

The Darwin Autonomous Shuttle: an overview

What is the Darwin Autonomous Shuttle (DAS)?

The Darwin Autonomous Shuttle, or DAS, is a minibus-sized, purpose-built autonomous vehicle, powered by electricity. It can carry up to fifteen passengers.

The DAS was originally manufactured by Navya, an experienced French developer of autonomous vehicles. Similar Navya autonomous shuttles have been used at sites across the world.

Where does the DAS operate, and who can ride it?

The DAS service launched on 29 November 2021 at Harwell Science and Innovation Campus in Oxfordshire.

The DAS provides a regular passenger transport service to campus residents. It drives autonomously and stops at campus bus stops along the way, allowing passengers off and on.

The DAS travels two routes on the campus: one along Fermi Avenue and one along Eighth Street. These routes are outlined below, in orange and blue respectively:



Satellite image © Google

The point at the bottom right where the two routes converge is ECSAT, the European Space Agency building on Fermi Avenue.

To board the shuttle, you will need to show your Harwell Science and Innovation Campus pass or guest pass to the safety operator. There is no cost to ride the shuttle.

What are the goals of the DAS service?

In addition to providing transportation, the DAS service has several goals:

- To demonstrate how autonomous vehicles can be used to provide public transport in a real-world setting.
- To demonstrate Darwin's [ubiquitous communications technology](#), which enables the shuttle to switch seamlessly between terrestrial and satellite networks, allowing it to remain connected at all times.
- To inform Aviva's development of insurance packages for autonomous vehicles.

What is the role of the safety operator?

According to UK regulations, a safety operator must monitor self-driving passenger services similar to the DAS.

Although the DAS does not have traditional driving controls, such as a steering wheel, it does have safety controls that can be used to operate the vehicle in an emergency.

Whenever the DAS is in operation, one of our safety operators will be on board to greet passengers and use the safety controls if required.

Our safety operators are experienced public transport drivers and have undergone specific training to use the DAS.

What other safety measures are in place?

The DAS service has been planned following the [CCAV's Code of Practice: Automated vehicle trialling 2019](#) and the [BSI's PAS 1881:2020 Assuring the safety of automated vehicle trials and testing](#).

The DAS's manufacturer has fully mapped out the routes the shuttle is travelling. The shuttle has been programmed with this mapping information, to ensure it knows what to expect and what to look for.

Darwin has also commissioned an independent route safety assessment. This was carried out by an experienced independent company, which concluded that the two routes for the service were safe.

The shuttle is equipped with LiDAR sensors, cameras, odometry sensors and a GNSS (GPS) antenna to help it position itself and detect obstacles.

A specially trained maintenance team is on standby, ready to deal with any mechanical issues.

Darwin's partner Telefónica Tech provides cybersecurity support.

Is the DAS registered and insured?

The DAS has been registered with the DVLA for use on public roads. The licence plate number is FX21 HWO.

The shuttle is insured by Aviva.

Who is behind the service?

The service is being run by Darwin Innovation Group, and the shuttle's safety operators are employed by Darwin.

As mentioned, the DAS is manufactured by Navya and insured by Aviva.

The service is also supported by our other ecosystem partners, including Harwell Campus/RAL STFC, the UK Space Agency, the European Space Agency, Virgin Media O2, Telefónica Tech and Hispasat.

We are grateful for the support and advice we have received from the CCAV throughout our preparations for the service launch.

What personal data is being collected by Darwin, and how will it be processed?

For information about data collection and processing, please take a look at our [privacy policy](#).

How can Darwin help my organisation operate self-driving vehicles?

With our experience of setting up and operating a self-driving shuttle service, we'd be delighted to help your organisation do the same. We can help you with every step of the process: obtaining the vehicle, commissioning the route, securing insurance, training the safety operators, gathering and processing data. [Get in touch](#) to set up a meeting, and we'd be happy to talk about your needs.