

Ultra-Low Emission Zone

How Siemens Mobility Limited is helping London take a step towards a healthier, more sustainable future.

A central IT in-station service management centre is operated on a 24/7, 365 days a year basis by a dedicated Siemens Mobility team with our maintenance engineers providing local 1st and 2nd line support. Third line support is provided by technical experts at Siemens Mobility in Poole, UK.

The system is integrated with the roadside sensors and ANPR cameras which form part of TfL's existing Congestion Charging scheme.

ANPR cameras identify and register every vehicle that enters the ULEZ - 24 hours a day, 365 days a year. This information is then transmitted to a dedicated and secure Siemens Mobility

Background

Cities and urban areas around the world are experiencing ever-growing volumes of traffic and congestion. As a result, air quality levels are a major concern, with national governments and local authorities increasingly taking measures to improve them.

How does London's ULEZ operate?

On 8 April 2019 the Mayor of London launched the world's first Ultra Low Emission Zone (ULEZ) in the existing Central London Congestion Charge Zone.

The purpose of the ULEZ is to improve air quality in and around central London by reducing the number of older more polluting vehicles that enter the central zone.

ULEZ operates 24 hours a day, every day of the year. Vehicles must meet strict emission standards to drive in the ULEZ area. The system uses a network of Automatic Number Plate Recognition (ANPR) cameras to enforce compliance with older, more polluting non-compliant vehicles that do not meet the strict ULEZ emissions standards being required to pay a daily charge or incur a penalty charge.

From October 2021, the ULEZ area will be expanded to include the whole of inner London, bounded by the city's North and South Circular roads.

The technology behind ULEZ

Siemens Mobility provided the Transport for London (TfL) ULEZ enforcement system in London on a Design, Build, Operate and Maintain basis, covering both the roadside equipment and central IT in-station.



Central London Ultra Low Emission Zone operates in the same area as the Congestion Charge Zone

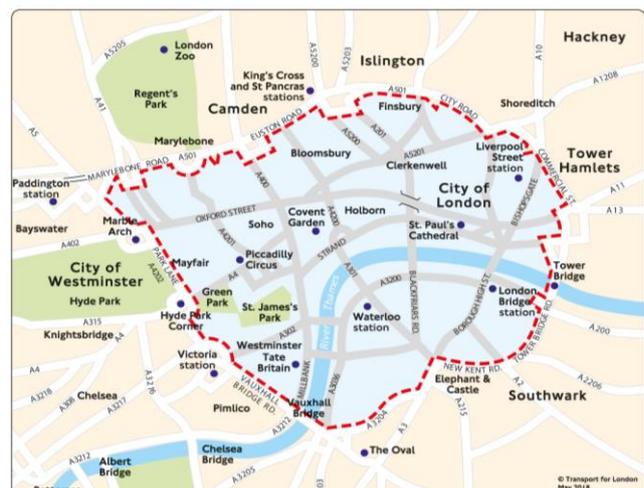
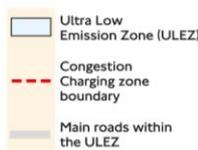


Image courtesy of TfL.



data centre, where our ULEZ in-station software determines the compliance of the vehicle.

The system is capable of processing an immense volume of data, which has to be processed and stored in such a way it can be used as a basis for notifications of charges and penalties. The information the system has to constitute a strong basis of evidence.



ULEZ and Congestion Charging signage in Central London.

Vehicle data from the ANPR camera network is also used by TfL for scheme analysis and reporting, and to assist with their traffic management operations.

Six-month results

After six months of operation, research by the Mayor of London's Office found that on an average day, 13,500 fewer 'non-compliant vehicles' were driven in the zone since the scheme was introduced in April 2019, compared to the previous month, with 74% of vehicles driving into the zone being compliant with the new standards.

This has translated into real improvements in air quality, including a reduction of nitrogen dioxide concentrations levels by 36% at roadside monitoring sites in the zone since 2017. Nitrogen oxide emissions have been reduced by 200 tonnes, and carbon dioxide emissions by 9,800 tonnes.

Sadiq Khan, the Mayor of London, said: "This shows how bold action reaps rewards – just one month after launching the world's first ULEZ, leading the way for cities around the globe, we have already seen a significant impact on the types of vehicles driving in the centre of our capital and polluting our air.

"Nearly three-quarters of the vehicles driving into central London each day now meeting the standards required to turn around this public health crisis. It's vital this compliance is sustained to truly make a difference to our air quality."

Alex Williams, Transport for London's director of city planning, said: "Everyone benefits from clean air, which is why it is great to see that so many people have responded to the Ultra-Low Emission Zone, which has resulted in a reduction in the number of polluting vehicles in the capital.

"ULEZ will nearly halve road-based NOx emissions in central London, and in addition to our work to green up the bus fleet and encourage the taxi industry to switch to cleaner vehicles, together we will help to tackle this public health crisis."

In addition to Siemens Mobility's ULEZ work, the company also has a suite of solutions that are helping highway planners, engineers and managers to better understand and manage the city's traffic efficiently and to make a positive impact on air quality. The company is also supporting the increasing use of Electric Vehicles by providing reliable, rapid chargers, all of which underpins Siemens Mobility's commitment to delivering a more efficient transport network and a cleaner, healthier, more sustainable and more attractive environment.

The Siemens Mobility ULEZ solution:

- Automatic Number Plate Recognition (ANPR) cameras
- Low Emission Zone Enforcement installation software and Evidential Record capture
- Secure hosting of IT infrastructure
- Operation and maintenance of complete ULEZ solution
- Performance dashboards for proactive operational support and KPI reporting
- Consultancy Services for modelling and data analysis

Siemens Mobility Limited

Sopers Lane

Poole

Dorset

BH17 7ER

Contact: info.mobility.gb@siemens.com

