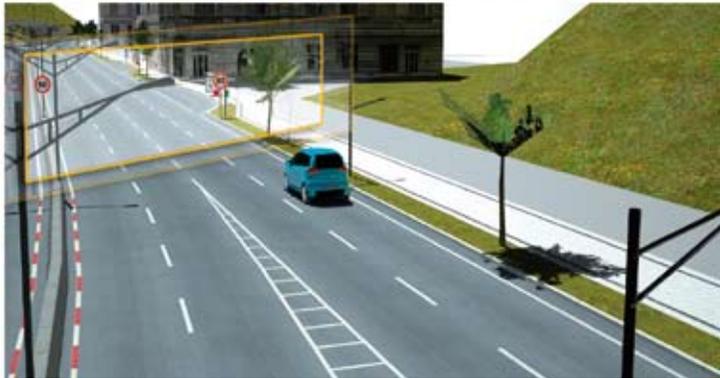
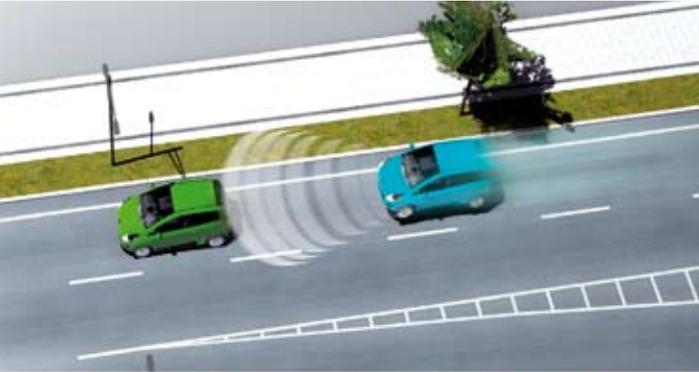


Driving innovation

New technologies enable advanced driver assistance systems for safer roads



September 2009

STMicroelectronics drives innovation to make our roads safer

More than 90% of all road accidents involve human error in what is too often a tragic mismatch between driver behavior and scenario complexity. The role of advance driver assistance systems (ADAS) is to decrease the driver's workload, detecting danger and providing support in hazardous situations.

As a solution provider, ST, in co-operation with strategic partners in the field, has developed technologies and products to make our roads safer. ST's technological contributions in the ADAS market include:

- Dedicated CMOS camera sensors (high dynamic range CMOS sensors with the best sensitivity and dynamic range amongst the devices currently on the market, and linear sensors for rear-view applications)
- High-performance vision-processing engines
- Sensors, ASICs and processors for short range and long range radar applications
- Car-to-car communication and car-to-infrastructure communication
- Dedicated ADAS mapping

Our new microcontrollers for safety-critical applications, developed in collaboration with Freescale Semiconductor and using PowerPC® architecture, are designed with safety in mind and are built using ST's embedded Flash technology.

The above technologies address the following applications:

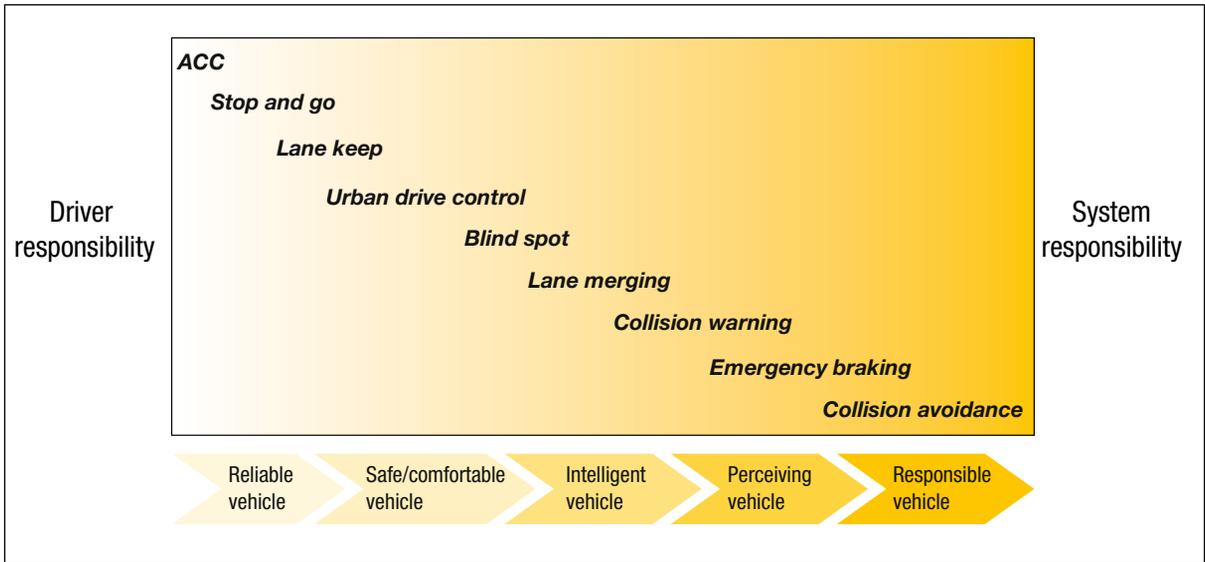


- Lane departure warning
- Lane keeping
- Collision mitigation
- Forward collision warning
- Pedestrian protection
- Adaptive cruise control
- Night vision
- Through fog vision
- Traffic sign recognition
- Rain sensing
- Blind spot detection
- Lane change assistance
- Parking assistance
- Rear view camera
- Headway monitoring
- Automatic high-beam control



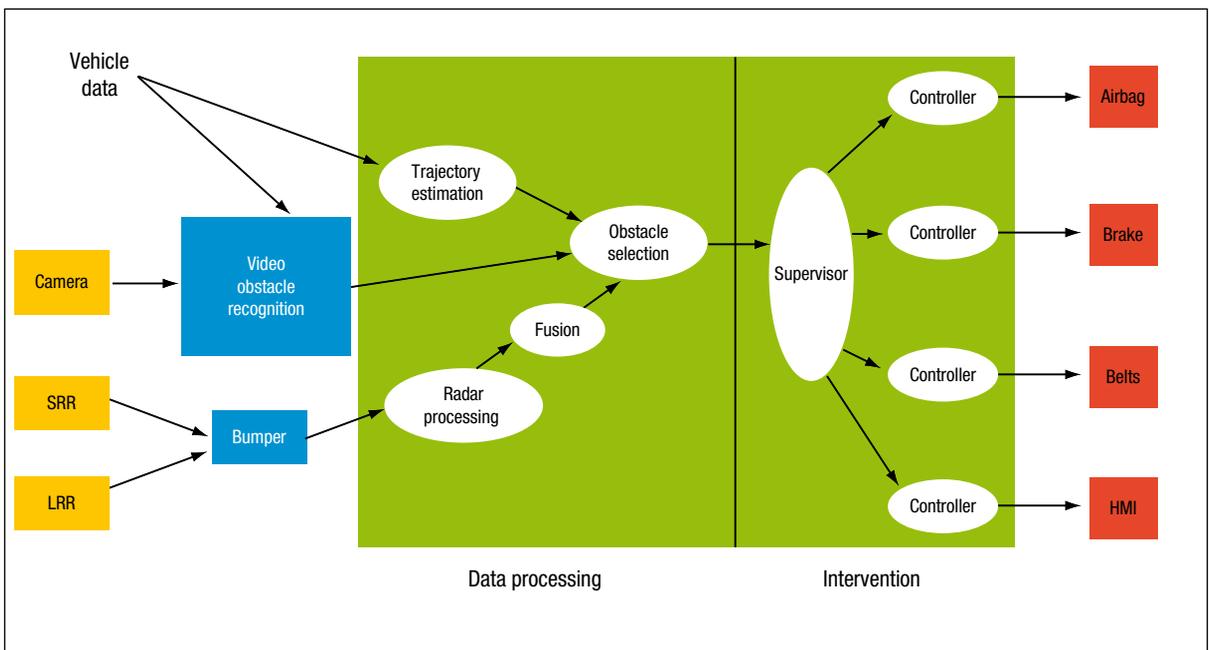
Driver to system responsibility

The current trend in the automotive market is to shift the emphasis from vehicle comfort and reliability to increasingly “sensitive” car systems, able to relieve drivers of possible workload and consequently enhance driving safety.



Data fusion processing flow

To take advantage of the complementary characteristics and to improve system reliability, data generated by sensors such as SRRs, LRRs, cameras, are combined and processed by a system microcontroller (supervisor) to select the kind of action to be initiated.





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