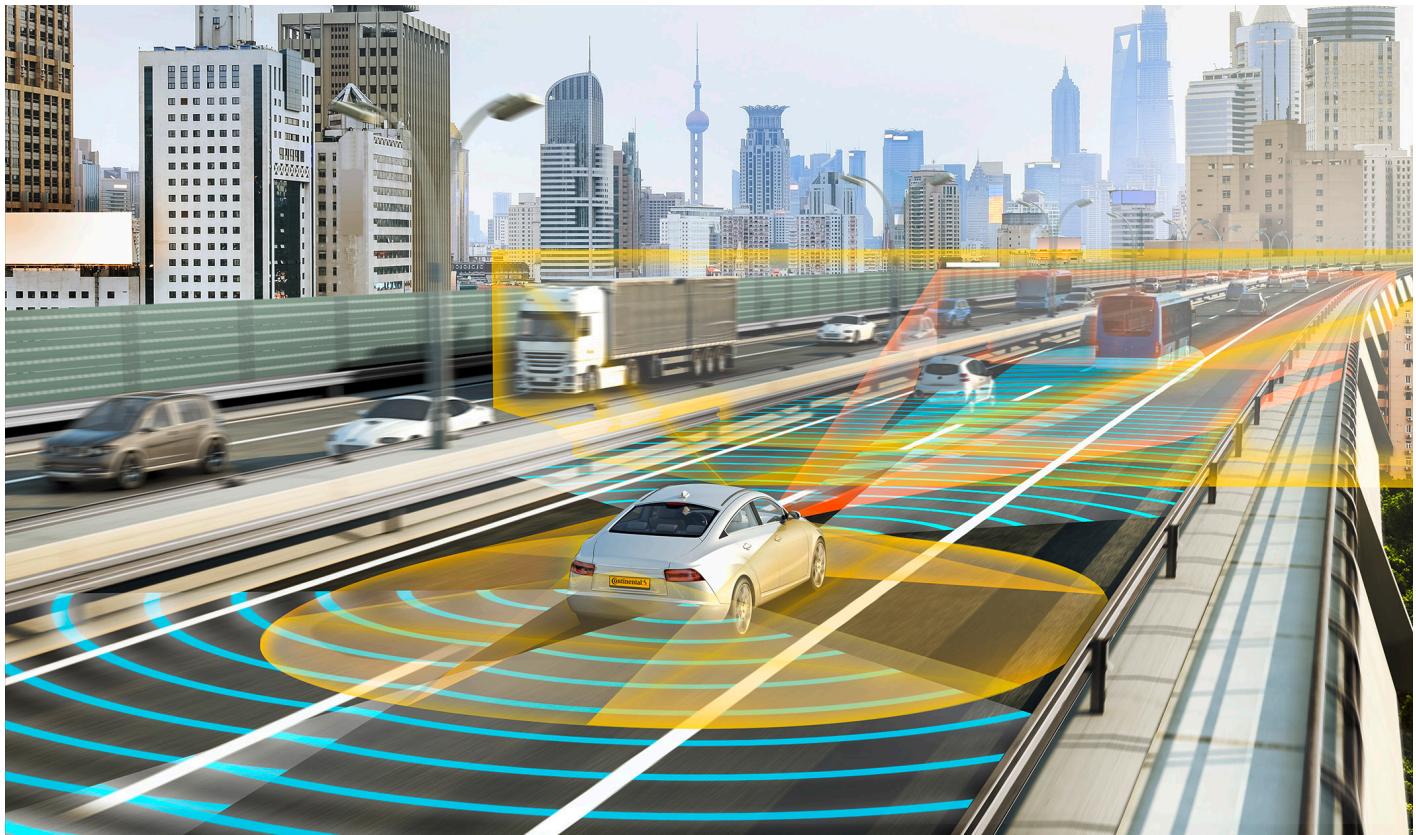


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Driverless cars in name only

The phrase "driverless car" has captured the public's imagination in such a way that many might find it difficult to think of anything other than an empty car driving itself here and there, maybe with a human passenger inside at some point or other.

The more matter-of-fact term "advanced driver assistance system" probably doesn't capture the imagination in the same way, even when it's called ADAS. But both are componentially the same.

The list of ADAS functions is growing all the time and already includes such things as cruise control, autonomous emergency braking, lane-changing and so on.

Some of these features – such as cruise control – have been with us for several decades, others are quite new, and together they constitute a driverless car system.

But to be fair to the phrase driverless car, ADAS is still a collection of separate albeit integrated functions which ultimately require a human to be in charge, whereas the idea that many people have of a fully autonomous car is that it doesn't need a human at all.

The missing, or developing, technologies of the driverless car seem to be to do with mapping and navigation. ADAS teaches a car how to perform individual manoeuvres, but cars are yet to be given the bigger picture, the context, a map of the environment in which they are to undertake those manoeuvres.

But with more work being done in mapping and navigation, as well as vision and light detection systems, it's only a matter of time before cars become fully aware of their environment and go on to take over the world. ■

News



Chinese supercar features advanced driver assistance system

Techrules has demonstrated a prototype supercar, called Ren (above), which features advanced driver assistance systems.

China is the world's largest auto market, a relatively new development, so motorists probably have less antipathy towards ADAS in supercars.

Attitudes in the US are also changing, perhaps brought about by Tesla's success. Not only is the Tesla electric – another feature previously considered unpopular with motorists – it also has something called Autopilot, which is basically autonomous driving.

Most new luxury cars are loaded with ADAS, but in the supercar segment, drivers are more keen to drive themselves and are less enthusiastic about ADAS.

techrules-news.com

Bosch doing roaring trade in ADAS market

Bosch is one of the two big companies in the ADAS market. Dirk Hoheisel, Bosch's board member in charge of mobility issues, says the demand for the technology is huge.

"It was only in 2016 that our sales in this area first passed the billion-euro mark – while orders last year were worth 3.5 billion euros."

The key technology for the future, he added, is the onboard computer it has developed in partnership with Nvidia.

<https://goo.gl/NSdNXg>



Continental expands ADAS business in Asia

Continental, the other one of the big two ADAS providers, is expanding its operations in Asia.

The company is increasing production capacity in the Philippines and China, and accelerating its knowledge transfer and staff expansion. India, too, is in its sights.

Norbert Hammerschmidt, head of the Continental ADAS business unit in Asia, says: "The strong growth trend is continuing unabated in Asia and more than 1,000 of our people work here."

<https://goo.gl/gE6emE>



ZF Friedrichshafen adds ADAS to trucks

ZF Friedrichshafen has demonstrated two new ADAS features which are specifically designed for trucks.

The collision avoidance function, or evasive manoeuvre assist as ZF likes to call it, and the highway driver assist function will take more the drudgery out of long-distance driving at a time when recruiting for the job has become difficult.

ZF has also agreed a partnership deal with Faurecia to develop more technologies for autonomous driving.



<https://goo.gl/MYLihx>

Hitachi supplying ADAS for Nissan X-Trail

Hitachi Automotive Systems is providing its Advanced Driver Assistance System Electronic Control Unit in Nissan's redesigned X-Trail vehicle.

ADAS ECUs are one of the core products of ADAS, and feature various integrated ADAS features such as adaptive cruise control, collision mitigation braking, and lane departure warning systems, all within a single controller.



Hitachi has produced ADAS ECUs since its first installation in the 2009 Nissan Fuga.

<https://goo.gl/2qFhK2>

Denso accelerates ADAS activity

Denso, the main supplier of electronics to Toyota, is establishing a new company – called NSITEXE – to make components for ADAS.

NSITEXE will design and develop semiconductor intellectual property cores, which will then be licensed to manufacturers.



Denso has licensed GPU and CPU technologies from a company called Imagination. Also, Denso has selected Cypress Semiconductor's automotive microcontroller and memory for Toyota cars.

<https://goo.gl/mpJZPJ>

Wabco expands ADAS offering with acquisition

Wabco is expanding its ADAS portfolio with the acquisition of Sheppard, a supplier of commercial vehicle technologies.

The company is looking to offer new steering capabilities as well as "full dynamic control" for commercial vehicles.



Jacques Esculier, Wabco CEO, says: "This acquisition represents another key milestone as Wabco advances toward enabling self-driving commercial vehicles."

<https://goo.gl/UwK1yX>



Levels of autonomousness

The difference between a fully autonomous car and one with ADAS is simply the level of autonomy

As the international engineers' association SAE defines them, there are six levels of autonomy – or five if you discount the zero level, which is no autonomy at all.

Level 0 is the category in which the majority of the world's vehicles fit into now, where they are just mechanical machines with no autonomy.

Level 1 autonomy is labelled "driver assistance" by SAE, and it's probably where the majority of the functions in today's advanced driver assistance systems can be included, although some may argue that ADAS can be seen as going up as high as Level 4, which is regarded as "high automation" by the SAE.

The top level, Level 5, is called "full automation" by the SAE. This is where the car can totally drive itself and can perform all the functions and manoeuvres normally performed by the human driver.

It probably should be said that the SAE, although widely respected around the world, is one association among many. Moreover, governments and other regulators will make the final decisions.

<https://goo.gl/4QAz97>

It's all about functionality

From the moment people noticed – decades ago now – that cars had electric windows, they probably felt that something was fundamentally changing.

Electronics in cars have come a long way since then, with almost 30 clearly defined functions of advanced driver assistance systems, which are essentially electronics systems with computer chips at their heart.

Aside from electric windows – which could actually be a simple electromechanical system but probably mostly integrate sensors and chips as well – the other best known and oldest ADAS features are probably cruise control and anti-lock braking systems, better known as ABS.

These days, ABS is barely mentioned and electronic windows have apparently been completely forgotten. Now, ADAS can park your car and stop it in an emergency if the driver fails to.

<https://goo.gl/6Rc6uv>

The really big picture

It would be difficult to rank each automaker based on how much autonomy it has integrated into its cars, and how many of them, but Robotics and Automation News produced an impressionistic view, for which there is a web link below.

And while the majority of the media attention in the past few years has been on companies such as Google and, more recently, Tesla and Apple – even though it still hasn't confirmed any plans to build a car, the real advances in autonomy have actually been made by the traditional auto giants.

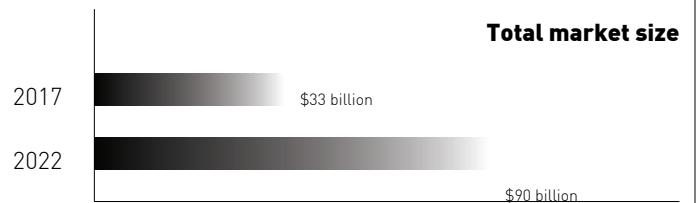
General Motors claims to have become the first company to use mass-manufacturing techniques to build electric and autonomous cars, but that's just one story in many that make up the industry as it is now.

<https://goo.gl/5PtK1Z>

Infographics & tables

Given that the vast majority of the cars and vehicles on the road now do not have advanced driver assistance systems, the market is set to grow exponentially over the next few years, which is what a variety of research shows.

Current leaders Continental and Bosch are growing, and new entrants to the market are expected.



World's leading suppliers of advanced driver assistance systems

Sources: Visiongain; Statistics MRC

Source: Semicast Research

Nº	Company name	Link to recent news about the company	Market share
1.	Continental	http://roboticsandautomationnews.com/?s=continental&x=0&y=0	18 per cent
2.	Bosch	http://roboticsandautomationnews.com/?s=bosch&x=0&y=0	15 per cent
3.	Autoliv	http://roboticsandautomationnews.com/?s=autoliv&x=0&y=0	14 per cent
4.	Magna	http://roboticsandautomationnews.com/?s=magna&x=0&y=0	9 per cent
5.	ZF	http://roboticsandautomationnews.com/?s=zf&x=0&y=0	7 per cent

Other important companies in the ADAS market

Nº	Company name	Link to recent news about the company or company website	Market cap
1.	Delphi	http://roboticsandautomationnews.com/?s=delphi&x=0&y=0	\$25 billion
2.	Aisin Seiki	http://www.aisin.com/	\$15 billion
3.	Denso	http://roboticsandautomationnews.com/?s=autoliv&x=0&y=0	14 per cent
4.	Valeo	http://www.valeo.com/en/	\$16 billion
5.	Hitachi Automotive	http://roboticsandautomationnews.com/?s=hitachi&x=0&y=0	Private
6.	Hella	http://roboticsandautomationnews.com/?s=hella&x=0&y=0	\$6 billion
7.	Ficosa	https://www.ficosa.com/	Private
8.	Mobileye	http://roboticsandautomationnews.com/?s=mobileye&x=0&y=0	\$14 billion
9.	Faurecia	http://roboticsandautomationnews.com/?s=faurecia&x=0&y=0	\$8 billion
10.	Magneti Marelli	http://www.magnetimarelli.com/	Private