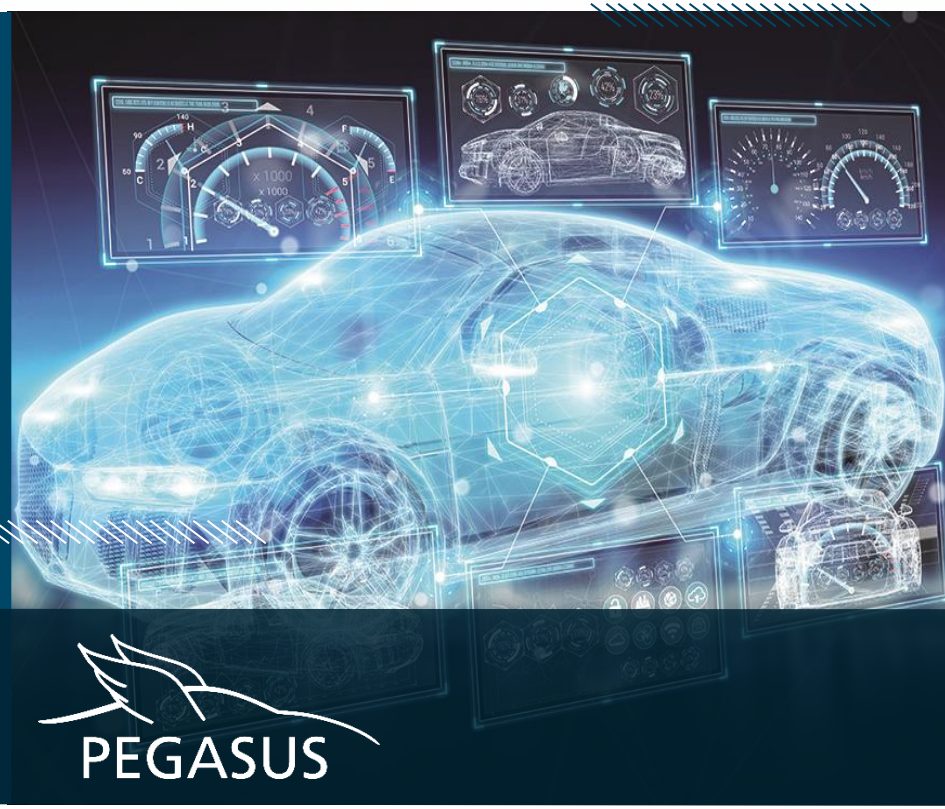
3,5 Jahre PEGASUS – Ein Überblick

3,5 Years PEGASUS – an Overview



PEGASUS

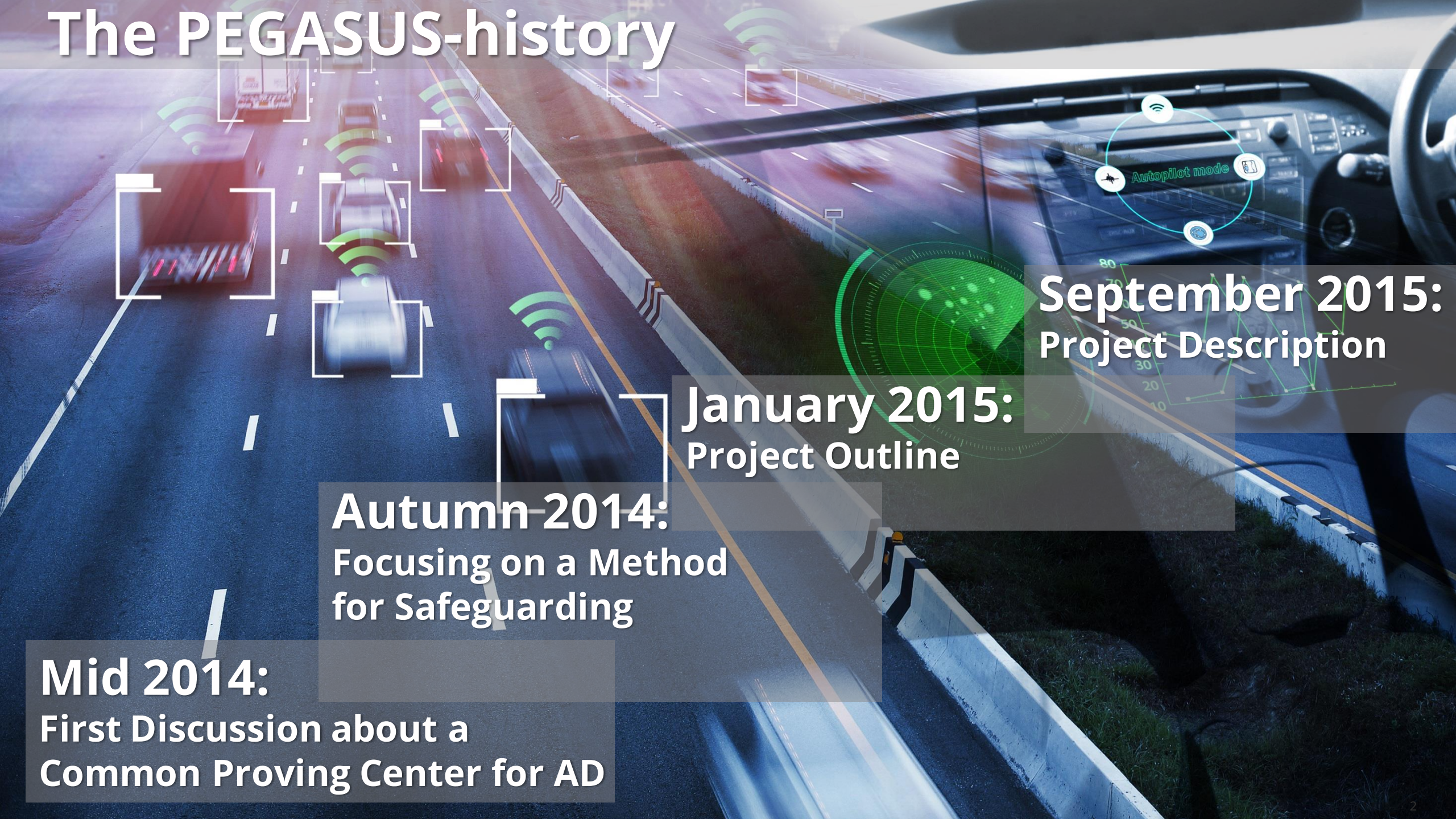
Prof. Karsten Lemmer | 13. Mai 2019

Gefördert durch:

Bundesministerium
für Wirtschaft
und Energie

aufgrund eines Beschlusses
des Deutschen Bundestages

The PEGASUS-history



September 2015:
Project Description

January 2015:
Project Outline

Autumn 2014:
Focusing on a Method for Safeguarding

Mid 2014:
First Discussion about a Common Proving Center for AD

The PEGASUS-history

January 2016:

Project start with 17 partners

OEM: Audi, BMW, Daimler, Opel, Volkswagen
Tier 1: ADC, Bosch, Continental
Test Lab: TÜV SÜD
SMB: fka, iMAR, IPG, QTronic, TraceTronic, VIRES
Scientific institutes: DLR, TU Darmstadt

Subcontracts: IFR, ika, OFFIS

Key-facts:

42 Months Term
1.791 man-month or 149 man-years
34,5 Mio. EUR Budget

4 Sub-Projects
13 Workpackages
38 Sub-Workpackages

Mid 2016:

Convention of an Advisory Board

- Federal Ministry for Economic Affairs and Energy
- Federal Ministry of Transport and Digital Infrastructure
- Federal Ministry of Justice and Consumer Protection
- German Association of the Automotive Industry (VDA)
- German Road Safety Council (DVR)
- ADAC

Associated Partner:

Federal Highway Research Institute (BASt)

dSPACE

The PEGASUS-history

November 2017:
PEGASUS-Half-Time-Event in Aachen

Presentation of Intermediate Results

Scenario Analysis & Quality Measures

- What human capacity does the application require?
- What about technical capacity?
- Is it sufficiently accepted?
- Which criteria and measures can be deducted from it?

Implementation Process

- Which tools, methods and processes are necessary?

Testing

- How can completeness of relevant test runs be ensured?
- What do the criteria and measures for these test runs look like?
- What can be tested in labs or in simulation? What must be tested on proving grounds, what must be tested on the road?

Reflection of Results & Embedding

- Is the concept sustainable?
- How can the PEGASUS-Partners embed the results?

For the first time: Presentation of the PEGASUS-Approach

➔ PEGASUS becomes International

The PEGASUS-history

World wide:
ISO: ISO/TC 22/SC 33/WG 9 und WG16 sowie ISO TR21959 Part 2 und SOTIF
DIN SAE: Spec Project Terms and definitions

Addtl. Cooperation Requests & bilateral Exchange:
→ FP Nouvelle France Industrielle, AutoAlliance, Jaguar LandRover, Hyundai, Volvo, RDW, etc.

© PEGASUS

The statement that we all need

source: daijiworld.com

*With **PEGASUS**,*
we contribute to answer the question…

How safe is safe enough and how can we verify that it achieves the desired performance consistently?

…by introducing a

Scenario Based Method *to*
Assess Highly Automated Driving Functions

© PEGASUS

Argumentation	Evidence
Safety argumentation	Safety evidence

© PEGASUS

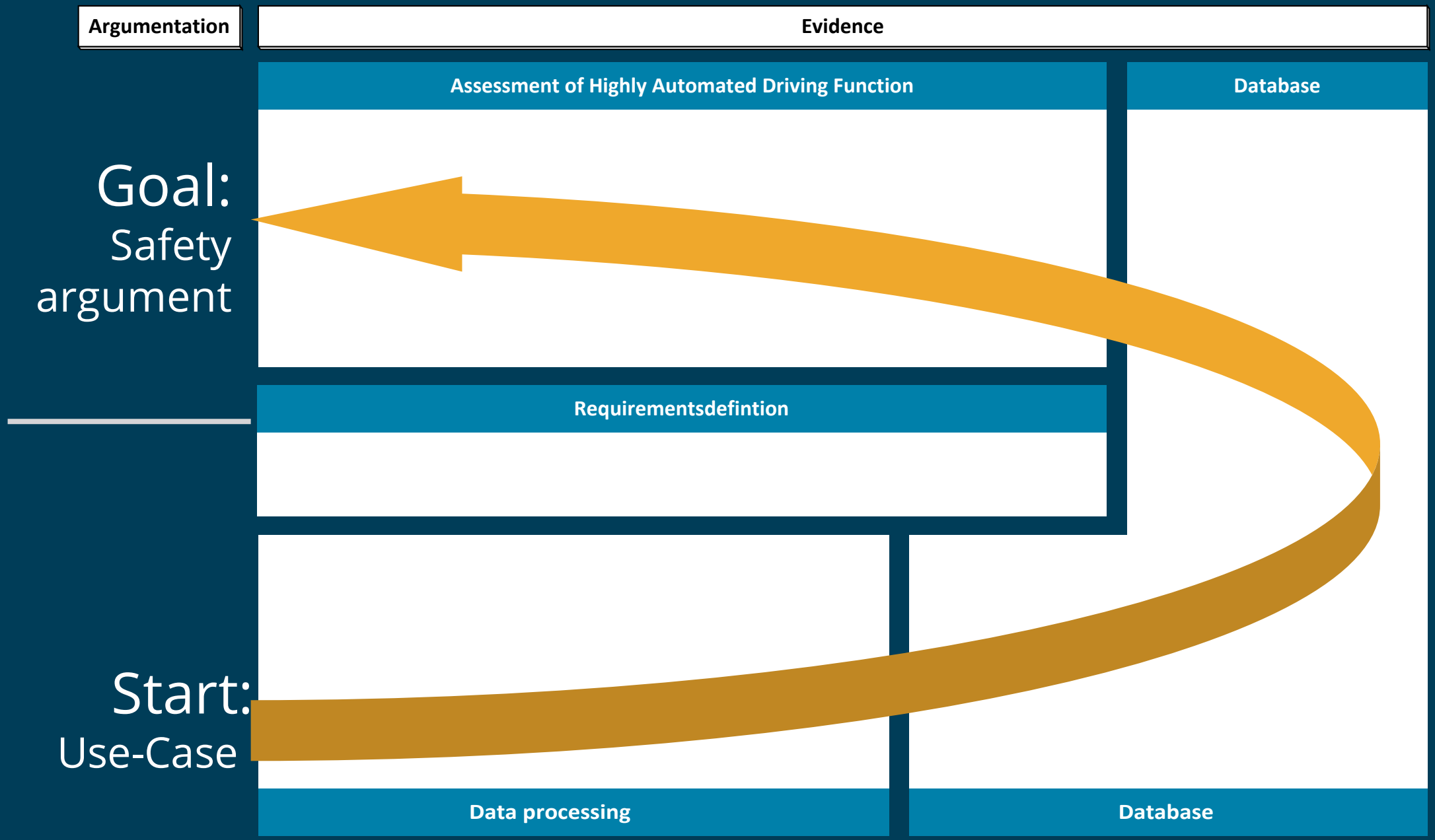
Argumentation	Evidence

Goal:
Safety argument

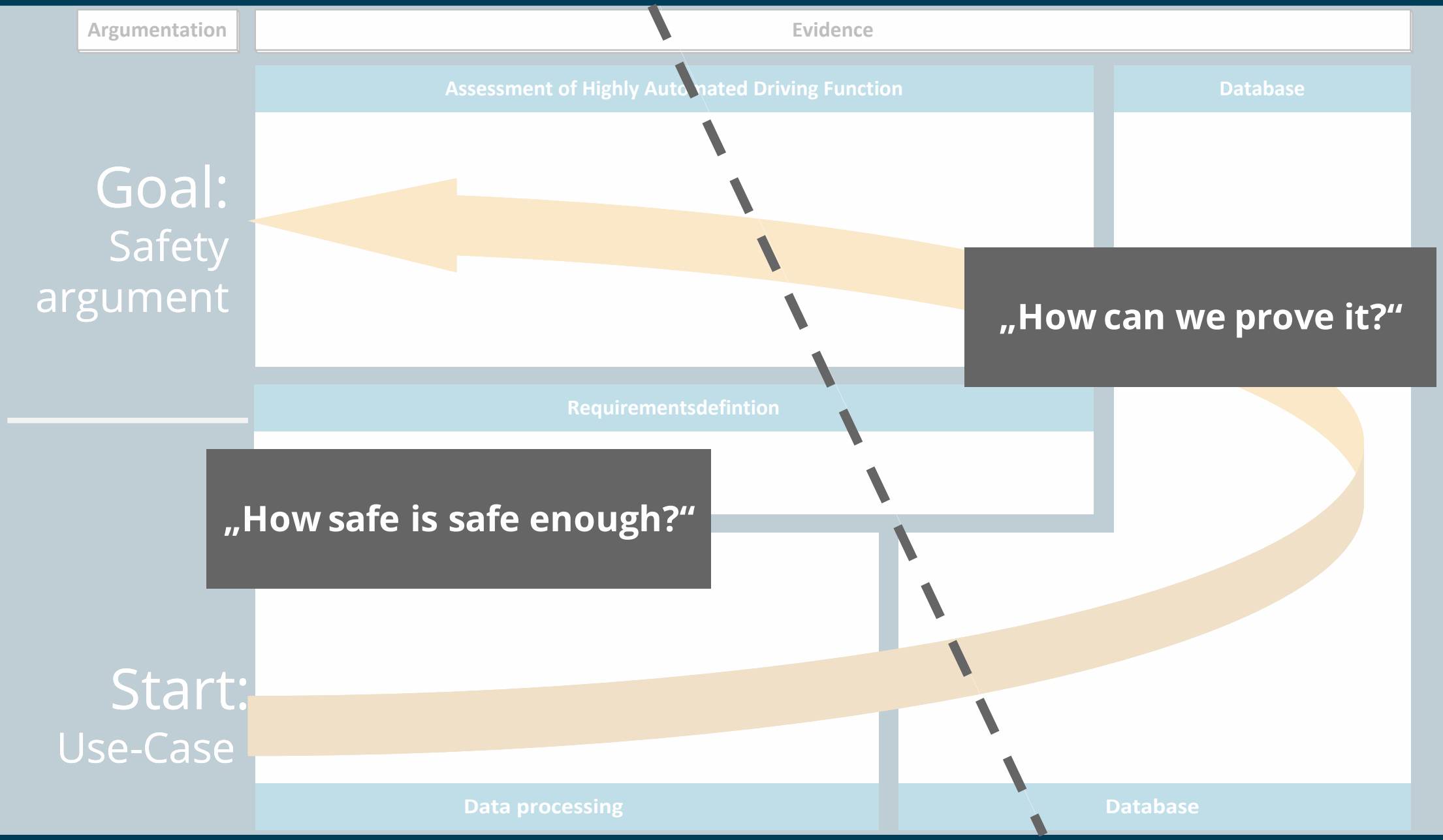
Start:
Use-Case

© PEGASUS

PEGASUS Method for Assessment of Highly Automated Driving Function (HAD-F)



© PEGASUS


Argumentation
Evidence
Assessment of Highly Automated Driving Function
Database
Goal:
Safety argument
„How can we prove it?“
Requirementsdefintion
„How safe is safe enough?“
Start:
Use-Case
Data processing
Database

Major 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?

How good is good enough?

How can I proof it?

What else do I need?

How will the PEGASUS approach be applied?

© PEGASUS

Vielen Dank für Ihre Aufmerksamkeit!

Many thanks for your attention!