



Audi A6

2018

Highway Assist System



AD System Name	Adaptive Cruise Assist	
Standard Active Safety Systems	AEB Car-to-Car	●
	AEB VRU	●
	LSS	●
	SAS	●
Available on	<u>A6</u>	

Comments

Adaptive Cruise Assist on the Audi A6 gives the driver a moderate level of support while maintaining the impression of the driver being in control with the car assisting them. The system is readily perceived as a system to assist the driver which aligns well with the information provided.

The name "Adaptive Cruise Assist" clearly indicates that the system is a driver-assist system, not an autonomous one, and is not readily misunderstood. The limited scenarios tested provide a similar impression. The handbook mentions that the system has specific limitations for particular driving conditions, but the system is not geofenced and can therefore be engaged on any road with distinct lane markings. The legally-required hands-off warning tells the driver to keep his hands on the wheel, but slight steering input on the steering wheel is sufficient to suppress this warning. In case of no response to the warning, the system will bring the car to a controlled stop.

Within the longitudinal scenarios, the A6 shows a moderate level of support in the slower-moving and braking car scenarios. When approaching a stationary car, the vehicle provides support up to 80 km/h above which the vehicle will not even warn the driver of an imminent collision. In the 'cut-in' and 'cut-out' scenarios, the system offers moderate support, the driver being primarily required to handle the situation.

Adaptive Cruise Assist provides subtle steering support resulting in a good balance between the driver and the system in the S-bend scenario. In the absence of lane markings or other vehicles to acts as a guide, Adaptive Cruise Assist will change to a passive mode and will resume assistance when clear lane markings are detected.

Overall, the Audi system is balanced with little risk of the driver over-reliance the system.

Human Machine Interaction

System Name	The system name, Adaptive Cruise Assist, clearly indicates that this is an Assist System	
Official Manufacturer Information		
System Features	SPEED CONTROL	
	Automatic Speed Limit Adaptation	○
	Speed Adjustment for Road Features	○
	STEERING SUPPORT	
	Assisted Lane Change	—
User Manual	Description of Operational Design Domain (areas where the system can be used)	✘
	Description of the Driver's Role	●
	Description of Adaptive Cruise Control Limitations	●
	Description of Lane Centering Limitations	●
	Description of Hands OFF Warning Sequence	●
	<p style="text-align: center;">Hands Off Warning timeline</p>	

- Explained in user manual
- Feature fitted as part of the system
- ✘ Not explained in user manual
- Feature not available as part of the system

Comments

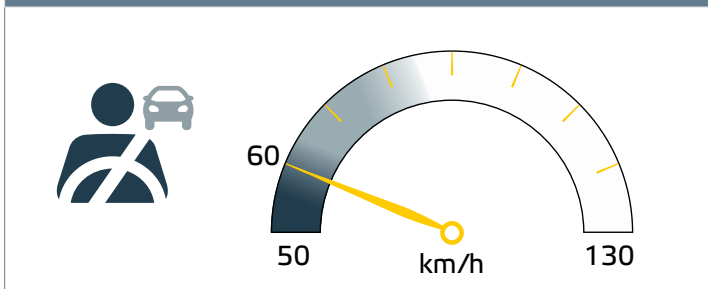
While the user manual clearly explains the limitations of the systems and where they can operate reliably, system use is not limited as geofencing is not implemented. The role of the driver during the use of the system is also clearly stated and is in line with the system design. Specific scenarios where the driver must be primarily in control or where no system response is expected are mentioned in the handbook.

Enabling of the systems is performed using a switch in the driver assistance menu. Engaging the systems is simple and intuitive using a dedicated stalk next to the steering wheel.

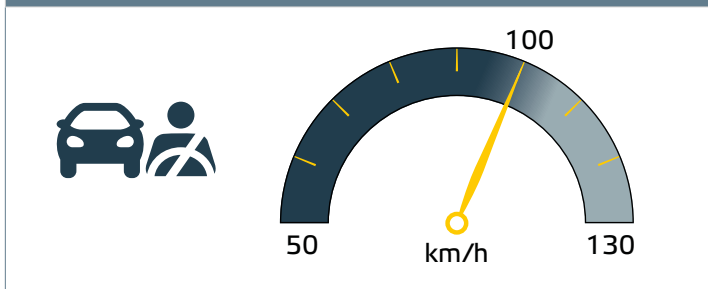
Marketing information from Audi clearly explains the design and intended use of the systems.

Adaptive Cruise Control Tests

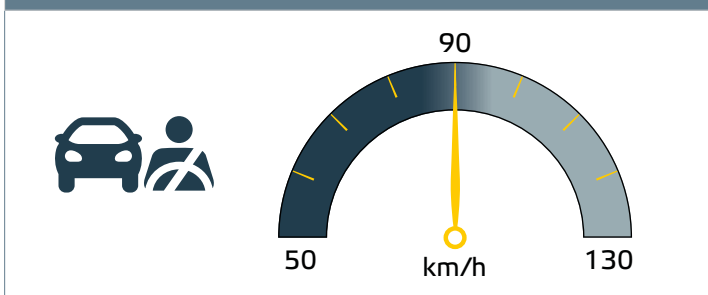
Approaching a stationary car



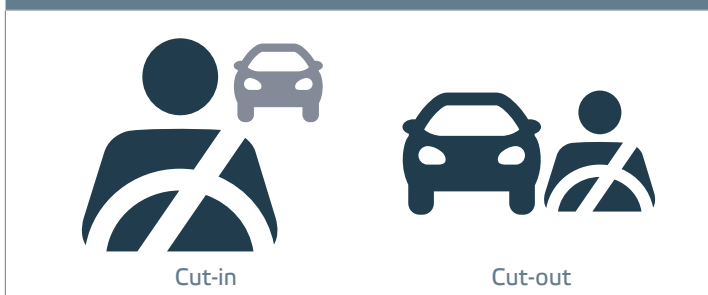
Approaching a slower moving car



Approaching a braking car



Car cutting-in or cutting-out ahead



VEHICLE PRIMARILY IN CONTROL
Level of support may result in over reliance



GOOD COOPERATION BETWEEN DRIVER AND VEHICLE
Balanced



DRIVER PRIMARILY IN CONTROL
Limited support provided by the system



NO SYSTEM SUPPORT AT ALL



ACC DESIGN LIMIT



ACC BRAKING



EMERGENCY INTERVENTION



NO RESPONSE

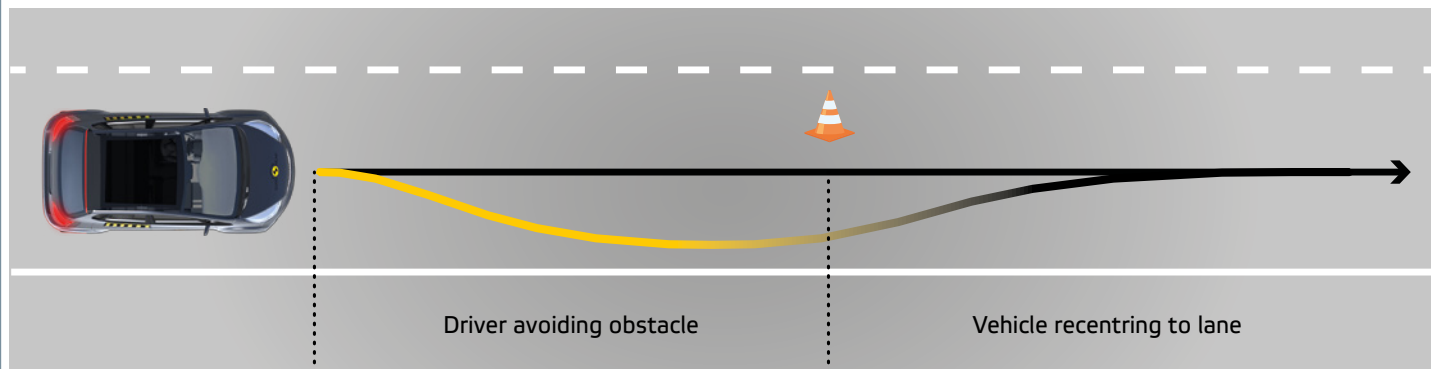
Comments

In the scenarios tested, Adaptive Cruise Assist responds to a stationary vehicle directly ahead and the ACC function will bring the car to halt up to 60 km/h after which the AEB/FCW system supports the driver up to 80 km/h. In both the slower-moving and braking lead vehicle scenarios, the car responds well and provides full support in scenarios with a maximum speed differential of 80 km/h. Late or no system response was witnessed in the cut-in scenarios which are critical and challenging due to the rapidly changing conditions. During the cut-out scenarios, good performance was witnessed. Warnings are issued to alert the driver of the possible crash in these cases.

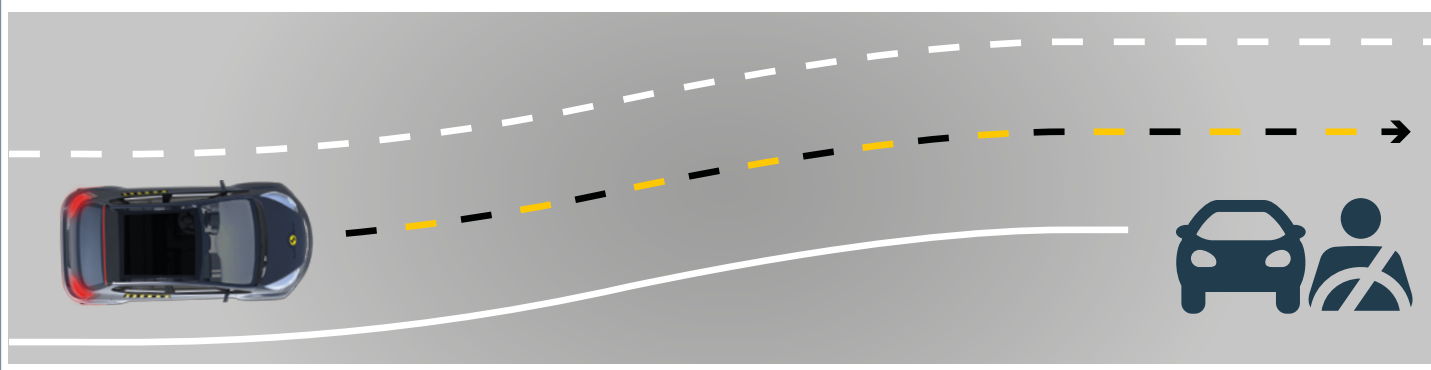
Overall, the system performs moderately in the ACC scenarios and a good balance exists between the car and the driver. The driver clearly needs to stay alert and take appropriate action in more critical day-to-day scenarios such as the sudden cut-in situation.

Steering Support

Steering to avoid an obstacle



Steering in a S-curve



VEHICLE PRIMARILY IN CONTROL
Level of support may result in over reliance



GOOD COOPERATION BETWEEN DRIVER AND VEHICLE
Balanced



DRIVER PRIMARILY IN CONTROL
Limited support provided by the system



NO SYSTEM SUPPORT AT ALL

— STEERING SUPPORT PATH

— DRIVER STEERING PATH

Comments

In the scenarios tested, Adaptive Cruise Assist gives the impression that the driver is in control with the car supporting by providing steering assistance, which encourages good driver engagement. Where a driver wants to reposition the car within the lane, for example to avoid an obstacle or increase clearance to adjacent traffic, the system readily accommodates driver inputs and subsequently continues to provide steering assistance.