



Driver Assistance Tech FAQ

2018 S-Class Sedan

GENERAL BACKGROUND INFORMATION

- Mercedes-Benz is constantly looking for innovative ways to further protect our passengers in the event of a collision. Many times, this is also a first for the industry and become widely adopted years later by other OEMs, ABS (1978), Airbag and Belt Tensioner (1980), ESP (1995) to name a few. More recently, Mercedes-Benz first introduced its PRE-SAFE® technology on the S-Class in 2002 (an industry first at the time), which uses sensors to detect an imminent collision and prepare for it in the moments leading up to it (i.e. by tightening front seat belts, adjusting front head restraints and passenger seat into the optimal position for a collision, and additionally even close the windows and sunroof if they are open). The PRE-SAFE® system is now standard equipment on almost all Mercedes-Benz vehicles. As introduced last year (2016) on the E-Class Sedan as standard equipment, PRE-SAFE® Sound builds on the PRE-SAFE® system by triggering a reflex in the human ear when an imminent collision is detected to help reduce hearing loss in the event of an accident. This is accomplished by rapidly inflating bolsters in the side of the seat milliseconds before the accident will occur. Mercedes-Benz believes that it continues to offer the most comprehensive active and passive safety systems in the industry, technically being at the high end of Level 2 semi-autonomous systems.

Can you remind me of the status of the Mercedes system for automated highway driving? It's already available in certain models, right? In what vehicles and what's the exact capability?

- While nomenclature and capabilities of our Intelligent Drive systems features differ across model lines and expand over time, we'll try to highlight some major technology innovations on the road towards autonomous driving.

The following highlights when major Intelligent Drive technologies were first introduced on Mercedes-Benz vehicles, especially the most recent S-Class in Fall 2013:

- With the launch of the new S-Class in 2013, the following systems were new or notably enhanced: DISTRONIC PLUS® with Steering Assist (radar-based adaptive cruise control helps driver maintain a safe distance from the vehicle ahead and remain in the center of the lane), BAS® PLUS with Cross-Traffic Function (able to detect crossing traffic and pedestrians and boost braking power applied by the driver accordingly), Active Lane Keeping Assist, Adaptive Highbeam Assist Plus, Night View Assist® PLUS, ATTENTION ASSIST®. The driver is always able to deactivate a system if they would like to operate the vehicle without it. Note: DISTRONIC radar-based cruise control was introduced in 1999 in the W220 S-Class, and then DISTRONIC PLUS with PRE-SAFE Brake was introduced in 2006.
- We then introduced our next-generation of Intelligent Drive system last year (2016) on the 10th generation E-Class Sedan (followed by rest of E-Class family). This included significant upgrades to Steering Assist and advanced safety and technical features such as PRE-SAFE® Sound, PRE-SAFE® Impulse Side, Active Speed Limit Assist, Active Emergency Stop Assist and Car-to-X Communication (Car-to-X Communication currently allows E-Class vehicles to communicate with each other and with new S-Class vehicles as well). Active Lane Change Assist was also introduced for the first time on the E-Class last year. This radar-and-camera-based system assists the driver when changing lanes on

multi-lane roads and can steer the vehicle into an adjacent lane. Once the driver has indicated a lane change for at least two seconds, Active Lane Change Assist assists with steering into the adjacent lane if it detects that the lane is unoccupied. For more information, please visit the E-Class Quick Reference Guide on MBUSA's media site: media.mbusa.com.

- This year, we are introducing the facelifted S-Class family, which will take another step towards the future of autonomous driving and elevates our Intelligent Drive systems to the next level. The facelifted S-Class has an even better view of any traffic situation: improved camera and radar systems will allow it to look further up ahead than before and can assist the driver at a wider range of speeds. It also uses a substantially broader scope of map and navigation data, thus allowing for Route-Based Speed Adaptation, which is a first in an MB vehicle using both radar and navigation data together. For more information, please visit the S-Class Quick Reference Guide on MBUSA's media site: media.mbusa.com.
- All systems are still considered Level 2 (but really like a 2.5 if that was a recognized level), but we are deliberately taking a step-by-step approach in our rollouts and have been in the market with semi-autonomous features since Fall 2013, and we have been moving in this direction since 2009 with the launch of ATTENTION ASSIST. We have launched many models since that time that feature these safety and driver assistance systems as optional equipment and add more standard equipment year after year. The S-Class (and most other model) Driver Assistance Package costs \$2,250 and has an installation rate of at least 70% (in the S-Class) and features the following functions:

S-Class Driver Assistance Package (997)

Option price: \$2,250 on most MB models and requires Premium Package, which most vehicles are equipped with:

- **Active Distance Assist DISTRONIC®** is able to follow a vehicle in front at a pre-selected distance at wider range of speeds
- **Active Steering Assist** functions at a wider range of speeds and can now actively intervene even if road lines are unclear or non-existent at certain speeds; can now function in curves with a tighter radius
- **Active Emergency Stop Assist** brakes the vehicle to a standstill in its lane if it detects that the driver is no longer actively driving the vehicle while driving with Active Distance Assist DISTRONIC and Active Steering Assist engaged. Can now unlock the doors when the vehicle is stationary to allow first aid responders immediate access to the vehicle's interior. With available mbrace® Secure, the system is also able to simultaneously make an emergency call
- **Active Lane Change Assist** is a radar-and-camera-based system that aids the driver when changing lanes. When a turn is indicated, this feature will aid with steering into the adjacent lane if it detects the lane is empty
- **Active Speed Limit Assist** can adapt vehicle speed to identified speed limits and can now adjust preemptively when speed limits are going to change
- **Route-Based Speed Adaptation** the vehicle is now able to reduce the speed in anticipatory mode by referencing the COMAND map data ahead of bends, junctions, roundabouts, toll booths and exit roads.
- **Active Brake Assist with Cross-Traffic Function** is able to help the driver avoid impending collisions with vehicles ahead, stationary or crossing vehicles and pedestrians if the driver fails to take any action to defuse the dangerous situation.
- **Evasive Steering Assist** this system assists by adding calculated steering torque to aid in steering wheel movement when a driver deliberately or instinctively performs an evasive maneuver around a pedestrian

- **Active Blind Spot Assist** is active at a wider range of speeds and informs the driver to help avoid an imminent side impact by single-sided braking
- **Active Lane Keeping Assist** is active now at a wider range of speeds

Is there a driver-facing camera to monitor eye movement or does it rely on the driver touching the wheel to ensure the person is paying attention?

- Our ATTENTION ASSIST® system (first introduced in 2009) continuously analyzes driving behavior and steering movements. The system monitors the driver's behavior in the first 15 minutes and uses this as a benchmark in its continuous monitoring and analyzing as long as the system is enabled and the vehicle is traveling at highway speeds. While the system does not monitor eye movement/eye scans, it does analyze more than 70 parameters in total, including time of day, steering movements, vehicle speed, vehicle acceleration, driver's operating actions (such as use of control buttons for radio, steering column adjustment actions, instrument cluster or steering wheel actions such as turning windshield wipers or lights on or off), etc.
- Active Steering Assist (as part of the E/S-Class Driver Assistance Package) does indeed monitor how much input the driver is providing the system and will alert the driver to put their hands on the wheel if it detects an absence of input. A feature called Active Emergency Stop Assist will be activated if the system determines there is no driver input at all for a continued period of time (like in the case of a debilitating health event) and if the driver does not respond to various alerts and notifications from the system. In this case, the vehicle will then bring itself to a stop, unlock the doors, and can even activate an SOS call to emergency responders.

Media Contacts

Christian Bokich	770-705-2245	christian.bokich@mbusa.com
Catherine Gebhardt	770-705-2706	catherine.gebhardt@mbusa.com
Brian Cotter	770-705-2274	brian.cotter@mbusa.com

More information about Mercedes-Benz is available online at media.mbusa.com.