Deliverable D1.6 //

Initial System Specifications
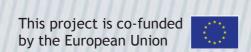
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Adapt**I**Ve

Automated Driving Applications and Technologies for Intelligent Vehicles

Document information //

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1 Summary

Main findings of this document are the initial definitions of sensors, processing units, HMI devices, communication technologies and vehicle actuators per each demonstrator vehicle that is planned to be developed into the project to deploy the supervised automated vehicle functions for the close-distance, urban and highway scenarios. At the same time each hosting vehicle brand and model has been pre-selected, although the final selection will be done in the first half of the second project year.

The aim of the AdaptIVe project deliverable D1.6 is to draw the initial system specifications of the supervised automated manoeuvres that are being designed for the selected close distance, urban and highway scenarios and use cases. This document is conceived to become the basis for the definition of the system architecture to drive the development phase. At the same time D1.6 is based on the cooperation among all different AdaptIVe activity areas.

A fault tolerant and resilient architecture will be designed for the implementation of the supervised automated manoeuvres in close distance, urban and highway scenario.

To this aim, the initial system specifications are the building blocks for the next phase, a phase in which the definition of the different system functional blocks (final system specifications) and their interconnections (system architecture) in terms of HW and SW will be established.

It's for this reason that the initial system specifications are drawn starting from the scenarios, going through the defined use cases and are focused on the demonstrator vehicles.

For the same reason the material reported in this document is related to initial system specifications, while the system functional blocks, namely the final system specifications will follow.

The initial system specifications are structured in the definition of the main functional blocks for automated driving, going through a scenario assessment, recalling the related driving functions and digging into the human-to-vehicle interaction as well as into the vehicle-to-X interaction.

Deliverable D1.6 is then structured clustering the initial specifications per demonstrator vehicle (BMW, CONTIT, CRF, Daimler, FORD, VCC, VTEC, VW) and per each demonstrator sensors, communication, HMI and vehicle actuator technologies.

The following part of the D1.6 document are dealing with the specification of communication data exchanges, tackling short-medium range communication data exchange, including a brief introduction to vehicular ad hoc network, vehicular networking basics and talking about the physical architecture of vehicular node, namely the ITS station. Long range communication data exchange is also included in the discussion, as it's a recognised need to understand the extent to which cellular based communication (3-4G) can support the deployment of automated vehicle manoeuvres.

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