

# Recommendations for Implementing speed assistance services in vehicles

**Project:** HasT – Speed-secured traffic zone in urban environments  
**Funding Agency:** Skyltfonden – Swedish Transport Administration  
**Date:** January 2025



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## INTRODUCTION

HasT – Speed-Secured Traffic Zone in Urban Environment was a research and innovation project funded by the Swedish Transport Administration's Skyltfond, between 2023 and 2024.

The aim of the project was to conduct a large-scale demonstration in a city centre where various modes of transport were speed-secured using digital solutions, including geofencing.

10 partners participated in the project: Allmiljö, Dagab, Enköpings kommun, Enköpings Åkeri, Keolis, Martin & Servera, Småfrakt, VTI, V-tron, and the project manager CLOSER.

The demonstration took place in central Enköping and was confined within a geofenced zone, covering an area approximately 2x2 km. Around 100 vehicles, including passenger cars, trucks, and buses, were part of the project. Services used included Volvo Zone Management<sup>1</sup>, Scania Zone<sup>2</sup>, and a third-party solution from V-tron<sup>3</sup>.

The purpose of this report is to summarise the project participants' experiences and provide concrete recommendations to organisations interested in implementing similar solutions. More information about the project, including videos, an evaluation report, and the final report, is available on the project website<sup>4</sup>.

<sup>1</sup> <https://www.volvobuses.com/se/services/zone-management.html>

<sup>2</sup> <https://www.scania.com/scania-zone.html>

<sup>3</sup> <https://v-tron.nl/en/isa-fit/>

<sup>4</sup> <https://closer.lindholmen.se/en/project/hast-speed-controlled-traffic-zone-urban-environments>

## About the Project Pilot

- The project partners jointly defined the geographical boundaries.
- The municipality mapped the zone using its GIS tools and communicated it to the project partners.
- Before the project began, an assessment was conducted to identify which vehicles were compatible with the services to be tested in the project.
- The transport operators used Volvo or Scania vehicles and contacted the respective manufacturers to activate the service (Scania Zone or Volvo Zone Management). The services included software that enabled the transport operators to draw zones themselves using geofencing, based on the map provided by the municipality.
- Småfrakt and Enköping Municipality also included other vehicle brands in the test. For these, a third-party solution from V-tron, a project partner, was used. V-tron handled everything from hardware installation and loading the designated zone to quality assurance, maintenance, and more.
- Meanwhile, VTI conducted surveys and interviews with drivers, analysed speed data, and distributed a public survey.

## RECOMMENDATIONS

### Getting started as a Transport Operator

How do you get started? It depends slightly on who you are. If you are a transport operator, start by contacting your vehicle supplier(s) and asking about the services they provide to help you maintain speed limits.

#### *Intelligent Speed Assistance (ISA)*

Keep in mind that all new vehicles, starting in 2024, will come equipped with Intelligent Speed Assistance (ISA)<sup>5</sup>. This is a driver support system that either warns the driver when the vehicle exceeds the maximum allowed speed or automatically adjusts the vehicle's speed.

Vehicle manufacturers can choose between different solutions to warn or adjust speed when exceeding the maximum allowed limit. Visual warnings can be complemented by: audible warnings, vibrations (e.g., in the accelerator pedal), increased resistance when pressing the accelerator pedal, or reduced throttle response.



Acoustic



Vibration



Pedal resistance



Reduced throttle

<sup>5</sup> [https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=PI\\_COM:Ares\(2021\)2243084&rid=1](https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=PI_COM:Ares(2021)2243084&rid=1)



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### *Commercial Services and Available Solutions*

There are already commercial services on the market based on similar technology. For example, Scania Zone and Volvo Zone Management use reduced throttle response, and their services also allow transport operators to map their own zones and set custom speed limits that activate the service.

Other vehicle brands, such as Volvo Cars, Volkswagen, BMW, Tesla, Ford, and Mercedes-Benz, can offer services with reduced throttle response, depending on the vehicle model.

There are also third-party solutions available today, mainly for retrofitting older vehicles. These solutions can operate in various ways. Note that hardware installation in the vehicle is often required to activate the service.

The mentioned services can generally be temporarily overridden by the driver but will then reactivate.

Be curious and ask the vehicle manufacturer what services they can offer, how the service works in detail, what data can be accessed, and who can access it.

### **Getting started as a Transport Buyer**

A good first step for transport buyers is to maintain open communication with your transport providers. Ask about how they work with traffic safety, what services they use, and what data they can aggregate, for example, to ensure compliance with speed limits. Data obtained can provide insights into how often speed limits are adhered to, how frequently services are overridden, and fuel consumption.

Better traceability is often a win-win for both you and your transport providers. You'll also learn more about the available technologies and the possibilities for follow-up when incidents occur.

It's not uncommon for transport buyers to receive complaints from passengers or the public about issues such as speeding at a specific time and place. Driver assistance services make it easier to follow up and address these concerns.

This is not about pointing fingers but rather about raising awareness and fostering good cooperation with a focus on traffic safety.



Transport buyers can also set clear requirements during procurement. Ensure that traffic safety and working conditions are prioritised and that there are clear processes for handling deviations, such as complaints from the public.

## Getting started as a Road Operator

One of the road authority's most important tasks is to build, operate, maintain, and develop roads that are safe. It is usually other authorities that are responsible for supervision. Road authorities can also have other roles, such as transport buyers.

But what can you do as a road authority? The road authority can play an important role in bringing together key stakeholders who influence road safety. For example, at the local level, you can ensure good cooperation and communication between transport buyers, carriers, and citizens (who are also road users). You need to understand the enabling technologies available on the market and how you can support the implementation of solutions that enable better road safety.

One thing you can do to improve driver assistance functions in vehicles is to ensure that speed signs are well-maintained and correctly positioned in relation to traffic regulations.

Another important measure is to ensure that traffic regulations are machine-readable, up-to-date, correctly interpretable, and can be communicated to road users, for example via the National Road Database (Swedish NVDB). If possible, you should also aim to include temporary speed changes, such as those during roadworks.

The road authority can also identify road segments where there are issues with maintaining speed, thereby contributing to the delimitation of which roads should be geofenced.

## Implementing as a Transport Operator

It depends a bit on the conditions you have. As a carrier, you have now evaluated whether there are solutions you can use to maintain speed. Our recommendation is to be curious, explore, and test the technology and services available. If you now choose to explore the possibility of testing and



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implementation, here are some recommendations:

### *1. Close collaboration with the service provider*

If you don't have prior experience with a particular solution, it's important to contact and ask the service provider, such as the vehicle manufacturer, for help. Even when you think you understand how everything works, questions will arise that you can't answer on your own. Some questions worth asking include:

- What does the cost model look like? ISA will be standard on all new vehicles, while other services may cost a couple of hundred SEK per month per vehicle.
- What is required to get the service up and running, and how long does it take? (installation, software updates, etc.)
- What does the service look like, and what opportunities/limitations does it have?
- Who is responsible for what, for creating zones, who addresses any deficiencies, etc.?

- What does the communication look like during the operation of the service? Who communicates with whom, and about what?
- What data is available through the service, in what format is it available, and who can access it?

### *2. Measurability and follow-up*

Think early on about the purpose of the service and how you want to and can follow up. Consider potential gains, losses, or risks that may arise. Don't only think about investment costs but also potential operational efficiencies and cost savings. Some examples of what the service can affect include:

- Number of accidents
- Vehicle damage
- Driver work environment
- Fuel consumption
- Time savings/losses

It is desirable to conduct a current situation analysis on the data you already have. Then, create a plan for how you will measure and follow up on the factors you want to monitor more closely. As mentioned in point 1, ask the service provider about the data they can provide.



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Several of these potential improvements can be measured quantitatively, but qualitative methods will likely also be needed, such as interviews and surveys. Don't assume that all drivers will tell the truth to their supervisor, so think through how you will proceed.

Negative reactions and effects may also arise, for example, from drivers regarding the service. It's important to understand the reasons behind this. It could be related to a stressful work situation where drivers compensate by speeding to keep up with their tasks. In such cases, this type of service may be perceived as an obstacle.

Therefore, it's essential to follow up and see if, for example, schedules and timetables need to be adjusted.

### 3. Anchoring

The initiative to test and implement this type of speed-assisting service may have come directly from management or from other parts of the organization. Regardless of where the initiative originates, early anchoring and good communication with key stakeholders are necessary, such as:

- Management
- Transport byers
- Drivers
- Union representatives
- Health and safety officers
- Other employees, e.g., IT and maintenance

It is important to showcase and visualise how the intended service will look, how it will impact daily operations, and what measures are being taken to ensure that the service does not introduce other risks.

If possible, invite and demonstrate how the technology works, or why not allow the invited guests to test it themselves and experience it first-hand.

It is also important, already in point 2, to create a clear understanding of the purpose of the service, what you want to improve, and highlight the potential improvements such as better working conditions, contributing to road safety and fewer accidents, greater savings through lower fuel consumption, fewer vehicle damages, etc.

Our experience is that many are willing to cooperate, as long as they feel included and that their opinions matter. Therefore, it is also important to maintain a continuous dialogue, not only before the actual implementation of the service.



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### 4. Preparation and test environment

How should the implementation be carried out? It depends a bit on which service you choose and how many vehicles are involved.

Some recommendations we would like to share are as follows:

- Involve key competencies from the start, such as IT, maintenance managers, etc.
- Always begin with one or a few test vehicles before including more. This is recommended regardless of which service you choose. It gives you the opportunity to test, identify, and address problems early in the process.
- Choose test drivers who will use the system daily, so they have a chance to experience the system and provide feedback on how the service works and what can be improved.
- If possible, the person responsible for the implementation should also test drive the system to better understand how the technology works in practice.
- Don't rush to activate the service in all vehicles before having a test period, and ensure that the test group is satisfied with the results. After that, you can gradually start activating the service in the other vehicles.
- Another limitation to consider is geographical. Services work differently in different areas. For example, both Scania Zone (2024) and Volvo Zone Management (2024) require the transport operator to create their own geofencing zones and choose the applicable speeds. These services thus require more manual effort to ensure that the zones are correct and drawn according to traffic regulations.

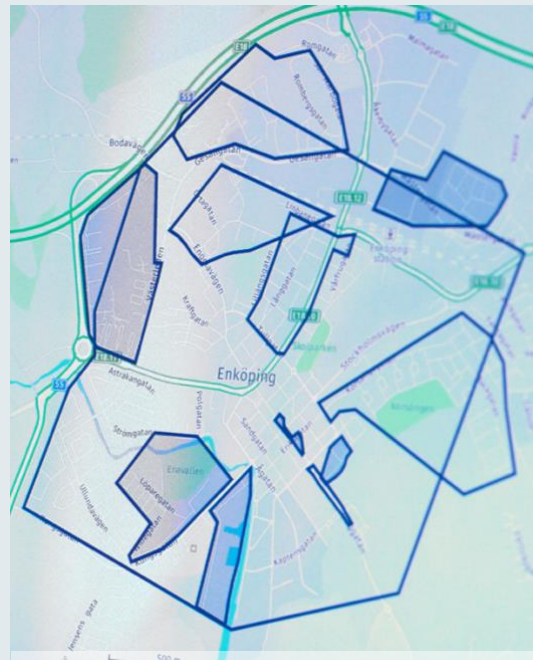


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Hopefully, these services will evolve and become more automated in the future. Until then, it's better to choose the zones that are most important to you, such as around schools or in areas where accidents occur more frequently. The road operator should also be able to assist with providing information on speed limits or temporary speeds (e.g., during roadworks).

- A third limitation that can be made is regarding the speed limits within the zones, i.e., whether the service supports geofencing. In most cases, it is sufficient to follow the prevailing traffic regulations. However, there may be instances where you want to implement lower speeds, such as in and around terminals and depots, near sensitive infrastructure, or in areas where you have had significant issues with accidents, damage, etc. Test and assess, but ensure there is mutual understanding regarding this.





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### 5. Integration into daily operations

After you have tested and found a solution you are satisfied with, it is advisable to slowly scale up. Scaling up involves both activating the service in more vehicles and engaging more drivers. Therefore, it is important to continue dialogues with those affected by the system.

You will likely need to engage and train more site managers, traffic planners, etc., on how to work with the available tools, e.g., creating zones, extracting data, and generating statistics.

### Implementing as a Transport Buyer

As a transport buyer, you can support the transport operator in planning and implementing the services. It's beneficial to get involved early in the process to understand how these services might affect the transport operations.

Maintaining speed or reducing speed in certain areas can have an impact on timetables and schedules.

Unfortunately, it is not uncommon for a stressful work environment to lead to

speeding in order to keep up with tasks. Therefore, it is crucial for the transport buyer to understand this and engage in a dialogue with the transport operator on how operations can be adjusted without compromising traffic safety and the work environment.

If you work with multiple transport operators, you have an opportunity to gather and inspire other operators to follow suit and use similar services to maintain speed limits.

### Implementing as a Road Operator

In the implementation process, you as a road operator can continue to play an important role in bringing together transport operators and transport buyers and showcasing best practices.

Equally important is maintaining communication with transport operators even after the implementation of speed-supporting services. Issues will likely arise, such as the placement of speed signs not matching the speed displayed in the vehicle. The road operator can also proactively inform about upcoming construction and roadworks that might impact speed limits.



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