




Designing cooperative interaction of automated vehicles with other road users in mixed traffic environments

interACT D.1.2 Requirements, system architecture and interfaces for software modules

Work package	WP1: Scenarios, Requirements and interACT System Architecture
Task	Task 1.2, Task 1.3, Task 1.4
Authors	Drakoulis, Richardos – ICCS (Main author), Drainakis, Giorgos – ICCS, Portouli, Evangelia - ICCS, Tango, Fabio – CRF (Main author), Marc Kaup – Hella (Main author)
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Executive Summary

The interACT project aims to study and model interactions among human traffic participants and develop software and hardware, which will enable an automated vehicle to interact with other traffic participants.

In its Work Package 1, the interACT project has selected use cases which are the most relevant according to the consortium's views. The selected use cases cover intersections and parking spaces, because in such environments interactions among traffic participants are clearly needed. Starting from the use cases selected in WP1 of the project, the work presented in this deliverable aimed to extract the requirements that need to be satisfied by the interACT components and to propose the functional architecture to be used as basis for the project development work.

A total of 101 requirements have been collected, categorised in General, Operational, Perception, Human-Factor and Actuation related requirements. The biggest parts of requirements refer to Operational and Human-Factor related ones. These five categories of requirements were then assigned into seven functional blocks, namely into blocks called Sensing, Perception, Situation Awareness, Cooperation and Communication Planning Unit (CCPU), HMI, Control and Enablers. The functional blocks were further decomposed into components. Each component was described in terms of the functionalities that it must offer and the needed input and output. This has resulted in the definition of the needed interfaces between components and in the general functional architecture for interACT. In parallel, a first list of requirements as regards safety, security, ethical, legal and liability issues was collected.

The requirements and architecture presented in this document will guide the development work in the next WPs of the project.

For more information:

interACT Project Coordinator

Anna Schieben

DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT e.V. (DLR)

Lilienthalplatz 7

38108 Braunschweig, Germany

Anna.Schieben@dlr.de

interact-roadautomation.eu/



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