From research questions and study design to common data format

EUCAR Conference
7th November 2018, Brussels

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VTT
FESTA Implementation Plan adapted to L3PILOT

PREPARE (i)
- Functions & use cases
- Research questions & hypotheses
- Performance indicators & measures
- Data collection tools
- Study design
- Test site set-up

LEGAL ASPECTS & CYBER-SECURITY (iv)

DRIVE (ii)
- Pre-tests
- Tests

EVALUATE (iii)
- Societal impacts
- Impact on safety, mobility, efficiency and environment
- Driving & travel behaviour
- User acceptance
- Technical performance & cyber-security
- Data processing
- Test site wrap-up

From theories and AD function descriptions to research questions

Theories of impact areas

Early descriptions of AD functions

Research questions (3 levels) for all evaluation and impact areas:

• **Technical & traffic evaluation**: System performance, Driving behaviour (28 level-3 RQs)
• **User & acceptance evaluation**: User experience (21 level-3 RQs)
• **Impact evaluation**: Mobility, Safety, Efficiency, Environment (21 level-3 RQs)
• **Socio-economic evaluation**: Socio-economics (5 level-3 RQs)
Examples of research questions

Level 1
• What is the system's technical performance?

Level 2
• How often and under which circumstances do the AD functions issue a take-over request?

Level 3
• How often do unexpected take-over requests occur?

Level 1
• What is the user experience?

Level 2
• What is drivers’ secondary task engagement during AD function use?

Level 3
• What is the frequency and duration of drivers' secondary task engagement during AD function use?
From research questions to signal list
From signal list to common data format
Experimental procedure set-up

Experimental procedures: Approaches, participants, study design (incl. baseline)

- Aim: Sufficient commonalities to be able to make harmonised evaluation

**Step 1: Description of alternatives**
- Alternatives
- Pros & cons
- Minimum requirements

**Step 2: Pilot site consultation**
- Support on how to implement the methodology into practice
- Awareness of optimal solution vs. Best practical solution for a pilot study
Development of toolbox of evaluation methods: From analysis of direct field measurements to high-level socio-economic impact assessment

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Foundation for successful evaluation

• Harmonised approaches across pilot sites, established partnerships between evaluation and pilots
• Smooth data flow from pilots via tools to all evaluation methods
• Multidisciplinary evaluation methodology
• Well-defined and tested evaluation plan for all research questions
Thank you for your kind attention.

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