

<b>Claim 12</b>	<b>Corresponding Element in Audi Vehicles</b>
12A. Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:	The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claim 1.</i>
12B. means for determining when road speed for said vehicle is decreasing;	The accused Audi vehicles include a means for determining when road speed for said vehicle is decreasing.  <i>See, e.g., citations for claim element 4B.</i>
12C. means for determining when throttle position for said vehicle is increasing; and	The accused Audi vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g., citations for claim element 2C.</i>
12D. means for determining when manifold pressure for said vehicle is increasing; and	The accused Audi vehicles include a means for determining when manifold pressure for said vehicle is increasing.  <i>See, e.g., citations for claim element 4D.</i>
12E. means for determining when engine speed for said vehicle is decreasing;	The accused Audi vehicles include a means for determining when engine speed for said vehicle is decreasing.  <i>See, e.g., citations for claim element 4E.</i>
12F. said processor subsystem activating said fuel overinjection notification circuit if both	On information and belief, the accused Audi vehicles include a processor subsystem that activates said fuel overinjection notification circuit if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.

<b>Claim 12</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.</p>	<p><i>See, e.g., citations for claim elements 1E, 1G.</i></p>

<b>Claim 13</b>		<b>Corresponding Element in Audi Vehicles</b>
13A. Apparatus for optimizing operation of a vehicle, comprising:		The accused Audi vehicles include an apparatus for optimizing operation of a vehicle.  <i>See, e.g., citations for claim 1.</i>
13B. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;		The accused Audi vehicles include a plurality of sensors coupled to the vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor  <i>See, e.g., citations for claim element 1B.</i>
13C. a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;		The accused Audi vehicles include a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom.  <i>See, e.g., citations for claim element 1C.</i>
13D. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an engine speed set point, and present and prior levels for each one of said plurality of sensors;		The accused Audi vehicles have a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an engine speed set point, and present and prior levels for each one of said plurality of sensors.  <i>See, e.g., citations for claim element 1D.</i>
13E. a fuel overinjection notification circuit coupled		The accused Audi vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that

<b>Claim 13</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;</p>	<p>excessive fuel is being supplied to said engine of said vehicle.  See, e.g., citations for claim element 1E.</p>
<p>13F. an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed;</p>	<p>The accused Audi vehicles include an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.  See, e.g., citations for claim element 1F.</p>
<p>13G. a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and</p>	<p>The accused Audi vehicles include a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and  See, e.g., citations for claim element 7F.</p>
<p>13H. said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit, said upshift</p>	<p>The accused Audi vehicles include a processor subsystem that determines based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit, said upshift notification circuit and said downshift notification circuit.  See, e.g., citations for claim element 1G.</p>



<b>Claim 13</b>	<b>Corresponding Element in Audi Vehicles</b>
notification circuit and said downshift notification circuit.	

<b>Claim 15</b>	<b>Corresponding Element in Audi Vehicles</b>
15A. Apparatus for optimizing operation of a vehicle according to claim 13 wherein said processor subsystem further comprises:	<p>The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 13 wherein said processor subsystem further comprises:</p> <p><i>See, e.g., citations for claim 1.</i></p>
15B. means for determining when road speed for said vehicle is increasing or decreasing;	<p>The accused Audi vehicles include a means for determining when road speed for said vehicle is increasing or decreasing.</p> <p><i>See, e.g., citations for claim element 2B.</i></p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when road speed for said vehicle is increasing or decreasing” are described in, for example, Figures 1 and 2 and associated text of the '781 patent relating to Road Speed Sensor 18, Memory Subsystem 14, and Processor Subsystem 12.</p>
15C. means for determining when throttle position for said vehicle is increasing;	<p>The accused Audi vehicles include a means for determining when throttle position for said vehicle is increasing.</p> <p><i>See, e.g., citations for claim element 2C.</i></p>
15D. means for comparing manifold pressure to said manifold pressure set point;	<p>The accused Audi vehicles include a means for comparing manifold pressure to said manifold pressure set point.</p> <p><i>See, e.g., citations for claim element 2D.</i></p>
15E. means for comparing engine speed to said RPM set point;	<p>The accused Audi vehicles include a means for comparing engine speed to said RPM set point.</p> <p><i>See, e.g., citations for claim element 5E.</i></p>
15F. means for determining	<p>The accused Audi vehicles include a means for determining when manifold pressure is</p>

<b>Claim 15</b>		<b>Corresponding Element in Audi Vehicles</b>
when manifold pressure is increasing;	increasing.	
15G. means for determining when engine speed is increasing or decreasing;	<p>See, e.g., citations for claim element 4D.</p> <p>The accused Audi vehicles include a means for determining when engine speed is increasing or decreasing.</p> <p>See, e.g., citations for claim element 4E.</p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when engine speed for said vehicle is increasing or decreasing” are described in, for example, Figures 1 and 2 and associated text of the ’781 patent relating to RPM Sensor 20, Memory Subsystem 14, and Processor Subsystem 12.</p>	
15H. said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing;	<p>On information and belief, the accused Audi vehicles include a processor subsystem that activates said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.</p> <p>See, e.g., citations for claim elements 1E, 1G.</p>	
15I. said processor	On information and belief, the accused Audi vehicles include a processor subsystem that	

<b>Claim 15</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point; and</p>	<p>activates said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.</p> <p><i>See, e.g., citations for claim elements 1F, 1G.</i></p>
<p>15J. said processor subsystem activating said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.</p>	<p>On information and belief, the accused Audi vehicles include a processor subsystem that activates said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.</p> <p><i>See, e.g., citations for claim element 10F.</i></p>

<b>Claim 17</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>17A. Apparatus for optimizing operation of a vehicle, comprising:</p>	<p>The accused Audi vehicles include an apparatus for optimizing operation of a vehicle.  See, e.g., citations for claim 1.</p>
<p>17B. a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;</p>	<p>The accused Audi vehicles include a radar detector that determines a distance separating a vehicle having an engine and another object in front of the accused vehicles.  For example, the accused Audi vehicles include one or more systems with radar detectors that determine a distance separating a vehicle having an engine and another object in front of the accused vehicles.</p>

17B1. Audi Adaptive Cruise Control:

**Audi adaptive cruise control**

**Description**  
Applies to vehicles, with Audi adaptive cruise control.

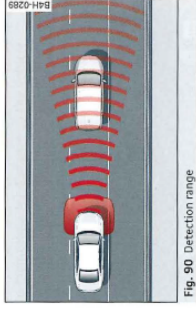


Fig. 90 Detection range

**What can adaptive cruise control do?**

The adaptive cruise control system uses video, radar and ultrasound. Moving vehicles ahead can be recognized up to about 650 feet (200 m) away.

On open roads with no traffic, adaptive cruise control works like a regular cruise control system. The stored speed is maintained. When approaching a moving vehicle detected up ahead, the adaptive cruise control system automatically slows down to match that vehicle's speed and then maintains the distance that the driver previously stored. As soon as the system does not detect a vehicle up ahead, adaptive cruise control accelerates back up to the stored speed.

In stop-and-go traffic, adaptive cruise control can brake until the vehicle stops and accelerate again under certain conditions and if this is possible within the system's limits and capabilities → page 90. Adaptive cruise control will not make an emergency stop.

(See, e.g., Exhibits Audi-1 at 88; Audi-2 at 101; Audi-3 at 92; Audi-4 at 95; Audi-5 at 86; Audi-6 at 109; Audi-7 at 114-15; Audi-9 at 95; Audi-10 at 93).

**Claim 17**

**Corresponding Element in Audi Vehicles**

**Overview**

ACC is also offered as an option for the 2012 A7. As already introduced on the 2011 A8, two radar sensors are used in the A7.



(See Exhibit Audi-18, 2012 A7 Running Gear and Suspension Systems Self-Study Program at 41).

17B2. Audi Braking Guard:

**Audi braking guard**

**Description**  
Applies to vehicles with Audi adaptive cruise control.



Fig. 97. Instrument cluster: approach warning

Braking guard uses radar sensors and a video camera. It also functions within the limits of the system when adaptive cruise control is switched off.

**What can braking guard do?**

When detected in time, the system can assess situations when a vehicle ahead brakes suddenly or if your own vehicle is traveling at a high speed and approaching a vehicle up ahead that is moving more slowly. Braking guard does not react if it cannot detect the situation.

The system advises you of various situations:

- The **distance warning** is given if you are too close to the vehicle ahead for a long time. If the vehicle ahead brakes sharply, you will not be able to avoid a collision. The indicator light  in the display comes on.
- The **approach warning** is given when a detected vehicle up ahead in your lane is moving much more slowly than you are or if it brakes sharply. When this warning is given, it may only be possible to avoid a collision by swerving or braking sharply. The indicator light  and indicator in the display will warn you about the danger → fig. 97. You will also hear an acoustic signal.

If you do not react fast enough or do not react at all to the situation, braking guard will intervene by braking.

- If a collision is imminent, the system will first provide an **acute warning** by briefly and sharply applying the brakes.
- If you do not react to the acute warning, braking guard can brake with increasing force within the limits of the system. This reduces the vehicle speed in the event of a collision.
- The system can initiate maximum braking shortly before a collision<sup>1)</sup>. Full deceleration at high speeds occurs only in vehicles with adaptive cruise control and side assist (pre sense plus).
- If the braking guard senses that you are not braking hard enough when a collision is imminent, it can increase the braking force.
- The pre sense functions also engage when a collision is imminent → page 194.

**Which functions can be controlled?**

You can switch braking guard and the distance/approach warning on or off in the MMI → page 93, *Settings in the MMI*.

**WARNING**

Lack of attention can cause collisions, other accidents and serious personal injuries. The braking guard is an assist system and cannot prevent a collision by itself. The driver must always intervene. The driver is always responsible for braking at the correct time.

- Always pay close attention to traffic, even when the braking guard is switched on. Be ready to intervene and be ready to take complete control whenever necessary. Always keep the safe and legal distance between your vehicle and vehicles up ahead.
- Braking guard works within limits and will not respond outside the system limits, for example when approaching a

(See, e.g., Exhibits Audi-1 at 92; Audi-2 at 105-06; Audi-3 at 96-97; Audi-4 at 99; Audi-5 at 90;

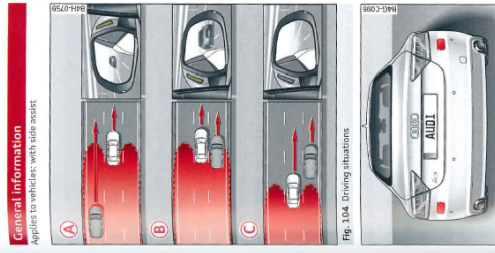


**Claim 17**

**Corresponding Element in Audi Vehicles**

Audi-6 at 113; Audi-7 at 127; Audi-9 at 99; Audi-10 at 97).

17B3. Audi Side Assist:



**③ Vehicles left behind**

If you slowly pass a vehicle that side assist has detected (the difference in speed between the vehicle and your vehicle is less than 9 mph or 15 km/h), the display in the exterior mirror turns on as soon as the vehicle enters your blind spot.

The display will not turn on if you quickly pass a vehicle that side assist has detected (the difference in speed between the vehicle and your vehicle is greater than 9 mph or 15 km/h).

**Functional limitations**

The radar sensors are designed to detect the left and right adjacent lanes when the road lanes are the normal width. In certain situations, the display in the exterior mirror may turn on even though there is no vehicle located in the area that is critical for a lane change. For example:

- if the lanes are narrow or if you are driving on the edge of your lane. If this is the case, the system may have detected the vehicle in another lane that is not adjacent to your current lane.
- if you are driving through a curve. Side assist may react to a vehicle that is one lane over from the adjacent lane.
- if side assist reacts to other objects (such as high or displaced guard rails).
- in poor weather conditions. The side assist functions are limited.

Do not cover the radar sensors -> fig. 105 with stickers, deposits, bicycle wheels or other objects, because this will affect the function. Do not use side assist when towing a trailer. For information on cleaning, refer to -> page 213.

**⚠ WARNING**

- Always pay attention to traffic and to the area around your vehicle. Side assist cannot replace a driver's attention. The driver alone is always responsible for lane changes and similar driving maneuvers.

Fig. 104. Driving situations

Fig. 105. Rear of the vehicle: position of the sensors

Side assist functions at speeds above approximately 19 mph (30 km/h).

**③ Vehicles that are approaching**

In certain cases, a vehicle will be classified as critical for a lane change even if it is still somewhat far away. The faster a vehicle approaches, the sooner the display in the exterior mirror will turn on.

**③ Vehicles traveling with you**

Vehicles traveling with you are indicated in the exterior mirror if they are classified as critical for a lane change. All vehicles detected by side assist are indicated by the time they enter your "blind spot", at the latest.

(See, e.g., Exhibits Audi-1 at 99; Audi-2 at 110; Audi-3 at 101; Audi-3 at 103; Audi-4 at 103; Audi-5 at 97; Audi-6 at 117; Audi-7 at 130-33; Audi-9 at 106; Audi-10 at 101).

The accused Audi vehicles include at least one sensor coupled to said vehicle for monitoring

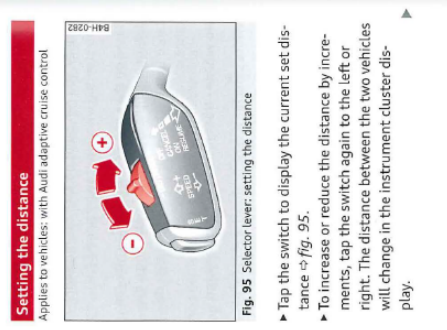
17C. at least one sensor

<b>Claim 17</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor, a manifold pressure sensor, a throttle position sensor and an engine speed sensor;</p>	<p>operation thereof, said at least one sensor including a road speed sensor, a manifold pressure sensor, a throttle position sensor and an engine speed sensor.  <i>See, e.g., citations for claim element 1B.</i></p>
<p>17D. a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;</p>	<p>The accused Audi vehicles include a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom.  <i>See, e.g., citations for claim element 1C.</i></p>
<p>17E. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor;</p>	<p>The accused Audi vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor.  <i>See, e.g., citations for claim elements 1A-1D.</i>  For example, on information and belief, the accused Audi vehicles include one or more systems that use one or more vehicle speed/stopping distance tables stored in one or more memories.</p>

## Claim 17

## Corresponding Element in Audi Vehicles

17E1. Audi Adaptive Cruise Control:




Corresponding Element in Audi Vehicles


When approaching a moving vehicle up ahead, the adaptive cruise control system automatically brakes to match that object's speed and then maintains the stored distance. If the vehicle ahead accelerates, adaptive cruise control will also accelerate up to the stored speed.


The higher the speed, the greater the distance in yards (meters) ⇨ **Distance 3** setting is recommended.


The distances provided are specified values. Depending on the driving situation and the how the vehicle ahead is driving, the actual distance may be more or less than these target distances.

The various symbols for the time increments appear briefly in the information line ⇨ **page 88, fig. 92** when you change the settings.

 **Distance 1:** This setting corresponds to a distance of 92 feet/28 meters when traveling at 62 mph (100 km/h), or a time interval of 1 second.

 **Distance 2:** This setting corresponds to a distance of 118 feet/36 meters when traveling at 62 mph (100 km/h), or a time interval of 1.3 seconds.

 **Distance 3:** This setting corresponds to a distance of 164 feet/50 meters when traveling at 62 mph (100 km/h), or a time interval of 1.8 seconds.

 **Distance 4:** This setting corresponds to a distance of 210 feet/64 meters when traveling at 62 mph (100 km/h), or a time interval of 2.3 seconds.

**WARNING**  
 Following other vehicles too closely increases the risk of collisions and serious personal injury.  
 – Setting short distances to the traffic ahead reduces the time and distance available to bring your vehicle to a safe stop and makes it even more necessary to pay close attention to traffic.

**i Tips**  
 – Always obey applicable traffic laws, use good judgment, and select a safe following distance for the traffic, road and weather conditions.

**i Tips**  
 – **Distance 3** is set automatically each time you switch the ignition on.  
 – Your standard settings are automatically stored and assigned to the remote control key being used.

(See, e.g., Exhibits Audi-1 at 90-91; Audi-2 at 104; Audi-3 at 95; Audi-4 at 97-98; Audi-5 at 88-89; Audi-6 at 111-12; Audi-7 at 118-20; Audi-9 at 97-98; Audi-10 at 95-96).

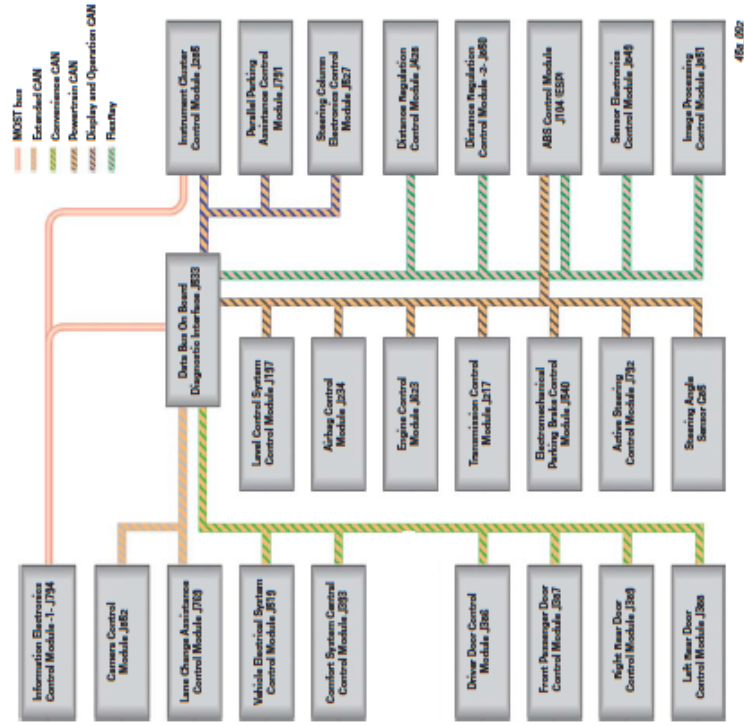
**Claim 17**

**Corresponding Element in Audi Vehicles**

**Networking/CAN Data Exchange**

The ACC control module reads approximately 1,700 different signals from other control modules and sensors.

The following overview shows the control modules involved in this data exchange.



(See, e.g., Exhibit Audi-19, 2011 A8 Running Gear and Suspension Systems Self-Study Program at 50).

17E2. Audi Braking Guard:

**Audi braking guard**

**Description**  
Applies to vehicles with Audi adaptive cruise control.



Fig. 97 Instrument cluster: approach warning

Braking guard uses radar sensors and a video camera. It also functions within the limits of the system when adaptive cruise control is switched off.

**What can braking guard do?**

When detected in time, the system can assess situations when a vehicle ahead brakes suddenly or if your own vehicle is traveling at a high speed and approaching a vehicle up ahead that is moving more slowly. Braking guard does not react if it cannot detect the situation.

The system advises you of various situations:

- The **distance warning** is given if you are too close to the vehicle ahead for a long time. If the vehicle ahead brakes sharply, you will not be able to avoid a collision. The indicator light  in the display comes on.
- The **approach warning** is given when a detected vehicle up ahead in your lane is moving much more slowly than you are or if it brakes sharply. When this warning is given, it may only be possible to avoid a collision by swerving or braking sharply. The indicator light  and indicator in the display will warn you about the danger → *fig. 97*. You will also hear an acoustic signal.

If you do not react fast enough or do not react at all to the situation, braking guard will intervene by braking.

- If a collision is imminent, the system will first provide an **acute warning** by briefly and sharply applying the brakes.
- If you do not react to the acute warning, braking guard can brake with increasing force within the limits of the system. This reduces the vehicle speed in the event of a collision.
- The system can initiate maximum braking shortly before a collision<sup>1,2</sup>. Full deceleration at high speeds occurs only in vehicles with adaptive cruise control and side assist (pre sense plus).
- If the braking guard senses that you are not braking hard enough when a collision is imminent, it can increase the braking force.
- The pre sense functions also engage when a collision is imminent → *page 194*.

**Which functions can be controlled?**

You can switch braking guard and the distance/approach warning on or off in the MMI → *page 93*, *Settings in the MMI*.

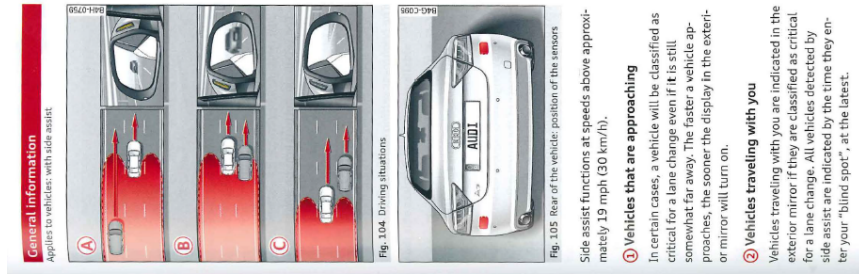
**WARNING**

Lack of attention can cause collisions, other accidents and serious personal injuries. The braking guard is an assist system and cannot prevent a collision by itself. The driver must always intervene. The driver is always responsible for braking at the correct time.

- Always pay close attention to traffic even when the braking guard is switched on. Be ready to intervene and be ready to take complete control whenever necessary. Always keep the safe and legal distance between your vehicle and vehicles up ahead.
- Braking guard works within limits and will not respond outside the system limits, for example when approaching a

(See, e.g., Exhibits Audi-1 at 92; Audi-2 at 105-06; Audi-3 at 96-97; Audi-4 at 99; Audi-5 at 90; Audi-6 at 113; Audi-7 at 127; Audi-9 at 99; Audi-10 at 97).

17E3. Audi Side Assist:



General information  
Applies to vehicles with side assist.

**3 Vehicles left behind**  
If you slowly pass a vehicle that side assist has detected (the difference in speed between the vehicle and your vehicle is less than 9 mph or 15 km/h), the display in the exterior mirror turns on as soon as the vehicle enters your blind spot.  
The display will not turn on if you quickly pass a vehicle that side assist has detected (the difference in speed between the vehicle and your vehicle is greater than 9 mph or 15 km/h).

**Functional limitations**  
The radar sensors are designed to detect the left and right adjacent lanes when the road lanes are the normal width. In certain situations, the display in the exterior mirror may turn on even though there is no vehicle located in the area that is critical for a lane change. For example:  
- If the lanes are narrow or if you are driving on the edge of your lane. If this is the case, the system may have detected the vehicle in another lane that is not adjacent to your current lane.  
- If you are driving through a curve. Side assist may react to a vehicle that is one lane over from the adjacent lane.  
- If side assist reacts to other objects (such as high or displaced guard rails).  
- In poor weather conditions. The side assist functions are limited.

Do not cover the radar sensors → Fig. 105 with stickers, deposits, bicycle wheels or other objects, because this will affect the function. Do not use side assist when towing a trailer. For information on cleaning, refer to → page 213.

**WARNING**  
- Always pay attention to traffic and to the area around your vehicle. Side assist cannot replace a driver's attention. The driver alone is always responsible for lane changes and similar driving maneuvers.

Fig. 104. Driving situations

Fig. 105. Rear of the vehicle: position of the sensors

Side assist functions at speeds above approximately 19 mph (30 km/h).

**3 Vehicles that are approaching**  
In certain cases, a vehicle will be classified as critical for a lane change even if it is still somewhat far away. The faster a vehicle approaches, the sooner the display in the exterior mirror will turn on.

**3 Vehicles traveling with you**  
Vehicles traveling with you are indicated in the exterior mirror if they are classified as critical for a lane change. All vehicles detected by side assist are indicated by the time they enter your "blind spot", at the latest.

(See, e.g., Exhibits Audi-1 at 99; Audi-2 at 110; Audi-3 at 101; Audi-4 at 103; Audi-5 at 97; Audi-6 at 117; Audi-7 at 130-34; Audi-9 at 106; Audi-10 at 101).

Claim 17	Corresponding Element in Audi Vehicles
<p>17F. a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to an object;</p>	<p>On information and belief, additional vehicle systems, including but not limited to electronic brake control systems (<i>e.g.</i>, ABS, TCS, BAS, ESC, <i>etc.</i>) and speed control systems (<i>e.g.</i>, electronic speed control (ESC) systems) included in the accused Audi vehicles, and safety and performance testing systems use vehicle speed/stopping distance tables stored in memory.</p> <p>The accused Audi vehicles include a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to an object.</p> <p>For example, the accused Audi vehicles include one or more systems that include circuits that issue an alarm to indicate that the vehicle is too close to an object.</p>





**Claim 17**


**Corresponding Element in Audi Vehicles**


17F1. Audi Adaptive Cruise Control:

**Indicator lights**

 - Adaptive cruise control is switched on. No vehicles are detected up ahead. The stored speed is maintained.

 - A moving vehicle is detected up ahead. The adaptive cruise control system regulates the speed and distance to the moving vehicle ahead and accelerates/brakes automatically.

 - Adaptive cruise control is switched on. A moving vehicle up ahead was detected. Your vehicle remains stopped.

 - When automatic braking is not able to keep enough distance to a previously detected moving vehicle up ahead, you must take control and brake → *page 91, Prompt for driver intervention.*

**Display**


If adaptive cruise control is not shown in the display, you can call it up with the multifunction steering wheel buttons → *page 24.*

Based on the symbols in the display, you can determine if the system is maintaining a distance to the vehicle ahead and what that distance is.

**No vehicle** - No vehicle ahead was detected.

**White vehicle** - A vehicle ahead was detected.

**Red vehicle** - Prompt for the driver to take action → *page 91.*

Both arrows on the **scale**  indicate the distance to the vehicle ahead. No arrow appears when the vehicle is on an open road and there is no object ahead. If an object is detected ahead, the arrow moves on the scale.

(See, e.g., Exhibits Audi-1 at 89; Audi-2 at 102; Audi-3 at 93; Audi-4 at 96; Audi-5 at 87; Audi-6

**Claim 17**

**Corresponding Element in Audi Vehicles**

at 110; Audi-7 at 120-22; Audi-9 at 96; Audi-10 at 94).

**Audi pre sense front (vehicles with adaptive cruise control\*)**

Audi pre sense front includes the functions in Audi pre sense basic. In addition, within the limits of the system, the likelihood of a collision with the vehicle immediately ahead is also calculated. If the system senses an imminent collision the following functions can be triggered:

- Braking guard → page 92
- Tightening the safety belts
- Closing the windows and the sunroof\* (leaving a small open gap)

(See, e.g., Exhibits Audi-1 at 194; Audi-5 at 192; Audi-6 at 110; Audi-9 at 196).

17F2. Audi Braking Guard:

**Audi braking guard**

**Description**  
Applies to vehicles with Audi adaptive cruise control.



Fig. 97 Instrument Cluster: approach warning

Braking guard uses radar sensors and a video camera. It also functions within the limits of the system when adaptive cruise control is switched off.

**What can braking guard do?**

When detected in time, the system can assess situations when a vehicle ahead brakes suddenly or if your own vehicle is traveling at a high speed and approaching a vehicle up ahead that is moving more slowly. Braking guard does not react if it cannot detect the situation.

The system advises you of various situations:

- The **distance warning** is given if you are too close to the vehicle ahead for a long time. If the vehicle ahead brakes sharply, you will not be able to avoid a collision. The indicator light  in the display comes on.
- The **approach warning** is given when a detected vehicle up ahead in your lane is moving much more slowly than you are or if it brakes sharply. When this warning is given, it may only be possible to avoid a collision by swerving or braking sharply. The indicator light  and indicator in the display will warn you about the danger → fig. 97. You will also hear an acoustic signal.

If you do not react fast enough or do not react at all to the situation, braking guard will intervene by braking.

- If a collision is imminent, the system will first provide an **acute warning** by briefly and sharply applying the brakes.
- If you do not react to the acute warning, braking guard can brake with increasing force within the limits of the system. This reduces the vehicle speed in the event of a collision.
- The system can initiate maximum braking shortly before a collision<sup>1)</sup>. Full deceleration at high speeds occurs only in vehicles with adaptive cruise control and side assist (pre sense plus).
- If the braking guard senses that you are not braking hard enough when a collision is imminent, it can increase the braking force.
- The pre sense functions also engage when a collision is imminent → page 194.

**Which functions can be controlled?**

You can switch braking guard and the distance/approach warning on or off in the MMI → page 93, Settings in the MMI.

**WARNING**

- Lack of attention can cause collisions, other accidents and serious personal injuries. The braking guard is an assist system and cannot prevent a collision by itself. The driver must always intervene. The driver is always responsible for braking at the correct time.
- Always pay close attention to traffic, even when the braking guard is switched on. Be ready to intervene and be ready to take complete control whenever necessary. Always keep the safe and legal distance between your vehicle and vehicles up ahead.
  - Braking guard works within limits and will not respond outside the system limits, for example when approaching a

(See, e.g., Exhibits Audi-1 at 92; Audi-2 at 105-06; Audi-3 at 96-97; Audi-4 at 99; Audi-5 at 90; Audi-6 at 113; Audi-7 at 127; Audi-9 at 99; Audi-10 at 97).

**Audi pre sense front (vehicles with adaptive cruise control\*)**

Audi pre sense front includes the functions in Audi pre sense basic. In addition, within the limits of the system, the likelihood of a collision with the vehicle immediately ahead is also calculated. If the system senses an imminent collision the following functions can be triggered:

- Braking guard → page 92
- Tightening the safety belts
- Closing the windows and the sunroof\* (leaving a small open gap)

(See, e.g., Exhibits Audi-1 at 194; Audi-5 at 192; Audi-9 at 196).

17F3. Audi Side Assist:

**Warning stage**

If you activate the turn signal, side assist warns you about vehicles that are detected and classified as critical. The display in the respective mirror blinks brightly. If this happens, check traffic by glancing in the rearview mirror and over your shoulder → [in General information on page 99](#).

**1 Tips**

- You can adjust the brightness of the display → [page 100](#).
- Please refer to the instructions for towing a trailer located in → [page 99](#).

(See, e.g., Exhibits Audi-1 at 98; Audi-2 at 109; Audi-3 at 100; Audi-4 at 102; Audi-5 at 96; Audi-6 at 116; Audi-7 at 130-34; Audi-9 at 105; Audi-10 at 100).

Claim 17	Corresponding Element in Audi Vehicles
	<p><b>Audi pre sense rear (vehicles with Audi side assist*)</b></p> <p>Audi pre sense rear includes the functions in Audi pre sense basic. In addition, the likelihood of a rear-end collision with the vehicle coming from behind is also calculated. If the risk of a collision is detected, the following functions can be triggered:</p> <ul style="list-style-type: none"> <li>- Tightening the safety belts</li> <li>- Closing the windows and the sunroof* (leaving a small open gap)</li> </ul> <p>(See, e.g., Exhibits Audi-1 at 194; Audi-5 at 192; Audi-9 at 196).</p>
<p>17G. a fuel overinjection circuit coupled to said processor subsystem, said fuel overinjection circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;</p>	<p>The accused Audi vehicles include a fuel overinjection circuit coupled to said processor subsystem, said fuel overinjection circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.</p> <p>See, e.g., citations for claim element 1E.</p>
<p>17H. an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an</p>	<p>The accused Audi vehicles include an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.</p> <p>See, e.g., citations for claim element 1F.</p>

Claim 17	Corresponding Element in Audi Vehicles
<p>excessive speed;</p> <p>17I. said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit, when to activate said fuel overinjection circuit, and when to activate said upshift notification circuit.</p>	<p>On information and belief, the accused Audi vehicles include a processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit, when to activate said fuel overinjection circuit, and when to activate said upshift notification circuit.</p> <p><i>See, e.g., citations for claim elements 1G, 17F.</i></p>

<b>Claim 18</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>18A. Apparatus for optimizing operation of a vehicle according to claim 17 wherein:</p>	<p>The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 17.  <i>See, e.g., citations for claim 17.</i></p>
<p>18B. said at least one sensor further includes a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated; and</p>	<p>The accused Audi vehicles include at least one sensor further including a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated.  For example, the accused Audi vehicles include a windshield wiper sensor that determines when the wipers are turned on.</p>

**Claim 18**

**Corresponding Element in Audi Vehicles**

**Wiper and washer system**



Fig. 42 Windshield wiper lever

Move the windshield wiper lever to the corresponding position:

- Ⓐ - Windshield wipers off
- 1 - Rain sensor mode. The windshield wipers switch on once the vehicle speed exceeds approximately 2 mph (4 km/h) and it is raining. The higher the rain sensor sensitivity is set (switch Ⓐ to the right), the earlier the windshield wipers react to moisture on the windshield. You can deactivate rain sensor mode in the MMI, which will then activate intermittent mode. Select: [CAR] function button > (Car)\* systems control button > Driver assist > Rain sensor > Off. In intermittent mode, you can adjust the interval time using the switch Ⓐ.

(See, e.g., Exhibits Audi-1 at 48; Audi-2 at 53-54; Audi-3 at 49; Audi-4 at 56; Audi-5 at 48; Audi-6 at 54; Audi-7 at 63-64; Audi-9 at 52; Audi-10 at 49).

The accused Audi vehicles include a memory subsystem further storing a second vehicle speed/stopping distance table.


On information and belief, the accused Audi vehicles store a second vehicle speed/stopping

18C. said memory subsystem further storing a second vehicle speed/stopping distance



<b>Claim 18</b>	<b>Corresponding Element in Audi Vehicles</b>
table.	<p>distance table.</p> <p>See, e.g., citations for claim element 17E.</p>


<b>Claim 19</b>	<b>Corresponding Element in Audi Vehicles</b>
19A. Apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:	<p>The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 17.</p> <p>See, e.g., citations for claim 17.</p>
19B. a throttle controller for controlling a throttle of said engine of said vehicle; and	<p>The accused Audi vehicles include a throttle controller for controlling a throttle of said engine of said vehicle.</p> <p>See, e.g., citations for claim element 1B.</p>
19C. said processor subsystem selectively reducing said throttle based upon data received from said radar detector, said at least one sensor and said memory subsystem.	<p>On information and belief, the accused Audi vehicles include a processor subsystem that selectively reduces said throttle based upon data received from said radar detector, said at least one sensor and said memory subsystem.</p> <p>See, e.g., citations for claim element 1G and 17E1.</p>


<b>Claim 20</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>20. Apparatus for optimizing operation of a vehicle according to claim 19 wherein said at least one sensor further includes a brake sensor for indicating whether a brake system of said vehicle is activated.</p>	<p>The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 19 wherein said at least one sensor further includes a brake sensor for indicating whether a brake system of said vehicle is activated.</p> <p>For example, the accused Audi vehicles include a brake sensor that determines when the brake system is activated (e.g., as indicated by brake lights.)</p> <div style="border: 1px solid gray; padding: 5px; margin: 10px 0;">  <b>Tips</b>  The brake lights illuminate as soon as the brakes decelerate automatically. </div> <p>(See, e.g., Exhibits Audi-1 at 85; Audi-2 at 89; Audi-3 at 80; Audi-4 at 83; Audi-5 at 83; Audi-6 at 95; Audi-9 at 91; Audi-10 at 83).</p>


<b>Claim 21</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>21A. Apparatus for optimizing operation of a vehicle according to claim 19 wherein said processor subsystem further comprises:</p>	<p>The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 19 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claims 1, 19.</i></p>
<p>21B. means for counting a total number of vehicle proximity alarms determined by said processor subsystem;</p>	<p>The accused Audi vehicles include a means for counting a total number of vehicle proximity alarms determined by said processor subsystem.</p>


21B1. Audi Adaptive Cruise Control:

**B Indicator lights**

 - Adaptive cruise control is switched on. No vehicles are detected up ahead. The stored speed is maintained.

 - A moving vehicle is detected up ahead. The adaptive cruise control system regulates the speed and distance to the moving vehicle ahead and accelerates/brakes automatically.

 - Adaptive cruise control is switched on. A moving vehicle up ahead was detected. Your vehicle remains stopped.

 - When automatic braking is not able to keep enough distance to a previously detected moving vehicle up ahead, you must take control and brake ⇒ *page 9 I, Prompt for driver intervention.*

**C Display**

If adaptive cruise control is not shown in the display, you can call it up with the multifunction steering wheel buttons ⇒ *page 24.*

Based on the symbols in the display, you can determine if the system is maintaining a distance to the vehicle ahead and what that distance is.

**No vehicle** - No vehicle ahead was detected.

**White vehicle** - A vehicle ahead was detected.

**Red vehicle** - Prompt for the driver to take action ⇒ *page 9 I.*

Both arrows on the scale **C** indicate the distance to the vehicle ahead. No arrow appears when the vehicle is on an open road and there is no object ahead. If an object is detected ahead, the arrow moves on the scale.

**Claim 21**

**Corresponding Element in Audi Vehicles**

(See, e.g., Exhibits Audi-1 at 89; Audi-2 at 102; Audi-3 at 93; Audi-4 at 96; Audi-5 at 87; Audi-6 at 110; Audi-7 at 120-22; Audi-9 at 96; Audi-10 at 94).

**Audi pre sense front (vehicles with adaptive cruise control\*)**

Audi pre sense front includes the functions in Audi pre sense basic. In addition, within the limits of the system, the likelihood of a collision with the vehicle immediately ahead is also calculated. If the system senses an imminent collision the following functions can be triggered:

- Braking guard ⇨ page 92
- Tightening the safety belts
- Closing the windows and the sunroof\* (leaving a small open gap)

(See, e.g., Exhibits Audi-1 at 194; Audi-5 at 192; Audi-6 at 110; Audi-9 at 196).

21B2. Audi Braking Guard:

**Audi braking guard**

**Description**  
Applies to vehicles with Audi adaptive cruise control.



Fig. 97. Instrument cluster: approach warning

Braking guard uses radar sensors and a video camera. It also functions within the limits of the system when adaptive cruise control is switched off.

**What can braking guard do?**

When detected in time, the system can assess situations when a vehicle ahead brakes suddenly or if your own vehicle is traveling at a high speed and approaching a vehicle up ahead that is moving more slowly. Braking guard does not react if it cannot detect the situation.

The system advises you of various situations:

- The **distance warning** is given if you are too close to the vehicle ahead for a long time. If the vehicle ahead brakes sharply, you will not be able to avoid a collision. The indicator light  in the display comes on.
- The **approach warning** is given when a detected vehicle up ahead in your lane is moving much more slowly than you are or if it brakes sharply. When this warning is given, it may only be possible to avoid a collision by swerving or braking sharply. The indicator light  and indicator in the display will warn you about the danger → fig. 97. You will also hear an acoustic signal.

If you do not react fast enough or do not react at all to the situation, braking guard will intervene by braking.

- If a collision is imminent, the system will first provide an **acute warning** by briefly and sharply applying the brakes.
- If you do not react to the acute warning, braking guard can brake with increasing force within the limits of the system. This reduces the vehicle speed in the event of a collision.
- The system can initiate maximum braking shortly before a collision<sup>1)</sup>. Full deceleration at high speeds occurs only in vehicles with adaptive cruise control and side assist (pre sense plus).
- If the braking guard senses that you are not braking hard enough when a collision is imminent, it can increase the braking force.
- The pre sense functions also engage when a collision is imminent → page 194.

**Which functions can be controlled?**

You can switch braking guard and the distance/approach warning on or off in the MMI → page 93, *Settings in the MMI*.

**WARNING**

Lack of attention can cause collisions, other accidents and serious personal injuries. The braking guard is an assist system and cannot prevent a collision by itself. The driver must always intervene. The driver is always responsible for braking at the correct time.

- Always pay close attention to traffic, even when the braking guard is switched on. Be ready to intervene and be ready to take complete control whenever necessary. Always keep the safe and legal distance between your vehicle and vehicles up ahead.
- Braking guard works within limits and will not respond outside the system limits, for example when approaching a

(See, e.g., Exhibits Audi-1 at 92; Audi-2 at 105-06; Audi-3 at 96-97; Audi-4 at 99; Audi-5 at 90;

**Claim 21**

**Corresponding Element in Audi Vehicles**

Audi-6 at 113; Audi-7 at 127; Audi-9 at 99; Audi-10 at 97).

**Audi pre sense front (vehicles with adaptive cruise control\*)**

Audi pre sense front includes the functions in Audi pre sense basic. In addition, within the limits of the system, the likelihood of a collision with the vehicle immediately ahead is also calculated. If the system senses an imminent collision the following functions can be triggered:

- Braking guard → page 92
- Tightening the safety belts
- Closing the windows and the sunroof\* (Leaving a small open gap)

(See, e.g., Exhibits Audi-1 at 194; Audi-5 at 192; Audi-6 at 110; Audi-9 at 196).

21B3. Audi Side Assist:

**Warning stage**

If you activate the turn signal, side assist warns you about vehicles that are detected and classified as critical. The display in the respective mirror blinks brightly. If this happens, check traffic by glancing in the rearview mirror and over your shoulder → [in General information on page 99](#).

**1 Tips**

- You can adjust the brightness of the display → [page 100](#).
- Please refer to the instructions for towing a trailer located in → [page 99](#).

Claim 21	Corresponding Element in Audi Vehicles
	<p>(See, e.g., Exhibits Audi-1 at 98; Audi-2 at 109; Audi-3 at 100; Audi-4 at 102; Audi-5 at 96; Audi-6 at 116; Audi-7 at 130-34; Audi-9 at 105; Audi-10 at 100).</p> <p><b>Audi pre sense rear (vehicles with Audi side assist*)</b></p> <p>Audi pre sense rear includes the functions in Audi pre sense basic. In addition, the likelihood of a rear-end collision with the vehicle coming from behind is also calculated. If the risk of a collision is detected, the following functions can be triggered:</p> <ul style="list-style-type: none"> <li>- Tightening the safety belts</li> <li>- Closing the windows and the sunroof* (leaving a small open gap)</li> </ul> <p>(See, e.g., Exhibits Audi-1 at 194; Audi-5 at 192; Audi-9 at 196).</p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “counting a total number of vehicle proximity alarms determined by said processor subsystem” are described in, for example, Figures 1 and 2 and associated text relating to the expression programmed in the Processor Subsystem 12.</p>
<p>21C. means for selectively reducing said throttle based upon said total number of vehicle proximity alarms.</p>	<p>On information and belief, the accused Audi vehicles include a means for selectively reducing said throttle based upon said total number of vehicle proximity alarms.</p> <p>See, e.g., citations for claim element 21B.</p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “counting a total number of vehicle proximity</p>



<b>Claim 21</b>	<b>Corresponding Element in Audi Vehicles</b>
	alarms determined by said processor subsystem” are described in, for example, Figures 1 and 2 and associated text relating to the expression programmed in the Processor Subsystem 12.
<b>Claim 22</b>	<b>Corresponding Element in Audi Vehicles</b>
22A. Apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:	The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:  <i>See, e.g., citations for claim 17.</i>
22B. a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and	The accused Audi vehicles include a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed.  <i>See, e.g., citations for claim element 7F.</i>
22C. said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said downshift notification circuit.	The accused Audi vehicles include a processor subsystem that determines, based upon data received from said plurality of sensors, when to activate said downshift notification circuit.  <i>See, e.g., citations for claim elements 1B, 1G.</i>

<b>Claim 23</b>	<b>Corresponding Element in Audi Vehicles</b>
23A. Apparatus for optimizing operation of a vehicle, comprising:	The accused Audi vehicles include an apparatus for optimizing operation of a vehicle.  <i>See, e.g., citations for claims 1, 17.</i>
23B. a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;	The accused Audi vehicles include a radar detector that determines a distance separating a vehicle having an engine and another object in front of the accused vehicles.  <i>See, e.g., citations for claim element 17B.</i>
23C. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor;	The accused Audi vehicles include a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor  <i>See, e.g., citations for claim element 1B.</i>
23D. a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;	The accused Audi vehicles include a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;  <i>See, e.g., citations for claim element 1C.</i>
23E. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold	The accused Audi vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors.

<b>Claim 23</b>	<b>Corresponding Element in Audi Vehicles</b>
pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors;	<i>See, e.g.,</i> citations for claim element 17E.
23F. a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;	<p>The accused Audi vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.</p> <p><i>See, e.g.,</i> citations for claim element 1E.</p>
23G. an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed;	<p>The accused Audi vehicles include an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.</p> <p><i>See, e.g.,</i> citations for claim element 1F.</p>
23H. said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit;	<p>The accused Audi vehicles include a processor subsystem that determines, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit.</p> <p><i>See, e.g.,</i> citations for claim element 1G.</p>
23I. a vehicle proximity	The accused Audi vehicles include a vehicle proximity alarm circuit coupled to said processor

<b>Claim 23</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;</p>	<p>subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object.  <i>See, e.g., citations for claim 17F.</i></p>
<p>23J. said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.</p>	<p>The accused Audi vehicles includes a processor subsystem that determines, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.  <i>See, e.g., citations for claim element 17I.</i></p>

<b>Claim 24</b>	<b>Corresponding Element in Audi Vehicles</b>
24A. Apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:	<p>The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:</p> <p><i>See, e.g., citations for claim 23.</i></p>
24B. means for determining when road speed for said vehicle is increasing or decreasing;	<p>The accused Audi vehicles include a means for determining when road speed for said vehicle is increasing or decreasing.</p> <p><i>See, e.g., citations for claim element 15B.</i></p>
24C. means for determining when throttle position for said vehicle is increasing or decreasing; and	<p>The accused Audi vehicles include a means for determining when throttle position for said vehicle is increasing or decreasing.</p> <p><i>See, e.g., citations for claim element 2C.</i></p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when throttle position for said vehicle is increasing or decreasing” are described in, for example, Figures 1 and 2 and associated text of the ’781 patent relating to Throttle Sensor 24, Memory Subsystem 14, and Processor Subsystem 12.</p>
24D. means for comparing manifold pressure to said manifold pressure set point;	<p>The accused Audi vehicles include a means for comparing manifold pressure to said manifold pressure set point.</p> <p><i>See, e.g., citations for claim element 2D.</i></p>
24E. means for determining when manifold pressure for said vehicle is increasing or decreasing; and	<p>The accused Audi vehicles include a means for determining when manifold pressure for said vehicle is increasing or decreasing.</p> <p><i>See, e.g., citations for claim element 4D.</i></p>

<b>Claim 24</b>	<b>Corresponding Element in Audi Vehicles</b>
	<p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when manifold pressure for said vehicle is increasing or decreasing” are described in, for example, Figures 1 and 2 and associated text of the ’781 patent relating to Manifold PSI Sensor 22, Memory Subsystem 14, and Processor Subsystem 12.</p>
<p>24F. means for determining when engine speed for said vehicle is increasing or decreasing;</p>	<p>The accused Audi vehicles include a means for determining when engine speed for said vehicle is increasing or decreasing.  <i>See, e.g.,</i> citations for claim element 15G.</p>
<p>24G. said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.</p>	<p>On information and belief, the accused Audi vehicles include a processor subsystem that activates said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.  <i>See, e.g.,</i> citations for claim element 1G.</p>

<b>Claim 25</b>	<b>Corresponding Element in Audi Vehicles</b>
25A. Apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:	The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claim 23.</i>
25B. means for determining when road speed for said vehicle is increasing;	The accused Audi vehicles include a means for determining when road speed for said vehicle is increasing.  <i>See, e.g., citations for claim element 2B.</i>
25C. means for determining when throttle position for said vehicle is increasing; and	The accused Audi vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g., citations for claim element 2C.</i>
25D. means for comparing manifold pressure to said manifold pressure set point;	The accused Audi vehicles include a means for comparing manifold pressure to said manifold pressure set point.  <i>See, e.g., citations for claim element 2D.</i>
25E. means for comparing engine speed to said RPM set point;	The accused Audi vehicles include a means for comparing engine speed to said RPM set point.  <i>See, e.g., citations for claim element 5E.</i>
25F. said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or above said RPM set point and	On information and belief, the accused Audi vehicles include a processor subsystem that activates said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.  <i>See, e.g., citations for claim element 5F.</i>

<b>Claim 25</b>	<b>Corresponding Element in Audi Vehicles</b>
at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.	



<b>Claim 26</b>	<b>Corresponding Element in Audi Vehicles</b>
26A. Apparatus for optimizing operation of a vehicle, comprising:	The accused Audi vehicles include an apparatus for optimizing operation of a vehicle.  <i>See, e.g., citations for claims 1, 17.</i>
26B. a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;	The accused Audi vehicles include a radar detector that determines a distance separating a vehicle having an engine and another object in front of the accused vehicles.  <i>See, e.g., citations for claim element 17B.</i>
26C. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor;	The accused Audi vehicles include a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor.  <i>See, e.g., citations for claim element 1B.</i>
26D. a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;	The accused Audi vehicles include a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;  <i>See, e.g., citations for claim element 1C.</i>
26E. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold	The accused Audi vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, RPM set point, and present and prior levels for each one of said plurality of sensors.

<b>Claim 26</b>	<b>Corresponding Element in Audi Vehicles</b>
pressure set point, RPM set point, and present and prior levels for each one of said plurality of sensors;	<i>See, e.g., citations for claim element 17E.</i>
26F. a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;	<p>The accused Audi vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.</p> <p><i>See, e.g., citations for claim element 1E.</i></p>
26G. a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;	<p>The accused Audi vehicles include a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;</p> <p><i>See, e.g., citations for claim element 7F.</i></p>
26H. said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit;	<p>The accused Audi vehicles include a processor subsystem that determines, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit.</p> <p><i>See, e.g., citations for claim element 7G.</i></p>
26I. a vehicle proximity	The accused Audi vehicles include a vehicle proximity alarm circuit coupled to said processor

<b>Claim 26</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;</p>	<p>subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object.  <i>See, e.g., citations for claim element 17F.</i></p>
<p>26J. said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.</p>	<p>The accused Audi vehicles includes a processor subsystem that determines, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.  <i>See, e.g., citations for claim element 17I.</i></p>

<b>Claim 27</b>	<b>Corresponding Element in Audi Vehicles</b>
27A. Apparatus for optimizing operation of a vehicle according to claim 26 wherein said processor subsystem further comprises:	The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 26 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claims 1, 26.</i>
27B. means for determining when road speed for said vehicle is decreasing;	The accused Audi vehicles include a means for determining when road speed for said vehicle is decreasing.  <i>See, e.g., citations for claim element 4B.</i>
27C. means for determining when throttle position for said vehicle is increasing; and	The accused Audi vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g., citations for claim element 4C.</i>
27D. means for determining when manifold pressure for said vehicle is increasing; and	The accused Audi vehicles include a means for determining when manifold pressure for said vehicle is increasing.  <i>See, e.g., citations for claim element 4D.</i>
27E. means for determining when engine speed for said vehicle is decreasing;	The accused Audi vehicles include a means for determining when engine speed for said vehicle is decreasing.  <i>See, e.g., citations for claim element 4E.</i>
27F. said processor subsystem activating said downshift notification circuit if both road speed and engine speed are	On information and belief, the accused Audi vehicles include a processor subsystem that activates said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.  <i>See, e.g., citations for claim element 10F.</i>

<b>Claim 27</b>	<b>Corresponding Element in Audi Vehicles</b>
decreasing and both throttle position and manifold pressure for said vehicle are increasing.	

<b>Claim 28</b>		<b>Corresponding Element in Audi Vehicles</b>
28A. Apparatus for optimizing operation of a vehicle, comprising:		The accused Audi vehicles include an apparatus for optimizing operation of a vehicle.  <i>See, e.g., citations for claim 1.</i>
28B. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;		The accused Audi vehicles include a plurality of sensors coupled to the vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor  <i>See, e.g., citations for claim element 1B.</i>
28C. a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;		The accused Audi vehicles include a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom.  <i>See, e.g., citations for claim element 1C.</i>
28D. a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;		The accused Audi vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.  <i>See, e.g., citations for claim element 1E.</i>
28E. said processor subsystem determining whether to activate said fuel overinjection notification		The accused Audi vehicles include a processor subsystem that determines whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor.

<b>Claim 28</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor.</p>	<p><i>See, e.g., citations for claim element 1G.</i></p>

<b>Claim 29</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>29A. Apparatus according to claim 28 and further comprising:</p>	<p>The accused Audi vehicles include an apparatus according to claim 28 and further comprising:  <i>See, e.g., citations for claim 1, 28.</i></p>
<p>29B. a memory subsystem, coupled to said processor subsystem, said memory subsystem maintaining a manifold pressure set point;</p>	<p>The accused Audi vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem maintaining a manifold pressure set point.  <i>See, e.g., citations for claim element 1D.</i></p>
<p>29C. said processor subsystem activating said fuel overinjection notification circuit upon determining that: (1) based upon data received from said road speed sensor, road speed of said vehicle is increasing; (2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; and (3) based upon data received from said manifold pressure sensor, manifold pressure for said vehicle exceeds said manifold pressure set point.</p>	<p>On information and belief, the accused Audi vehicles include a processor subsystem that activates said fuel overinjection notification circuit upon determining that: (1) based upon data received from said road speed sensor, road speed of said vehicle is increasing; (2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; and (3) based upon data received from said manifold pressure sensor, manifold pressure for said vehicle exceeds said manifold pressure set point.  <i>See, e.g., citations for claim element 1G.</i></p>



<b>Claim 30</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>30A. Apparatus according to claim 28, wherein:</p>	<p>The accused Audi vehicles include an apparatus according to claim 28.</p> <p><i>See, e.g., citations for claims 1, 28.</i></p>
<p>30B. said plurality of sensors coupled to said vehicle further include an engine speed sensor;</p>	<p>The accused Audi vehicles include a plurality of sensors coupled to said vehicle further including an engine speed sensor;</p> <p><i>See, e.g., citations for claim element 1B.</i></p>
<p>30C. said processor subsystem activating said fuel overinjection notification circuit upon determining that: (1) based upon data received from said road speed sensor, road speed of said vehicle is decreasing; (2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; (3) based upon data received from said manifold pressure sensor, manifold pressure for said vehicle is increasing; and (4) based upon data received from said engine speed sensor, engine speed for said vehicle is decreasing.</p>	<p>On information and belief, the accused Audi vehicles include a processor subsystem that activates said fuel overinjection notification circuit upon determining that: (1) based upon data received from said road speed sensor, road speed of said vehicle is decreasing; (2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; (3) based upon data received from said manifold pressure sensor, manifold pressure for said vehicle is increasing; and (4) based upon data received from said engine speed sensor, engine speed for said vehicle is decreasing.</p> <p><i>See, e.g., citations for claim element 1G.</i></p>

<b>Claim 30</b>	<b>Corresponding Element in Audi Vehicles</b>
engine speed for said vehicle is decreasing.	

<b>Claim 31</b>	<b>Corresponding Element in Audi Vehicles</b>
31A. Apparatus for optimizing operation of a vehicle, comprising:	The accused Audi vehicles include an apparatus for optimizing operation of a vehicle.  <i>See, e.g., citations for claims 1, 17.</i>
31B. a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;	The accused Audi vehicles include a radar detector that determines a distance separating a vehicle having an engine and another object in front of the accused vehicles.  <i>See, e.g., citations for claim element 17B.</i>
31C. at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor.	The accused Audi vehicles include at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor.  <i>See, e.g., citations for claim element 1B.</i>
31D. a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;	The accused Audi vehicles include a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom.  <i>See, e.g., citations for claim element 17D.</i>
31E. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table.	The accused Audi vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table.  <i>See, e.g., citations for claim element 17E.</i>
31F. a vehicle proximity alarm circuit coupled to said	The accused Audi vehicles include a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to

<b>Corresponding Element in Audi Vehicles</b>	
<b>Claim 31</b> processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;	said object.  <i>See, e.g., citations for claim element 17F.</i>
31G. said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem.	On information and belief, the accused Audi vehicles includes a processor subsystem that determines whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem.  <i>See, e.g., citations for claim element 17I.</i>

<b>Corresponding Element in Audi Vehicles</b>	
<b>Claim 32</b> 32A. Apparatus for optimizing operation of a vehicle according to claim 31 wherein:	The accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 31.  <i>See, e.g., citations for claim 31.</i>
32B. said at least one sensor further includes a	The accused Audi vehicles include at least one sensor further including a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated.

<b>Claim 32</b>	<b>Corresponding Element in Audi Vehicles</b>
windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated; and	<i>See, e.g.,</i> citations for claim element 18B.
32C. said memory subsystem further storing a second vehicle speed/stopping distance table.	The accused Audi vehicles include a memory subsystem further storing a second vehicle speed/stopping distance table.  <i>See, e.g.,</i> citations for claim element 18C.
32D. if said windshield wiper sensor indicates that said windshield wiper is deactivated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar speed detector, said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem;	On information and belief, the accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 31 wherein if said windshield wiper sensor indicates that said windshield wiper is deactivated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem.  <i>See, e.g.,</i> citations for claim element 17I.
32E. if said windshield wiper sensor indicates that said windshield wiper is activated, said processor subsystem determining whether to activate said vehicle proximity alarm	On information and belief, the accused Audi vehicles include an apparatus for optimizing operation of a vehicle according to claim 31 wherein if said windshield wiper sensor indicates that said windshield wiper is activated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said second vehicle speed/stopping distance table stored in said memory subsystem.

<b>Claim 32</b>	<b>Corresponding Element in Audi Vehicles</b>
<p>circuit based upon data received from said radar detector, said road speed sensor and said second vehicle speed/stopping distance table stored in said memory subsystem.</p>	<p><i>See, e.g., citations for claim element 17I.</i></p>

## **EXHIBIT 7**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS**

**EASTERN DIVISION**

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VELOCITY PATENT LLC,	)	
	)	
<i>Plaintiff,</i>	)	Civil Action No. 1:13-cv-08413
	)	
v.	)	Hon. John W. Darrah
	)	
MERCEDES-BENZ USA, LLC	)	<b>JURY TRIAL DEMANDED</b>
MERCEDES-BENZ U.S. INTERNATIONAL	)	
INC.	)	
	)	
<i>Defendants.</i>	)	

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**VELOCITY PATENT LLC'S INITIAL INFRINGEMENT CONTENTIONS PURSUANT  
TO LOCAL PATENT RULE 2.2**

Plaintiff Velocity Patent LLC (“Velocity”) hereby provides, pursuant to N.D. Ill. Local Patent Rule 2.2 of the Northern District of Illinois, the following Initial Infringement Contentions. Velocity contends that each of the identified claims is infringed by Mercedes-Benz USA, LLC and Mercedes-Benz U.S. International Inc. (collectively “Mercedes”). The following contentions are based on knowledge and information in Velocity’s possession, custody and control after a reasonable investigation of publicly-available sources and the limited number of documents produced by Mercedes pursuant to Local Patent Rule 2.1. The accused Mercedes products implement some of the infringing functionality in whole or in part using circuitry and associated programs, which are neither publicly available nor described in Mercedes’s production to date. Therefore, Velocity reserves the right to revise, amend and supplement these contentions as discovery progresses and new information becomes available.



**A. Identification of Infringed Claims and Applicable Statutory Section of 35 U.S.C. § 271**

Claims 1-2, 4-5, 7-8, 10, 12-13, 15, and 17-32 of U.S. Patent No. 5,954,781 are directly infringed under 35 U.S.C § 271(a) by the accused Mercedes vehicles identified below.

**B. Identification of Accused Instrumentalities By Claim**

As set forth in the accompanying claim chart, the Mercedes-Benz S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class vehicles that include the identified features, infringe one or more of the claims identified above.

On a claim-by-claim basis, the following Mercedes vehicles are accused of infringement by Velocity:

Claim 1 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 2 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 4 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 5 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 7 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 8 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;



Claim 25 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 26 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 27 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 28 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 29 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 30 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 31 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class;

Claim 32 - Mercedes S-Class, C-Class Coupe, C-Class Sedan, CL-Class, CLA-Class, CLS-Class, E-Class Coupe/Cabriolet, E-Class Sedan/Wagon, G-Class, GL-Class, GLK-Class, M-Class, SL-Class, SLK-Class, and SLS-Class.

**C. Claim Chart Comparing Each Element of the Asserted Claims to the Accused Instrumentalities**

A claim chart identifying where each element of each asserted claim is found within each Accused Mercedes vehicle is attached.

**D. Identification of Whether Each Element of Each Asserted Claim is Present in the Accused Instrumentalities Literally or Under the Doctrine of Equivalents**

At this time, Velocity asserts that all of the asserted claim elements are literally present in the Accused Mercedes vehicles.

At this time, sections (e)-(f) of Local Patent Rule 2.2 are not applicable. Velocity expressly reserves the right to revise, amend and supplement these contentions as discovery progresses and new information becomes available.

Dated: March 12, 2014

Respectfully submitted,

/s/ James A. Shimota

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**PROOF OF SERVICE**

The undersigned hereby certifies that a true and correct copy of the above and foregoing document has been served on March 12, 2014, by electronic mail to:

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*/s/ James C. Rally*

Project Assistant  
Mavrakakis Law Group LLP

**Velocity Patent LLC Preliminary Infringement Contentions Against Mercedes-Benz Defendants Pursuant to N.D. Ill. LPR 2.1**

<b>Corresponding Element in Mercedes-Benz Vehicles<sup>1</sup></b>	
<p><b>Claim 1</b></p> <p>1A. Apparatus for optimizing operation of a vehicle, comprising:<sup>2</sup></p>	<p>The accused Mercedes-Benz vehicles<sup>3</sup> include an apparatus for optimizing operation of a vehicle.</p> <p>For example, the accused Mercedes-Benz vehicles include a motor electronics (ME) control unit with one or more computer processors that monitor various vehicle systems and optimize the fuel economy, safety and performance of the vehicle.</p>

<sup>1</sup> Velocity contends that each element of the asserted claims is literally and directly infringed by the accused vehicles.

<sup>2</sup> Velocity's citations related to any claim preamble in this claim chart should not be interpreted as an admission that the preamble is limiting.

<sup>3</sup> The accused features and vehicles identified in these preliminary contentions are representative only. Velocity accuses all Mercedes-Benz vehicle models for model years 2007 to 2014 that incorporate features that are similar to the accused features identified in these preliminary contentions, including at least the: a) S-Class; b) C-Class Coupe; c) C-Class Sedan; d) CL-Class; e) CLA Class; f) CLS Class; g) E-Class Coupe and Cabriolet; h) E-Class Sedan and Wagon; i) G-Class; j) GL-Class; k) GLK-Class; l) M-Class; m) SL-Class; n) SLK-Class; and o) SLS-Class. Discovery has just begun in this case. Velocity reserves the right to supplement and identify additional infringing models (e.g., 2015 models currently being tested) as it learns facts through discovery.

**Claim 1**

**Corresponding Element in Mercedes-Benz Vehicles**

**ME (motor electronics) control unit**

The MED 17.7.1 engine control builds on experiences with the MED 9 of previous engines. The following features have been implemented in this new engine control MED 17.7.1 in an identical modular housing:

- Modular design as a standardized control unit for all new V8 engines with direct injection
- In contrast to the predecessor unit, no separate water cooling of the injector power amplifiers but air convection via cooling fins instead
- No additional component carriers in the control unit for the injector power amplifiers
- Single-processor concept with 150 MHz clock frequency instead of dual-core concept with 66 MHz each
- Significantly increased flash and RAM memory capacities
- Weight reduction by 0.2 kg



P54.2.1-3.17.1-00

*Engine M 157*

*N3/10 ME-SFI [ME] control unit*

Claim 1	Corresponding Element in Mercedes-Benz Vehicles <sup>1</sup>
<p><b>Task</b></p> <p>The engine control unit combines with the sensors and actuators of engine M 157 to form the engine control system. The following systems and functions are controlled and coordinated by the engine control unit according to the input signals:</p> <ul style="list-style-type: none"> <li>• Ignition system</li> <li>• Fuel supply</li> <li>• Injection control</li> <li>• Electronic accelerator</li> <li>• Diagnosis and fault storage</li> <li>• Engine start/stop function</li> <li>• Drive authorization system and immobilizer</li> <li>• Controlled camshaft adjustment</li> <li>• Thermal management</li> <li>• Torque interface</li> <li>• Alternator interface</li> <li>• Oil pressure control</li> <li>• Lambda control</li> <li>• Tank diagnosis</li> <li>• Purging</li> </ul>	





**Claim 1**

**Corresponding Element in Mercedes-Benz Vehicles<sup>1</sup>**

A1	Instrument cluster
A164	Fuel reserve warning lamp
A1654	Coolant temperature warning lamp
A1658	Engine diagnosis indicator lamp
A1p13	Multifunction display
A29/2	Front knock sensor (left side of engine)
A30/1	Rear knock sensor (left side of engine)
A30/2	Front knock sensor (right side of engine)
A30/3	Rear knock sensor (right side of engine)
B4/1	Fuel level indicator sensor, left tank half
B4/2	Fuel level indicator sensor, right tank half
B4/3	Tank pressure sensor (with code (494) USA version)
B4/7	Fuel pressure sensor
B4/25	Fuel pressure and temperature sensor
B6/4	Intake camshaft Hall sensor, left
B6/5	Intake camshaft Hall sensor, right
B6/6	Exhaust camshaft Hall sensor, left
B6/7	Exhaust camshaft Hall sensor, right

B11/4	Coolant temperature sensor
B17	Intake air temperature sensor
B28/4	Pressure sensor downstream of air filter, left cylinder bank
B28/5	Pressure sensor downstream of air filter, right cylinder bank
B28/6	Pressure sensor upstream of throttle valve actuator
B28/7	Pressure sensor downstream of throttle valve actuator
B37	Accelerator pedal sensor
B40	Oil sensor (oil level, temperature and quality)
B64/1	Brake vacuum sensor
B70	Crankshaft Hall sensor
G1	On-board electrical system battery
G2	Alternator
G3/3	Left O2 sensor upstream of catalytic converter
G3/4	Right O2 sensor upstream of catalytic converter
G3/5	Left O2 sensor downstream of catalytic converter
G3/6	Right O2 sensor downstream of catalytic converter

L6/1	Left front rpm sensor
L6/2	Right front rpm sensor
L6/3	Left rear rpm sensor
L6/4	Right rear rpm sensor
M1	Starter
M3	Fuel pump
M4/7	Engine and air conditioning electric suction fan with integrated control
M16/6	Throttle valve actuator
M44	Charge air cooler/circulation pump
N2/7	Restraint systems control unit
N3/10	ME-SF (ME) control unit
N10/1	Front SAM control unit with fuse and relay module
N10/1kC	Circuit 87 relay, engine
N10/1kD	Circuit 15 relay
N10/1kH	Circuit 50 relay, starter
N10/2	Rear SAM control unit with fuse and relay module
N10/2kC	Circulation pump relay
N22/1	AAC (KLA) control unit
N42/5	ESP control unit
N51/2	ABC control unit

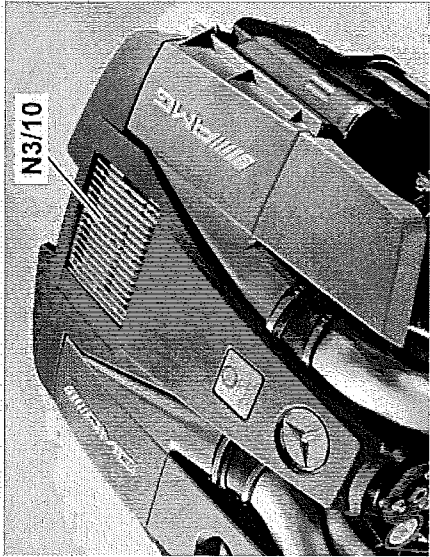
(See, e.g., Ex. Mercedes-Benz-1, Introduction of the New Generation of V-Engines, 8-cylinder M157 AMG at 49-51).

While the citations above relate specifically to the Mercedes-Benz M157 engine, upon information and belief, Mercedes-Benz's other engines (e.g., the 4-cylinder M270/M274, 6-cylinder M272/M276, 8-cylinder M155/M156/M273/M278/M157/M159 and 12-cylinder M158/M275/M285) have the same or similar motor electronics (ME) control units with one or more computer processors.

The accused Mercedes-Benz vehicles include a plurality of sensors coupled to the vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor.

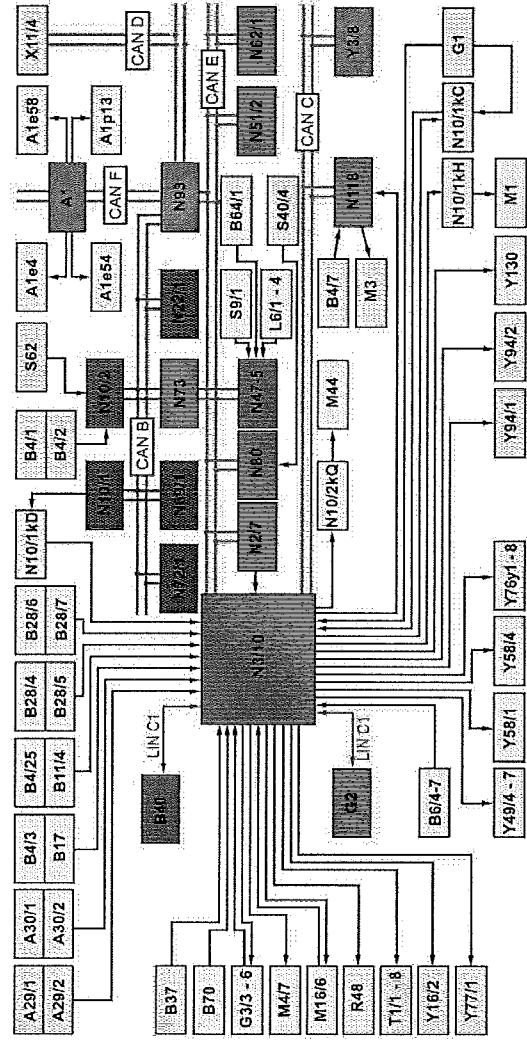
1B. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said

<p><b>Claim 1</b></p> <p>vehicle, including a road speed sensor, an engine pressure sensor, a manifold throttle position sensor;</p>	<p><b>Corresponding Element in Mercedes-Benz Vehicles<sup>1</sup></b></p> <p>See, e.g., citations for claim element 1A (describing processor controlled vehicle systems that monitor vehicle system characteristics and operations).</p> <p>Upon information and belief, the accused Mercedes-Benz vehicles include an engine. More specifically, upon information and belief, the Mercedes-Benz engines include the 4-cylinder M270/M274, 6-cylinder M272/M276, 8-cylinder M155/M156/M273/M278/M157/M159 and 12-cylinder M158/M275/M285.</p> <p>IB1. The accused Mercedes-Benz vehicles include one or more road speed sensors, engine speed sensors, manifold pressure sensors, and throttle position sensors. For example, the Mercedes-Benz M157 engine includes a MED 17.7.1 engine control unit with a processor that is coupled to a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor. Upon information and belief, Mercedes-Benz's other engines have the same or similar engine control features.</p>
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Claim 1	Corresponding Element in Mercedes-Benz Vehicles <sup>1</sup>
	<p><b>ME (motor electronics) control unit</b></p> <p>The MED 17.7.1 engine control builds on experiences with the MED 9 of previous engines. The following features have been implemented in this new engine control MED 17.7.1 in an identical modular housing:</p> <ul style="list-style-type: none"> <li>• Modular design as a standardized control unit for all new V8 engines with direct injection</li> <li>• In contrast to the predecessor unit, no separate water cooling of the injector power amplifiers but air convection via cooling fins instead</li> <li>• No additional component carriers in the control unit for the injector power amplifiers</li> <li>• Single-processor concept with 150 MHz clock frequency instead of dual-core concept with 66 MHz each</li> <li>• Significantly increased flash and RAM memory capacities</li> <li>• Weight reduction by 0.2 kg</li> </ul> <div>  </div> <p><i>Engine M 157</i></p> <p><i>N3/10 ME-SFI [ME] control unit</i></p>

Claim 1	Corresponding Element in Mercedes-Benz Vehicles
	<p>Task</p> <p>The engine control unit combines with the sensors and actuators of engine M 157 to form the engine control system. The following systems and functions are controlled and coordinated by the engine control unit according to the input signals:</p> <ul style="list-style-type: none"> <li>• Ignition system</li> <li>• Fuel supply</li> <li>• Injection control</li> <li>• Electronic accelerator</li> <li>• Diagnosis and fault storage</li> <li>• Engine start/stop function</li> <li>• Drive authorization system and immobilizer</li> <li>• Controlled camshaft adjustment</li> <li>• Thermal management</li> <li>• Torque interface</li> <li>• Alternator interface</li> <li>• Oil pressure control</li> <li>• Lambda control</li> <li>• Tank diagnosis</li> <li>• Purging</li> </ul>

Engine control



Block diagram of engine M 157 (shown on model 221)

Prüfung 86

Claim 1	Corresponding Element in Mercedes-Benz Vehicles	
<p>A1 Instrument cluster</p> <p>A1e4 Fuel reserve warning lamp</p> <p>A1e54 Coolant temperature warning lamp</p> <p>A1e58 Engine diagnosis indicator lamp</p> <p>A1p13 Multifunction display</p> <p>A29/1 Front knock sensor (left side of engine)</p> <p>A29/2 Rear knock sensor (right side of engine)</p> <p>A30/1 Front knock sensor (right side of engine)</p> <p>A30/2 Rear knock sensor (right side of engine)</p> <p>B4/1 Fuel level indicator sensor, left tank half</p> <p>B4/2 Fuel level indicator sensor, right tank half</p> <p>B4/3 Tank pressure sensor (with code 494 USA version)</p> <p>B4/7 Fuel pressure sensor</p> <p>B4/25 Fuel pressure and temperature sensor</p> <p>B6/4 Intake camshaft Hall sensor, left</p> <p>B6/5 Intake camshaft Hall sensor, right</p> <p>B6/6 Exhaust camshaft Hall sensor, left</p> <p>B6/7 Exhaust camshaft Hall sensor, right</p>	<p>B11/4 Coolant temperature sensor</p> <p>B17 Intake air temperature sensor</p> <p>B28/4 Pressure sensor downstream of air filter, left cylinder bank</p> <p>B28/5 Pressure sensor downstream of air filter, right cylinder bank</p> <p>B28/6 Pressure sensor upstream of throttle valve actuator</p> <p>B28/7 Pressure sensor downstream of throttle valve actuator</p> <p>B37 Accelerator pedal sensor</p> <p>B40 Oil sensor (oil level, temperature and quality)</p> <p>B64/3 Brake vacuum sensor</p> <p>B70 Crankshaft Hall sensor</p> <p>G1 On-board electrical system battery</p> <p>G2 Alternator</p> <p>G3/3 Left O2 sensor upstream of catalytic converter</p> <p>G3/4 Right O2 sensor upstream of catalytic converter</p> <p>G3/5 Left O2 sensor downstream of catalytic converter</p> <p>G3/6 Right O2 sensor downstream of catalytic converter</p>	<p>L6/1 Left front rpm sensor</p> <p>L6/2 Right front rpm sensor</p> <p>L6/3 Left rear rpm sensor</p> <p>L6/4 Right rear rpm sensor</p> <p>M1 Starter</p> <p>M3 Fuel pump</p> <p>M4/7 Engine and air conditioning electric suction fan with integrated control</p> <p>M16/6 Throttle valve actuator</p> <p>M44 Charge air cooler circulation pump</p> <p>N2/7 Restraint systems control unit</p> <p>N3/10 ME-SFI (IME) control unit</p> <p>N10/1 Front SAM control unit with fuse and relay module</p> <p>N10/1kC Circuit 87 relay, engine</p> <p>N10/1kD Circuit 15 relay</p> <p>N10/1kH Circuit 50 relay, starter</p> <p>N10/2 Rear SAM control unit with fuse and relay module</p> <p>N10/2kQ Circulation pump relay</p> <p>N22/1 AAC (KLA) control unit</p> <p>N42-5 ESP control unit</p> <p>N5 1/2 ABC control unit</p>

(See, e.g., Ex. Mercedes-Benz-1 at 49-51)



Claim 1	Corresponding Element in Mercedes-Benz Vehicles <sup>1</sup>
	<p><b>Safety fuel shutoff</b></p> <p>A safety fuel shutoff function guarantees road safety and the safety of the occupants.</p> <p>The engine control unit controls the safety fuel shutoff on the basis of the following sensors and signals:</p> <ul style="list-style-type: none"> <li>• Crankshaft Hall sensor, engine rpm</li> <li>• Throttle valve actuator, throttle valve position</li> <li>• Restraint systems control unit, direct crash signal</li> <li>• Restraint systems control unit, indirect crash signal via chassis CAN</li> </ul> <p>The safety fuel shutoff is activated by the engine control unit in the event of mechanical faults in the throttle valve actuator, on the absence of the engine speed signal or after receipt of a crash signal.</p>
1C. a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;	<p>(See, e.g., Ex. Mercedes-Benz-1 at 33).</p> <p>The accused Mercedes-Benz vehicles include a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom.</p> <p>See, e.g., citations for claim elements 1A (describing processor controlled vehicle systems that monitor vehicle system characteristics and operations) and 1B (describing an engine control unit with a processor coupled to sensors that measure system characteristics).</p>
1D. a memory subsystem, coupled to said processor subsystem, said memory	<p>On information and belief, the accused Mercedes-Benz vehicles have a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors.</p>



**Corresponding Element in Mercedes-Benz Vehicles**

**Claim 1**

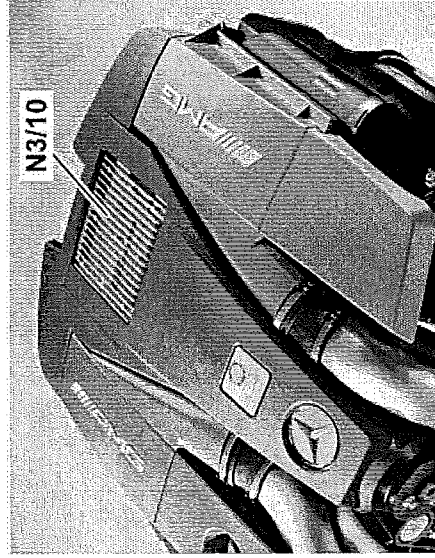
subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors;

For example, the accused Mercedes-Benz vehicles include one or more memories that form a memory subsystem for storing information relating to vehicle system operations:

**ME (motor electronics) control unit**

The MED 17.7.1 engine control builds on experiences with the MED 9 of previous engines. The following features have been implemented in this new engine control MED 17.7.1 in an identical modular housing:

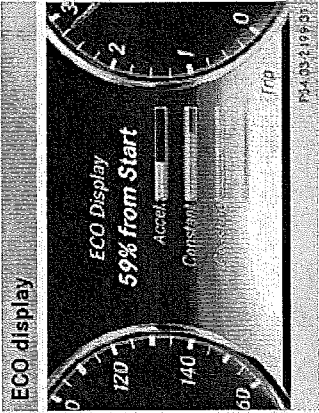
- Modular design as a standardized control unit for all new V8 engines with direct injection
- In contrast to the predecessor unit, no separate water cooling of the injector power amplifiers but air convection via cooling fins instead
- No additional component carriers in the control unit for the injector power amplifiers
- Single-processor concept with 150 MHz clock frequency instead of dual-core concept with 66 MHz each
- Significantly increased flash and RAM memory capacities
- Weight reduction by 0.2 kg



P54.2, 1-317, 1-00

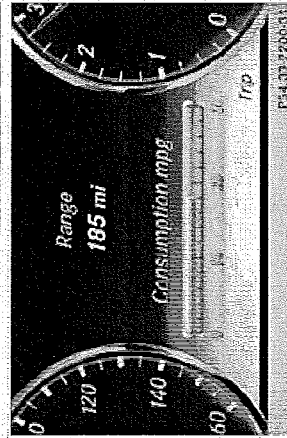
**Engine M 157**  
N3/10 ME-SFI [ME] control unit

Claim 1	Corresponding Element in Mercedes-Benz Vehicles <sup>1</sup>
	<p>Task</p> <p>The engine control unit combines with the sensors and actuators of engine M 157 to form the engine control system. The following systems and functions are controlled and coordinated by the engine control unit according to the input signals:</p> <ul style="list-style-type: none"> <li>• Ignition system</li> <li>• Fuel supply</li> <li>• Injection control</li> <li>• Electronic accelerator</li> <li>• Diagnosis and fault storage</li> <li>• Engine start/stop function</li> <li>• Drive authorization system and immobilizer</li> <li>• Controlled camshaft adjustment</li> <li>• Thermal management</li> <li>• Torque interface</li> <li>• Alternator interface</li> <li>• Oil pressure control</li> <li>• Lambda control</li> <li>• Tank diagnosis</li> <li>• Purging</li> </ul> <p>(See, e.g., Ex. Mercedes-Benz-1 at 49-51; see also citations for claim elements 1A-C).</p> <p>While the citations above relate specifically to the Mercedes-Benz M157 engine, upon information and belief, Mercedes-Benz's other engines (e.g., the 4-cylinder M270/M274, 6-cylinder M272/M276, 8-cylinder M155/M156/M273/M278/M157/M159 and 12-cylinder M158/M275/M285) have the same or similar memories that form a memory subsystem for storing information relating to vehicle system operations</p>
1E. a fuel overinjection notification circuit coupled to said processor subsystem,	<p>The accused Mercedes-Benz vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.</p>








<p><b>Claim 1</b>  said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;</p>	<p><b>Corresponding Element in Mercedes-Benz Vehicles</b></p> <p>For example, the accused Mercedes-Benz vehicles include one or more fuel overinjection notification circuits coupled to said processor subsystem.</p>  <p>The ECO display provides feedback on how economical your driving characteristics are. The ECO display assists you in achieving the most economical driving style for the selected settings and prevailing conditions. Your driving style can significantly influence the vehicle's consumption.</p> <p>The ECO display consists of three bars:</p> <ul style="list-style-type: none"> <li>• Acceleration</li> <li>• Constant</li> <li>• Coasting</li> </ul> <p>The percent value is the average value of the three bars. The three bars and the mean value begin at the value of 50%. A higher percentage indicates a more economical driving style.</p> <p><i>(See, e.g., Ex. Mercedes-Benz-2, 2014 S-Class Operator's Manual at 195; Ex. Mercedes-Benz-3,</i></p>
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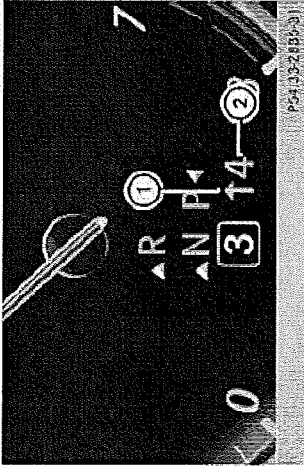
Claim 1	Corresponding Element in Mercedes-Benz Vehicles
	<p>2014 C-Class Coupe Operator's Manual at 151; Ex. Mercedes-Benz-4, 2014 C-Class Sedan Operator's Manual at 167; Ex. Mercedes-Benz-6, 2014 CLA-Class Sedan Operator's Manual at 157; Ex. Mercedes-Benz-7, 2014 CLS-Class Sedan Operator's Manual at 170; Ex. Mercedes-Benz-8, 2014 E-Class Coupe/Cabriolet Operator's Manual at 185; Ex. Mercedes-Benz-9, 2014 E-Class Sedan/Wagon Operator's Manual at 185; Ex. Mercedes-Benz-11, 2014 GL-Class Operator's Manual at 192; Ex. Mercedes-Benz-12, 2014 GLK-Class Operator's Manual at 167; Ex. Mercedes-Benz-13, 2014 M-Class Operator's Manual at 183; Ex. Mercedes-Benz-14, 2014 SL-Class Operator's Manual at 179; Ex. Mercedes-Benz-15, 2014 SLK-Class Operator's Manual at 163).</p>

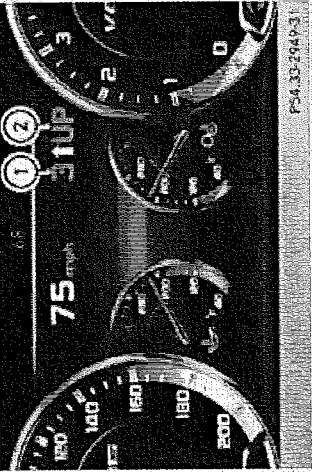
Displaying the range and current fuel consumption





Claim 1	Corresponding Element in Mercedes-Benz Vehicles
<p>1F, an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed,</p>	<ul style="list-style-type: none"> <li>▶ Use  on the steering wheel to call up the list of menus.</li> <li>▶ Press the  or  button on the steering wheel to select the Trip menu.</li> <li>▶ Confirm by pressing  on the steering wheel.</li> <li>▶ Press the  or  button to select the approximate range and the current fuel consumption (not for AMG vehicles).</li> </ul> <p>The approximate range that can be covered depends on the fuel level and your current driving style. If there is only a small amount of fuel left in the fuel tank, the display shows a vehicle being refueled  instead of the range.</p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 251, Ex. Mercedes-Benz-3 at 192, Ex. Mercedes-Benz-4 at 208, Ex. Mercedes-Benz-5, CL-Class Operator's Manual at 342, Ex. Mercedes-Benz-6 at 198, Ex. Mercedes-Benz-7 at 223, Ex. Mercedes-Benz-8 at 236, Ex. Mercedes-Benz-9 at 242, Ex. Mercedes-Benz-10, G-Class Operator's Manual at 209, Ex. Mercedes-Benz-11 at 276, Ex. Mercedes-Benz-12 at 224, Ex. Mercedes-Benz-13 at 267, Ex. Mercedes-Benz-14 at 230, Ex. Mercedes-Benz-15 at 296, Ex. Mercedes-Benz-16, SLS-Class Operator's Manual at 153).</p>
	<p>The accused Mercedes-Benz vehicles include an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.</p> <p>For example, the accused Mercedes-Benz vehicles include one or more upshift notification circuits coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.</p>

Claim 1	Corresponding Element in Mercedes-Benz Vehicles <sup>1</sup>
	<p>Shift recommendation</p>  <p>The gearshift recommendations assist you in adopting an economical driving style. The recommended gear is shown in the multifunction display.</p> <ul style="list-style-type: none"> <li>▶ Shift to recommended gear ② according to gearshift recommendation ① when shown in the multifunction display of the instrument cluster.</li> </ul> <p><i>(See, e.g., Ex. Mercedes-Benz-2 at 184-85; Ex. Mercedes-Benz-3 at 143-44; Ex. Mercedes-Benz-4 at 159-60; Ex. Mercedes-Benz-6 at 198; Ex. Mercedes-Benz-7 at 161; Ex. Mercedes-Benz-8 at 177-78; Ex. Mercedes-Benz-9 at 173; Ex. Mercedes-Benz-11 at 179-80; Ex. Mercedes-Benz-12 at 157; Ex. Mercedes-Benz-13 at 171; Ex. Mercedes-Benz-14 at 169-171; Ex. Mercedes-Benz-15 at 153-54.)</i></p> <p>As another example, the accused Mercedes-Benz vehicles include one or more upshift notification circuits coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.</p>

Claim 1	Corresponding Element in Mercedes-Benz Vehicles
	 <p>P-54.33-294P-3</p> <ul style="list-style-type: none"> <li>① Gear indicator</li> <li>② Upshift indicator</li> </ul> <p>Before the engine speed reaches the red area, an upshift indicator will be shown in the multifunction display.</p> <p>▶ If the color in the speedometer multifunction display changes to red and the UP display message is shown, shift up a gear using the right-hand steering wheel paddle shifter.</p> <p>The automatic transmission shifts up to the next gear if this is permissible.</p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 185-86; Ex. Mercedes-Benz-3 at 143; Ex. Mercedes-Benz-4 at 159-60; Ex. Mercedes-Benz-6 at 149; Ex. Mercedes-Benz-7 at 163; Ex. Mercedes-Benz-9 at 174; Ex. Mercedes-Benz-10 at 217-18; Ex. Mercedes-Benz-11 at 180; Ex. Mercedes-Benz-13 at 172; Ex. Mercedes-Benz-14 at 172; Ex. Mercedes-Benz-15 at 154; Ex. Mercedes-Benz-16 at 128).</p> <p>As another example, the accused Mercedes-Benz vehicles include one or more upshift</p>

Claim 1	Corresponding Element in Mercedes-Benz Vehicles <sup>1</sup>
<p>notification circuits coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.</p> <p><b>Shifting gears</b></p> <p>If you pull on the left or right steering wheel paddle shifter, the automatic transmission switches to manual drive program <b>M</b> for a limited amount of time. Depending on which paddle shifter is pulled, the automatic transmission immediately shifts into the next gear down or up, if permitted.</p> <p>► <b>To shift up:</b> pull the right-hand steering wheel paddle shifter (► page 183). The automatic transmission shifts up to the next gear.</p> <p>ⓘ If the maximum engine speed on the currently engaged gear is reached and you continue to accelerate, the automatic transmission automatically shifts up in order to prevent engine damage.</p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 184; Ex. Mercedes-Benz-3 at 143; Ex. Mercedes-Benz-4 at 159; Ex. Mercedes-Benz-5 at 284-85; Ex. Mercedes-Benz-6 at 149; Ex. Mercedes-Benz-7 at 161; Ex. Mercedes-Benz-8 at 177; Ex. Mercedes-Benz-9 at 173; Ex. Mercedes-Benz-10 at 151-52; Ex. Mercedes-Benz-11 at 179-80; Ex. Mercedes-Benz-12 at 156; Ex. Mercedes-Benz-13 at 170; Ex. Mercedes-Benz-14 at 169; Ex. Mercedes-Benz-15 at 153.)</p>	<p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that determines based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit.</p> <p>See, e.g., citations for elements 1A-1F.</p>
<p>IG, said processor subsystem determining, based upon data received from said plurality of sensors, when to activate</p>	<p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that determines based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit.</p> <p>See, e.g., citations for elements 1A-1F.</p>



<p><b>Claim 1</b>  said fuel overinjection  circuit and when to activate  said upshift notification  circuit.</p>	<p><b>Corresponding Element in Mercedes-Benz Vehicles<sup>1</sup></b></p>
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<b>Corresponding Element in Mercedes-Benz Vehicles</b>	
<b>Claim 2</b>	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claim 1.</i>
2A. Apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:	The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is increasing.  <i>See, e.g., citations for claim elements IB-ID.</i>
2B. means for determining when road speed for said vehicle is increasing;	To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of "determining when road speed for said vehicle is increasing" are described in, for example, Figures 1 and 2 and associated text of the '781 patent relating to Road Speed Sensor 18, Memory Subsystem 14, and Processor Subsystem 12.
2C. means for determining when throttle position for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g., citations for claim elements IB-ID.</i>
2D. means for comparing manifold pressure to said manifold pressure set point;	To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of "determining when throttle position for said vehicle is increasing" are described in, for example, Figures 1 and 2 and associated text of the '781 patent relating to Throttle Sensor 24, Memory Subsystem 14, and Processor Subsystem 12.
2D. means for comparing manifold pressure to said manifold pressure set point;	The accused Mercedes-Benz vehicles include a means for comparing manifold pressure to said manifold pressure set point.  <i>See, e.g., citations for claim elements IB-ID.</i>

Claim 2	Corresponding Element in Mercedes-Benz Vehicles
<p>2E. said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point.</p>	<p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “comparing manifold pressure to said manifold pressure set point” are described in, for example, Figures 1 and 2 and associated text of the ‘781 patent relating to Manifold PSI Sensor 22, Memory Subsystem 14, and Processor Subsystem 12.</p> <p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point.</p> <p><i>See, e.g., citations for claim elements 1E, 1G.</i></p>

<b>Claim 4</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
4A. Apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:	<p>The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:</p> <p><i>See, e.g., citations for claim 1.</i></p>
4B. means for determining when road speed for said vehicle is decreasing;	<p>The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is decreasing.</p> <p><i>See, e.g., citations for claim element 2B.</i></p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when road speed for said vehicle is decreasing” are described in, for example, Figures 1 and 2 and associated text of the '781 patent relating to Road Speed Sensor 18, Memory Subsystem 14, and Processor Subsystem 12.</p>
4C. means for determining when throttle position for said vehicle is increasing; and	<p>The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing.</p> <p><i>See, e.g., citations for claim element 2C.</i></p>
4D. means for determining when manifold pressure for said vehicle is increasing; and	<p>The accused Mercedes-Benz vehicles include a means for determining when manifold pressure for said vehicle is increasing.</p> <p><i>See, e.g., citations for claim elements 1B-1D.</i></p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when manifold pressure for said vehicle is increasing” are described in, for example, Figures 1 and 2 and associated text of the '781 patent relating to Manifold PSI Sensor 22, Memory Subsystem 14, and Processor Subsystem 12.</p>

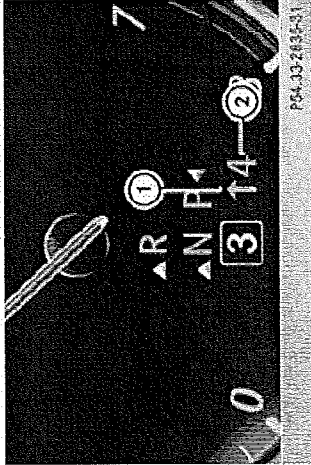
Claim 4	Corresponding Element in Mercedes-Benz Vehicles
<p>4E. means for determining when engine speed for said vehicle is decreasing;</p> <p>4F. said processor subsystem activating said fuel overinjection notification circuit if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.</p>	<p>The accused Mercedes-Benz vehicles include a means for determining when engine speed for said vehicle is decreasing.</p> <p><i>See, e.g.,</i> citations for claim elements 1B-1D.</p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when engine speed for said vehicle is decreasing” are described in, for example, Figures 1 and 2 and associated text of the ’781 patent relating to RPM Sensor 20, Memory Subsystem 14, and Processor Subsystem 12.</p> <p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said fuel overinjection notification circuit if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.</p> <p><i>See, e.g.,</i> citations for claim elements 1E, 1G.</p>

<b>Claim 5</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
5A. Apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claim 1.</i>
5B. means for determining when road speed for said vehicle is increasing;	The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is increasing.  <i>See, e.g., citations for claim element 2B.</i>
5C. means for determining when throttle position for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g., citations for claim element 2C.</i>
5D. means for comparing manifold pressure to said manifold pressure set point;	The accused Mercedes-Benz vehicles include a means for comparing manifold pressure to said manifold pressure set point.  <i>See, e.g., citations for claim element 2D.</i>
5E. means for comparing engine speed to said RPM set point;	The accused Mercedes-Benz vehicles include a means for comparing engine speed to said RPM set point.  <i>See, e.g., citations for claim elements 1B-1D.</i>
5F. said processor	To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or material(s) that perform the claimed function of "determining when engine speed for said vehicle is decreasing" are described in, for example, Figures 1 and 2 and associated text of the '781 patent relating to RPM Sensor 20, Memory Subsystem 14, and Processor Subsystem 12. On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem

<p><b>Claim 5</b></p>	<p><b>Corresponding Element in Mercedes-Benz Vehicles</b></p>
<p>subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.</p> <p><i>See, e.g., citations for claim elements 1F, 1G.</i></p>	<p>that activates said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.</p> <p><i>See, e.g., citations for claim elements 1F, 1G.</i></p>

Claim 7	Corresponding Element in Mercedes-Benz Vehicles
7A. Apparatus for optimizing operation of a vehicle, comprising:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle.  <i>See, e.g.,</i> citations for claim 1.
7B. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor;	The accused Mercedes-Benz vehicles include a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor;  <i>See, e.g.,</i> citations for claim element 1B.
7C. a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;	The accused Mercedes-Benz vehicles include a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom.  <i>See, e.g.,</i> citations for claim element 1C.
7D. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point and present and prior levels for each one of said plurality of sensors;	The accused Mercedes-Benz vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point and present and prior levels for each one of said plurality of sensors;  <i>See, e.g.,</i> citations for claim element 1D.
7E. a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;	The accused Mercedes-Benz vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;



<b>Claim 7</b>		<b>Corresponding Element in Mercedes-Benz Vehicles</b>
<p>notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;</p> <p>7F. a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;</p> <p>and</p>	<p>See, e.g., citations for claim element 1E.</p>	<p>The accused Mercedes-Benz vehicles include a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed.</p> <p>For example, the accused Mercedes-Benz vehicles include one or more downshift notification circuits coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient speed.</p>
		<p><b>Shift recommendation</b></p>  <p>PC4-032F35-51</p>

Claim 7	Corresponding Element in Mercedes-Benz Vehicles
	<p>The gearshift recommendations assist you in adopting an economical driving style. The recommended gear is shown in the multifunction display.</p> <ul style="list-style-type: none"> <li>▶ Shift to recommended gear ② according to gearshift recommendation ① when shown in the multifunction display of the instrument cluster.</li> </ul> <p>(See, e.g., Ex. Mercedes-Benz-2 at 184-85; Ex. Mercedes-Benz-3 at 143-44; Ex. Mercedes-Benz-4 at 159-60; Ex. Mercedes-Benz-6 at 198; Ex. Mercedes-Benz-7 at 161; Ex. Mercedes-Benz-8 at 177-78; Ex. Mercedes-Benz-9 at 173; Ex. Mercedes-Benz-11 at 179-80; Ex. Mercedes-Benz-12 at 157; Ex. Mercedes-Benz-13 at 171; Ex. Mercedes-Benz-14 at 169-171; Ex. Mercedes-Benz-15 at 153-54.)</p> <p>As another example, the accused Mercedes-Benz vehicles include one or more downshift notification circuits coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient speed.</p> <p><b>Shifting gears</b></p> <p>If you pull on the left or right steering wheel paddle shifter, the automatic transmission switches to manual drive program <b>M</b> for a limited amount of time. Depending on which paddle shifter is pulled, the automatic transmission immediately shifts into the next gear down or up, if permitted.</p>

Claim 7	Corresponding Element in Mercedes-Benz Vehicles
<p>7G, said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit.</p>	<p> <ul style="list-style-type: none"> <li>① <b>AMG vehicles:</b> the automatic transmission will not shift up to the next gear when the engine speed is very low.</li> <li>▶ <b>To shift down:</b> pull on the left-hand steering wheel paddle shifter (&gt; page 183). The automatic transmission shifts down to the next gear.</li> <li>① If the engine exceeds the maximum engine speed when shifting down, the automatic transmission protects against engine damage by not shifting down.</li> <li>① Automatic down shifting occurs when coasting.</li> </ul> <p>(See, e.g., Ex. Mercedes-Benz-2 at 184; Ex. Mercedes-Benz-3 at 144; Ex. Mercedes-Benz-4 at 160; Ex. Mercedes-Benz-5 at 285; Ex. Mercedes-Benz-6 at 149; Ex. Mercedes-Benz-7 at 161; Ex. Mercedes-Benz-8 at 177; Ex. Mercedes-Benz-9 at 173; Ex. Mercedes-Benz-10 at 152; Ex. Mercedes-Benz-11 at 178-80; Ex. Mercedes-Benz-12 at 156; Ex. Mercedes-Benz-13 at 170; Ex. Mercedes-Benz-14 at 169; Ex. Mercedes-Benz-15 at 153; Ex. Mercedes-Benz-15 at 128.)</p> <p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that determines, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit.</p> <p>See, e.g., citations for elements 1G, 7F.</p> </p>

<b>Claim 8</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
8A. Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claim 1.</i>
8B. means for determining when road speed for said vehicle is increasing;	The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is increasing.  <i>See, e.g., citations for claim element 2B.</i>
8C. means for determining when throttle position for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g., citations for claim element 2C.</i>
8D. means for comparing manifold pressure to said manifold pressure set point;	The accused Mercedes-Benz vehicles include a means for comparing manifold pressure to said manifold pressure set point.  <i>See, e.g., citations for claim element 2D.</i>
8E. said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point.	On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point.  <i>See, e.g., citations for claim element 2E.</i>

<b>Claim 10</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
10A. Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claim element 1.</i>
10B. means for determining when road speed for said vehicle is decreasing;	The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is decreasing.  <i>See, e.g., citations for claim element 4B.</i>
10C. means for determining when throttle position for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g., citations for claim element 2C.</i>
10D. means for determining when manifold pressure for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when manifold pressure for said vehicle is increasing.  <i>See, e.g., citations for claim element 4D.</i>
10E. means for determining when engine speed for said vehicle is decreasing;	The accused Mercedes-Benz vehicles include a means for determining when engine speed for said vehicle is decreasing.  <i>See, e.g., citations for claim element 4E.</i>
10F. said processor subsystem activating said downshift notification circuit if both road speed	On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.

Claim 10	Corresponding Element in Mercedes-Benz Vehicles
and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.	See, e.g., citations for claim elements 1G, 7F.

<b>Claim 12</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
12A. Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claim 1.</i>
12B. means for determining when road speed for said vehicle is decreasing;	The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is decreasing.  <i>See, e.g., citations for claim element 4B.</i>
12C. means for determining when throttle position for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g., citations for claim element 2C.</i>
12D. means for determining when manifold pressure for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when manifold pressure for said vehicle is increasing.  <i>See, e.g., citations for claim element 4D.</i>
12E. means for determining when engine speed for said vehicle is decreasing;	The accused Mercedes-Benz vehicles include a means for determining when engine speed for said vehicle is decreasing.  <i>See, e.g., citations for claim element 4E.</i>
12F. said processor subsystem activating said fuel overinjection notification circuit if both throttle position and	On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said fuel overinjection notification circuit if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.

Claim 12	Corresponding Element in Mercedes-Benz Vehicles
<p>manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.</p>	<p>See, e.g., citations for claim elements 1E, 1G.</p>



Claim 13	Corresponding Element in Mercedes-Benz Vehicles
13A. Apparatus for optimizing operation of a vehicle, comprising:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle.
13B. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;	<p><i>See, e.g.</i>, citations for claim 1.</p> <p>The accused Mercedes-Benz vehicles include a plurality of sensors coupled to the vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor</p> <p><i>See, e.g.</i>, citations for claim element 1B.</p>
13C. a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;	<p>The accused Mercedes-Benz vehicles include a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom.</p> <p><i>See, e.g.</i>, citations for claim element 1C.</p>
13D. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an engine speed set point, and present and prior levels for each one of said plurality of sensors;	<p>The accused Mercedes-Benz vehicles have a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an engine speed set point, and present and prior levels for each one of said plurality of sensors.</p> <p><i>See, e.g.</i>, citations for claim element 1D.</p>
13E. a fuel overinjection notification circuit coupled to said processor subsystem,	The accused Mercedes-Benz vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.

Claim 13	Corresponding Element in Mercedes-Benz Vehicles
<p>said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;</p>	<p><i>See, e.g.,</i> citations for claim element 1E.</p>
<p>13F. an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed;</p>	<p>The accused Mercedes-Benz vehicles include an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.</p> <p><i>See, e.g.,</i> citations for claim element 1F.</p>
<p>13G. a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and</p>	<p>The accused Mercedes-Benz vehicles include a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and</p> <p><i>See, e.g.,</i> citations for claim element 7F.</p>
<p>13H. said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit, said upshift notification circuit and said</p>	<p>The accused Mercedes-Benz vehicles include a processor subsystem that determines based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit, said upshift notification circuit and said downshift notification circuit.</p> <p><i>See, e.g.,</i> citations for claim element 1G.</p>

<p><b>Claim 13</b> downshift notification circuit.</p>	<p><b>Corresponding Element in Mercedes-Benz Vehicles</b></p>
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<b>Claim 15</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
15A. Apparatus for optimizing operation of a vehicle according to claim 13 wherein said processor subsystem further comprises:	<p>The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 13 wherein said processor subsystem further comprises:</p> <p><i>See, e.g., citations for claim 1.</i></p>
15B. means for determining when road speed for said vehicle is increasing or decreasing;	<p>The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is increasing or decreasing.</p> <p><i>See, e.g., citations for claim element 2B.</i></p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when road speed for said vehicle is increasing or decreasing” are described in, for example, Figures 1 and 2 and associated text of the '781 patent relating to Road Speed Sensor 18, Memory Subsystem 14, and Processor Subsystem 12.</p>
15C. means for determining when throttle position for said vehicle is increasing;	<p>The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing.</p> <p><i>See, e.g., citations for claim element 2C.</i></p>
15D. means for comparing manifold pressure to said manifold pressure set point;	<p>The accused Mercedes-Benz vehicles include a means for comparing manifold pressure to said manifold pressure set point.</p> <p><i>See, e.g., citations for claim element 2D.</i></p>
15E. means for comparing engine speed to said RPM set point;	<p>The accused Mercedes-Benz vehicles include a means for comparing engine speed to said RPM set point.</p> <p><i>See, e.g., citations for claim element 5E.</i></p>

<b>Claim 15</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
15F. means for determining when manifold pressure is increasing;	<p>The accused Mercedes-Benz vehicles include a means for determining when manifold pressure is increasing.</p> <p><i>See, e.g.</i>, citations for claim element 4D.</p>
15G. means for determining when engine speed is increasing or decreasing;	<p>The accused Mercedes-Benz vehicles include a means for determining when engine speed is increasing or decreasing.</p> <p><i>See, e.g.</i>, citations for claim element 4E.</p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when engine speed for said vehicle is increasing or decreasing” are described in, for example, Figures 1 and 2 and associated text of the ’781 patent relating to RPM Sensor 20, Memory Subsystem 14, and Processor Subsystem 12.</p>
15H. said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing;	<p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.</p> <p><i>See, e.g.</i>, citations for claim elements 1E, 1G.</p>

Claim 15	Corresponding Element in Mercedes-Benz Vehicles
<p>15I. said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point; and</p>	<p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.</p> <p><i>See, e.g., citations for claim elements 1F, 1G.</i></p>
<p>15J. said processor subsystem activating said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.</p>	<p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.</p> <p><i>See, e.g., citations for claim element 10F.</i></p>

<b>Claim 17</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
<p>17A. Apparatus for optimizing operation of a vehicle, comprising:</p>	<p>The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle.</p> <p><i>See, e.g., citations for claim 1.</i></p>
<p>17B. a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;</p>	<p>The accused Mercedes-Benz vehicles include a radar detector that determines a distance separating a vehicle having an engine and another object in front of the accused vehicles.</p> <p>For example, the accused Mercedes-Benz vehicles include one or more systems with radar detectors that determine a distance separating a vehicle having an engine and another object in front of the accused vehicles.</p> <p>17B1. PRE-SAFE/PRE-SAFE PLUS:</p> <p><b>PRE-SAFE® PLUS (anticipatory occupant protection system PLUS)</b></p> <p><b>General information</b></p> <p>PRE-SAFE® PLUS is only available in vehicles with the Driving Assistance package.</p> <p>Using the radar sensor system, PRE-SAFE® PLUS is able to detect that a head-on or rear-end collision is imminent. In certain hazardous situations, PRE-SAFE® PLUS takes pre-emptive measures to protect the vehicle occupants.</p>

Claim 17	<p style="text-align: center;"><b>Corresponding Element in Mercedes-Benz Vehicles</b></p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 56; Ex. Mercedes-Benz-3 at 50; Ex. Mercedes-Benz-4 at 52; Ex. Mercedes-Benz-5 at 55; Ex. Mercedes-Benz-7 at 54-55; Ex. Mercedes-Benz-8 at 55-56; Ex. Mercedes-Benz-9 at 54-55; Ex. Mercedes-Benz-11 at 54-55; Ex. Mercedes-Benz-13 at 54; Ex. Mercedes-Benz-14 at 61; Ex. Mercedes-Benz-15 at 50).</p> <p>17B2. BAS PLUS (Brake Assist System PLUS):</p>
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**BAS PLUS (Brake Assist System PLUS) with Cross-Traffic Assist**

**General information**

- Observe the "Important safety notes" section (> page 70).

BAS PLUS is only available on vehicles with the Driving Assistance package.

For BAS PLUS to assist you when driving, the radar sensor system and the camera system must be operational.

With the help of a sensor system and a camera system, BAS PLUS can detect obstacles:

- that are in the path of your vehicle for an extended period of time
- that cross the path of your vehicle

In addition, pedestrians in the path of your vehicle can be detected.

BAS PLUS detects pedestrians by using typical characteristics such as the body contours and posture of a person standing upright.

(See, e.g., Ex. Mercedes-Benz-2 at 72; Ex. Mercedes-Benz-3 at 63; Ex. Mercedes-Benz-4 at 66; Ex. Mercedes-Benz-5 at 66; Ex. Mercedes-Benz-7 at 67; Ex. Mercedes-Benz-8 at 70; Ex. Mercedes-Benz-9 at 68; Ex. Mercedes-Benz-11 at 68; Ex. Mercedes-Benz-12 at 68; Ex. Mercedes-Benz-13 at 68; Ex. Mercedes-Benz-14 at 72; Ex. Mercedes-Benz-15 at 60; Ex.

**Claim 17**


**Corresponding Element in Mercedes-Benz Vehicles**

Mercedes-Benz-16 at 72).

**17B3. COLLISION PREVENTION ASSIST/Distance Warning Function:**

**Function**

► **To activate/deactivate:** activate or deactivate the distance warning function in the on-board computer (→ page 261).

If the distance warning function is not activated, the  symbol appears in the assistance graphics display.

The distance warning function can help you to minimize the risk of a front-end collision with a vehicle ahead or reduce the effects of such a collision. If the distance warning function detects that there is a risk of a collision, you will be warned visually and acoustically. The distance warning function cannot prevent a collision without your intervention.

**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

Starting at a speed of around 4 mph (7 km/h), the distance warning function warns you if you rapidly approach a vehicle in front. An intermittent warning tone will then sound and the [A] distance warning lamp will light up in the instrument cluster.

- ▶ Brake immediately in order to increase the distance from the vehicle in front.

or

- ▶ Take evasive action, provided it is safe to do so.

Due to the nature of the system, particularly complicated but non-critical driving conditions may also cause the system to display a warning.

With the help of the radar sensor system, the distance warning function can detect obstacles that are in the path of your vehicle for an extended period of time.

(See, e.g., Ex. Mercedes-Benz-2 at 74; Ex. Mercedes-Benz-6 at 62-64; Ex. Mercedes-Benz-8 at 70-71; Ex. Mercedes-Benz-9 at 70-71; Ex. Mercedes-Benz-11 at 69-70; Ex. Mercedes-Benz-13 at 69-70).

17B4: COLLISION PREVENTION ASSIST/Adaptive Brake Assist.

**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

Adaptive Brake Assist aids you in braking during hazardous situations at speeds above 4 mph (7 km/h) and uses the radar sensor system to evaluate the traffic situation.

With the help of Adaptive Brake Assist, the distance warning signal can detect obstacles that are in the path of your vehicle for an extended period of time.

Should you approach an obstacle and Adaptive Brake Assist has detected a risk of collision, Adaptive Brake Assist calculates the braking force necessary to avoid a rear-end collision. Should you apply the brakes vigorously, Adaptive Brake Assist will automatically increase the braking force to a level suitable for the traffic conditions.

(See, e.g., Ex. Mercedes-Benz-2 at 75; Ex. Mercedes-Benz-6 at 64-66; Ex. Mercedes-Benz-8 at 71-72; Ex. Mercedes-Benz-9 at 71-72; Ex. Mercedes-Benz-11 at 71-72; Ex. Mercedes-Benz-13 at 70-71).

17B5: PRE-SAFE Brake:

**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

**PRE-SAFE® Brake**

**General information**

ⓘ Pay attention to the important safety notes in the "Driving safety systems" section (➤ page 70).

PRE-SAFE® Brake is only available for vehicles with the Driving Assistance package.

For PRE-SAFE® Brake to assist you when driving, the radar sensor system and the camera system must be switched on and be operational.

With the help of the radar sensor system and the camera system, PRE-SAFE® Brake can detect obstacles that are in front of your vehicle for an extended period of time.

In addition, pedestrians in the path of your vehicle can be detected.

(See, e.g., Ex. Mercedes-Benz-2 at 78; Ex. Mercedes-Benz-3 at 67; Ex. Mercedes-Benz-4 at 71; Ex. Mercedes-Benz-5 at 68; Ex. Mercedes-Benz-7 at 72; Ex. Mercedes-Benz-8 at 76-77; Ex. Mercedes-Benz-9 at 76-77; Ex. Mercedes-Benz-11 at 75; Ex. Mercedes-Benz-12 at 72; Ex. Mercedes-Benz-13 at 74; Ex. Mercedes-Benz-14 at 77; Ex. Mercedes-Benz-15 at 65; Ex. Mercedes-Benz-16 at 77).

17B6. DISTRONIC PLUS:

**DISTRONIC PLUS**

**General notes**

DISTRONIC PLUS regulates the speed and automatically helps you maintain the distance to the vehicle detected in front. Vehicles are detected with the aid of the radar sensor system. DISTRONIC PLUS brakes automatically so that the set speed is not exceeded.

(See, e.g., Ex. Mercedes-Benz-2 at 201; Ex. Mercedes-Benz-3 at 157; Ex. Mercedes-Benz-4 at 173; Ex. Mercedes-Benz-5 at 298; Ex. Mercedes-Benz-6 at 164; Ex. Mercedes-Benz-7 at 177; Ex. Mercedes-Benz-8 at 191; Ex. Mercedes-Benz-9 at 191; Ex. Mercedes-Benz-10 at 177; Ex. Mercedes-Benz-11 at 203; Ex. Mercedes-Benz-12 at 175; Ex. Mercedes-Benz-13 at 194; Ex. Mercedes-Benz-14 at 186; Ex. Mercedes-Benz-15 at 169; Ex. Mercedes-Benz-16 at 186).

17B7. Blind Spot Assist/Active Blind Spot Assist:

**Active Blind Spot Assist**

**General notes**

Active Blind Spot Assist uses a radar sensor system, pointed toward the rear of the vehicle, to monitor the area to the sides of the vehicle which the driver is unable to see. A warning display in the exterior mirrors draws your attention to vehicles detected in the monitored area. If you then switch on the corresponding turn signal to change lane, you will also receive an optical and audible warning. If a risk of lateral collision is



**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

detected, corrective braking may help you avoid a collision. Active Blind Spot Assist evaluates the free space in the direction of travel and to the side before making a course-correcting brake application. For this, Active Blind Spot Assist uses radar sensors which are pointed in the direction of travel. Active Blind Spot Assist supports you from a speed of approximately 20 mph (30 km/h).

(See, e.g., Ex. Mercedes-Benz-2 at 240-43; Ex. Mercedes-Benz-3 at 177-78, 180-81; Ex. Mercedes-Benz-4 at 193-94, 197-99; Ex. Mercedes-Benz-5 at 327-30; Ex. Mercedes-Benz-6 at 188-90; Ex. Mercedes-Benz-7 at 207-09, 211-13; Ex. Mercedes-Benz-8 at 221-23, 225-27; Ex. Mercedes-Benz-9 at 221-23, 225-27; Ex. Mercedes-Benz-10 at 185-87; Ex. Mercedes-Benz-11 at 243-44, 247-50; Ex. Mercedes-Benz-12 at 202-03, 206-09; Ex. Mercedes-Benz-13 at 233-35, 237-40; Ex. Mercedes-Benz-14 at 218-21; Ex. Mercedes-Benz-15 at 187-88; Ex. Mercedes-Benz-16 at 145-47).

**Radar sensors**

The Active Blind Spot Assist radar sensors are integrated into the front and rear bumpers and behind a cover in the radiator grill. Make sure that the bumpers and the cover in the radiator grill are free of dirt, ice or slush. The rear sensors must not be covered, e.g. by bicycle racks or overhanging loads. Following a severe impact or in the event of damage to the bumpers, have the function of the radar sensors checked at a qualified specialist workshop. Active Blind Spot Assist may otherwise no longer work properly.

Claim 17	Corresponding Element in Mercedes-Benz Vehicles
<p>17C. at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor, a manifold pressure sensor, a throttle position sensor and an engine speed sensor;</p>	<p>(See, e.g., Ex. Mercedes-Benz-2 at 240-43; Ex. Mercedes-Benz-3 at 177-78, 180-81; Ex. Mercedes-Benz-4 at 193-94, 197-99; Ex. Mercedes-Benz-5 at 327-30; Ex. Mercedes-Benz-6 at 188-90; Ex. Mercedes-Benz-7 at 207-09, 211-13; Ex. Mercedes-Benz-8 at 221-23, 225-27; Ex. Mercedes-Benz-9 at 221-23, 225-27; Ex. Mercedes-Benz-10 at 185-87; Ex. Mercedes-Benz-11 at 243-44, 247-50; Ex. Mercedes-Benz-12 at 202-03, 206-09; Ex. Mercedes-Benz-13 at 233-35, 237-40; Ex. Mercedes-Benz-14 at 218-21; Ex. Mercedes-Benz-15 at 187-88; Ex. Mercedes-Benz-16 at 145-47).</p>
<p>17D. a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;</p>	<p>The accused Mercedes-Benz vehicles include at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor, a manifold pressure sensor, a throttle position sensor and an engine speed sensor.  See, e.g., citations for claim element 1B.</p>
<p>17E. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor.</p>	<p>The accused Mercedes-Benz vehicles include a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom.  See, e.g., citations for claim element 1C.</p>
<p>17F. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor.</p>	<p>The accused Mercedes-Benz vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor.  See, e.g., citations for claim elements 1A-1D.  For example, on information and belief, the accused Mercedes-Benz vehicles include one or more systems that use one or more vehicle speed/stopping distance tables stored in one or more</p>



Claim 17	Corresponding Element in Mercedes-Benz Vehicles
<p>sensor and a prior level for each one of said at least one sensor;</p>	<p>memories.</p> <p>17E1. PRE-SAFE/PRE-SAFE PLUS:</p> <p><b>Function</b></p> <p>PRE-SAFE® PLUS intervenes in certain situations if the radar sensor system detects an imminent head-on or rear-end collision. PRE-SAFE® PLUS takes the following measures depending on the hazardous situation detected:</p> <ul style="list-style-type: none"> <li>• if the radar sensor system detects that a head-on collision is imminent, the seat belts are pre-tensioned.</li> <li>• if the radar sensor system detects that a rear-end collision is imminent: <ul style="list-style-type: none"> <li>- the brake pressure is increased if the driver applies the brakes when the vehicle is stationary.</li> <li>- the seat belts are pre-tensioned.</li> </ul> </li> </ul> <p>The PRE-SAFE® PLUS braking application is canceled in the following situations:</p> <ul style="list-style-type: none"> <li>• if the accelerator pedal is depressed when a gear is engaged</li> <li>• if the risk of a collision passes or is no longer detected</li> <li>• if DISTRONIC PLUS indicates an intention to pull away</li> </ul> <p>If the hazardous situation passes without resulting in an accident, the original settings are restored.</p>

**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

(See, e.g., Ex. Mercedes-Benz-2 at 56; Ex. Mercedes-Benz-3 at 50; Ex. Mercedes-Benz-4 at 52; Ex. Mercedes-Benz-5 at 55; Ex. Mercedes-Benz-7 at 54-55; Ex. Mercedes-Benz-8 at 55-56; Ex. Mercedes-Benz-9 at 54-55; Ex. Mercedes-Benz-11 at 54-55; Ex. Mercedes-Benz-13 at 54; Ex. Mercedes-Benz-14 at 61; Ex. Mercedes-Benz-15 at 50).

17E2. BAS PLUS (Brake Assist System PLUS):

**Function**

To avoid a collision, BAS PLUS calculates the brake force necessary if:

- you approach an obstacle, and
- BAS PLUS has detected a risk of collision

**When driving at a speed under 20 mph (30 km/h):** if you depress the brake pedal, BAS PLUS is activated. The increase in brake pressure will be carried out at the last possible moment.

**When driving at a speed above 20 mph (30 km/h):** if you depress the brake pedal sharply, BAS PLUS automatically raises the brake pressure to a value adapted to the traffic situation.

BAS PLUS provides braking assistance in hazardous situations with vehicles in front within a speed range between 4 mph (7 km/h) and 155 mph (250 km/h).

**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

At speeds of up to approximately 44 mph (70 km/h), BAS PLUS reacts to:

- stationary objects in the path of your vehicle, e.g. stopped or parked vehicles
- pedestrians in the path of your vehicle
- objects crossing your path

① If BAS PLUS demands particularly high braking force, preventative passenger protection measures (PRE-SAFE®) are activated simultaneously.

▶ Keep the brake pedal depressed until the emergency braking situation is over. ABS prevents the wheels from locking.

BAS PLUS is deactivated and the brakes function as usual again, if:

- you release the brake pedal.
- there is no longer a risk of collision.
- no obstacle is detected in front of your vehicle.
- you depress the accelerator pedal.
- you activate kickdown.

(See, e.g., Ex. Mercedes-Benz-2 at 72; Ex. Mercedes-Benz-3 at 63; Ex. Mercedes-Benz-4 at 66; Ex. Mercedes-Benz-5 at 66; Ex. Mercedes-Benz-7 at 67; Ex. Mercedes-Benz-8 at 70; Ex. Mercedes-Benz-9 at 68; Ex. Mercedes-Benz-11 at 68; Ex. Mercedes-Benz-12 at 68; Ex. Mercedes-Benz-13 at 68; Ex. Mercedes-Benz-14 at 72; Ex. Mercedes-Benz-15 at 60; Ex. Mercedes-Benz-16 at 72).


**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

17E3. COLLISION PREVENTION ASSIST/Distance Warning Function:

**Function**

► **To activate/deactivate:** activate or deactivate the distance warning function in the on-board computer (→ page 261).

If the distance warning function is not activated, the  symbol appears in the assistance graphics display.

The distance warning function can help you to minimize the risk of a front-end collision with a vehicle ahead or reduce the effects of such a collision. If the distance warning function detects that there is a risk of a collision, you will be warned visually and acoustically. The distance warning function cannot prevent a collision without your intervention.

Claim 17	Corresponding Element in Mercedes-Benz Vehicles
<p>Starting at a speed of around 4 mph (7 km/h), the distance warning function warns you if you rapidly approach a vehicle in front. An intermittent warning tone will then sound and the [A] distance warning lamp will light up in the instrument cluster.</p> <ul style="list-style-type: none"> <li>▶ Brake immediately in order to increase the distance from the vehicle in front.</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>▶ Take evasive action, provided it is safe to do so.</li> </ul> <p>Due to the nature of the system, particularly complicated but non-critical driving conditions may also cause the system to display a warning.</p> <p>With the help of the radar sensor system, the distance warning function can detect obstacles that are in the path of your vehicle for an extended period of time.</p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 74; Ex. Mercedes-Benz-6 at 62-64; Ex. Mercedes-Benz-8 at 70-71; Ex. Mercedes-Benz-9 at 70-71; Ex. Mercedes-Benz-11 at 69-70; Ex. Mercedes-Benz-13 at 69-70).</p> <p>17E4. COLLISION PREVENTION ASSIST/Adaptive Brake Assist:</p>	



**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

Adaptive Brake Assist aids you in braking during hazardous situations at speeds above 4 mph (7 km/h) and uses the radar sensor system to evaluate the traffic situation.

With the help of Adaptive Brake Assist, the distance warning signal can detect obstacles that are in the path of your vehicle for an extended period of time.


Should you approach an obstacle and Adaptive Brake Assist has detected a risk of collision, Adaptive Brake Assist calculates the braking force necessary to avoid a rear-end collision. Should you apply the brakes vigorously, Adaptive Brake Assist will automatically increase the braking force to a level suitable for the traffic conditions.


- ▶ Keep the brake pedal depressed until the emergency braking situation is over. ABS prevents the wheels from locking.

(See, e.g., Ex. Mercedes-Benz-2 at 75; Ex. Mercedes-Benz-6 at 64-66; Ex. Mercedes-Benz-8 at 71-72; Ex. Mercedes-Benz-9 at 71-72; Ex. Mercedes-Benz-11 at 71-72; Ex. Mercedes-Benz-13 at 70-71).


17E5. PRE-SAFE Brake:

Function

- ▶ **To activate/deactivate:** activate or deactivate PRE-SAFE® Brake in the on-board computer (▶ page 260).  
If the PRE-SAFE® Brake is not activated, the  symbol appears in the multifunction display.

Starting at a speed of around 4 mph (7 km/h), this function warns you if you rapidly approach a vehicle in front. An intermittent warning tone will then sound and the  distance warning lamp will light up in the instrument cluster.

- ▶ Brake immediately to defuse the situation.
- or
- ▶ Take evasive action provided it is safe to do so.

 If there is an increased risk of collision, preventive passenger protection measures (PRE-SAFE®) are activated.

(See, e.g., Ex. Mercedes-Benz-2 at 78; Ex. Mercedes-Benz-3 at 67; Ex. Mercedes-Benz-4 at 71; Ex. Mercedes-Benz-5 at 68; Ex. Mercedes-Benz-7 at 72; Ex. Mercedes-Benz-8 at 76-77; Ex. Mercedes-Benz-9 at 76-77; Ex. Mercedes-Benz-11 at 75; Ex. Mercedes-Benz-12 at 72; Ex. Mercedes-Benz-13 at 74; Ex. Mercedes-Benz-14 at 77; Ex. Mercedes-Benz-15 at 65; Ex. Mercedes-Benz-16 at 77).

17E6. DISTRONIC PLUS:

**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

**Setting the specified minimum distance**

You can set the specified minimum distance for DISTRONIC PLUS by varying the time span between one and two seconds. With this function, you can set the minimum distance that DISTRONIC PLUS keeps to the vehicle in front, dependent on vehicle speed. You can see this distance in the multifunction display ([▶ page 207](#)).

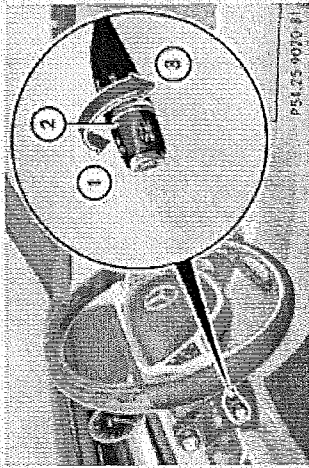
- Make sure that you maintain the minimum distance to the vehicle in front as



**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

required by law. Adjust the distance to the vehicle in front if necessary.



- ▶ **To increase:** turn control ② in direction ③.
- DISTRONIC PLUS then maintains a greater distance between your vehicle and the vehicle in front.
- ▶ **To decrease:** turn control ② in direction ①.
- DISTRONIC PLUS then maintains a shorter distance between your vehicle and the vehicle in front.

(See, e.g., Ex. Mercedes-Benz-2 at 201; Ex. Mercedes-Benz-3 at 157; Ex. Mercedes-Benz-4 at 173; Ex. Mercedes-Benz-5 at 298; Ex. Mercedes-Benz-6 at 164; Ex. Mercedes-Benz-7 at 177; Ex. Mercedes-Benz-8 at 191; Ex. Mercedes-Benz-9 at 191; Ex. Mercedes-Benz-10 at 177; Ex. Mercedes-Benz-11 at 203; Ex. Mercedes-Benz-12 at 175; Ex. Mercedes-Benz-13 at 194; Ex. Mercedes-Benz-14 at 186; Ex. Mercedes-Benz-15 at 169; Ex. Mercedes-Benz-16 at 186).

17E7. Blind Spot Assist/Active Blind Spot Assist:

Claim 17	Corresponding Element in Mercedes-Benz Vehicles
	<p><b>Active Blind Spot Assist</b></p> <p><b>General notes:</b></p> <p>Active Blind Spot Assist uses a radar sensor system, pointed toward the rear of the vehicle, to monitor the area to the sides of the vehicle which the driver is unable to see. A warning display in the exterior mirrors draws your attention to vehicles detected in the monitored area. If you then switch on the corresponding turn signal to change lane, you will also receive an optical and audible warning. If a risk of lateral collision is detected, corrective braking may help you avoid a collision. Active Blind Spot Assist evaluates the free space in the direction of travel and to the side before making a course-correcting brake application. For this, Active Blind Spot Assist uses radar sensors which are pointed in the direction of travel.</p> <p>Active Blind Spot Assist supports you from a speed of approximately 20 mph (30 km/h).</p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 240-43; Ex. Mercedes-Benz-3 at 177-78, 180-81; Ex. Mercedes-Benz-4 at 193-94, 197-99; Ex. Mercedes-Benz-5 at 327-30; Ex. Mercedes-Benz-6 at 188-90; Ex. Mercedes-Benz-7 at 207-09, 211-13; Ex. Mercedes-Benz-8 at 221-23, 225-27; Ex. Mercedes-Benz-9 at 221-23, 225-27; Ex. Mercedes-Benz-10 at 185-87; Ex. Mercedes-Benz-11 at 243-44, 247-50; Ex. Mercedes-Benz-12 at 202-03, 206-09; Ex. Mercedes-Benz-13 at 233-35, 237-40; Ex. Mercedes-Benz-14 at 218-21; Ex. Mercedes-Benz-15 at 187-88; Ex. Mercedes-Benz-16 at 145-47).</p>

**Claim 17**

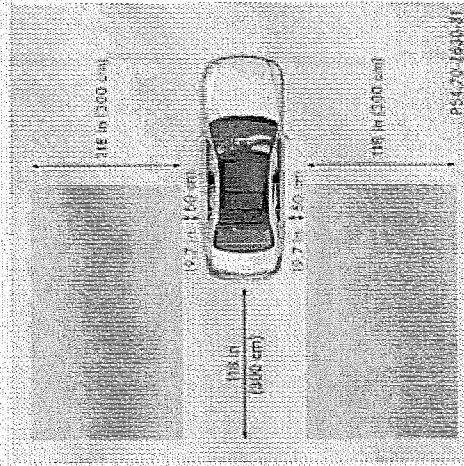
**Corresponding Element in Mercedes-Benz Vehicles**

**Monitoring area**

**⚠ WARNING**

Active Blind Spot Assist does not detect all traffic situations and road users. There is a risk of an accident.

Always make sure that there is sufficient distance on the side for other traffic or obstacles.



Active Blind Spot Assist monitors the area up to 10 ft (3.0 m) behind your vehicle and directly next to your vehicle, as shown in the diagram.

(See, e.g., Ex. Mercedes-Benz-2 at 240-43; Ex. Mercedes-Benz-3 at 177-78, 180-81; Ex. Mercedes-Benz-4 at 193-94, 197-99; Ex. Mercedes-Benz-5 at 327-30; Ex. Mercedes-Benz-6 at

Claim 17	Corresponding Element in Mercedes-Benz Vehicles
<p>17F. a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to an object,</p>	<p>188-90; Ex. Mercedes-Benz-7 at 207-09, 211-13; Ex. Mercedes-Benz-8 at 221-23, 225-27; Ex. Mercedes-Benz-9 at 221-23, 225-27; Ex. Mercedes-Benz-10 at 185-87; Ex. Mercedes-Benz-11 at 243-44, 247-50; Ex. Mercedes-Benz-12 at 202-03, 206-09; Ex. Mercedes-Benz-13 at 233-35, 237-40; Ex. Mercedes-Benz-14 at 218-21; Ex. Mercedes-Benz-15 at 187-88; Ex. Mercedes-Benz-16 at 145-47).</p> <p>On information and belief, additional vehicle systems, including but not limited to electronic brake control systems (<i>e.g.</i>, ABS, TCS, BAS, ESC, <i>etc.</i>) and speed control systems (<i>e.g.</i>, electronic speed control (ESC) systems) included in the accused Mercedes-Benz vehicles, and safety and performance testing systems use vehicle speed/stopping distance tables stored in memory.</p> <p>The accused Mercedes-Benz vehicles include a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to an object.</p> <p>For example, the accused Mercedes-Benz vehicles include one or more systems that include circuits that issue an alarm to indicate that the vehicle is too close to an object.</p> <p>17F1. PRE-SAFE/PRE-SAFE PLUS:</p>

**Function**

PRE-SAFE® PLUS intervenes in certain situations if the radar sensor system detects an imminent head-on or rear-end collision.

PRE-SAFE® PLUS takes the following measures depending on the hazardous situation detected:

- if the radar sensor system detects that a head-on collision is imminent, the seat belts are pre-tensioned.
- if the radar sensor system detects that a rear-end collision is imminent:
  - the brake pressure is increased if the driver applies the brakes when the vehicle is stationary.
  - the seat belts are pre-tensioned.

The PRE-SAFE® PLUS braking application is canceled in the following situations:

- if the accelerator pedal is depressed when a gear is engaged
- if the risk of a collision passes or is no longer detected
- if DISTRONIC PLUS indicates an intention to pull away

If the hazardous situation passes without resulting in an accident, the original settings are restored.

(See, e.g., Ex. Mercedes-Benz-2 at 56; Ex. Mercedes-Benz-3 at 50; Ex. Mercedes-Benz-4 at 52;



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**Corresponding Element in Mercedes-Benz Vehicles**

Ex. Mercedes-Benz-5 at 55; Ex. Mercedes-Benz-7 at 54-55; Ex. Mercedes-Benz-8 at 55-56; Ex. Mercedes-Benz-9 at 54-55; Ex. Mercedes-Benz-11 at 54-55; Ex. Mercedes-Benz-13 at 54; Ex. Mercedes-Benz-14 at 61; Ex. Mercedes-Benz-15 at 50).

**17F2. COLLISION PREVENTION ASSIST/Distance Warning Function:**

**Function**


► **To activate/deactivate:** activate or deactivate the distance warning function in the on-board computer (→ page 261).

If the distance warning function is not activated, the  symbol appears in the assistance graphics display.

The distance warning function can help you to minimize the risk of a front-end collision with a vehicle ahead or reduce the effects of such a collision. If the distance warning function detects that there is a risk of a collision, you will be warned visually and acoustically. The distance warning function cannot prevent a collision without your intervention.

**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

Starting at a speed of around 4 mph (7 km/h), the distance warning function warns you if you rapidly approach a vehicle in front. An intermittent warning tone will then sound and the  distance warning lamp will light up in the instrument cluster.

- ▶ Brake immediately in order to increase the distance from the vehicle in front.

or

- ▶ Take evasive action, provided it is safe to do so.

Due to the nature of the system, particularly complicated but non-critical driving conditions may also cause the system to display a warning.

With the help of the radar sensor system, the distance warning function can detect obstacles that are in the path of your vehicle for an extended period of time.

(See, e.g., Ex. Mercedes-Benz-2 at 74; Ex. Mercedes-Benz-6 at 62-64; Ex. Mercedes-Benz-8 at 70-71; Ex. Mercedes-Benz-9 at 70-71; Ex. Mercedes-Benz-11 at 69-70; Ex. Mercedes-Benz-13 at 69-70).

17F3 COLLISION PREVENTION ASSIST/Adaptive Brake Assist.

**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

Adaptive Brake Assist aids you in braking during hazardous situations at speeds above 4 mph (7 km/h) and uses the radar sensor system to evaluate the traffic situation.

With the help of Adaptive Brake Assist, the distance warning signal can detect obstacles that are in the path of your vehicle for an extended period of time.

Should you approach an obstacle and Adaptive Brake Assist has detected a risk of collision, Adaptive Brake Assist calculates the braking force necessary to avoid a rear-end collision. Should you apply the brakes vigorously, Adaptive Brake Assist will automatically increase the braking force to a level suitable for the traffic conditions.


- ▶ Keep the brake pedal depressed until the emergency braking situation is over. ABS prevents the wheels from locking.


(See, e.g., Ex. Mercedes-Benz-2 at 75; Ex. Mercedes-Benz-6 at 64-66; Ex. Mercedes-Benz-8 at 71-72; Ex. Mercedes-Benz-9 at 71-72; Ex. Mercedes-Benz-11 at 71-72; Ex. Mercedes-Benz-13 at 70-71).

17F4: PRE-SAFE Brake:




Function

- ▶ **To activate/deactivate:** activate or deactivate PRE-SAFE® Brake in the on-board computer (▶ page 260).
- If the PRE-SAFE® Brake is not activated, the  symbol appears in the multifunction display.

Starting at a speed of around 4 mph (7 km/h), this function warns you if you rapidly approach a vehicle in front. An intermittent warning tone will then sound and the  distance warning lamp will light up in the instrument cluster.

- ▶ Brake immediately to defuse the situation.
- or
- ▶ Take evasive action provided it is safe to do so.

 If there is an increased risk of collision, preventive passenger protection measures (PRE-SAFE®) are activated.

(See, e.g., Ex. Mercedes-Benz-2 at 78; Ex. Mercedes-Benz-3 at 67; Ex. Mercedes-Benz-4 at 71; Ex. Mercedes-Benz-5 at 68; Ex. Mercedes-Benz-7 at 72; Ex. Mercedes-Benz-8 at 76-77; Ex. Mercedes-Benz-9 at 76-77; Ex. Mercedes-Benz-11 at 75; Ex. Mercedes-Benz-12 at 72; Ex. Mercedes-Benz-13 at 74; Ex. Mercedes-Benz-14 at 77; Ex. Mercedes-Benz-15 at 65; Ex. Mercedes-Benz-16 at 77).

17F5: DISTRONIC PLUS:

**Claim 17**

**Corresponding Element in Mercedes-Benz Vehicles**

If DISTRONIC PLUS detects that there is a risk of a collision, you will be warned visually and acoustically. DISTRONIC PLUS cannot prevent a collision without your intervention. An intermittent warning tone will then sound and the distance warning lamp will light up in the instrument cluster. Brake immediately in order to increase the distance to the vehicle in front or take evasive action provided it is safe to do so.

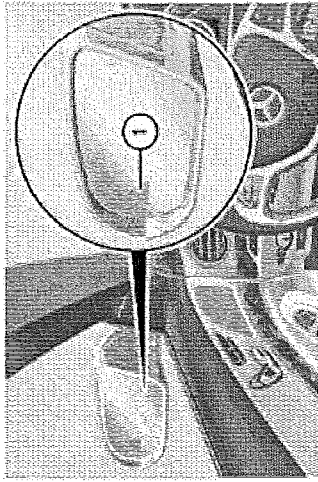
DISTRONIC PLUS operates in range between 0 mph (0 km/h) and 120 mph (200 km/h).

Do not use DISTRONIC PLUS while driving on roads with steep gradients.

(See, e.g., Ex. Mercedes-Benz-2 at 201; Ex. Mercedes-Benz-3 at 157; Ex. Mercedes-Benz-4 at 173; Ex. Mercedes-Benz-5 at 298; Ex. Mercedes-Benz-6 at 164; Ex. Mercedes-Benz-7 at 177; Ex. Mercedes-Benz-8 at 191; Ex. Mercedes-Benz-9 at 191; Ex. Mercedes-Benz-10 at 177; Ex. Mercedes-Benz-11 at 203; Ex. Mercedes-Benz-12 at 175; Ex. Mercedes-Benz-13 at 194; Ex. Mercedes-Benz-14 at 186; Ex. Mercedes-Benz-15 at 169; Ex. Mercedes-Benz-16 at 186).

17F6. Blind Spot Assist/Active Blind Spot Assist:

Warning di-play



① Warning display

Active Blind Spot Assist is not operational at speeds below approximately 20 mph (30 km/h). Vehicles in the monitoring range are then not indicated.

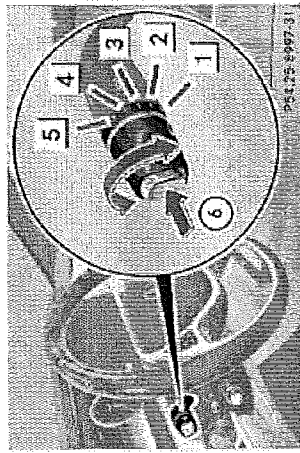
If a vehicle is detected within the blind spot monitoring range at speeds above 20 mph (30 km/h), warning lamp ① on the corresponding side lights up red. This warning is always emitted when a vehicle enters the blind spot monitoring range from behind or from the side. When you overtake a vehicle, the warning only occurs if the difference in speed is less than 7 mph (12 km/h).

(See, e.g., Ex. Mercedes-Benz-2 at 240-43; Ex. Mercedes-Benz-3 at 177-78, 180-81; Ex. Mercedes-Benz-4 at 193-94, 197-99; Ex. Mercedes-Benz-5 at 327-30; Ex. Mercedes-Benz-6 at 188-90; Ex. Mercedes-Benz-7 at 207-09, 211-13; Ex. Mercedes-Benz-8 at 221-23, 225-27; Ex. Mercedes-Benz-9 at 221-23, 225-27; Ex. Mercedes-Benz-10 at 185-87; Ex. Mercedes-Benz-11 at

Claim 17	Corresponding Element in Mercedes-Benz Vehicles
	<p>243-44, 247-50; Ex. Mercedes-Benz-12 at 202-03, 206-09; Ex. Mercedes-Benz-13 at 233-35, 237-40; Ex. Mercedes-Benz-14 at 218-21; Ex. Mercedes-Benz-15 at 187-88; Ex. Mercedes-Benz-16 at 145-47).</p> <p><b>Visual and acoustic collision warning</b>            If you switch on the turn signals to change lanes and a vehicle is detected in the side monitoring range, you receive a visual and acoustic collision warning. You will then hear a double warning tone and red warning lamp ① flashes. If the turn signal remains on, detected vehicles are indicated by the flashing of red warning lamp ①. There are no further warning tones.</p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 240-43; Ex. Mercedes-Benz-3 at 177-78, 180-81; Ex. Mercedes-Benz-4 at 193-94, 197-99; Ex. Mercedes-Benz-5 at 327-30; Ex. Mercedes-Benz-6 at 188-90; Ex. Mercedes-Benz-7 at 207-09, 211-13; Ex. Mercedes-Benz-8 at 221-23, 225-27; Ex. Mercedes-Benz-9 at 221-23, 225-27; Ex. Mercedes-Benz-10 at 185-87; Ex. Mercedes-Benz-11 at 243-44, 247-50; Ex. Mercedes-Benz-12 at 202-03, 206-09; Ex. Mercedes-Benz-13 at 233-35, 237-40; Ex. Mercedes-Benz-14 at 218-21; Ex. Mercedes-Benz-15 at 187-88; Ex. Mercedes-Benz-16 at 145-47).</p>
<p>17G. a fuel overinjection circuit coupled to said processor subsystem, said fuel overinjection circuit issuing a notification that excessive fuel is being supplied to said engine of</p>	<p>The accused Mercedes-Benz vehicles include a fuel overinjection circuit coupled to said processor subsystem, said fuel overinjection circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.</p> <p>See, e.g., citations for claim element 1E.</p>

<b>Corresponding Element in Mercedes-Benz Vehicles</b>	
<p><b>Claim 17</b> said vehicle; 17H. an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed;</p>	<p>The accused Mercedes-Benz vehicles include an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.  <i>See, e.g., citations for claim element 1F.</i></p>
<p>17I. said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said said memory subsystem, when to activate said upshift notification circuit.</p>	<p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit, when to activate said fuel overinjection circuit, and when to activate said upshift notification circuit.  <i>See, e.g., citations for claim elements 1G, 17F.</i></p>

<b>Claim 18</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
<p>18A. Apparatus for optimizing operation of a vehicle according to claim 17 wherein:</p>	<p>The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 17.  See, e.g., citations for claim 17.</p>
<p>18B. said at least one sensor further includes a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated; and</p>	<p>The accused Mercedes-Benz vehicles include at least one sensor further including a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated.  For example, the accused Mercedes-Benz vehicles include a windshield wiper sensor that determines when the wipers are turned on.</p> <p><b>■</b> Vehicles with a rain sensor: if the windshield becomes dirty in dry weather conditions, the windshield wipers may be activated inadvertently. This could then damage the windshield wiper blades or scratch the windshield.  For this reason, you should always switch off the windshield wipers in dry weather.</p>





- 1 0 Windshield wiper off
  - 2 ... Intermittent wipe, low (rain sensor set to low sensitivity)
  - 3 .... Intermittent wipe, high (rain sensor set to high sensitivity)
  - 4 — Continuous wipe, slow
  - 5 ≡ Continuous wipe, fast
  - 6 ☹ To wipe the windshield using washer fluid
- ▶ Switch on the power supply with the Start/ Stop button or the SmartKey (➤ page 171).
  - ▶ Turn the combination switch to the corresponding position.
- In the [ ... ] or [ .... ] position, the appropriate wiping frequency is set automatically according to the intensity of the rain. In the [ .... ] position, the rain sensor is more sensitive than in the [ ... ] position, causing the windshield wipers to wipe more frequently.




Claim 18	Corresponding Element in Mercedes-Benz Vehicles
18C. said memory subsystem further storing a second vehicle speed/stopping distance table.	<p>(See, e.g., Ex. Mercedes-Benz-2 at 146; Ex. Mercedes-Benz-3 at 116; Ex. Mercedes-Benz-4 at 125; Ex. Mercedes-Benz-5 at 257; Ex. Mercedes-Benz-6 at 115; Ex. Mercedes-Benz-7 at 125; Ex. Mercedes-Benz-8 at 143; Ex. Mercedes-Benz-9 at 138; Ex. Mercedes-Benz-10 at 114; Ex. Mercedes-Benz-11 at 140; Ex. Mercedes-Benz-12 at 122; Ex. Mercedes-Benz-13 at 132; Ex. Mercedes-Benz-14 at 134; Ex. Mercedes-Benz-15 at 117; Ex. Mercedes-Benz-16 at 101).</p>
	<p>The accused Mercedes-Benz vehicles include a memory subsystem further storing a second vehicle speed/stopping distance table.</p> <p>On information and belief, the accused Mercedes-Benz vehicles store a second vehicle speed/stopping distance table.</p> <p>See, e.g., citations for claim element 17E.</p>



<b>Claim 19</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
19A. Apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 17.  <i>See, e.g., citations for claim 17.</i>
19B. a throttle controller for controlling a throttle of said engine of said vehicle; and	The accused Mercedes-Benz vehicles include a throttle controller for controlling a throttle of said engine of said vehicle.  <i>See, e.g., citations for claim element 1B.</i>
19C. said processor subsystem selectively reducing said throttle based upon data received from said radar detector, said at least one sensor and said memory subsystem.	On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that selectively reduces said throttle based upon data received from said radar detector, said at least one sensor and said memory subsystem.  <i>See, e.g., citations for claim element 1G and 17E1.</i>

Claim 20	Corresponding Element in Mercedes-Benz Vehicles
<p>20. Apparatus for optimizing operation of a vehicle according to claim 19 wherein said at least one sensor further includes a brake sensor for indicating whether a brake system of said vehicle is activated.</p> <p>19 wherein said at least one sensor further includes a brake sensor for indicating whether a brake system of said vehicle is activated.</p> <p>For example, the accused Mercedes-Benz vehicles include a brake sensor that determines when the brake system is activated (e.g., as indicated by various instrument displays and by the accused vehicles' brake lights.)</p>	<p>The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 19 wherein said at least one sensor further includes a brake sensor for indicating whether a brake system of said vehicle is activated.</p> <p>For example, the accused Mercedes-Benz vehicles include a brake sensor that determines when the brake system is activated (e.g., as indicated by various instrument displays and by the accused vehicles' brake lights.)</p> <p style="text-align: center;"><b>Function</b></p> <ul style="list-style-type: none"> <li>▶ <b>To activate/deactivate:</b> activate or deactivate PRE-SAFE® Brake in the on-board computer (▷ page 260).</li> <li>If the PRE-SAFE® Brake is not activated, the  symbol appears in the multifunction display.</li> </ul> <p>Starting at a speed of around 4 mph (7 km/h), this function warns you if you rapidly approach a vehicle in front. An intermittent warning tone will then sound and the  distance warning lamp will light up in the instrument cluster.</p> <ul style="list-style-type: none"> <li>▶ Brake immediately to defuse the situation.</li> <li>or</li> <li>▶ Take evasive action provided it is safe to do so.</li> </ul> <p>(See, e.g., Ex. Mercedes-Benz-2 at 78, Ex. Mercedes-Benz-3 at 67, Ex. Mercedes-Benz-4 at 71,</p>


Claim 20	Corresponding Element in Mercedes-Benz Vehicles
	Ex. Mercedes-Benz-5 at 68; Ex. Mercedes-Benz-7 at 72; Ex. Mercedes-Benz-8 at 76-77; Ex. Mercedes-Benz-9 at 76-77; Ex. Mercedes-Benz-11 at 75; Ex. Mercedes-Benz-12 at 72; Ex. Mercedes-Benz-13 at 74; Ex. Mercedes-Benz-14 at 77; Ex. Mercedes-Benz-15 at 65; Ex. Mercedes-Benz-16 at 77).


Claim 21	Corresponding Element in Mercedes-Benz Vehicles
<p>21A. Apparatus for optimizing operation of a vehicle according to claim 19 wherein said processor subsystem further comprises:</p> <p>21B. means for counting a total number of vehicle proximity alarms determined by said processor subsystem;</p>	<p>The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 19 wherein said processor subsystem further comprises:</p> <p><i>See, e.g., citations for claims 1, 19.</i></p> <p>The accused Mercedes-Benz vehicles include a means for counting a total number of vehicle proximity alarms determined by said processor subsystem.</p> <p>21B1. COLLISION PREVENTION ASSIST/Distance Warning Function:</p> <p><b>Function</b></p> <ul style="list-style-type: none"> <li>▶ <b>To activate/deactivate:</b> activate or deactivate the distance warning function in the on-board computer (➤ page 261).</li> </ul> <p>If the distance warning function is not activated, the  symbol appears in the assistance graphics display.</p> <p>The distance warning function can help you to minimize the risk of a front-end collision with a vehicle ahead or reduce the effects of such a collision. If the distance warning function detects that there is a risk of a collision, you will be warned visually and acoustically. The distance warning function cannot prevent a collision without your intervention.</p>

Claim 21	Corresponding Element in Mercedes-Benz Vehicles
<p>Starting at a speed of around 4 mph (7 km/h), the distance warning function warns you if you rapidly approach a vehicle in front. An intermittent warning tone will then sound and the [A] distance warning lamp will light up in the instrument cluster.</p> <ul style="list-style-type: none"> <li>▶ Brake immediately in order to increase the distance from the vehicle in front.</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>▶ Take evasive action, provided it is safe to do so.</li> </ul> <p>Due to the nature of the system, particularly complicated but non-critical driving conditions may also cause the system to display a warning.</p> <p>With the help of the radar sensor system, the distance warning function can detect obstacles that are in the path of your vehicle for an extended period of time.</p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 74; Ex. Mercedes-Benz-6 at 62-64; Ex. Mercedes-Benz-8 at 70-71; Ex. Mercedes-Benz-9 at 70-71; Ex. Mercedes-Benz-11 at 69-70; Ex. Mercedes-Benz-13 at 69-70).</p> <p>21B2. PRE-SAFE Brake:</p>	


Function

- ▶ **To activate/deactivate:** activate or deactivate PRE-SAFE® Brake in the on-board computer (→ page 260).

If the PRE-SAFE® Brake is not activated, the  symbol appears in the multifunction display.

Starting at a speed of around 4 mph (7 km/h), this function warns you if you rapidly approach a vehicle in front. An intermittent warning tone will then sound and the  distance warning lamp will light up in the instrument cluster.

- ▶ Brake immediately to defuse the situation.
- or
- ▶ Take evasive action provided it is safe to do so.

 If there is an increased risk of collision, preventive passenger protection measures (PRE-SAFE®) are activated.

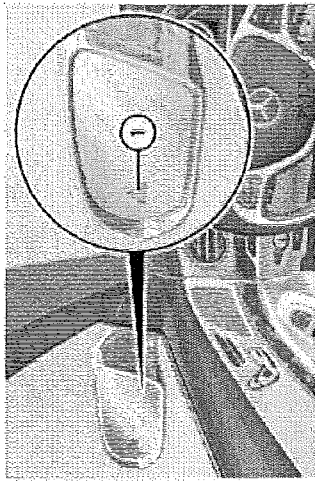
(See, e.g., Ex. Mercedes-Benz-2 at 78; Ex. Mercedes-Benz-3 at 67; Ex. Mercedes-Benz-4 at 71; Ex. Mercedes-Benz-5 at 68; Ex. Mercedes-Benz-7 at 72; Ex. Mercedes-Benz-8 at 76-77; Ex. Mercedes-Benz-9 at 76-77; Ex. Mercedes-Benz-11 at 75; Ex. Mercedes-Benz-12 at 72; Ex. Mercedes-Benz-13 at 74; Ex. Mercedes-Benz-14 at 77; Ex. Mercedes-Benz-15 at 65; Ex. Mercedes-Benz-16 at 77).

21B3. DISTRONIC PLUS

Claim 21	Corresponding Element in Mercedes-Benz Vehicles
	<p>IF DISTRONIC PLUS detects that there is a risk of a collision, you will be warned visually and acoustically. DISTRONIC PLUS cannot prevent a collision without your intervention. An intermittent warning tone will then sound and the distance warning lamp will light up in the instrument cluster. Brake immediately in order to increase the distance to the vehicle in front or take evasive action provided it is safe to do so.</p> <p>DISTRONIC PLUS operates in range between 0 mph (0 km/h) and 120 mph (200 km/h).</p> <p>Do not use DISTRONIC PLUS while driving on roads with steep gradients.</p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 201; Ex. Mercedes-Benz-3 at 157; Ex. Mercedes-Benz-4 at 173; Ex. Mercedes-Benz-5 at 298; Ex. Mercedes-Benz-6 at 164; Ex. Mercedes-Benz-7 at 177; Ex. Mercedes-Benz-8 at 191; Ex. Mercedes-Benz-9 at 191; Ex. Mercedes-Benz-10 at 177; Ex. Mercedes-Benz-11 at 203; Ex. Mercedes-Benz-12 at 175; Ex. Mercedes-Benz-13 at 194; Ex. Mercedes-Benz-14 at 186; Ex. Mercedes-Benz-15 at 169; Ex. Mercedes-Benz-16 at 186).</p> <p>21B4. Blind Spot Assist/Active Blind Spot Assist:</p>



Warning display





① Warning display

Active Blind Spot Assist is not operational at speeds below approximately 20 mph (30 km/h). Vehicles in the monitoring range are then not indicated.

If a vehicle is detected within the blind spot monitoring range at speeds above 20 mph (30 km/h), warning lamp ① on the corresponding side lights up red. This warning is always emitted when a vehicle enters the blind spot monitoring range from behind or from the side. When you overtake a vehicle, the warning only occurs if the difference in speed is less than 7 mph (12 km/h).

(See, e.g., Ex. Mercedes-Benz-2 at 240-43; Ex. Mercedes-Benz-3 at 177-78, 180-81; Ex. Mercedes-Benz-4 at 193-94, 197-99; Ex. Mercedes-Benz-5 at 327-30; Ex. Mercedes-Benz-6 at 188-90; Ex. Mercedes-Benz-7 at 207-09, 211-13; Ex. Mercedes-Benz-8 at 221-23, 225-27; Ex. Mercedes-Benz-9 at 221-23, 225-27; Ex. Mercedes-Benz-10 at 185-87; Ex. Mercedes-Benz-11 at



Claim 21	Corresponding Element in Mercedes-Benz Vehicles
	<p>243-44, 247-50; Ex. Mercedes-Benz-12 at 202-03, 206-09; Ex. Mercedes-Benz-13 at 233-35, 237-40; Ex. Mercedes-Benz-14 at 218-21; Ex. Mercedes-Benz-15 at 187-88; Ex. Mercedes-Benz-16 at 145-47).</p> <p><b>Visual and acoustic collision warning</b>  If you switch on the turn signals to change lanes and a vehicle is detected in the side monitoring range, you receive a visual and acoustic collision warning. You will then hear a double warning tone and red warning lamp  flashes. If the turn signal remains on, detected vehicles are indicated by the flashing of red warning lamp . There are no further warning tones.</p> <p>(See, e.g., Ex. Mercedes-Benz-2 at 240-43; Ex. Mercedes-Benz-3 at 177-78, 180-81; Ex. Mercedes-Benz-4 at 193-94, 197-99; Ex. Mercedes-Benz-5 at 327-30; Ex. Mercedes-Benz-6 at 188-90; Ex. Mercedes-Benz-7 at 207-09, 211-13; Ex. Mercedes-Benz-8 at 221-23, 225-27; Ex. Mercedes-Benz-9 at 221-23, 225-27; Ex. Mercedes-Benz-10 at 185-87; Ex. Mercedes-Benz-11 at 243-44, 247-50; Ex. Mercedes-Benz-12 at 202-03, 206-09; Ex. Mercedes-Benz-13 at 233-35, 237-40; Ex. Mercedes-Benz-14 at 218-21; Ex. Mercedes-Benz-15 at 187-88; Ex. Mercedes-Benz-16 at 145-47).</p> <p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “counting a total number of vehicle proximity alarms determined by said processor subsystem” are described in, for example, Figures 1 and 2 and associated text relating to the expression programmed in the Processor Subsystem 12.</p> <p>On information and belief, the accused Mercedes-Benz vehicles include a means for selectively reducing said throttle based upon said total number of vehicle proximity alarms.</p>
21C. means for selectively reducing said throttle based upon said total number of	

<b>Claim 21</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
vehicle proximity alarms.	See, e.g., citations for claim element 21B.
	To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “counting a total number of vehicle proximity alarms determined by said processor subsystem” are described in, for example, Figures 1 and 2 and associated text relating to the expression programmed in the Processor Subsystem 12.

<b>Corresponding Element in Mercedes-Benz Vehicles</b>	
<p><b>Claim 22</b></p> <p>22A. Apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:</p> <p>17 and further comprising:</p> <p>22B. a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed, and</p> <p>22C. said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said downshift notification circuit.</p>	<p>The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:</p> <p><i>See, e.g., citations for claim 17.</i></p> <p>The accused Mercedes-Benz vehicles include a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed.</p> <p><i>See, e.g., citations for claim element 7F.</i></p> <p>The accused Mercedes-Benz vehicles include a processor subsystem that determines, based upon data received from said plurality of sensors, when to activate said downshift notification circuit.</p> <p><i>See, e.g., citations for claim elements 1B, 1G.</i></p>

<b>Claim 23</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
23A. Apparatus for optimizing operation of a vehicle, comprising:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle. <i>See, e.g.,</i> citations for claims 1, 17.
23B. a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;	The accused Mercedes-Benz vehicles include a radar detector that determines a distance separating a vehicle having an engine and another object in front of the accused vehicles. <i>See, e.g.,</i> citations for claim element 17B.
23C. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor;	The accused Mercedes-Benz vehicles include a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor. <i>See, e.g.,</i> citations for claim element 1B.
23D. a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;	The accused Mercedes-Benz vehicles include a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom; <i>See, e.g.,</i> citations for claim element 1C.
23E. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors.	The accused Mercedes-Benz vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors.

<b>Corresponding Element in Mercedes-Benz Vehicles</b>	
<b>Claim 23</b> pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors;	<i>See, e.g.,</i> citations for claim element 17E.
23F. a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;	The accused Mercedes-Benz vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.  <i>See, e.g.,</i> citations for claim element 1E.
23G. an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed;	The accused Mercedes-Benz vehicles include an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed.  <i>See, e.g.,</i> citations for claim element 1F.
23H. said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit;	The accused Mercedes-Benz vehicles include a processor subsystem that determines, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit.  <i>See, e.g.,</i> citations for claim element 1G.
23I. a vehicle proximity	The accused Mercedes-Benz vehicles include a vehicle proximity alarm circuit coupled to said

<b>Claim 23</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
<p>alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;</p>	<p>processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object.  See, e.g., citations for claim 17F.</p>
<p>23J. said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.</p>	<p>The accused Mercedes-Benz vehicles includes a processor subsystem that determines, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.  See, e.g., citations for claim element 17I.</p>

Claim 24	Corresponding Element in Mercedes-Benz Vehicles
<p>24A. Apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:</p>	<p>The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:  <i>See, e.g.,</i> citations for claim 23.</p>
<p>24B. means for determining when road speed for said vehicle is increasing or decreasing;</p>	<p>The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is increasing or decreasing.  <i>See, e.g.,</i> citations for claim element 15B.</p>
<p>24C. means for determining when throttle position for said vehicle is increasing or decreasing; and</p>	<p>The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing or decreasing.  <i>See, e.g.,</i> citations for claim element 2C.  To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when throttle position for said vehicle is increasing or decreasing” are described in, for example, Figures 1 and 2 and associated text of the '781 patent relating to Throttle Sensor 24, Memory Subsystem 14, and Processor Subsystem 12.</p>
<p>24D. means for comparing manifold pressure to said manifold pressure set point;</p>	<p>The accused Mercedes-Benz vehicles include a means for comparing manifold pressure to said manifold pressure set point.  <i>See, e.g.,</i> citations for claim element 2D.</p>
<p>24E. means for determining when manifold pressure for said vehicle is increasing or decreasing; and</p>	<p>The accused Mercedes-Benz vehicles include a means for determining when manifold pressure for said vehicle is increasing or decreasing.  <i>See, e.g.,</i> citations for claim element 4D.</p>

Claim 24	Corresponding Element in Mercedes-Benz Vehicles
	<p>To the extent that 35 U.S.C. §112(6) applies to this claim limitation, the structure(s), act(s), or materials(s) that perform the claimed function of “determining when manifold pressure for said vehicle is increasing or decreasing” are described in, for example, Figures 1 and 2 and associated text of the ’781 patent relating to Manifold PSI Sensor 22, Memory Subsystem 14, and Processor Subsystem 12.</p>
<p>24F. means for determining when engine speed for said vehicle is increasing or decreasing;</p>	<p>The accused Mercedes-Benz vehicles include a means for determining when engine speed for said vehicle is increasing or decreasing.  <i>See, e.g.,</i> citations for claim element 15G.</p>
<p>24G. said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.</p>	<p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.  <i>See, e.g.,</i> citations for claim element 1G.</p>



<b>Claim 25</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
25A. Apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:  <i>See, e.g., citations for claim 23.</i>
25B. means for determining when road speed for said vehicle is increasing;	The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is increasing.  <i>See, e.g., citations for claim element 2B.</i>
25C. means for determining when throttle position for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g., citations for claim element 2C.</i>
25D. means for comparing manifold pressure to said manifold pressure set point;	The accused Mercedes-Benz vehicles include a means for comparing manifold pressure to said manifold pressure set point.  <i>See, e.g., citations for claim element 2D.</i>
25E. means for comparing engine speed to said RPM set point;	The accused Mercedes-Benz vehicles include a means for comparing engine speed to said RPM set point.  <i>See, e.g., citations for claim element 5E.</i>
25F. said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold	On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.  <i>See, e.g., citations for claim element 5F.</i>

	Corresponding Element in Mercedes-Benz Vehicles
<p><b>Claim 25</b>            pressure for said vehicle is            at or below said manifold            pressure set point and            engine speed for said            vehicle is at or above said            RPM set point.</p>	

<b>Claim 26</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
26A. Apparatus for optimizing operation of a vehicle, comprising:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle.  <i>See, e.g.,</i> citations for claims 1, 17.
26B. a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;	The accused Mercedes-Benz vehicles include a radar detector that determines a distance separating a vehicle having an engine and another object in front of the accused vehicles.  <i>See, e.g.,</i> citations for claim element 17B.
26C. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor;	The accused Mercedes-Benz vehicles include a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor.  <i>See, e.g.,</i> citations for claim element 1B.
26D. a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;	The accused Mercedes-Benz vehicles include a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;  <i>See, e.g.,</i> citations for claim element 1C.
26E. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a first vehicle speed/stopping distance table, a manifold	The accused Mercedes-Benz vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, RPM set point, and present and prior levels for each one of said plurality of sensors.

<b>Claim 26</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
pressure set point, RPM set point, and present and prior levels for each one of said plurality of sensors;	<i>See, e.g.,</i> citations for claim element 17E.
26F. a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;	The accused Mercedes-Benz vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.  <i>See, e.g.,</i> citations for claim element 1E.
26G. a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;	The accused Mercedes-Benz vehicles include a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;  <i>See, e.g.,</i> citations for claim element 7F.
26H. said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit;	The accused Mercedes-Benz vehicles include a processor subsystem that determines, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit.  <i>See, e.g.,</i> citations for claim element 7G.
26I. a vehicle proximity	The accused Mercedes-Benz vehicles include a vehicle proximity alarm circuit coupled to said

<b>Claim 26</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
<p>alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;</p>	<p>processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object.  <i>See, e.g.</i>, citations for claim element 17F.</p>
<p>26J. said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.</p>	<p>The accused Mercedes-Benz vehicles includes a processor subsystem that determines, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.  <i>See, e.g.</i>, citations for claim element 17I.</p>

Claim 27	Corresponding Element in Mercedes-Benz Vehicles
27A. Apparatus for optimizing operation of a vehicle according to claim 26 wherein said processor subsystem further comprises:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 26 wherein said processor subsystem further comprises:  <i>See, e.g.,</i> citations for claims 1, 26.
27B. means for determining when road speed for said vehicle is decreasing;	The accused Mercedes-Benz vehicles include a means for determining when road speed for said vehicle is decreasing.  <i>See, e.g.,</i> citations for claim element 4B.
27C. means for determining when throttle position for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when throttle position for said vehicle is increasing.  <i>See, e.g.,</i> citations for claim element 4C.
27D. means for determining when manifold pressure for said vehicle is increasing; and	The accused Mercedes-Benz vehicles include a means for determining when manifold pressure for said vehicle is increasing.  <i>See, e.g.,</i> citations for claim element 4D.
27E. means for determining when engine speed for said vehicle is decreasing;	The accused Mercedes-Benz vehicles include a means for determining when engine speed for said vehicle is decreasing.  <i>See, e.g.,</i> citations for claim element 4E.
27F. said processor subsystem activating said downshift notification circuit if both road speed and engine speed are	On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.  <i>See, e.g.,</i> citations for claim element 10F.

Claim 27	Corresponding Element in Mercedes-Benz Vehicles
decreasing and both throttle position and manifold pressure for said vehicle are increasing.	

Claim 28	Corresponding Element in Mercedes-Benz Vehicles
28A. Apparatus for optimizing operation of a vehicle, comprising:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle.  <i>See, e.g., citations for claim 1.</i>
28B. a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;	The accused Mercedes-Benz vehicles include a plurality of sensors coupled to the vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor.  <i>See, e.g., citations for claim element 1B.</i>
28C. a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;	The accused Mercedes-Benz vehicles include a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom.  <i>See, e.g., citations for claim element 1C.</i>
28D. a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;	The accused Mercedes-Benz vehicles include a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.  <i>See, e.g., citations for claim element 1E.</i>
28E. said processor subsystem determining whether to activate said fuel overinjection notification	The accused Mercedes-Benz vehicles include a processor subsystem that determines whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor.



<b>Claim 28</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
<p>sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor.</p>	<p>See, e.g., citations for claim element 1G.</p>

Claim 29	Corresponding Element in Mercedes-Benz Vehicles
<p>29A. Apparatus according to claim 28 and further comprising:</p>	<p>The accused Mercedes-Benz vehicles include an apparatus according to claim 28 and further comprising:  <i>See, e.g.,</i> citations for claim 1, 28.</p>
<p>29B. a memory subsystem, coupled to said processor subsystem, said memory subsystem maintaining a manifold pressure set point;</p>	<p>The accused Mercedes-Benz vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem maintaining a manifold pressure set point.  <i>See, e.g.,</i> citations for claim element 1D.</p>
<p>29C. said processor subsystem activating said fuel overinjection notification circuit upon determining that: (1) based upon data received from said road speed sensor, road speed of said vehicle is increasing; (2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; and (3) based upon data received from said manifold pressure sensor, manifold pressure exceeds said manifold pressure set point.</p>	<p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said fuel overinjection notification circuit upon determining that: (1) based upon data received from said road speed sensor, road speed of said vehicle is increasing; (2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; and (3) based upon data received from said manifold pressure sensor, manifold pressure for said vehicle exceeds said manifold pressure set point.  <i>See, e.g.,</i> citations for claim element 1G.</p>

Claim 30	Corresponding Element in Mercedes-Benz Vehicles
30A. Apparatus according to claim 28, wherein:	<p>The accused Mercedes-Benz vehicles include an apparatus according to claim 28.</p> <p><i>See, e.g.,</i> citations for claims 1, 28.</p>
30B. said plurality of sensors coupled to said vehicle further include an engine speed sensor;	<p>The accused Mercedes-Benz vehicles include a plurality of sensors coupled to said vehicle further including an engine speed sensor;</p> <p><i>See, e.g.,</i> citations for claim element 1B.</p>
30C. said processor subsystem activating said fuel overinjection notification circuit upon determining that: (1) based upon data received from said road speed sensor, road speed of said vehicle is decreasing; (2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; (3) based upon data received from said manifold pressure sensor, manifold pressure for said vehicle is increasing; and (4) based upon data received from said engine speed sensor, engine speed for said vehicle is decreasing.	<p>On information and belief, the accused Mercedes-Benz vehicles include a processor subsystem that activates said fuel overinjection notification circuit upon determining that: (1) based upon data received from said road speed sensor, road speed of said vehicle is decreasing; (2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; (3) based upon data received from said manifold pressure sensor, manifold pressure for said vehicle is increasing; and (4) based upon data received from said engine speed sensor, engine speed for said vehicle is decreasing.</p> <p><i>See, e.g.,</i> citations for claim element 1G.</p>

	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
<b>Claim 30</b> said engine speed sensor, engine speed for said vehicle is decreasing.	

<b>Claim 31</b>	<b>Corresponding Element in Mercedes-Benz Vehicles</b>
31A. Apparatus for optimizing operation of a vehicle, comprising:	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle. <i>See, e.g., citations for claims 1, 17.</i>
31B. a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;	The accused Mercedes-Benz vehicles include a radar detector that determines a distance separating a vehicle having an engine and another object in front of the accused vehicles. <i>See, e.g., citations for claim element 17B.</i>
31C. at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor.	The accused Mercedes-Benz vehicles include at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor. <i>See, e.g., citations for claim element 1B.</i>
31D. a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;	The accused Mercedes-Benz vehicles include a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom. <i>See, e.g., citations for claim element 17D.</i>
31E. a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table.	The accused Mercedes-Benz vehicles include a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table. <i>See, e.g., citations for claim element 17E.</i>
31F. a vehicle proximity	The accused Mercedes-Benz vehicles include a vehicle proximity alarm circuit coupled to said

<b>Corresponding Element in Mercedes-Benz Vehicles</b>	
<b>Claim 31</b> alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object.  See, e.g., citations for claim element 17F.	processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object.  See, e.g., citations for claim element 17F.
31G. said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem.  See, e.g., citations for claim element 17I.	On information and belief, the accused Mercedes-Benz vehicles includes a processor subsystem that determines whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem.  See, e.g., citations for claim element 17I.

<b>Corresponding Element in Mercedes-Benz Vehicles</b>	
<b>Claim 32</b> 32A. Apparatus for optimizing operation of a vehicle according to claim 31 wherein:  32B. said at least one sensor	The accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 31.  See, e.g., citations for claim 31.  The accused Mercedes-Benz vehicles include at least one sensor further including a windshield

Claim 32	Corresponding Element in Mercedes-Benz Vehicles
<p>further includes a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated; and</p> <p>32C. said memory subsystem further storing a second vehicle speed/stopping distance table.</p>	<p>wiper sensor for indicating whether a windshield wiper of said vehicle is activated.</p> <p><i>See, e.g.,</i> citations for claim element 18B.</p>
<p>32D. if said windshield wiper sensor indicates that said windshield wiper is deactivated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem;</p>	<p>The accused Mercedes-Benz vehicles include a memory subsystem further storing a second vehicle speed/stopping distance table.</p> <p><i>See, e.g.,</i> citations for claim element 18C.</p>
<p>32E. if said windshield wiper sensor indicates that said windshield wiper is activated, said processor subsystem determining whether to activate said</p>	<p>On information and belief, the accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 31 wherein if said windshield wiper sensor indicates that said windshield wiper is deactivated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem.</p> <p><i>See, e.g.,</i> citations for claim element 17I.</p>
<p>32E. if said windshield wiper sensor indicates that said windshield wiper is activated, said processor subsystem determining whether to activate said</p>	<p>On information and belief, the accused Mercedes-Benz vehicles include an apparatus for optimizing operation of a vehicle according to claim 31 wherein if said windshield wiper sensor indicates that said windshield wiper is activated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said second vehicle speed/stopping distance table stored in said memory subsystem.</p>

Claim 32	Corresponding Element in Mercedes-Benz Vehicles
vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said second vehicle speed/stopping distance table stored in said memory subsystem.	<i>See, e.g., citations for claim element 17I.</i>



## **EXHIBIT 8**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS

EASTERN DIVISION

_____	)	
VELOCITY PATENT LLC,	)	
	)	
<i>Plaintiff,</i>	)	Civil Action No. 1:13-cv-08419
	)	
v.	)	Hon. John W. Darrah
	)	
CHRYSLER GROUP, LLC	)	<b>JURY TRIAL DEMANDED</b>
	)	
	)	
<i>Defendant.</i>	)	
_____	)	

**VELOCITY PATENT LLC'S INITIAL INFRINGEMENT CONTENTIONS PURSUANT  
TO LOCAL PATENT RULE 2.2**

Plaintiff Velocity Patent LLC ("Velocity") hereby provides, pursuant to N.D. Ill. Local Patent Rule 2.2 of the Northern District of Illinois, the following Initial Infringement Contentions. Velocity contends that each of the identified claims is infringed by Chrysler Group, LLC ("Chrysler"). The following contentions are based on knowledge and information in Velocity's possession, custody and control after a reasonable investigation of publicly-available sources and the limited number of documents produced by Chrysler pursuant to Local Patent Rule 2.1. The accused Chrysler products implement some of the infringing functionality in whole or in part using circuitry and associated programs, which are neither publicly available nor described in Chrysler's production to date. Therefore, Velocity reserves the right to revise, amend and supplement these contentions as discovery progresses and new information becomes available.

**A. Identification of Infringed Claims and Applicable Statutory Section of 35 U.S.C. § 271**

Claims 1-2, 4-5, 7-8, 10, 12-13, 15, and 17-32 of U.S. Patent No. 5,954,781 are directly infringed under 35 U.S.C § 271(a) by the accused Chrysler vehicles identified below.

**B. Identification of Accused Instrumentalities By Claim**

As set forth in the accompanying claim chart, the Dodge Challenger (including SRT models), Dodge Charger (including SRT models), Dodge Dart (including SRT models), Dodge Nitro, Dodge Magnum (including SRT models), Dodge Grand Caravan, Dodge Durango, Dodge Aspen, Dodge Aspen Hybrid, Chrysler Sebring, Chrysler Town & Country, Chrysler 300 (including SRT models), Jeep Wrangler, Jeep Commander, Jeep Grand Cherokee (including SRT models), Jeep Cherokee, RAM 1500/2500/3500, RAM Promaster, RAM Chassis, and RAM Cargo Van vehicles that include the identified features, infringe one or more of the claims identified above. On a claim-by-claim basis, the following Chrysler vehicles are accused of infringement by Velocity:

Claim 1 - Dodge Challenger, Dodge Journey, Dodge Dart, Dodge Nitro, Dodge Magnum, Dodge Grand Caravan, Dodge Charger, Dodge Durango, Chrysler Sebring, Chrysler Town & Country, Chrysler 300, Jeep Wrangler, Jeep Commander, Jeep Grand Cherokee, Jeep Cherokee, RAM 1500/2500/3500, RAM Promaster, RAM Chassis and RAM Cargo Van;

Claim 2 - Dodge Challenger, Dodge Journey, Dodge Dart, Dodge Nitro, Dodge Magnum, Dodge Grand Caravan, Dodge Charger, Dodge Durango, Chrysler Sebring, Chrysler Town & Country, Chrysler 300, Jeep Wrangler, Jeep Commander, Jeep Grand Cherokee, Jeep Cherokee, RAM 1500/2500/3500, RAM Promaster, RAM Chassis and RAM Cargo Van;

Claim 4 - Dodge Challenger, Dodge Journey, Dodge Dart, Dodge Nitro, Dodge Magnum, Dodge Grand Caravan, Dodge Charger, Dodge Durango, Chrysler Sebring, Chrysler Town & Country, Chrysler 300, Jeep Wrangler, Jeep Commander, Jeep Grand Cherokee, Jeep Cherokee, RAM 1500/2500/3500, RAM Promaster, RAM Chassis and RAM Cargo Van;