



Evaluation Framework and Results

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DLR – Institute of Transport Research
interactive – eCoMove Joint Final Event

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Cooperative Mobility Systems and
Services for Energy Efficiency



www.ecomove-project.eu

Project goal

To develop a combination of cooperative systems and tools using V2V and V2I communication to support:

- drivers sustainably eliminate unnecessary fuel consumption;
- fleet managers manage their vehicles more economically and promote eco-driving through feedback & incentives;
- road operators balance traffic flows in the most energy efficient way.

Target is to reduce up to 20% fuel consumption and therefore CO₂ emission

Research Questions

Environment

- To what extent can eCoMove solutions decrease the fuel consumption and therefore also CO2 emissions of a vehicle, of fleets and of all traffic with cooperative technologies?

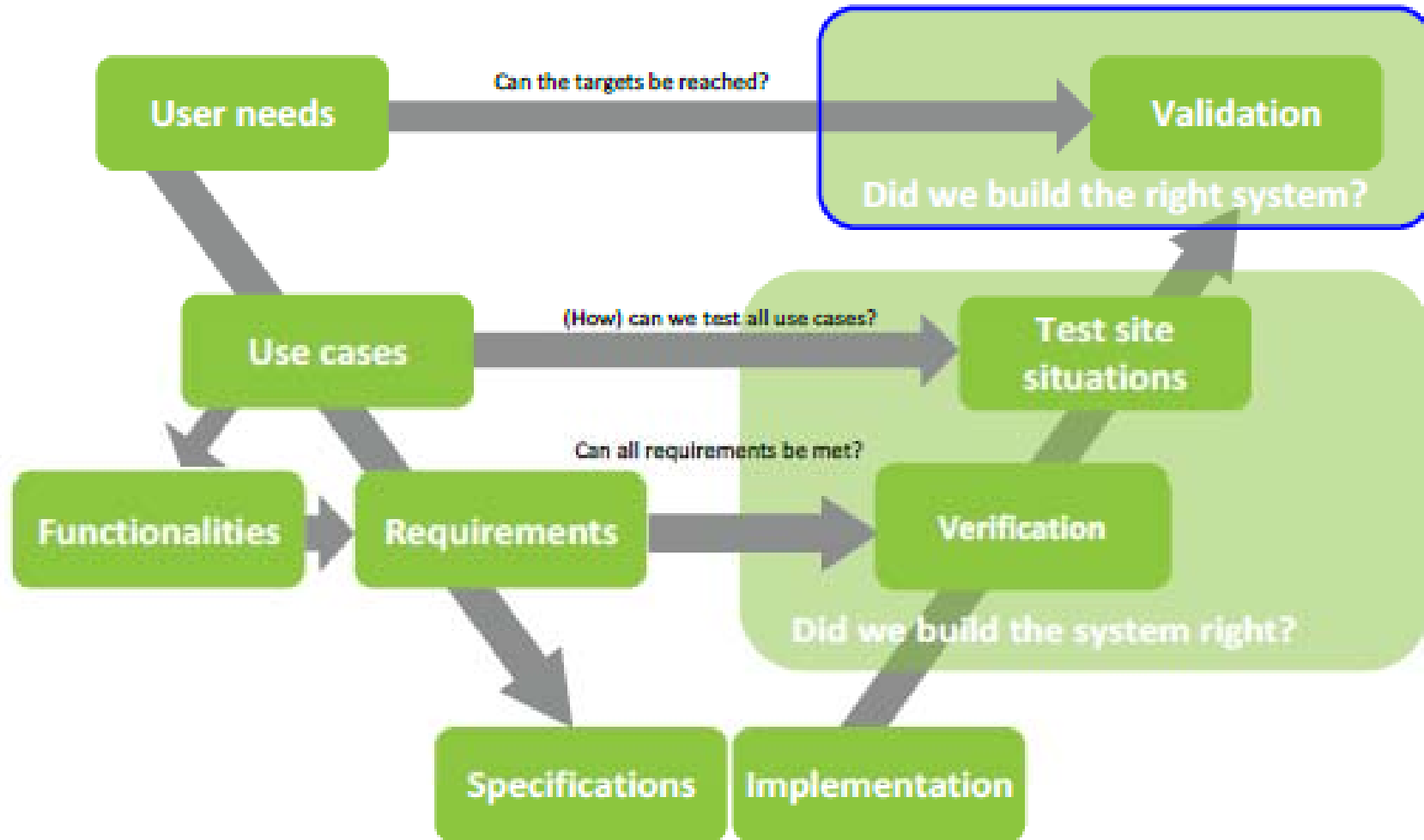
Mobility

- Which impact have eCoMove solutions in a cooperative environment for the traffic system?

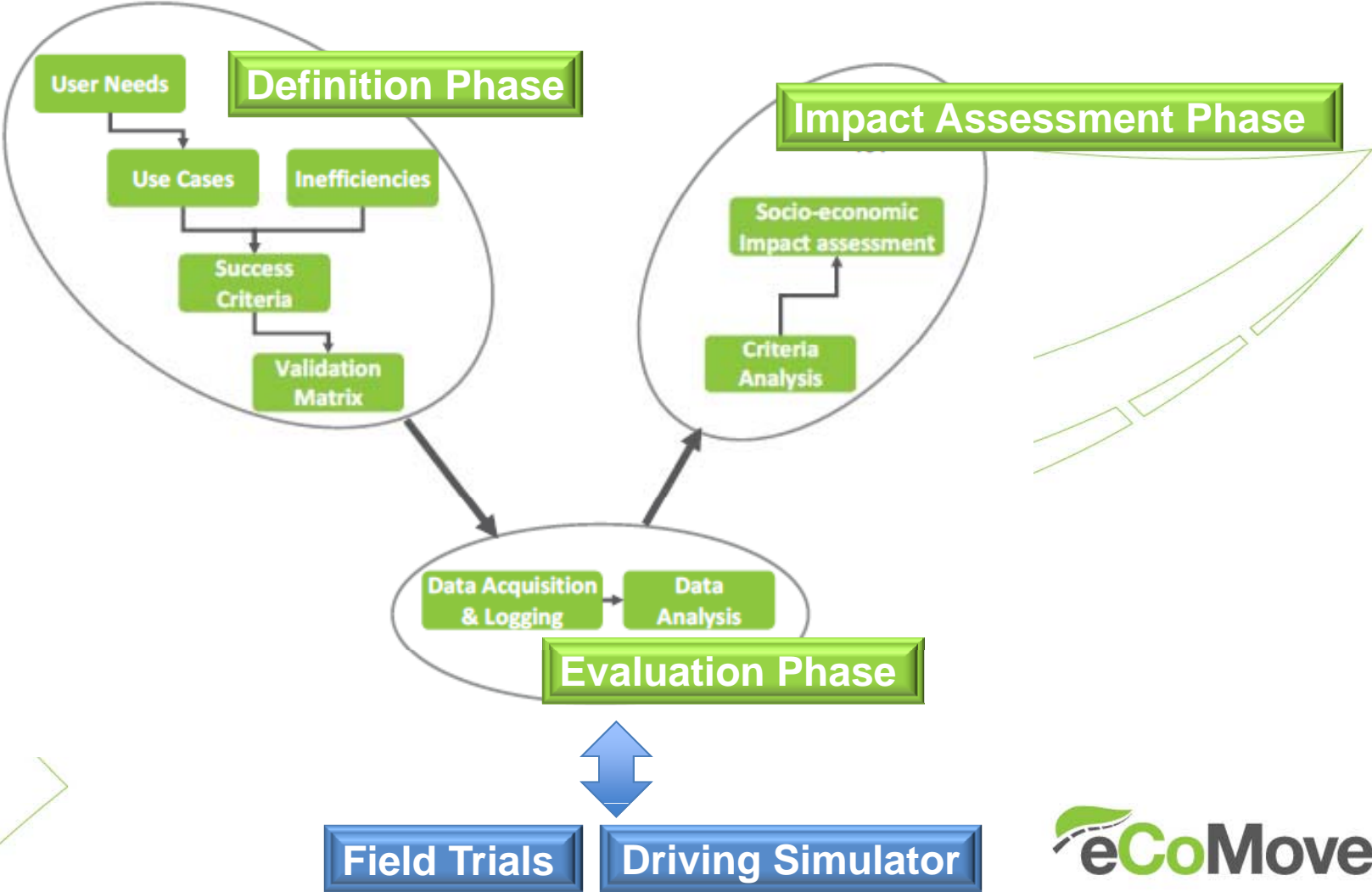
Driver Behaviour

- Which impact have eCoMove solutions on passenger and traffic safety?

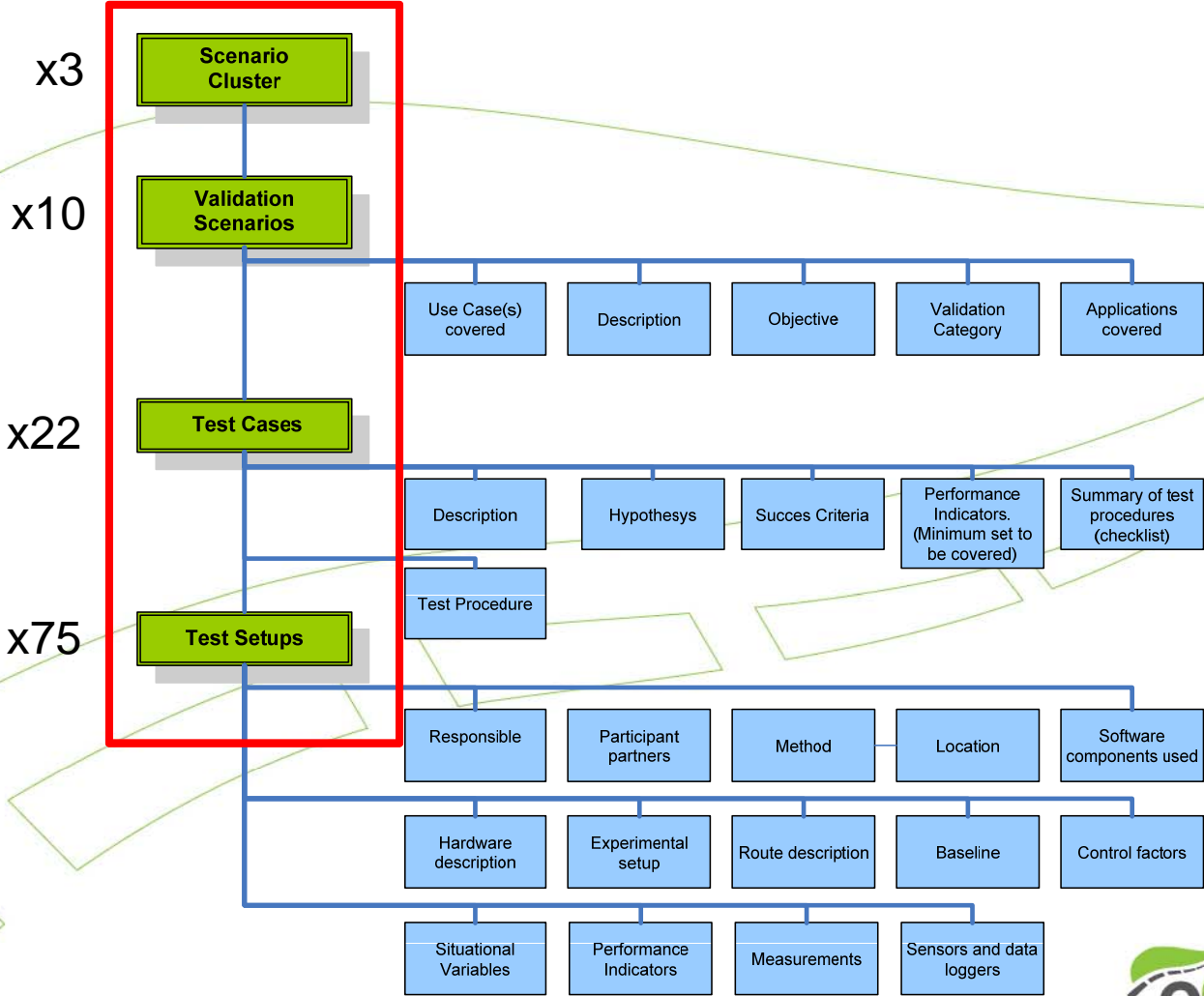
eCoMove evaluation V-Model



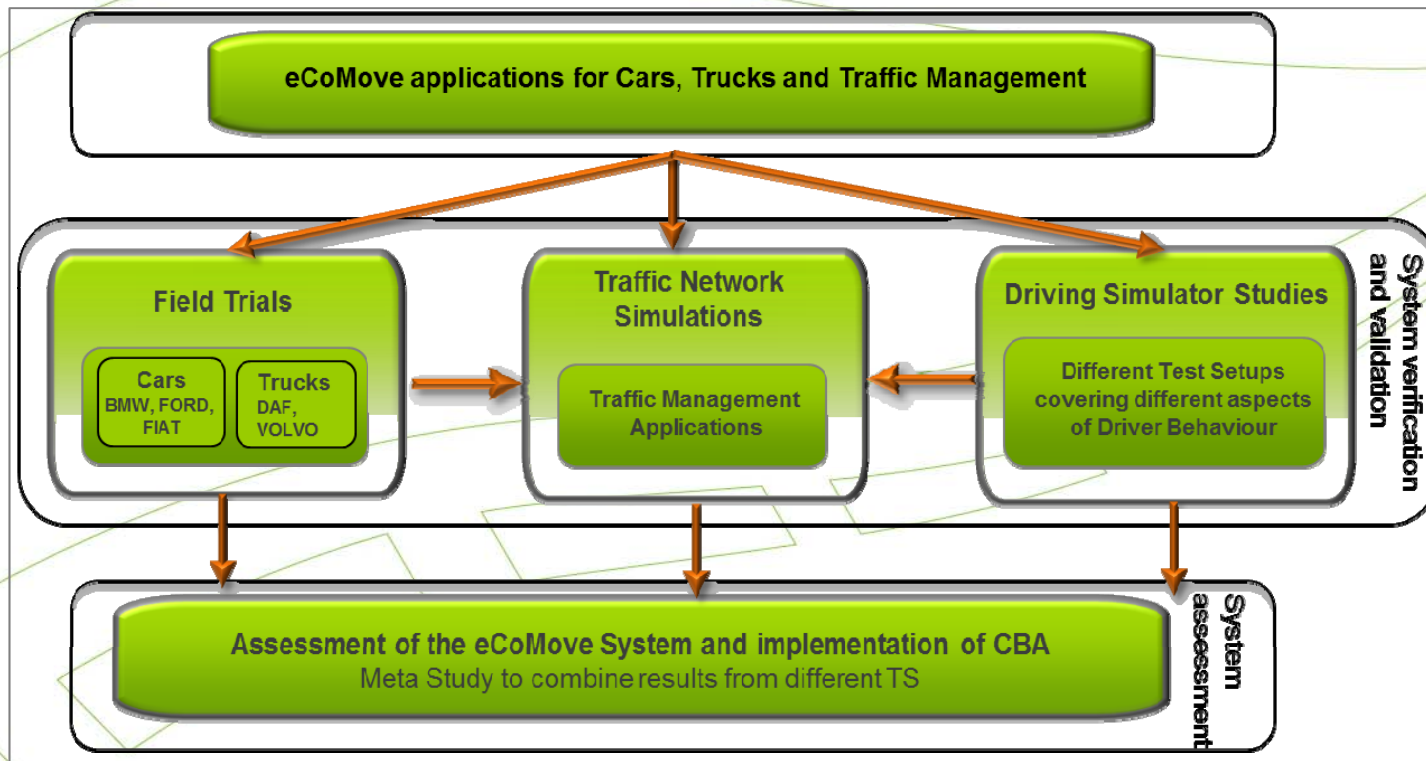
Evaluation Methodology



Definition Phase - Validation Scenarios



Validation and assessment methodology



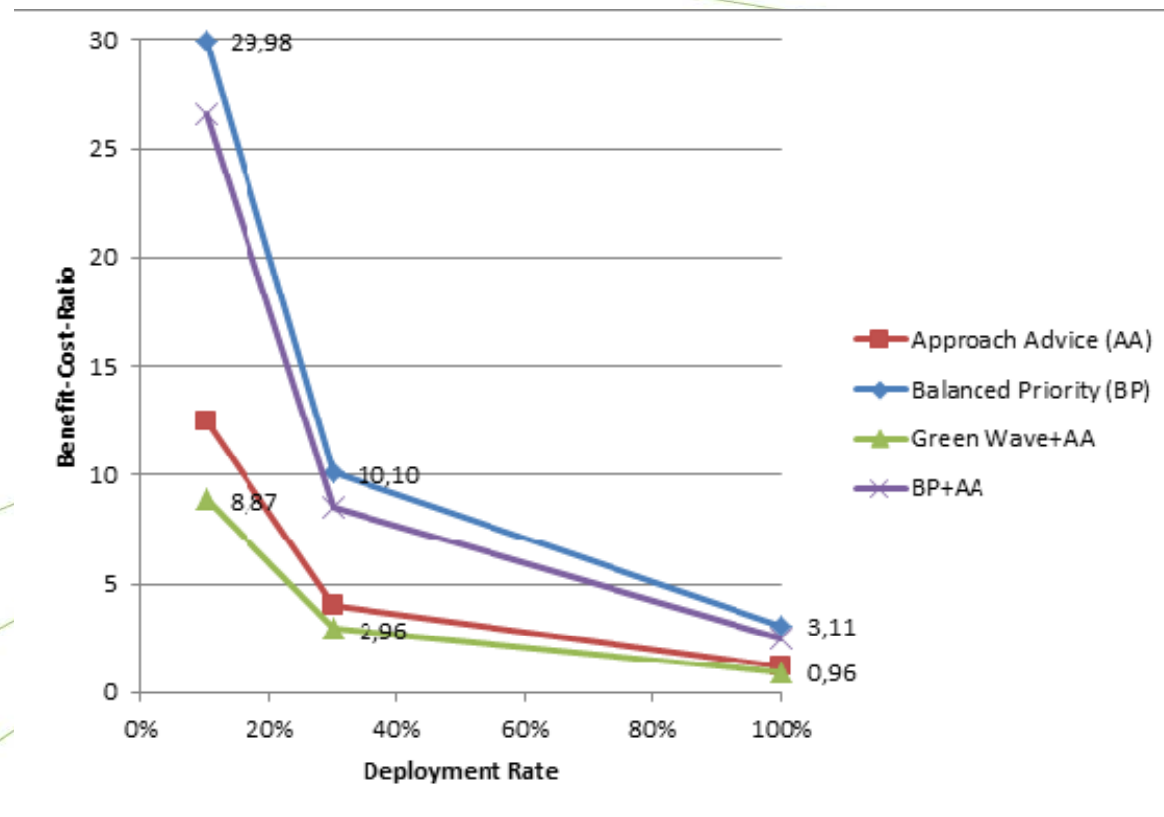
Evaluation Results

Assessment of the Field Trials and Driving Simulator Studies

- 20% fuel reduction seems too ambitious, but results show that a reduction $> 10\%$ is feasible in urban networks
- Fuel saving is highly dependent on the driving situations
- Highest potential were often in urban surroundings at traffic lights (close to or in some cases even above 20%)
- Willingness-to-pay for a system to drive fuel efficient
- Improved the anticipation of the drivers and support of a smooth driving style with lower velocity variations and less acceleration and deceleration (safety, environment, traffic flow)

Evaluation Results

Cost-Benefit-Analysis



Summary of Validation & Evaluation activities

- I. Study on Perceived Usefulness of ecoDriving Systems
- II. Driver Study on Motivation and Behavioural Change
- III. Assessment of Potential Energy Savings
- IV. Traffic Demand Simulation
- V. User Acceptance Study
- VI. Impact Assessment of the Study results
- VII. Cost-Benefit-Analysis
- VIII. eCoMove implementation Road Map

Contact: Validation & Evaluation

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