreign tourists but for many Hungarians as well.

The city's public transport system is efficient, cost-effective and reliable.

Metro lines, trams, buses, trolleybuses and trains serve most areas of the city proper and its sprawling suburbs. The combination of various transportation modes allows residents and visitors to travel quickly and comfortably throughout the city.

### How Does Budapest Pay&Go Work?

Switchio's innovative cEMV payment technology lets riders on the 100E airport shuttle bus use their bank card, smartphone or smart wearable to pay their fare. The system requires no prior steps, such as registration or download of a special app. Passengers simply climb on board, place their bank card or smart device over the digital terminal, and away they go. The technology turns their bank card, virtual or physical, into their ticket.

Whereas other systems require passengers to first purchase a ticket online and then validate it in separate operations, Pay&Go does it all in one lightning-fast step. Moreover, in the event of an inspection, passengers simply present their bank card the way they would a paper ticket under the old system.

The project is part of BKK's continued efforts to provide its passengers with an improved user experience while advancing eco-friendly public transportation with paperless digital solutions.

If you want to find out more contact Switchio

[switchio.com](https://www.switchio.com)

[info@switchio.com](mailto:info@switchio.com)

[monetplus.cz/en](https://www.monetplus.cz/en)





# Unlocking the Power of Vehicle Telematics: A Compact Solution Enhances Public Transportation for Smarter, Safer and Happier Mobility

## VTC 1920

- Intel® x7211RE quad-core processor (codenamed Amston Lake)
- Built-in GNSS receiver with optional dead reckoning function
- HDMI output and 2.5GbE LAN ports
- Built-in 1 x isolated CAN FD
- Three expansion slots for 5G NR, LTE, Wi-Fi 6E
- Wide range DC input from 9~36V



## VTC 6231

- Intel® x7433RE quad-core processor (codenamed Amston Lake)
- Built-in GNSS receiver with optional dead reckoning function
- Triple display outputs and dual 2.5GbE LAN ports
- Built-in 1 x isolated CAN FD
- Five expansion slots for 5G NR, LTE, Wi-Fi 6E
- Wide range DC input from 9~36V



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## Unlocking the Power of Vehicle Telematics: A Compact Solution Enhances Public Transportation for Smarter, Safer and Happier Mobility



In the bustling urban landscape, buses serve as the backbone of public transportation, connecting communities and powering city life.

As we envision the future of urban mobility, smart buses emerge as a beacon of innovation, promising a triple win: safer roads, smoother operations and happier passengers. Unlocking this potential lies in the untapped treasure trove of vehicle telematics data, a transformative force that can revolutionise driver management, asset maintenance and passenger services.

NEXCOM VTC 1920 is a palm-sized ruggedised

telematics gateway powered by Intel® Atom® Processor x7211RE (codenamed Amston Lake). This telematics gateway boasts impressive power, enabling real-time data acquisition, edge computing and network communication to control centre. The VTC 1920 extracts valuable vehicle telematics insights, conducts preliminary analysis and streams actionable results, empowering fleet operators to make informed decisions and optimise planning and operations for public transportation services.

### Transforming Buses into IoT Gateways with Advanced Vehicle Telematics

For public transportation providers, the VTC

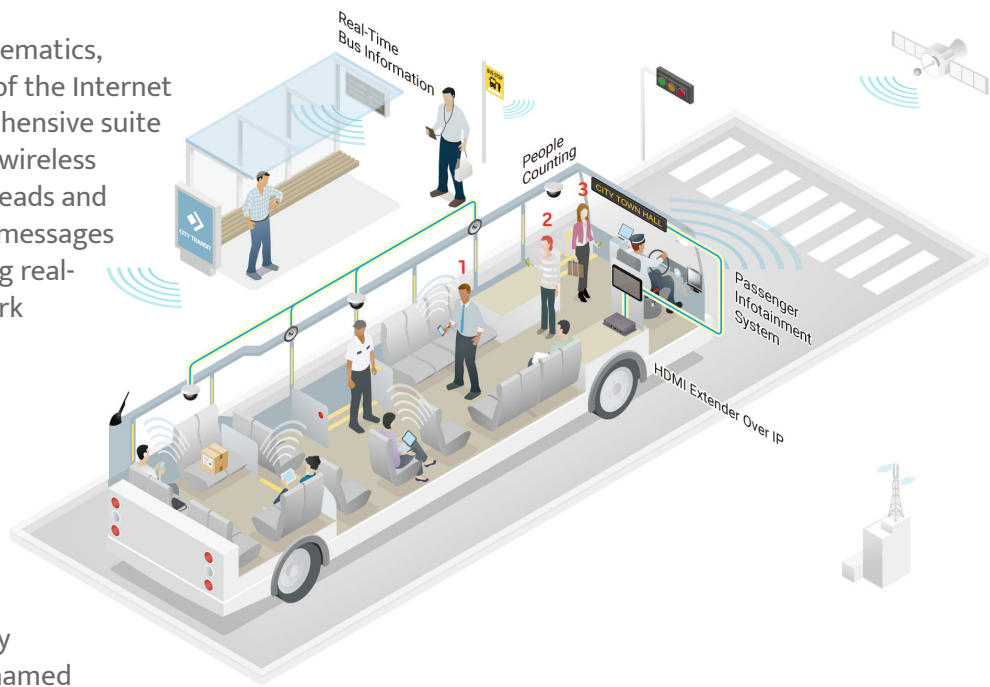
VTC 1920 unleashes the power of vehicle telematics, transforming buses into mobile nodes of the Internet of Things (IoT). Equipped with a comprehensive suite of interfaces such as CAN FD, COM and wireless connectivity, the VTC 1920 effortlessly reads and compiles vehicle status and diagnostic messages from vehicle control networks, providing real-time visibility into vehicle locations, work progress and potential anomalies.

## Unparalleled Cellular Connectivity

NEXCOM's latest series of mobile communication hubs, the VTC 6231, sets a new standard for versatility and connectivity in vehicles. Powered by Intel® Atom® Processor x7433RE (codenamed Amston Lake), the VTC 6231 serves as a powerful mobile communication hub. Building upon the durability and slim design, the VTC 6231 boasts five adaptable expansion slots for cellular connectivity and alternative options. This enhanced cellular connectivity translates to extra bandwidth and seamless connectivity, even when travelling through tunnels or crossing borders. With its five expansion slots, the VTC 6231 can accommodate more WWAN modules and SIM card slots than its predecessors.

## Diverse Video Outputs for Advertising and PIS Application

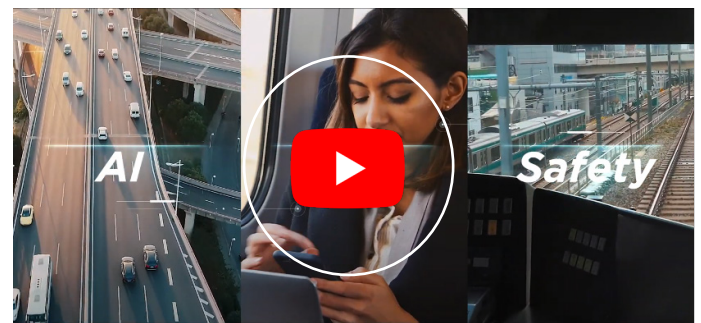
The VTC 6231's three independent video outputs – one VGA, one HDMI and one DP – enable Passenger Information System (PIS) application including watching news, video and weather reports, etc. Businesses can leverage these outputs to display advertisements and commercials, while tourist bureaus can showcase information about points of interest. Moreover, the VTC 6231's serial port can connect to LED displays to provide journey information.



NEXCOM's VTC 1920 and VTC 6231 emerge as champions of vehicle telematics, empowering public transportation with easy and effective solutions. These devices harness the power of vehicle telematics to enhance road safety, optimise operations and elevate passenger satisfaction, ushering in an era of smarter, safer and happier mobility.

## MCS – Always Moving Forward

NEXCOM's Mobile Computing Solutions forge the future with its innovative mobile computer system. Bringing forth a more convenient, safe, and intelligent mobile society. Watch the video below for more information.



For more information please contact:

[contact@nexcom.com.tw](mailto:contact@nexcom.com.tw)  
[www.nexcom.com](http://www.nexcom.com)

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🏠 Directory

# Bus Design & Interiors

## Stalatable Oy

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The Most Lightweight and Sustainable Bus Body

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🏠 Directory

Bus Design & Interiors

# Stalatube Oy

## The Most Lightweight and Sustainable Bus Body

### Over 50 Years of Stainless Expertise

Stalatube is the leading supplier of stainless steel in the bus and coach building industry globally. The company provides high-strength stainless steel solutions with over 50 years of experience. With a global presence, in-depth material expertise, and the world's widest product portfolio in stainless square and rectangular hollow sections and components, Stalatube helps customers connect the most suitable product with their application or project – in even the most complex of cases. Environmentally conscious solutions are here to build a better future. With co-operation with customers and investing in R&D, innovations can be achieved.

In the transportation sector, our ultimate goal is clear – lighter vehicles with lower CO2 emissions paired with the very highest passenger safety. Stalatube's innovative high-strength stainless steel materials and optimal vehicle structure design help achieve the weight reduction necessary as well as meet CO2 goals.

### Benefits of Stainless Steel in Bus Building

Stainless steel stands out as a superior material for bus structures including safety, durability and environmental matters. It is crash- and fire-resistant, eliminating the need for extra protection. Furthermore, stainless steel is less prone to corrosion, resulting in lower maintenance costs compared to carbon steel.

The life-cycle costs of stainless steel solutions are significantly less than those of carbon steel, making it a

cost-effective and sustainable choice. Notably, stainless steel is 100% recyclable, reducing the environmental impact of the transportation sector.

### Stronger Stainless, Lighter Structures

Stalatube high-strength hollow sections have excellent yield strength, elongation and energy absorption properties. In addition, they offer not only lighter structures but also better corrosion resistance and lower life-cycle costs. Tailored products reduce material waste and keep the cost level stable. Compared to a traditional carbon steel bus, life-cycle costs remain low. Additional benefits come from reduced CO2 emissions, fuel costs and improved passenger capacity. High strength stainless steel is an optimal material for roof arcs, side pillars, chassis and collision elements.

### How Do You Make a Lightweight, Safe and Sustainable Bus Body?

Ferritic EN 1.4003 (S40977) square and rectangular hollow sections, components and sheets are an affordable solution providing good structural corrosion resistance and relatively high strength. The strength can be further enhanced with Stalatube's strength class STALA400F and several thicknesses are offered to further optimise the weight.

High-strength Lean Duplex steel EN 1.4162 leads to considerable weight savings and provide superior elongation and corrosion resistance. Fortifying them with STALA strength class STALA630D will ramp up their yield strength to 630 MPa along with excellent elongation and energy absorption properties.



Combining Ferritic and Lean Duplex leads to the most lightweight bus or coach body that is both cost-effective and durable. A 1000-kilogram decrease in the weight of the bus body is possible by combining both high-strength material selection and professional bus body engineering. Life-cycle costs remain low – and the difference is quite remarkable compared to a traditional carbon steel bus. Additional benefits come from reduced CO2 emissions and fuel costs as well as improved passenger capacity.

Stalatube's newest high-strength stainless steel hollow section called STALA800 (EN 1.4678) has an exceptional combination of high strength and elongation. The material can absorb a huge amount of energy in case of an accident, making it ideal for roll-over structures and collision guards.

STALA800 is an excellent choice for bus body structures made mainly from carbon steel. It can be combined with carbon steel to strengthen the critical parts of the structure. E-coating is recommended for better corrosion resistance.

## STALA Opti – Optimised Strength Where the Strength Is Needed

Stalatube's newest invention is STALA Opti. It offers excellent flexural strength for customers looking for strength and durability without weight increase and

stronger joints. Heavier wall thickness at the end of the tubes allows better weld penetration that improves fatigue resistance in joints. This is a unique solution for strengthening the needed area and eliminating the weight increase at the same time. It is available in all Stalatube's stainless steel grades.

### Value-Added Services

Stalatube product portfolio for the transport industry contains standard and fully custom-made square and rectangular tubes, tube components, sheets and welded structures. Laser cutting, bending and creating ready-to-assemble component kits are at the core of customer services. Lead time is reduced through flexible stocking and delivery options. The technical team of Stalatube Transport has a lot of experience in bus body design. With their help, bus manufacturers can choose the materials and products to maximise the benefits by choosing stainless steel.

### Sustainability Is Achieved with Stainless Steel

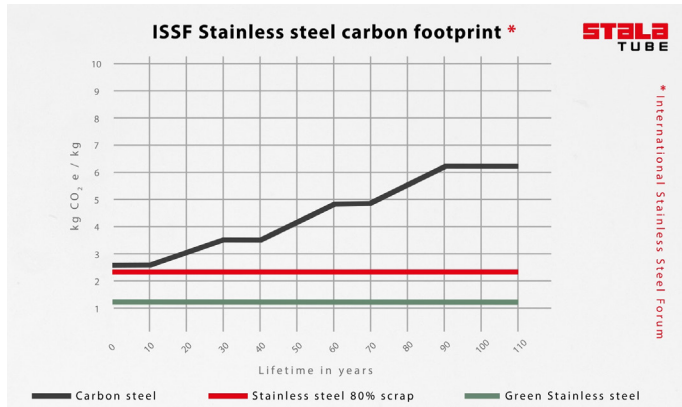
Sustainability goals can be achieved by choosing stainless steel. The sustainability of stainless steel is evident in its recyclability. As the transportation industry strives to set strong standards for zero-emission vehicles, stainless steel emerges as a key player in achieving these goals. Using stainless steel in buses decreases your own as well as your customer's carbon footprint. Furthermore, the carbon footprint



of a stainless steel product's life cycle is lower than for carbon steel products.

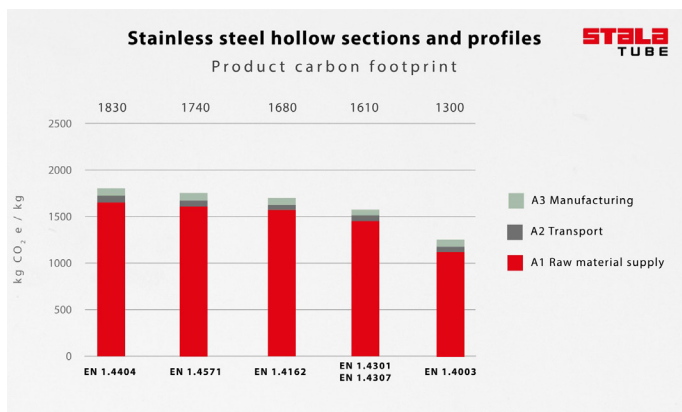
The carbon footprint of stainless steel compared to carbon steel is illustrated in the chart below.

Image 1: The Carbon Footprint of Stainless Steel Compared to Carbon Steel



Recently Stalalube has also published the Environmental Product Declarations (EPDs) of different materials. EPDs are documents that declare the environmental performance or impact of products or materials throughout their lifetime.

Image 2: EPD Calculations of Materials Used by Stalalube (2023)



Stalalube's goal is to be the cleanest producer of stainless steel structural sections. The share of raw material emissions in the company's carbon footprint is about 90 %. That's why Stalalube only cooperates with responsible raw material suppliers, who through their manufacturing process, are reducing the carbon footprint of the entire value chain. In addition, Stalalube continuously develops its manufacturing process to be more efficient – as proof, Stalalube

has reduced the amount of scrap generated from production by 42% during the past four years.

## Stalalube Oy

Stalalube is the leading supplier of stainless steel in the bus and coach building industry globally offering a unique combination of high-strength stainless steel materials to optimise weight savings. The company combines high-strength materials with years of experience and knowledge offering engineering support solutions with experts from the transport industry. Stalalube can assist you with experienced engineering to utilise the mechanical properties of STALA products and maximise weight savings with smart bus body design.

Stainless steel advantages for the transport industry:

- High-strength, lighter structures – up to 1000kg off the weight of the bus body
- Maintenance-free, low life-cycle costs
- Superior corrosion resistance
- Tailored products reduce material waste
- 100% recyclable, low environmental impact
- Price stability over time due to low nickel content
- Ready-to-assemble component kits
- Flexible stocking and delivery options
- Technical consultation service

Want to learn more? Please contact

Jori Määttänen  
Sales Director, Stalalube Oy

+358 50 518 3320

stalalube.com

jori.maattanen@stalalube.com





 Directory

# Maintenance & Servicing

**Stertil-Koni**

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Choosing the Right Vehicle Lift

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Home Directory

Maintenance & Servicing

# Stertil-Koni

## Choosing the Right Vehicle Lift

In your search for the right vehicle lift you can get overwhelmed by all the information that is available.

Safety and the well-being of your workshop personnel are your number one priority. You also want to work as cost-effectively and time-efficiently as possible. It is your job to help your customers' vehicles up and running.

Whether you have an existing or brand-new workshop, when you are looking for vehicle lifts there are several factors to consider.

### Your (Future) Customers

Maybe the maximum lifting capacity you are doing maintenance and service on is now 6,000kg, but what if heavier vehicles come to your workshop? Do you also want to service these customers?

### Lifting Capacity

Are you lifting vehicles with a single axle or multiple axles, and vehicles with or without trailers? The total capacity of a vehicle lift is something different than the capacity per arm, piston or single column. You certainly don't want to overload the vehicle lift.

### Available Space

The available space in your workshop is also important to take into account. Always

measure the height clearance. And ask yourself these questions:

- Do you want a permanent place for your vehicle lift or one that can be moved around the workshop and therefore mobile?
- Should you be able to use the vehicle lift outside on the job?
- Do you want vehicles like buses, trucks, agricultural and construction equipment to be lifted?
- Do you want to use the lift as a washing bay?
- Are you renting space where construction work is not allowed?
- If you are going to move to a different workshop location, should the vehicle lift be able to move with you?

Powerful premium piston in-ground lift, the Stertil-Koni DIAMONDLIFT®, available in 2, 3 and 4-piston configurations





The Stertil-Koni platform SKYLIFT® in a tandem configuration, ideal for articulated buses

Maintenance & Servicing

## Safety and Certification

What safety guarantees does the vehicle lift offer? Ask how the vehicle lift needs to be operated and what safety measures are involved. Make sure the vehicle lift you buy is in accordance with all product and legal requirements (CE, UKCE, ANSI/ALI-ALCTV, CSA certified).

## Training, Support and Warranty

Training should always come as standard with the vehicle lift. Find out more about the after-sales service and warranty on the products.

## Stertil-Koni Offers:

The Stertil-Koni range includes multiple heavy duty vehicle lifting solutions, either in-ground or above ground. Instead of lying down or sitting underneath vehicles, technicians can stand on their feet and can move freely under and around the vehicle for their inspection, maintenance or repair job with Stertil-Koni vehicle lifts.

Safe, reliable, ergonomic, durable and efficient makes Stertil-Koni heavy-duty vehicle lifts the best choice for your working environment. All Stertil-Koni lifts are designed and manufactured in-house by a team of specialists with expertise in the heavy-duty vehicle lifting industry. We do not just sell. Having extensive experience across different industries, we can help customers select the right solution for their respective applications and processes.

No matter what vehicles and equipment you are working on, all our lifts are easy to use and engineered

and manufactured to the highest safety standards. We will first access your workshop requirements and then recommend a vehicle lift that meets them. Our complete product range comprises of wireless mobile columns, platform lifts, 2-post lifts, 4-post lifts, and in-ground piston and scissor lifts. Designed with the user in mind. Tested above and beyond the industry standards so that you have peace of mind that your workshop staff can work safely every time they work underneath a Stertil-Koni vehicle lift.



Stertil-Koni is represented across the globe by local sales organisations, exclusive Stertil-Koni distributors and a network of qualified Stertil-Koni Service partners.

For more information contact us

vehiclelifts@stertil.nl  
+31 512 33 44 44  
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*Stertil-Koni mobile column vehicle lifts offer maximum flexibility and are easy to reposition*



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# NUMBER 1 IN HEAVY DUTY LIFTING WE LIFT ANY BUS



 member of the Stertil Group

## LEADING IN HEAVY DUTY VEHICLE LIFTING

Stertil-Koni is worldwide market leader specialised in the lifting of heavy duty commercial vehicles. Quality, safety, reliability and ultimate liberty of lifting. A complete range of heavy duty lifts designed specifically to answer the demanding needs of the market for vehicle service, repair and maintenance. Stertil-Koni products are developed and manufactured in-house by a highly qualified team of experts.



🏠 Directory

# Electrification & Power

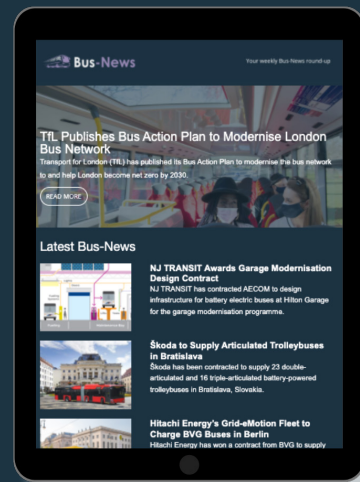
## Hitachi ZeroCarbon

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The Future of Electric Fleet Management with Hitachi's Battery Charging and Management Services

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Read our previous articles on Electrification and Power here



# Hitachi ZeroCarbon

## The Future of Electric Fleet Management with Hitachi's Battery Charging and Management Services

By Mike Nugent, Global Head of Sales and Delivery



Operating an electric bus fleet is an entirely different proposition to operating a conventional bus fleet.

It requires whole system change within the business and impacts fleet managers in particular. Managing this change and ensuring your fleet continues to perform its operational requirements is crucial to the success of your transition to EVs.

Hitachi ZeroCarbon's battery charging and management services provide fleet operators with the

tools to manage reliable and efficient electric fleets without the added complexity. Instead of treating charging operations and battery health as distinct components, this solution takes a comprehensive approach to the entire EV system to ensure your vehicles are always charged for effective operations. At the core of our solution is a technology platform that ingests and integrates data from both the charger and vehicle battery to enable enhanced fleet management, providing the right balance between ensuring vehicles are always charged to meet daily operations and leveraging battery data to optimise battery performance and extend battery life.



# This Unique Solution Combines Digital Technology, Operational Expertise and Innovative Financing Models

## Digital Technology

- The battery charging and management services employ smart charging technology, ensuring operational continuity for your fleets at lowest cost.
- We provide interoperability testing and integration across different battery OEMs, vehicle OEMs, charge point hardware and software. This allows fleet operators to decide what equipment to procure based on their operational needs. Going one step beyond this, the platform monitors the battery health of each vehicle and adjusts charging regimes to protect the battery assets and minimise maintenance costs.
- By bringing together the technology from our ZeroCarbon Charge and ZeroCarbon Battery products, our electric fleet optimisation solution unlocks greater value for your business.

## Operational Support Services

- Our unified solution is more than just a technology platform; it provides hands-on operational support from our EV and operations experts.
- We proactively manage risks and offer 24/7 support to ensure operational continuity, allowing you to

focus on delivering exceptional service to your customers.

- We take on operational risk with state-of-charge SLAs and service credit regimes.

## Innovative Financing Models

- Through innovative battery co-ownership models, we enter into long-term value-sharing partnerships. This means that fleet operators benefit from an extended battery lifetime and enhanced residual value, without responsibility for the ongoing management.
- This financing approach also lowers the costs to electrification since batteries are the most expensive component of electric vehicles today.
- Since we enter into battery co-ownership, rather than purely leasing the batteries, we share the benefits of the residual value of the battery and operational revenues from innovation energy management.

## Optimising Electric Vehicle Fleet Management through Long-Term Partnerships

Navigating the complexities of an electric fleet does not have a one-size-fits-all approach. We focus on building long-term, collaborative partnerships with fleet operators to build the right solutions. Our approach to battery-charging and management





Learn about our partnership with FirstGroup



services is founded on collaboration, maximising long-term asset value, being hardware agnostic and enabling interoperability with existing software, strategic advice and a holistic approach to the EV ecosystem.

- **Increased sustainability:** Decarbonising your fleet is critical to improving your business’s environmental impact, and we provide a breakdown of just how much CO2 you prevent through electrifying fleet operations.

### What Are the Benefits of a Battery Charging and Management Service?

- **Operational continuity:** The most important element of our solution is delivering reliable charging for your entire fleet, enabling seamless fleet operations and reducing downtime.
- **Enhanced battery value:** By combining smart charging management and battery analytics, we protect your battery health to secure an increased battery residual value and avoid replacement costs.
- **Accelerated electrification:** Our charging technology means that we maximise the use of available energy so that you can get more chargers and buses in your depots even within energy constraints.
- **Reduced costs:** We adjust charging based on when energy demand is lower, so you can benefit from lower electricity bills.
- **New revenue streams:** Utilise your battery assets by participating in flexibility markets and providing charging services to unlock new revenue, all facilitated and managed by our technology platform.
- **Improved decision-making:** Gain access to live insights on your charging operations and battery assets, alongside detailed monthly reports to improve efficiency and support investment planning.

### How Does this Work in Practice?

Electrifying your fleet can be a long and complex process. Hitachi ZeroCarbon offers the expertise, technology and support to navigate the transformation required, wherever you are in your electrification journey.

We deploy our solutions gradually, ensuring success of core ZeroCarbon Charge and ZeroCarbon Battery product features before introducing the advanced fleet optimisation functionality of battery charging and management services. This enables you to accelerate electrification efforts without compromising on your daily operations.

For more information on Hitachi ZeroCarbon’s battery charging and management services please visit [hitachizeroarbon.com](https://hitachizeroarbon.com) or email [zerocarbon@hitachi-eu.com](mailto:zerocarbon@hitachi-eu.com)

# HITACHI

Inspire the Next

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