VOLVO

FACT SHEET

I-SEE

I-See

I-See is a function to enable better gear selection in order to save energy. Map information is utilised to give predictability for I-See, meaning predictive cruise control. As a result, I-See adapts the speed of the vehicle in order to utilise the kinetic energy going over hills in the optimal way.

The optimal energy-saving performance is reached when the transportation route includes frequent inclines and declines, with a high utilisation of cruise control. During these conditions, energy savings up to 5% can occur.

While driving, the system obtains information about approaching gradients. This makes it possible to control and adjust the truck's progression (for example, speed, retardation and choosing gear) in order to optimise energy consumption and drivability.

Each version of I-See requires an I-Shift transmission.

DRIVER APPEAL

- Offers better consistency and knowledge about the route, which enables a smoother ride.

ENERGY EFFICIENCY

- Makes it easier for the driver to achieve consistency in an energy efficient driving style.
- Better speed control.

ENVIRONMENT

- Reduced energy consumption leads to lesser emissions for diesel and LNG vehicles, and longer battery range for electric vehicles.

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Sales variants
Pre-view topography

PVT-BAS	Basic topography information, learning by GPS positioning and the recording from the vehicles first time driving the route.
PVT-MAP	Map based topography information using a high-resolution commercial topography map.
PVT-MTM	Map based topography information that is obtained by using a high-resolution commercial topography map. The map includes road information, such as speed limitations, curvature and roundabouts. This is standard in all European markets.

Sales variants
Pre-view topography subscription

PVTS5	Preview topography service, five-year prepaid subscription for PVT-MAP and PVT-MTM.
PVTS6	Preview topography service, six-year prepaid subscription for PVT-MAP and PVT-MTM.
PVTS7	Preview topography service, seven-year prepaid subscription for PVT-MAP and PVT-MTM.
PVTS8	Preview topography service, eight-year prepaid subscription for PVT-MAP and PVT-MTM.

Different generations of I-See

The I-See system can vary depending on the sales area and emission level.

The first generation of I-See was PVT-BAS, followed by PVT-MAP. PVT-MTM is the latest generation, offering the most advanced features that enables premier energy efficiency.

Basic version (PVT-BAS)

The basic version of I-See uses GPS coordinates, saved in the transmission's electronic control unit, to register the vehicle's position. Meaning that the vehicle undergoes self-guided training.

The road topography is recorded the first time that a road is travelled when cruise control or adaptive cruise control is active, which in turn activates I-See.

By using cruise control or adaptive cruise control to predict gradients, the system optimises for a low energy consumption and drivability by adjusting speed, retardation, and gear selection based on approaching gradients.

Map based version (PVT-MAP)

PVT-MAP uses GPS coordinates, in combination with a high-resolution commercial topography map.

As the truck moves, map data for the upcoming path is downloaded from the cloud. No previous travel on the specific road is needed to gain knowledge about gradients.

The high-resolution map indicates changes in elevation to the vehicle through TGW. If there's a connection issue, downloaded data covers a few kilometres in front of the vehicle.

The driver may notice certain features. In a flat terrain, the truck may adjust the progression slightly around the set speed slightly for energy efficiency, visible on the speedometer (ACC deactivates this). In a hilly terrain with ACC, the time gap to the vehicle in front is flexible, prioritising safety while saving energy.

Map and traffic information based (PVT-MTM)

The version that uses a high-resolution map, which includes road information is the top of the line. PVT-MTM is a further development of the map-based version of I-See.

The aim is to enable the use of cruise control and I-See more frequently in a broader scope of traffic situations to avoid unnecessary accelerating, retardation and gear shifting, which in turn improve the energy efficiency and the driving experience.

Aside from GPS coordinates, the topography map used by PVT-MTM contains information about speed limits, road curvature and roundabouts. This ensures the best gear and speed for each traffic situation, creating the most optimal scenarios for energy efficiency.

Map information might not be fully complete, and it is always the driver's responsibility to operate the vehicle in a safe manner.

Preview topography subscription

The map licence is active for five years. Afterward, the truck transitions to basic service. The service can be extended through additional subscription.

When the pre-paid subscription period has expired this Agreement will automatically terminate.*

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The initial subscription period may vary depending on vehicle model, TGW technology, and other factors. Subscription is subject to change or cancellation at any time by Volvo with advanced notice to the customer. Volvo does not assume responsibility for technological obsolescence of the TGW or technical capabilities of the product, or for failure to use (covers any kind of use, non-compliant with Volvo instructions) or misuse of the product (refers to abuse/improper use, by reference to the purpose of the product or service), or for third-party supplier services or products.

***If the vehicle is equipped with the I-See service, the applicable terms for the I-See service are available at https://www.volvotrucks.com/en-en/services/agreements/service-agreement.html.**

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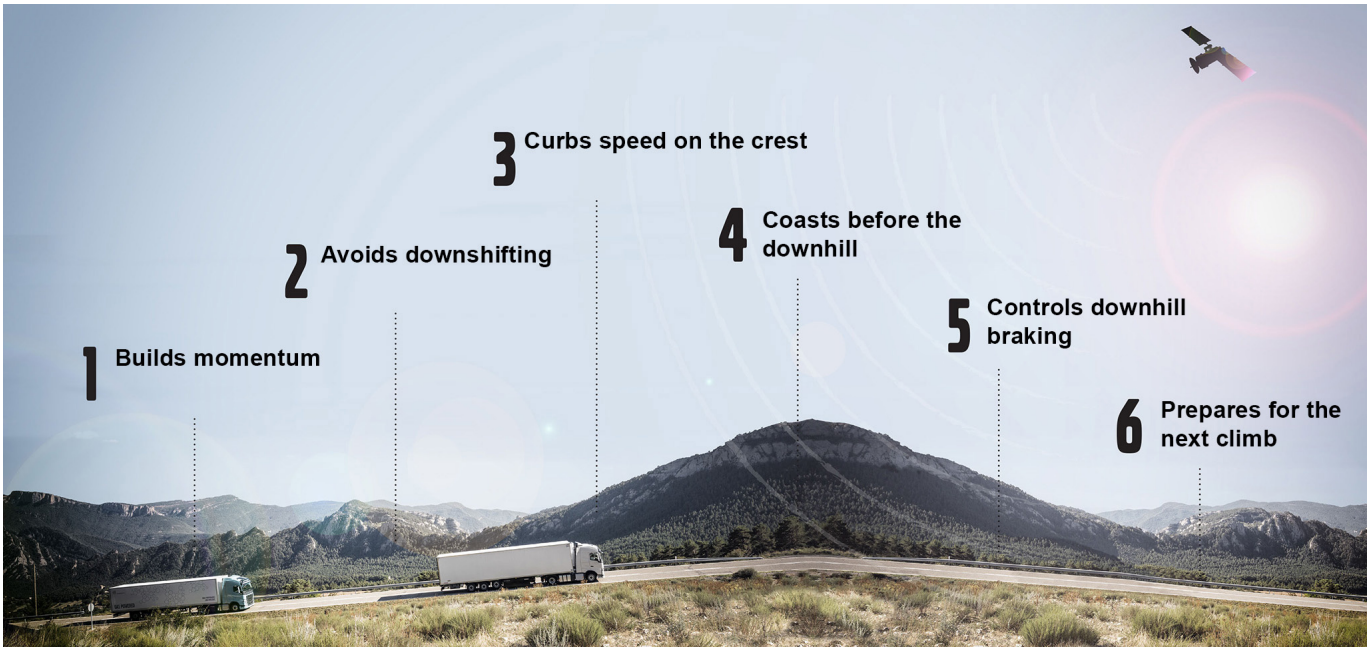

Example with map-based I-See. I-See use GPS-positioning to secure topography data.

The way I-See works

I-See provides very consistent vehicle behaviour over the route and time. I-See achieves energy savings in several steps:

1. Builds momentum

I-See knows that a hill is ahead, so the truck may accelerate and remain at the highest gear for a longer time. This feature offers improved speed control.

2. Avoids downshifting

By preventing needless gear changes, I-See makes the uphill climb.

3. Curbs speed on the crest

When the downhill is approaching. I-See stops the truck from accelerating unnecessarily. I-See acts more energy efficient at a crest going over a hill.

4. Coasts before the downhill

To save energy and minimize braking. I-See temporary disengages the driveline just before a downhill slope. This is the start point for curbing speed.

5. Controls downhill braking

I-See knows where one slope ends and the next begins, and applies the brakes if needed, for the maximum efficiency. This feature gives better speed control.

6. Prepares for the next climb

When it's time to go uphill again, I-See lets the truck coast, building up speed and momentum for an effortless climb.