

"Mercedes-Benz Intelligent Drive in the new S-Class"

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SUMMIT 2014



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General Manager Central Service
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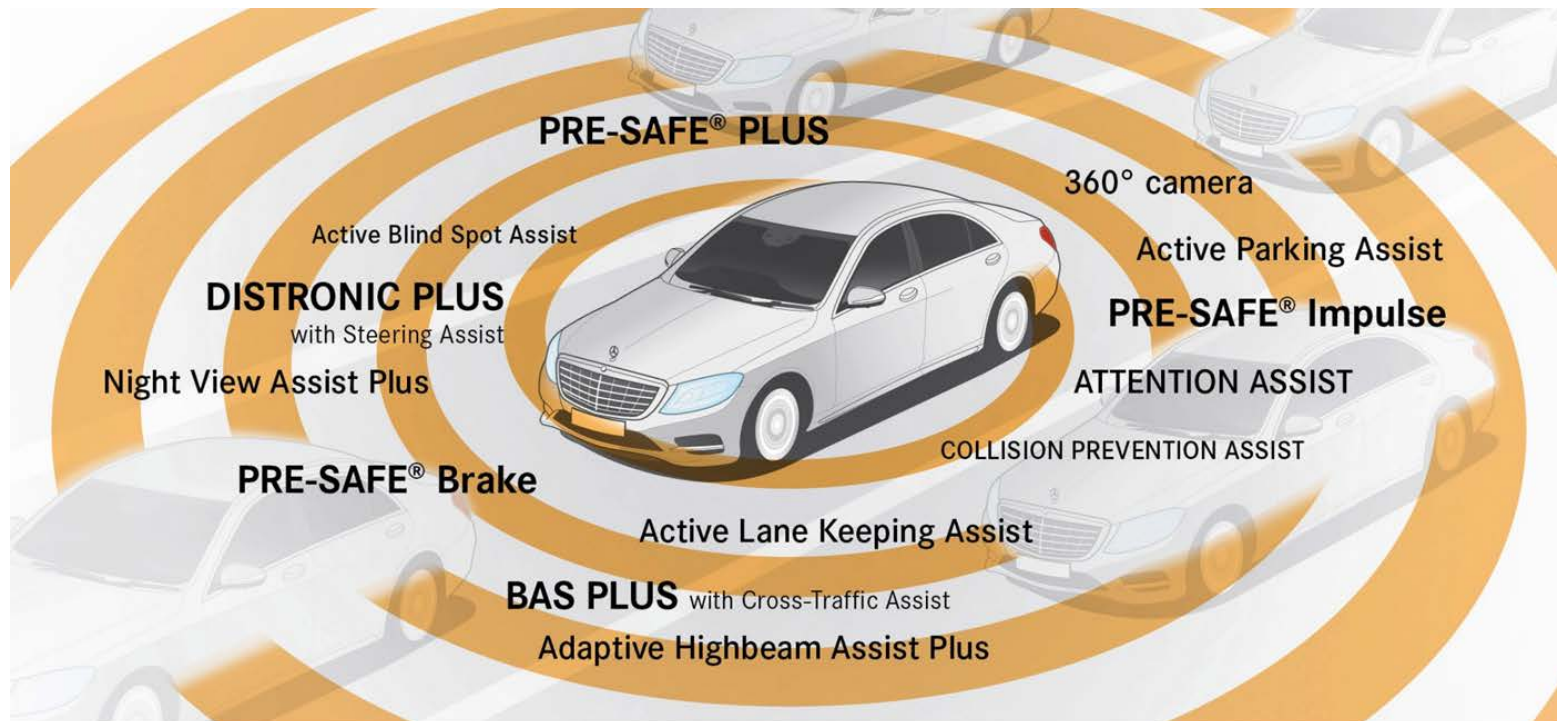
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Assistance Systems with Enhanced Performance

- All- round protection by Mercedes-Benz Intelligent Drive



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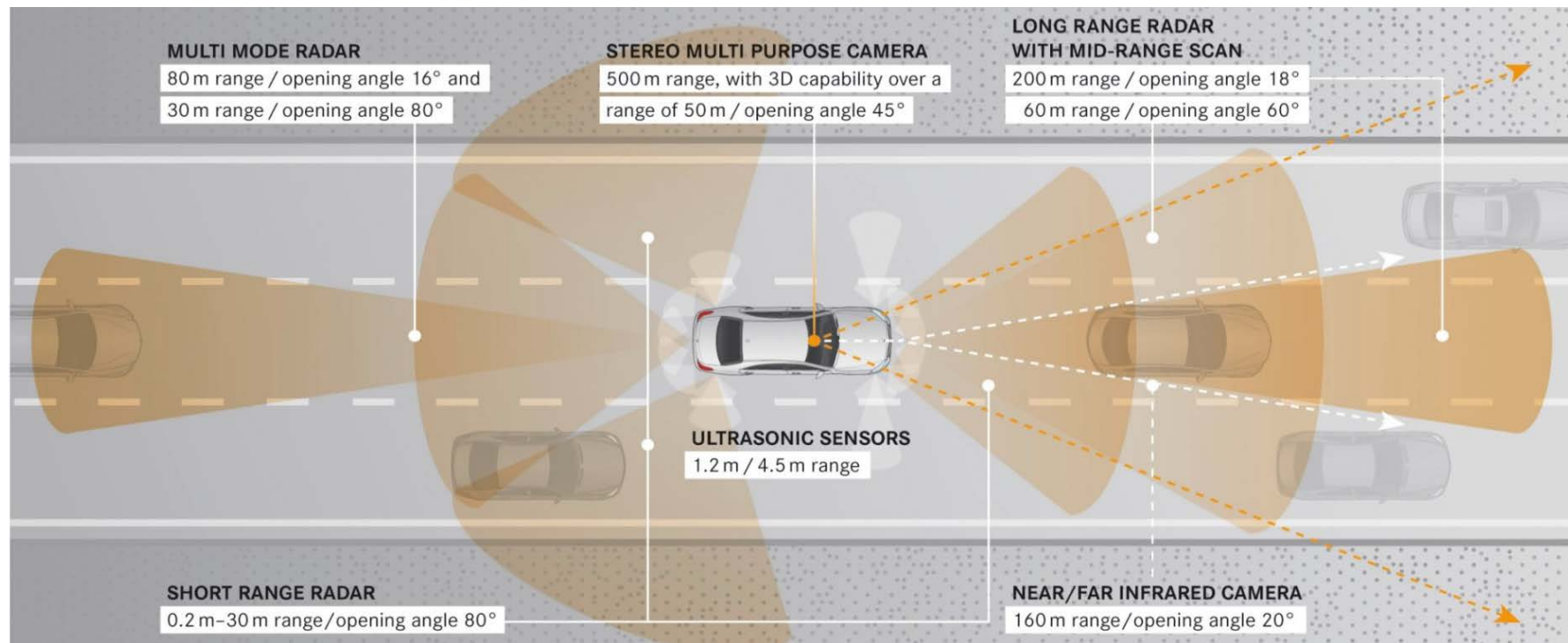
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Fusion of safety and comfort

- Networking sensors ensure more protection



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Collision Prevention assist - Radar Technology as Standard

Proximity Warning

Activation if distance between vehicles is too short



visual warning if distance between
vehicles is under 0.8s



- 30 - 250 km/h
on slower moving vehicles

Forward Collision Warning

Activation upon danger of collision (e.g. inattentive driver)



visual and audible warning
approx. 2.6s before collision



- 7 - 250 km/h
on moving or stopping vehicles
- 7 - 72 km/h
on stationary objects
- compliance with NCAP requirements
for forward collision warning systems

Adaptive Brake Assist

Activation upon danger of collision if driver brakes



situation adaptive
braking support



- 7 - 250 km/h
on moving or stopping vehicles

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ATTENTION ASSIST

- System evaluates the driver steering behavior
- operation active range 60 - 200 km/h
- Driver can select standard or sensitive mode
- Audible and optical warning upon increasing signs of drowsiness or inattentiveness
- Always activate after ignition, even if turned off before



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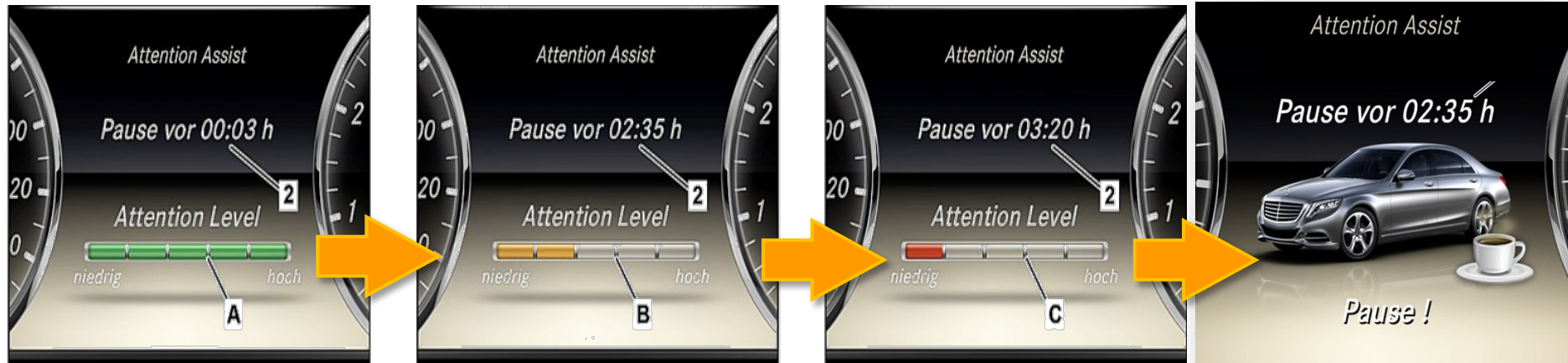


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ATTENTION ASSIST

- Special ATTENTION ASSIST menu in instrument cluster
 - Displays current attention level
 - Indicates when system is passive e.g. below 60 km/h speed range
 - Displays trip duration since last break
- Audible and optical warning upon increasing signs of drowsiness or inattentiveness
- Suggestion of nearest rest areas in navigation (S-Class)



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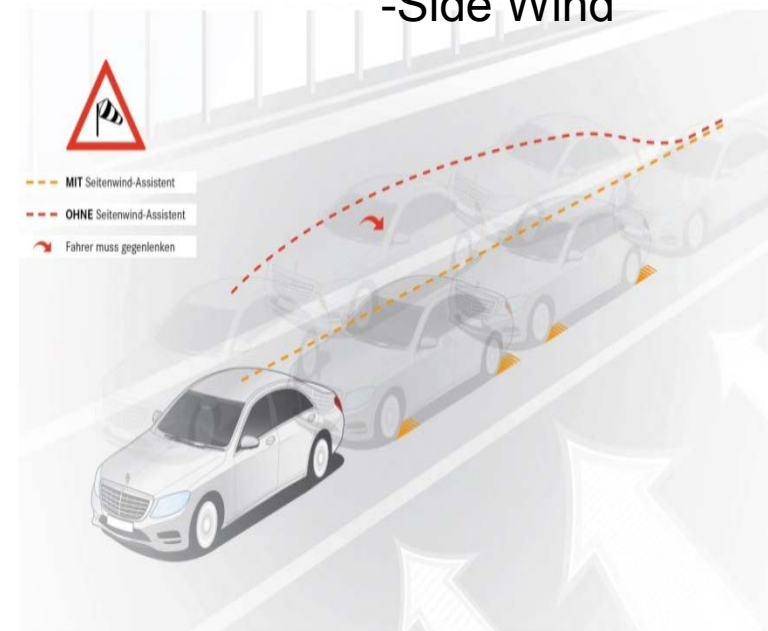
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Driver support by occurrence of strong side wind (gusts)

Assist

- Detection of side wind (gusts) by ESP sensors
- Dynamic control of singled sided braking similar as in Active Lane Keeping Assist
- Vehicles equipped with “Magic Body Control” use suspension system for Side Wind Assist
- Reduction of lane errors and yaw rate, improvement of straight path of vehicle
- Reduction of steering effort in strong wind gusts and storms

-Side Wind



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Enhance adaptive cruise control - DISTRONIC PLUS

- Supports the driver in keeping vehicle at desired distance to vehicle ahead
 - Even in stop & go traffic
- Highly dynamic system characteristics in E/S transmission program
- System monitors lead vehicle and lead vehicle in own/adjacent lanes
 - More dynamic response in passing maneuvers (blinker feature)
 - Quicker response to vehicles cutting in
- Maximum deceleration increased to 5 m/s^2
- System can be activated without lead vehicle
 - System starts after driver confirmation
- No acceleration after loss of lead vehicle before
 - Exits of highways,
 - Roundabouts, T-intersections
- Suppression of passing on the wrong side (where applicable)



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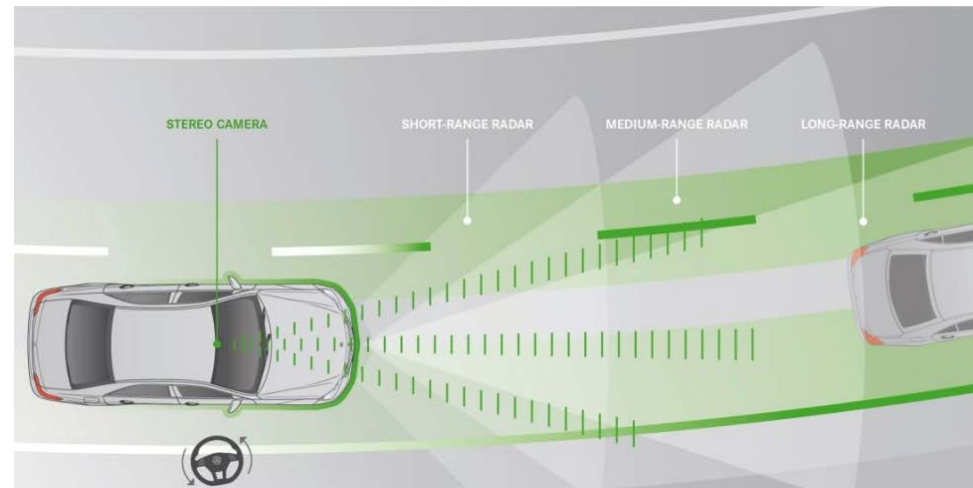
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DISTRONIC PLUS with Steering Assist and Stop & Go Pilot

System provides longitudinal and lateral support from 0 to 200 km/h

- Comfortable lateral support by steering interventions, even in curves
- Lateral support based on lane markings and surrounding vehicles
 - detected by radar and 3D stereo camera system
 - At speeds slower than 60 km/h in the absence of clear markings, system follows the lead vehicle intelligently
 - Icon indicates system activity
- Hands off-detection
 - warning if there is no steering input by the driver
 - lateral support deactivated upon further inactivity



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➤ Mercedes-Benz DISTRONIC PLUS with Steering Assist*

*Equipment and functionality may vary according to regional requirements.

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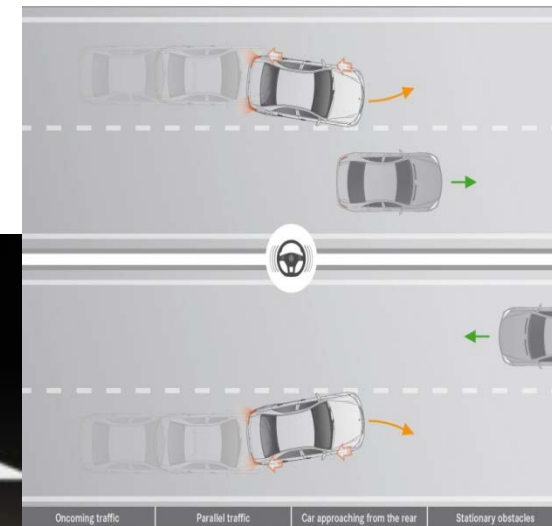
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Active Lane Keeping Assist & Active Blind Spot Assist

- Haptic warning active intervention by single side braking
 - Intervention on solid lines standard
 - Intervention on broken lines only in case of an imminent collision due to
 - Oncoming vehicles
 - Passing vehicles
 - Parallel traffic in or outside of blind spots
- Intelligent assessment of surroundings
 - fusion of data from radar and 3D stereo camera
- Driver can select standard or adaptive mode
 - Intervention displayed in instrument cluster
- Speed range: 60 - 200 km/h
- Driver can always override by
 - steering
 - braking or accelerating



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Active Lane Keeping Assist
Active Blind Spot Assist

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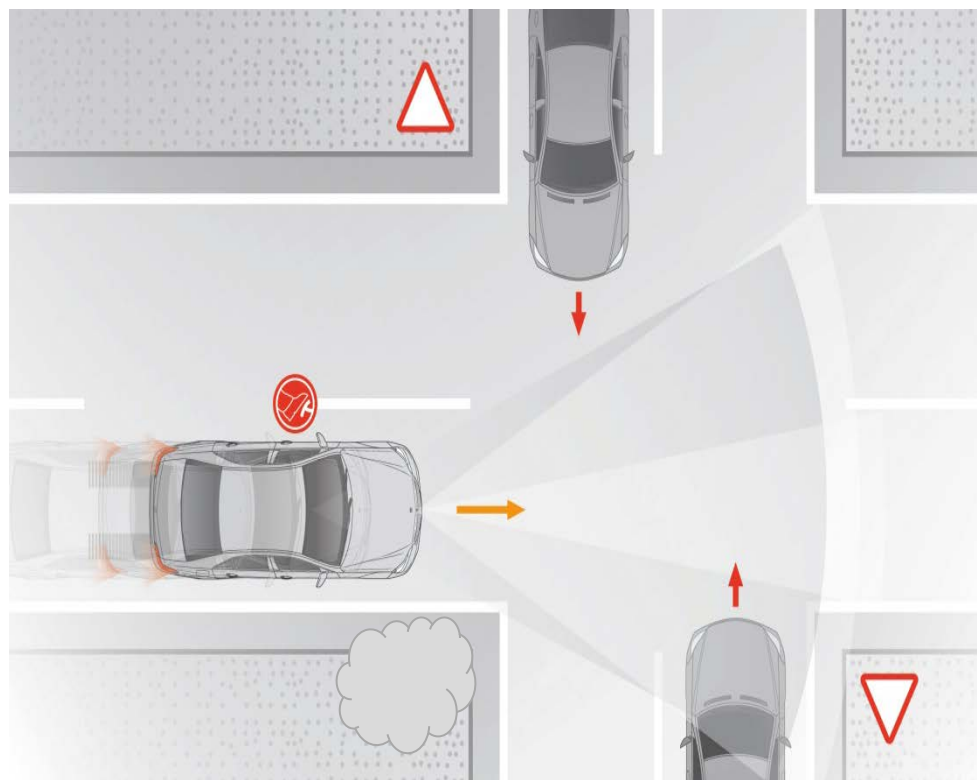
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Active Brake Assist (BAS PLUS)

- Enhances the driver's braking input according to the situation
 - if necessary to full emergency braking
- Now also detects crossing traffic
 - cars, motorcycles, bikes
- Intelligent assessment of the situation
 - fusion of data from radar and 3D stereo camera
- Speed range
 - Own vehicle: 7 – 72 km/h
 - Crossing traffic: max. $\frac{1}{2}$ own speed



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BAS PLUS with Cross-Traffic Assist

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PRE-SAFE® Brake

- with Pedestrian Detection and Urban Braking Function

- System provides
 - Visual and audible warning at any time if driver reacts: BAS PLUS situation adaptive brake support up to full emergency brake if necessary
 - PRE-SAFE® Brake: autonomous braking for collision avoidance or mitigation if driver does not react
- Detection of relevant objects using fusion of data from radar sensors and stereo camera
 - Pedestrians in the driving path in front of the vehicle
 - Slower moving, stopping or standing vehicles
- Speed range:
 - Pedestrian Detection and Urban Braking Function: 7 - 72 km/h
 - Collision avoidance up to more than 50 km/h
 - Support on slower moving vehicles: 7 - 200 km/h



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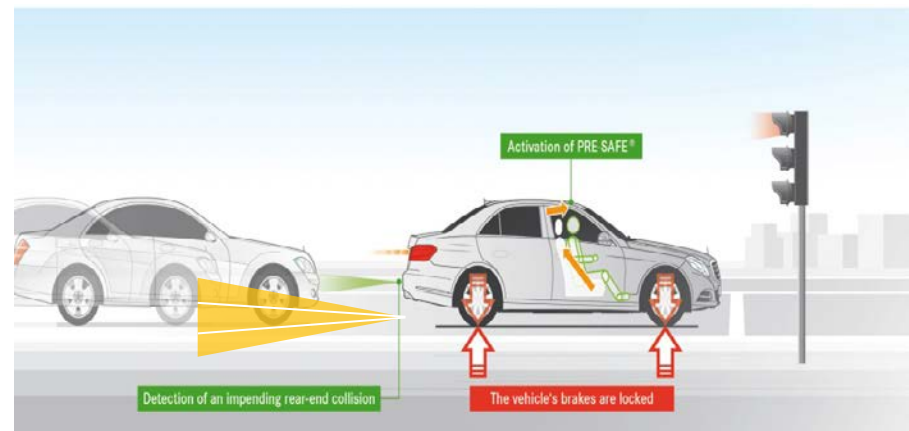
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PRE-SAFE® PLUS

- Multi-Purpose radar sensor in rear bumper monitors rear traffic
- Detection of imminent rear-end collision
 - Activation of rear hazard-lights with high frequency (5Hz) to warn vehicle in the back
- Additionally if car is standing still
 - Driver brakes or activates HOLD function
 - Car has stopped behind another car in DISTROC PLUS Stop & Go mode
 - Car is in "P" or in "N"
 - Parking brake is activated
- Locking of brakes
 - Reduction of forward acceleration and therefore occupant load / injury risk
 - Reduction of risk of secondary collision
- Activation of PRE-SAFE®



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PRE-SAFE® Brake with Pedestrian Recognition

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Traffic Sign Assist with Wrong Way Alert

- Signs detected by multi purpose camera
- Detection and display of speed limit signs
- Additional detection of no-passing signs and various additional information
- Red alert and audible warning in "Do-Not-Enter" situations
- Currently available in Germany only



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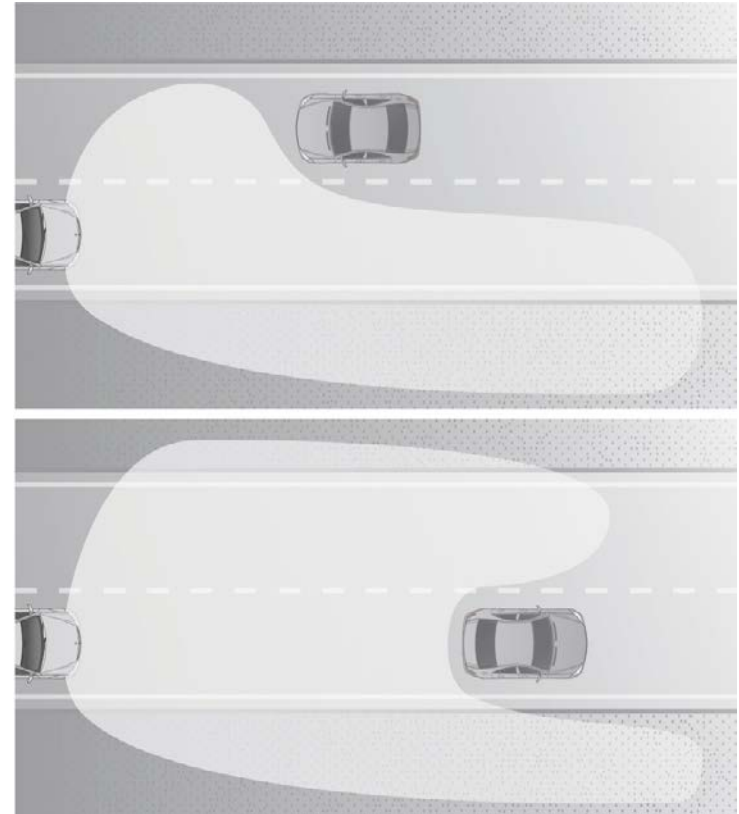
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Adaptive High Beam Assist Plus

- Optimized illumination of the road
 - In Germany only approx. 20% of all drives are at night, but approx. 40% of all accidents with fatalities or serious injuries occur at night
- Multi purpose camera detects other vehicles in the range of the high beam
- System blanks out relevant vehicles in own lane or opposite lane
- System active at speeds above 30 km/h
 - if it is dark, light switch is in position AUTO and high beam lever turned on
- Dimming of light beam at roadside
 - if highly reflective road signs are detected



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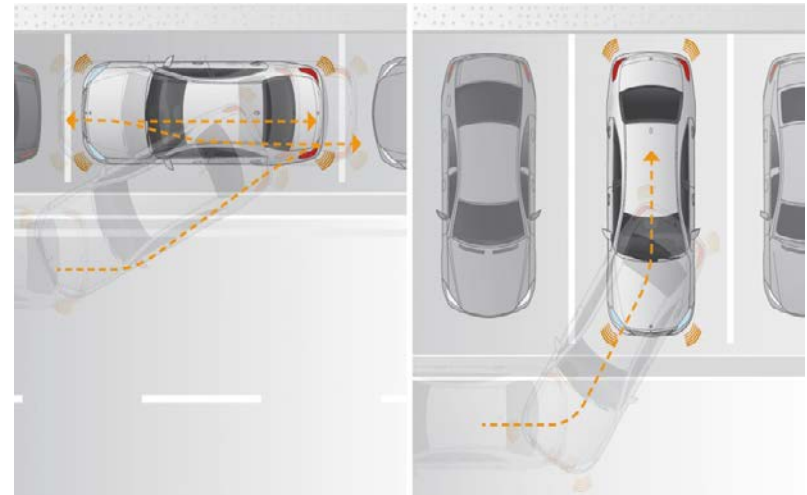
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Active Parking Assist

- Measurement and display of sufficient parallel and perpendicular parking spaces at speeds below 35 km/h
 - Activation of system when driver puts car in reverse gear and confirms with "OK" on the steering wheel
 - System automatically measures on the right side, if blinker is activated, also on left side of the road
- Vehicle automatically backs into parking space
 - Automatic steering and braking
 - Shift of gear and acceleration by driver
 - Maximum speed limited to 10 km/h
- Automatic steering out of parallel parking spaces
 - If vehicle was parked automatically before
- Additional driver information by PARKTRONIC



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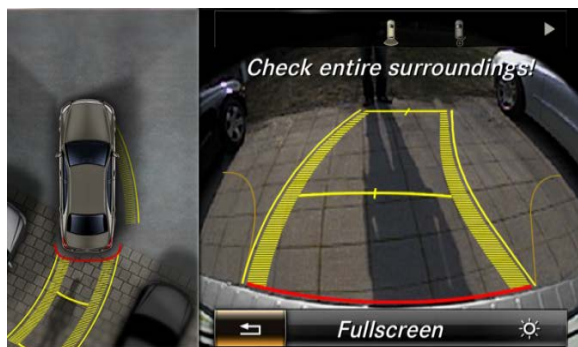
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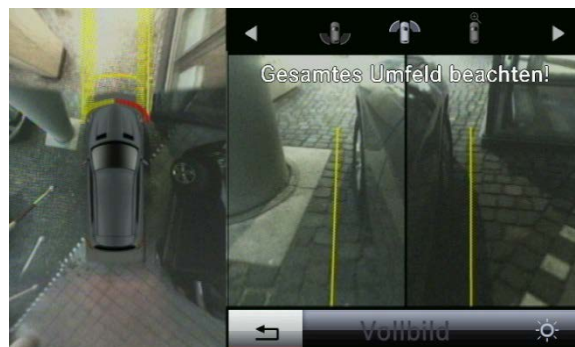
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Surround view by 360° Camera

- System uses four digital cameras (front grille, rear handle, exterior mirrors) to create direct camera pictures and augmented views (for example bird-view)
- System activated and image shown in COMAND Display
 - Automatically when car is put in reverse, image stays up to 30 km/h
 - If activated in System menu or SYS button is pressed for more than 3 seconds
- Fusion with ultrasonic sensors and display of PARKTRONIC information in bird view
- Dynamic trajectories displayed in various optional views



bird view and rear view camera



bird view and side view front



180°rear view

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Night View Assist Plus

- Improved sensor technology:
 - Far Infrared Camera (heat image) with active infrared light beams for brilliant picture
 - Detection of pedestrians approx. 160 m ahead, detection of larger animals (deer, horses, cattle) approx. 100 m
 - Automatic fade-in of the brilliant night view image and marking of detected pedestrians and animals in the instrument cluster
- Spotlight-Function:
 - Pedestrians will be highlighted outside (the single person in the path of travel in the night view image)
 - System can be switched on manually at any time, e.g.
 - In darkness also on lit roads (e.g. in urban / suburban areas) pedestrians and animals will be marked clearly
 - In daylight no marking, but display of surroundings ahead, makes sense e.g. if sun is low (dusk / dawn situations)

Pop-Up-Function



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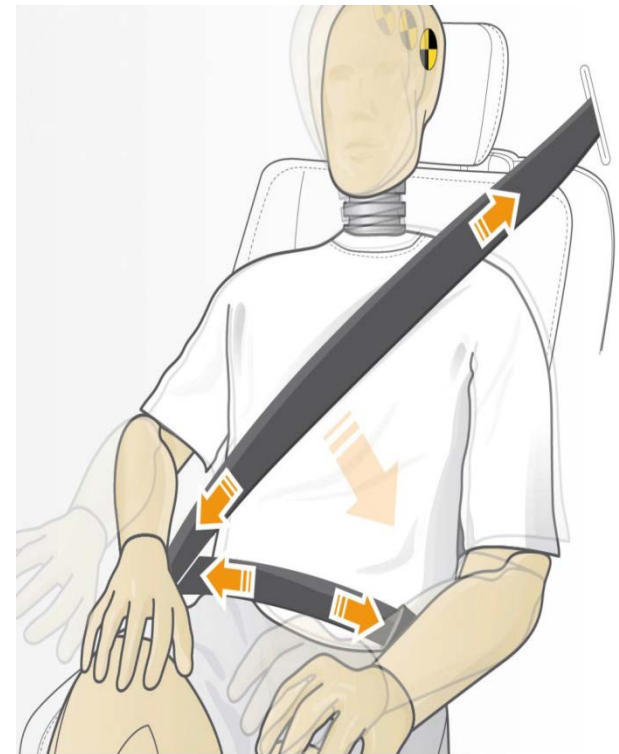
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Reduction of injury by PRE-SAFE® Impulse

- Prevention in early phase of accident
- Belt moves front occupants in the opposite direction as the direction of impact and pulls them down in their seat
- At time of maximum stress during an accident, movement is reversed, thus allowing a controlled dissipation of energy
- Pre-acceleration and force limitation enable a temporary decoupling of occupants from the crash



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Beltbag

- In the event of a frontal impact, inflatable seat belt strap can reduce risk of injury to rear seat passengers
- Reduction of load on the thorax
- Multi-layered seat belt strap has tear seams and can be inflated up to approx. three times its width by cold gas
- Optimization with newly developed virtual human models rather than test dummies only



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Mercedes-Benz Intelligent Drive

- Comfort and Safety at the highest technologies level
- Warning before and specific support or even autonomous reaction in critical situations can avoid accidents or mitigate their severity to save lives
- Mercedes-Benz Intelligent Drive systems stand out through ...

High reliability and availability

Plausibility of warnings

and interventions



Easily understandable HMI and display concepts

Nevertheless - Assistance systems have limits...

...the driver always stays responsible!

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