



**Ohmio Automotion Ltd**  
55 Ben Lomond Crescent,  
Pakuranga, Auckland 2010  
New Zealand

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Simon Ash  
Chief Operating Officer  
WINTON  
Level 4, 10 Viaduct Harbour Avenue  
Auckland 1010 New Zealand  
[Simon.Ash@winton.nz](mailto:Simon.Ash@winton.nz)

Dear Simon,

### **Ohmio Autonomous Shuttle Information**

As a proud NZ-based developer of Autonomous Shuttle vehicles, Ohmio welcomes the opportunity to be the proposed provider of advanced Sunbus autonomous shuttle transport services within the Sunfield neighbourhood.

Ohmio Automotion was established in Auckland in 2017, and is proud to have developed the world-leading Ohmio LIFT autonomous shuttle vehicle. The LIFT, an environmentally friendly all-electric vehicle, is now being used in projects throughout the world, while the core development is still being undertaken in NZ. The Ohmio LIFT has just been awarded the prestigious Vehicle of the Year title at the Cars Of The Future Self-Driving Industry Awards 2024 in the United Kingdom in November 2024.

The Sunfield vision is ideally aligned with a key intended application of the Ohmio LIFT, in providing environmentally friendly, efficient on-demand transport services within a smart community precinct.

The Ohmio LIFT uses multiple on-board sensor technologies, including highly accurate corrected GPS and multiple LiDARs, to allow the vehicle to drive safely on pre-defined routes without the need for a human driver. These sensors allow the vehicle to be accurately positioned on the road, and to detect and avoid any unexpected obstacles along the intended path of the vehicle.

In the initial stages of deployment, most jurisdictions require a Safety Operator to be present in each vehicle as an additional measure to ensure the safe and reliable operation of the vehicle. When operation has reached a sufficient level of maturity, remote monitoring of the vehicles can be undertaken from a control room, in which case a single person can monitor multiple vehicles, and utilise teleoperation to intervene in the rare case where manual intervention may be required.

New Zealand recognises that Automated Vehicle technology has the potential to trigger significant transformation in the transport system. NZ supports safety and productivity innovation, and welcomes manufacturers and developers wanting to test autonomous vehicle technologies. New Zealand legislation does not specifically require a driver to be present for a vehicle to be legally operated on a public road. At present, proposals for the deployment of autonomous vehicles on NZ roads are assessed and approved on a case-by-case basis by the NZ Ministry of Transport and the NZ Transport Agency Waka Kotahi.

Current Ohmio deployments around the world include:

Location	Project description
New York, USA	Demonstration of 3-vehicle close platooning in 2023. Provision of shuttle service in JFK Airport carpark

Riverside, USA	Ohmio office established in Riverside, CA Commencing project to provide shuttle service in Riverside, CA
South Korea	Multiple active shuttle service projects in multiple cities since 2020. These cities include Gangneung, Sejong, Busan and Suncheon, with a shuttle service in Seoul to commence in early 2025.
Luxembourg	Ohmio office established in Luxembourg Project with partners to demonstrate enhanced vehicle capabilities Provision of shuttle service in Belval neighbourhood
Netherlands	Air-side shuttle service at Schiphol airport
England, UK	Ohmio office established in Milton Keynes Shuttle service projects in multiple locations, including Milton Keynes and Birmingham.
Belgium	Shuttle service at Brussels airport
Finland	Provision of cold weather climate shuttle service in Kuopio
Italy	Commencing project to provide shuttle service in Turin
Sydney, Australia	Project with partners to demonstrate enhanced vehicle capabilities since 2021 Active development of further vehicle capabilities
New Zealand	Vehicle demonstrations in multiple cities since 2017 Active development of further vehicle capabilities

Please don't hesitate to contact me if you would like any further information about Ohmio's vehicles or projects.

Yours sincerely,




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**Andrew Mehaffey**  
**Director – Asia Pacific**  
**Ohmio Automotion Ltd**

📞 +61 411 043 412

✉️ andrew.mehaffey@hmitechnologies.com.au

🌐 [www.ohmio.com](http://www.ohmio.com)

🏠 Unit C9, Block C, 391 Park Road, Regents Park, NSW, Australia 2143



**POTENTIAL DEPLOYMENT**  
**OF**  
**OHMIO LIFT AUTONOMOUS VEHICLE**  
**IN**  
**SUNFIELD**

**INFORMATION FOR CONSIDERATION**

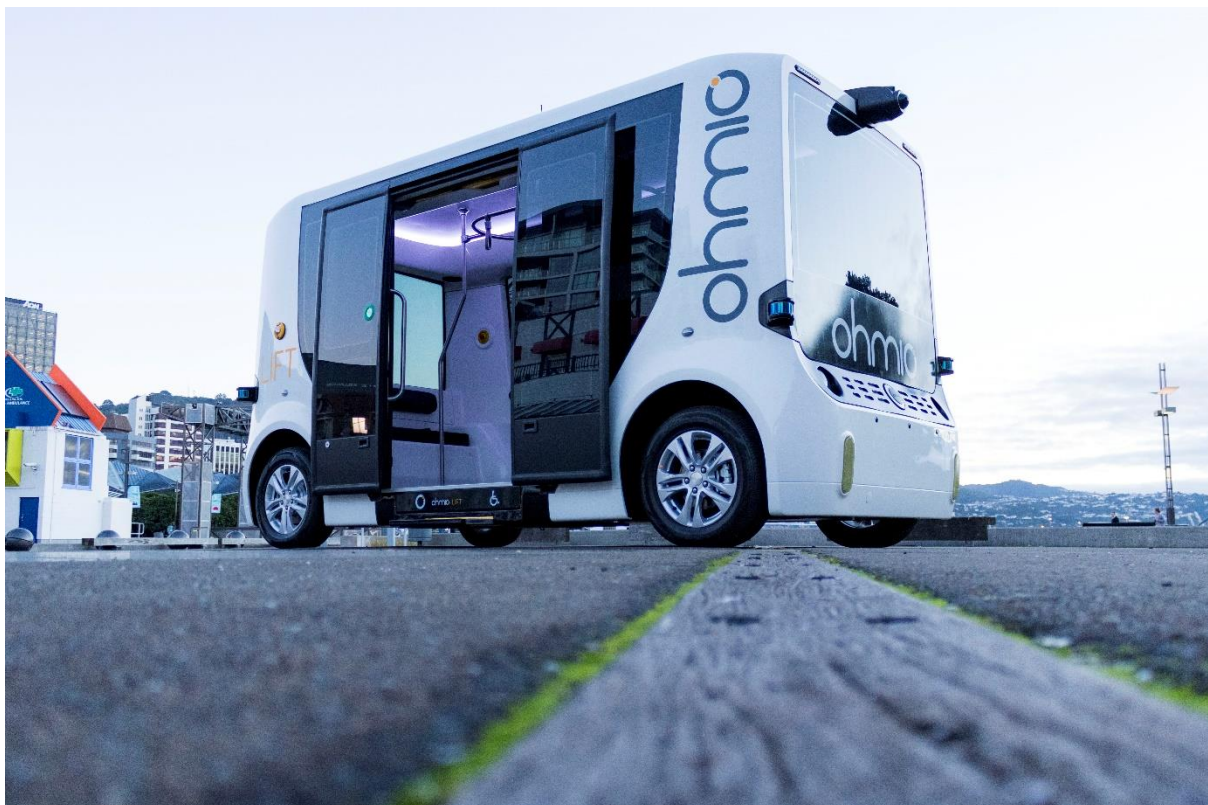


## Introduction

Ohmio welcomes the opportunity to provide further information for the potential deployment of Ohmio LIFT vehicles to provide the advanced Sunbus autonomous shuttle transport services within the Sunfield neighbourhood.

Ohmio is excited to share the valuable insights and expertise we've gained through our autonomous shuttle solutions throughout the world in a variety of scenarios on public and private roads, as well as providing services in multiple airports. This rich array of experiences positions us uniquely to bring lessons learned from diverse jurisdictions directly to Sunfield, ensuring the implementation of our most advanced and efficient solutions in this forward-thinking community.

This document provides information about currently deployed Ohmio LIFT vehicles, however please note that Ohmio welcomes the opportunity to work with partner organisations to adapt specifications and capabilities to suit specific customer needs.



*Ohmio LIFT in Wellington, New Zealand*

## Why Ohmio?

1. **Collaborative Partnership:** At Ohmio, we believe in working together with our clients as a strategic partner, tailoring our solutions to their specific needs and challenges, rather than just providing off-the-shelf products.
2. **Solution-Driven Approach:** We take pride in our ability to identify project requirements and develop customized solutions that seamlessly integrate with the existing infrastructure and environment.
3. **End-to-End Manufacturing:** Ohmio is unique in being the only autonomous shuttle provider that designs, develops and manufactures the entire vehicle in-house, giving us unparalleled control over quality, adaptability, and cost-effectiveness without reliance on third parties.
4. **Industry Expertise:** With over two decades of experience in Intelligent Transport Systems, Ohmio brings an integrated approach to each project, focusing on the entire ecosystem and interconnectivity of components rather than just the vehicles themselves.
5. **Diverse Experience:** Our extensive experience deploying autonomous shuttle solutions in a diverse range of scenarios, including public and private roads, multiple airport environments, locations in Asia-Pacific, Europe and America, and a broad range of climates, ensures that we understand the specific requirements, rules, and safety concerns associated with many deployment scenarios.
6. **Financial Stability:** Ohmio is a self-sustaining company, built on the success of our clients and our own resources. Our organic growth strategy means we avoid the pitfalls that can arise from dependency on external investment.
8. **On-site Support and Added Value:** Ohmio deploys our safety and engineering teams to assess and identify opportunities to optimise projects, providing even greater value and potential benefits to customers.
9. **Robust Testing and Validation:** Ohmio's robust testing and validation processes guarantee the highest standards of safety and operational efficiency for our autonomous shuttle services. Our commitment to data-driven development, continuous improvement, and seamless integration within the existing ecosystems, positions us as an ideal partner for our customers.
10. **Continuous Improvement and Value:** As our relationship with clients evolves, we work to ensure that the value-for-money offered by our services remains high, keeping the project relevant and updated throughout its lifecycle.



11. **Every Project as a Showcase:** Ohmio treats each new project as an opportunity to demonstrate our expertise and capabilities. This approach aligns our winning strategy with the success of our clients' projects.

We look forward to the opportunity to demonstrate our commitment to innovation, efficiency, and safety.

Ohmio currently has international presence in multiple locations around the world, and we are happy to discuss how best to provide the appropriate levels of support for our projects using a combination of current and additional resources.



*'Platoon' Demonstration of Ohmio LIFT vehicles at JFK Airport, New York*

## Service Options

### On-road Passenger Shuttle Service

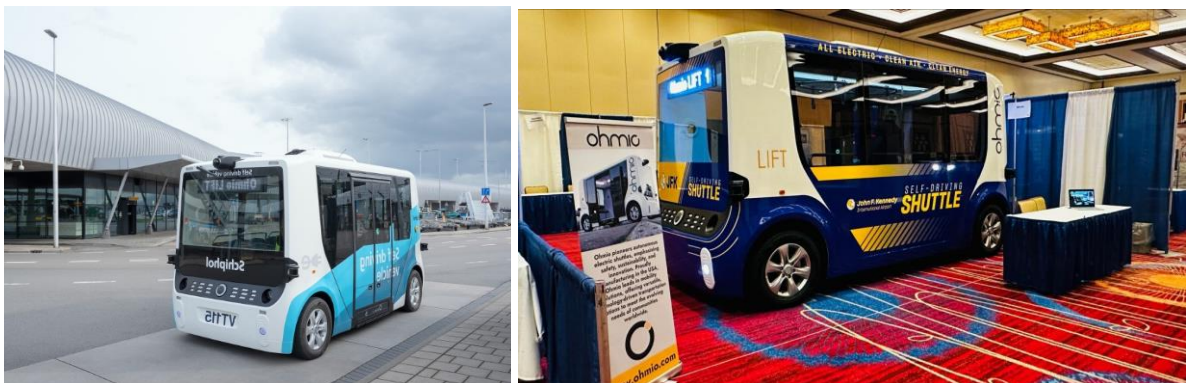
Ohmio has been successfully providing passenger shuttle services in numerous locations, in both private and public road environments. For example, 8 Ohmio vehicles are providing public passenger shuttle services in mixed traffic on public roads in multiple cities in Korea. Similar shuttle services could be provided to convey passengers in Sunfield.



*Ohmio LIFT vehicles in Luxembourg and Korea*

### Air Side Shuttle Service

Ohmio has been successfully providing an airside shuttle service at Schiphol Airport, Amsterdam for use by airport workers. The shuttle has been operating on a fixed route in mixed traffic with other airside vehicles. Similar services could be provided at other Airports.



*Ohmio LIFT vehicles at Schiphol and JFK Airports*



## Dedicated Service Vehicle

The Ohmio LIFT vehicle has been designed to be adapted to a range of vehicle types to provide dedicated services other than as a passenger transportation vehicle.



*The Ohmio LIFT has been designed to be easily adapted to provide dedicated services*



*Ohmio LIFT in Kuopio, Finland*

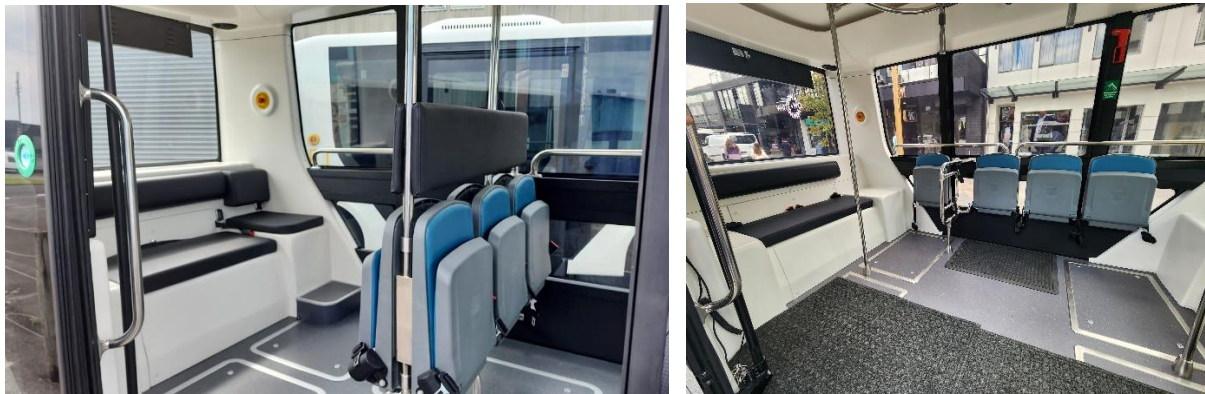


## Ohmio LIFT Features

**Vehicle Capacity:** The Ohmio LIFT vehicle can be supplied in a range of configurations to accommodate a combination of seated and standing passengers, up to a maximum of 20 passengers.

Seating configuration options provide from 4 to 12 seats with seatbelts.

An integrated wheelchair lift and fixing point for wheelchairs inside the vehicle can also be optionally provided.



*The Ohmio LIFT is available with multiple seating configurations*

**Maximum Speed:** The Ohmio LIFT is capable of operating up to a maximum speed of 40km/h subject to the operating environment.

**Vehicle Supervision:** In the initial stages of deployment a Safety Operator should be present on each vehicle to ensure the safe and reliable operation of the vehicle, and to provide manual intervention if required.

When operation has reached a sufficient level of maturity, remote monitoring of the vehicles can be undertaken from a control room, in which case a single person can monitor multiple vehicles, and utilise teleoperation to intervene in the rare case where manual intervention may be required.

**Online and On-board "Black Box":** Ohmio has developed a sophisticated "black box" system that records all activities within the vehicle, as well as information collected by external sensors. This comprehensive log data provides a detailed account of the vehicle's decision-making process, contributing to our robust testing and validation procedures.

**Long-term Data Storage and Cloud Accessibility:** The "black box" log is stored within the vehicle for months of operations and is uploaded to the cloud every hour. This

allows our team to access and analyse the data for safety, reliability, R&D, and continuous system improvement, and enhancement.

**Custom API for Third-Party Integration:** Ohmio has developed its own API to facilitate real-time data sharing about the vehicle's operation. This enables third-party providers to interface with the vehicle, seamlessly integrating it into the larger ecosystem and providing instant information about its performance.

**Data-driven System Development:** Our ability to collect, store, and analyse extensive operational data enables us to develop and test new systems against previous operations. This approach allows Ohmio to achieve exponential testing hours based on the detailed data gathered from prior deployments, ensuring continuous improvement in safety and efficiency.



*Ohmio LIFT in Milton Keynes, England*