

## Deliverable D4.2

# Replay framework for situation understanding and trajectory planning

Dissemination level	CO
Version	1.0
Lead contractor	University of Ulm
Due date	31.02.2017
Version date	16.02.2016



Co-funded by  
the European Union



This project is co-funded  
by the ECSEL JU

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### Project funding

H2020-EU.2.1.1.7.

ECSEL Programme

Contract No. 661933

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# 1 Executive Summary

This deliverable is part of a set of technical reports which explain the methods used for testing, evaluation and optimization. This report in particular considers evaluation and optimization of algorithms developed for the Understanding and Planning layer. This layer is part of the platform architecture described in deliverable D2.1. The considered modules were defined in deliverable D4.1. Since they build the most high-level elements in the RobustSENSE architecture, the use of offline processing is of great advantage for evaluation and optimization. Thus, the methods described in this deliverable are widely based on simulation and offline processing with recorded and synthetically created data.

Data generation and organization is one of the most important tasks described in this report. The need for testing with real world data as well as the need for a controlled and reactive testing environment are often competing requirements. Within the RobustSENSE Project, on the other hand, they lead to a hybrid simulation method with real world recorded sequences augmented with synthetic, simulated data. This way, both aspects were used complementary to gain accelerated generation of test data. Also, to ease collaboration among partners, tools and guidelines for data recording, storage and offline assessment are presented in this report.

The implementation of the individual modules in the Understanding and Planning Layer can be of versatile focus with different prioritization among partners. Therefore, this deliverable includes general aspects for evaluation and optimization with special attention on the probabilistic nature of the RobustSENSE project, as well as concrete approaches defined exemplarily for specific tasks in Work Package 4.