METHODOLOGY FOR EVALUATION IN L3PILOT

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L3PILOT - PILOTING AUTOMATED DRIVING ON EUROPEAN ROADS

- 2017-2021
- 68 M€ budget, 36 M€ funding from H2020
- 34 partner organisations in 12 EU countries
- Coordinator Aria Etemad, Volkswagen
OBJECTIVES OF L3PILOT

• Overall objective to test and study the viability of automated driving as a safe and efficient means of transportation

• Large-scale pilots of automated driving with SAE Level 3 functions in 100 vehicles
  • Different user groups, mixed traffic environments, different road networks
OVERALL OBJECTIVE FOR METHODOLOGY SETUP

• To cover the steps in ‘PREPARE’ to lay the foundations for the successful execution of the ‘DRIVE’ and ‘EVALUATE’ steps
SETTING THE RESEARCH QUESTIONS AND HYPOTHESES

• The L3Pilot approach adapts the FESTA methodology to account for the developing nature of the automated driving functions for testing.

• Research question with a top-down process, structured around the 4 evaluation areas in which we shall assess impacts in safety, mobility, efficiency, environment, acceptance & awareness, user experience, system performance, and socio-economics.
SETTING THE RESEARCH QUESTIONS AND HYPOTHESES

• Work started with literature review
• 3 levels of research questions from high-level ones towards more detailed ones (100+ in total)
  • Specific hypothesis generated for the detailed research questions
• Bottom-up check for their feasibility
  • Data logging possibilities
  • Suitable experimental procedures at pilot sites
• Prioritisation of research questions
DEFINING LOGGING AND INDICATOR NEEDS

• Data needs differentiated between subjective and objective data collected during and of the pilots
  • Subjective collected by questionnaires and surveys
  • Data from the logging systems in the vehicle and cameras
• Lists of signals, derived measures and performance indicators, derived from the research questions and hypotheses
• Video annotations: UDRIVE video annotation code book
• Additional data: statistics and other studies
SETTING THE EXPERIMENTAL PROCEDURES

• Experimental procedures are designed
  • to provide **solid evaluation procedures** based on the general scientific method to be applied throughout L3Pilot pilot sites
  • to enhance **harmonization of the evaluation criteria** by providing detailed suggestions for the pilots in the intention to create holistic evaluation results

• Experimental procedure includes the description of approaches, participant features, study design, experimental environments and scaling up the impacts to ensure holistic evaluation

• The aim is to have a **reliable procedure** for getting a versatile picture of the impacts
DEFINING EVALUATION METHODS

- Methods that cover the whole chain between logged vehicle data and the socio-economic impact assessment
- Includes the scaling up for higher penetration rates and for different areas of Europe
L3PILOT CONTRIBUTIONS FOR EVALUATION METHODOLOGY OF AD

• How to follow FESTA methodology adapting it to suit the project needs of evaluated impacts of automated driving functions
• Process of utilising both top-down and bottom-up approach for setting the research questions and hypotheses
• Process of defining the logging needs from the data needs of the selected hypotheses and methods
• Description of alternatives for experimental procedures
• The toolkit linking methods & tools & frameworks to fulfil the needs of evaluation of impacts on all levels
MORE INFORMATION

Visit L3Pilot website at L3Pilot.EU

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<table>
<thead>
<tr>
<th>Outcome of Methodology</th>
<th>Expected</th>
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<tbody>
<tr>
<td>Report D3.1 From research questions to logging requirements</td>
<td>2018</td>
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<tr>
<td>Process for data collection</td>
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<td>Report D3.2 Experimental procedure</td>
<td>2019</td>
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<td>Detailed testing plan</td>
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<td>Report D3.3 Evaluation methods</td>
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<td>Evaluation plan for automated driving impacts</td>
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<td>Report D3.4 Evaluation plan</td>
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<td>Detailed evaluation procedures</td>
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