SBD’s report on ‘Autonomous Car – Dream or Reality?’ helps identify the key players involved in developing autonomous vehicles and analyses their strengths and weaknesses in developing self-driving technologies.

The report also includes a detailed description of the sensing requirement as a function of the level of automation. Potential Human Machine Interfaces are also described with an analysis of the current thinking.
Is there substance behind the hype? What level of autonomy is going to be developed by who and when? What does the term 'autonomous car' actually mean?

With the continuing focus on self-driving vehicles SBD have analysed what features are being trialled and tested on public roads and how these developments could potentially change the way people drive their cars.

The report also identifies the main organisations involved in developing autonomous vehicles and analyses their strengths and weaknesses in developing self-driving technologies.

What does it mean to develop autonomous vehicles?

For OEMs it is evolution
For Google it is revolution

Google’s revolution

Levels 4 & 5 are challenging - what do we need to get there?

• **Enhance sensor range** and **field of view** in order to cover for difficult scenarios (e.g. avoiding a collision with a stationary vehicle)
• Develop a **good HMI** keeping the **driver into the control loop** and allowing for **smooth transition** of control
• Adapt the existing **Vienna Convention** and **UN road traffic regulations**
• Adapt **road infrastructure** to accommodate such vehicles
• Adapt **insurance** business model
SBD’s Report on Autonomous Driving

Understanding Autonomous Cars
What does the term ‘autonomous car’ mean? SBD help you distinguish between autonomous and driverless cars.
What are the benefits of autonomous vehicles?
Will autonomous vehicle deployment make things worse for drivers before getting better?
Understand the laws and regulations concerning Autonomous vehicles within Europe, USA and Japan.

Key Players – Who is Leading the Race?
SBD’s report highlights which OEM’s are the ‘technology leaders’ and who are the ‘fast followers’ and why.
Which suppliers have the technologies to make a difference? What are their existing capabilities and what do they have planned?
What impact do leading academics have and what are their partnerships with industry?
By presenting a prototype version of a self-driving pod, Google has made it clear that the CE giant is a realistic contender to the OEMs within the autonomous vehicles sector. This raises a key question – what implications could this have on the auto industry?

Technologies Required
In this section some limit scenarios that cars under SAE levels 2, 3 & 5 will be facing in real world situations are explained with respect to present sensor capability and availability. The levels are examined for both highway and urban conditions which are challenging limit scenarios. The highway category consists of a straight road, an overtaking manoeuvre and a curved road. The urban category consists of a straight road, a roundabout and an intersection scenario.
The following flowchart explains the assumed course of action and time delay for the driver/system to react to and bring the vehicle to a safe condition.

Deployment Timeline & SBD View
A summary of the evolutionary time frame of autonomous cars and SBD’s analysis on the autonomous vehicle outlook.
SBD’s view on the Google car and the auto industry, following discussions with key influencers and Google.

Understand the Stages of Autonomy
Identify what is required to get to each stage including:
• Road infrastructure
• Back-end infrastructure
• International standards
• Insurance model
• Clarification on liability issues
• Advanced sensor technologies
• Customer readiness and acceptance

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Working closely with major OEMs, suppliers and industry bodies, SBD provides unrivalled sector insight and consultancy – helping you gain greater clarity and make better decisions.

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