Intelligent Transportation Systems - Driverless Car

Description: Intelligent Transportation Systems (ITS) are a subject of the Practel, Inc. research for a number of years; several related reports have been published in 2010-2014.

ITS are in the process of dynamic evolution and present one of the most important branches of the economy. They are also affect everybody's life - their main goal is to make efficient and safe traveling a reality.

This particular report updates technical and marketing ITS characteristics as well as their standardization. Architecture of ITS, their applications and the industry are analyzed.

The current development of ITS leads to introduction of driverless cars, which are the most viable form of ITS. R&D as well as industry activities indicate that driverless cars may hit the roads in a couple of years; with wider commercialization in 2025-2030. The status of such cars introduction, their major characteristics, economics, opportunities and road blocks are analyzed in the report. The report also addresses major players' projects in this development.

A driverless car, for simplicity of the analysis, may be described as a combination of a connected car, ADAS (Advanced Driver Assistance Systems); and other parts.

The detailed analysis of connected cars specifics, characteristics and economics are presented in this report. The companies - contributors to the connected car market development - are identified and their portfolios analyzed.

As an example of a connected car commercialized technology, the detailed analysis of 5.9 GHz DSRC, its applications, the industry and market is provided. There is an active discussion in the industry regarding the allocated spectrum utilization as well as still limited 5.9 GHz DSRC use as well as benefits of competing technologies (such as LTE); it is the authors' opinion that this type of DSRC is finding applications in the connected car market.

The report also emphasizes the importance of 5G mobile networking as a basis for the driverless car ITS revolution.

The ADAS important part is driverless car “eyes” - an instrument that can “see” surroundings and provide the information to the car for the analysis and taking relevant actions. One of most promising technologies that makes cars “see” is lidar, which is composed of laser and other parts.

Lidar properties, and in particular its automotive applications, are addressed in this report. Lidar can function as driverless car’s “eyes” much more effectively than some competing technologies; the subjects of this report also include the analysis of the lidar market and the industry survey.

The report is intended for a wide audience of technical and managerial staff involved in advanced ITS development; and for specialists in communications technologies that support such development.

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