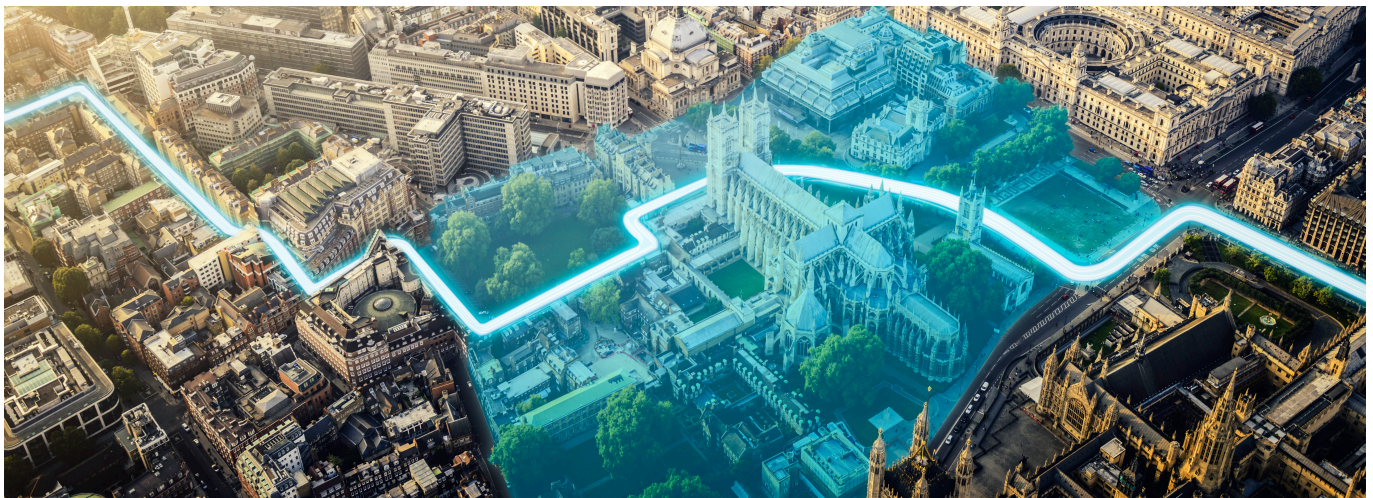




ZONE MANAGEMENT

A part of Volvo Connected Services



Full control

Zone Management is a Volvo service that helps the vehicle to comply with local regulations on noise, speed and emissions. It can also improve energy efficiency. The benefits for the city are increased safety, emission control, smoother traffic flow and reduced energy consumption. Zone Management is connectivity-based. The drivers are notified when they are in environmental or safety zones, and the bus automatically adjusts driving mode and acts accordingly, without intervention from the driver.

Create geographical zones

By setting geofences, and sometimes also measuring the bus routes, and downloading them to the Fleet Management tool, it is possible to create geographical zones in order to apply recommendations, rules and restrictions valid for vehicles entering such zones. By following the geographical position of the vehicle, the system makes the vehicle adjust automatically to the recommendations and restrictions given to specific zones.

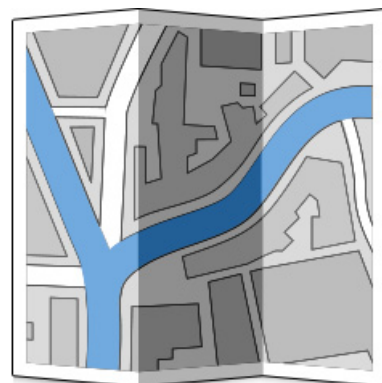
Environmental zones

An increasing number of cities restrict traffic with combustion engines in sensitive areas, such as zero-emission zones. Geofencing is used to allow vehicles to drive through the zero-emission zone in electric mode, without a combustion engine running.

Volvo's geofencing-based environmental zones switch the Electric Hybrid to electric mode. This allows the bus to drive through zero-emission zones without the combustion engine

running. Route and vehicle data is used to calculate and predict energy consumption, thus securing full electric drive throughout the zero-emission zones.

Volvo's full hybrid vehicle S-Charge can also drive in electric mode in zero-emission zones. Their length and locations depend on the route characteristics. Therefore, we carry out detailed analysis of each route to define the best locations for the zones.



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Safety zones

By defining active low-speed zones, it is ensured that the buses always keep the speed limits. The driver is informed when entering the zone, and the vehicle reduces the speed to the specified speed limit. This feature is excellent for increasing the active safety around sensible areas such as schools, large bus stops and city centres. The feature can be used for both electromobility solutions and diesel buses.

Zone characteristics

The environmental and safety zones are given attributes. These may be a speed limit, a time frame or a calendar controlling other parameters. A zone can be valid for all or some of the vehicles in the fleet, for example only vehicles linked to a specific route.

Coaching zones

Coaching zones help the driver to drive more economically, safely and in a way that increases passenger comfort. The feature can be used for both electromobility solutions and diesel buses. Coaching zones can be used in combination with the I-Coaching service. With I-Coaching, the driving parameters revving, idling, braking, accelerating, speeding and cornering are continuously monitored onboard. Using I-Coaching, a threshold level for each of the driving parameters is set, which is valid everywhere at all times. With the addition of coaching zones, it is possible to define zones and assign specific threshold levels to each zone, including days of the week and times of the day when the thresholds are valid.

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