



Day 1, Session: Vehicle Validation/Certification Roadworthiness Testing

Securing Automated Driving - The Database Approach in PEGASUS

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03-04

April 2017

Brussels



The PEGASUS Project – Key Figures

42 Months Duration

January 1, 2016 – June 30, 2019

17 Partners

- OEM: Audi, BMW, Daimler, Opel, Volkswagen
- Tier 1: Automotive Distance Control, Bosch, Continental Teves
- Test Lab: TÜV SÜD
- SME: fka, iMAR, IPG, QTronic, TraceTronic, VIRES
- Scientific institutes: DLR, TU Darmstadt

12 Subcontracts

- i.a. IFR, ika, OFFIS

Project Volume

- approx. 34,5 Mio. EUR
- Funding: 16,3 Mio. EUR

Personnel Deployment

- approx. 1.791 man-months or 149 man-years

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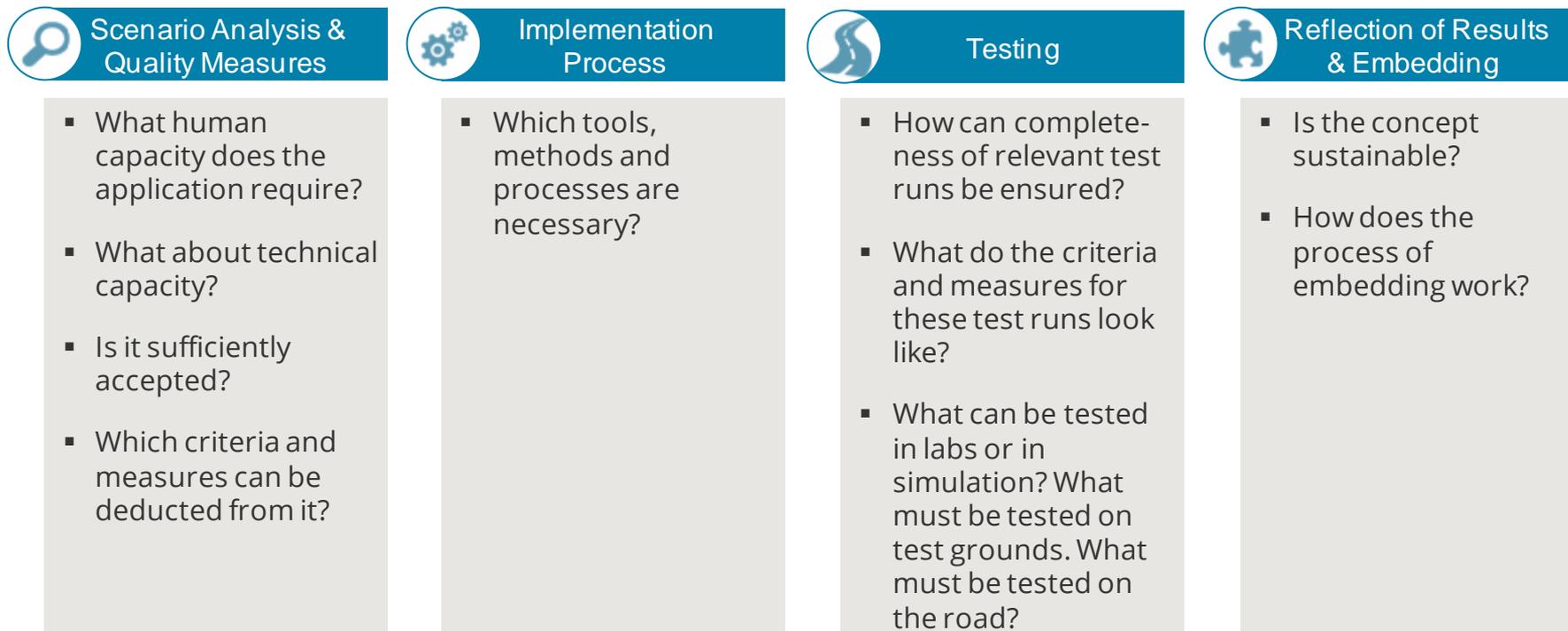


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Central Research Questions of the Project

What level of performance is expected of an automated vehicle?
How can we verify that it achieves the desired performance consistently?



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SP 3 Testing



- Detailing and completion of **test scenarios**, including technical quality measures as well as approval criteria
- Construction and filling of test specification **database**
- Establishment and verification of **testing methods, interfaces, tools** in the lab, on testing grounds and in real traffic
- **Development and coordination** of industrywide established models, tools and interfaces for the simulation
- Compilation of a **test catalog** and **requirements** for lab, testing ground and field coverage
- Construction of **reference elements** for practical testing and demonstration of functions
- **Testing** in the lab, on testing grounds and on the street

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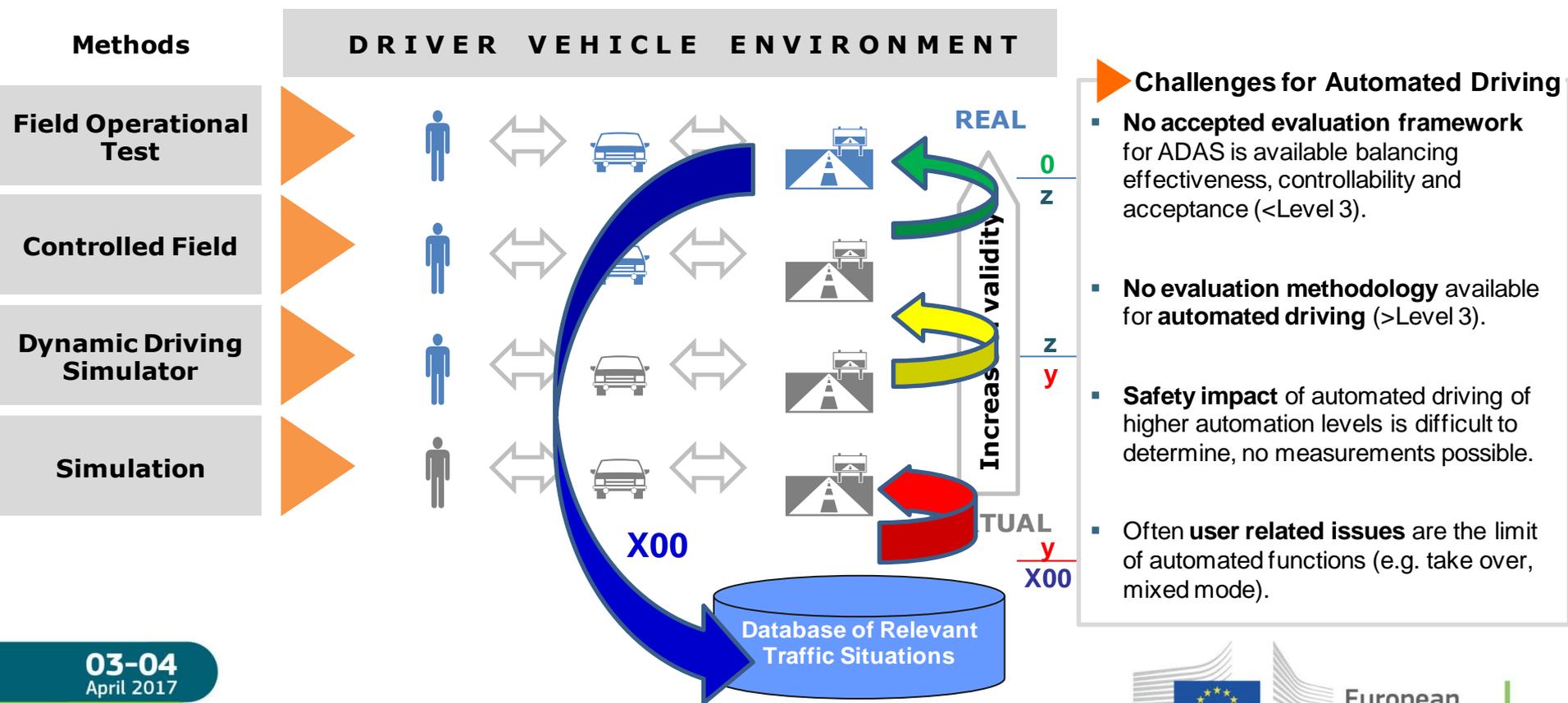
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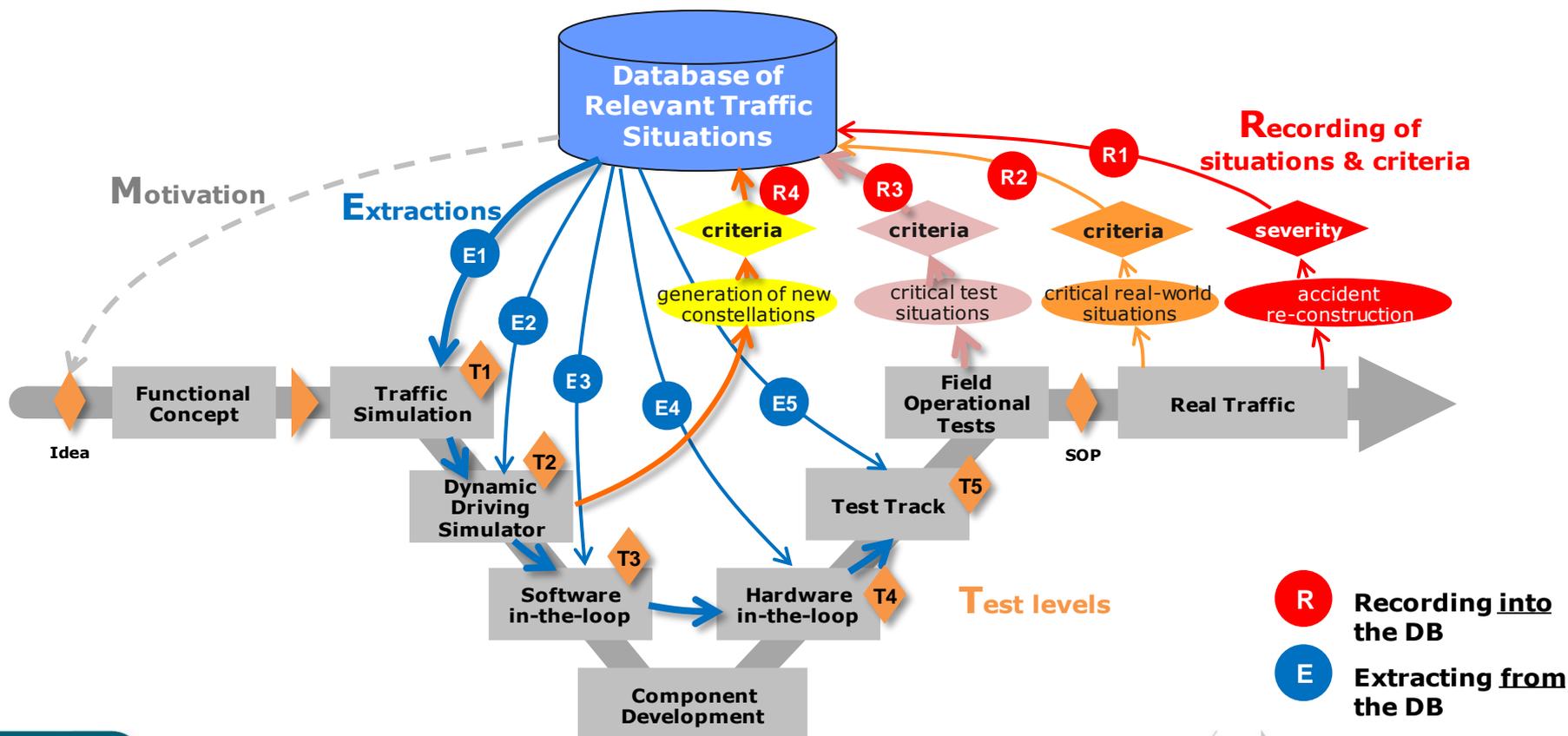


Challenges on Validation Methodology for CAD



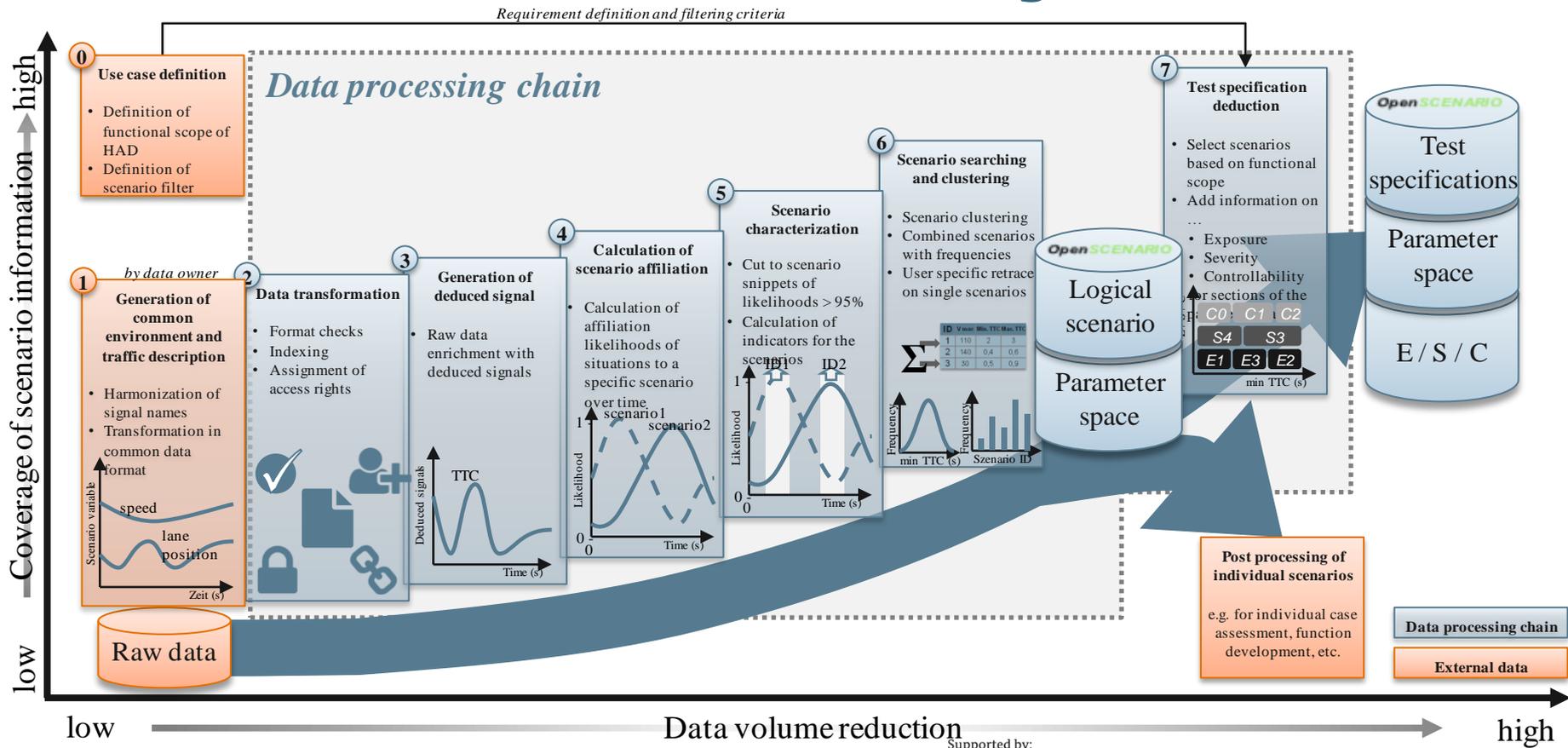


Database Approach to Develop and Validate CAD





Database and Database Processing Chain





Database User Interface



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Summary

- Testing and validation of automated vehicles requires new methods and tools for an efficient safeguarding process.
- Core element of the circuit process is a database and a data processing chain for the relevant scenarios, which is currently established in the German PEGASUS project.
- Available and known methods and tools can be utilized in the overall circuit process and therefore increase effectiveness.
- The data processing chain needs to be able to process different data sources and heterogeneous data quality in order to provide common test specifications.
- The presented database concept allows an efficient processing of high data volumes by means of a flexible tool chain.



Thank you!

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