



Deliverable D2.1 | Perception requirements on sensor interfaces, sensor data fusion, and perception horizon interface Executive Summary

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Executive Summary

interactIVe has the objective to develop multiple Advanced Driver Assistance Systems (ADAS) applications. A perception of the surrounding of the ego vehicle is a prerequisite for these applications. The perception platform will deliver the necessary sensing of the environment.

The purpose of this deliverable is to collect all requirements to the perception platform, to be used as the key foundation for successful specification and implementation.

The goal is to have a *common* perception framework, where general perception problems will not be implemented individually for each application, but instead, which will cover common elements for many applications. This deliverable will cover the following topics of the perception platform:

- reference platform
- functional architecture
- general sensor and sensor interfaces requirements
- perception modules
- perception horizon.

The challenge to derive the requirements of a common framework is manifold: First, different kinds of applications for safety and continuous driving support have to be served, which results in an increased number of internal perception framework modules. Additionally, the dependencies between the modules increase the links and interactions between the modules. It has to be taken care that the communication between the modules is strongly harmonised. Third, the general sensor and sensor interface requirements for the various sensor types (e.g. radar, lidar, camera, ultrasonic, map, communication) have to be coordinated with the modules requesting their input. And last, the output of the perception platform, the perception horizon, will present the vehicle surrounding in a unified way, despite the fact that the information originates from different sensors and from different modules.

The outcomes of this deliverable are strongly coherent requirements to the elements of the common interactIVe perception framework. They will serve as the firm base for the upcoming specification and implementation phase.