OpenMATERIAL® & 3D Model Structures
General Assembly Introduction
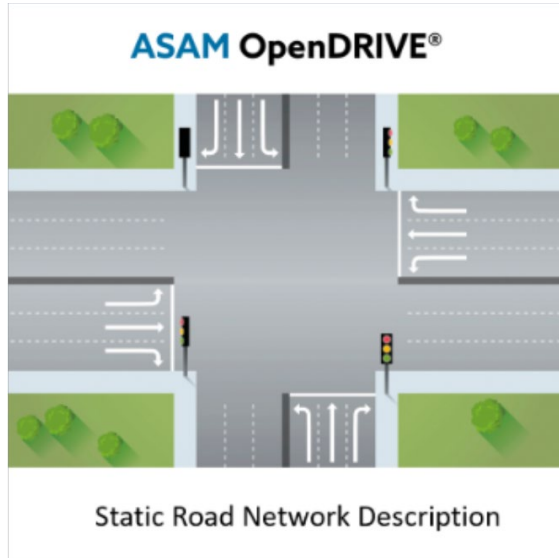
Dr.-Ing. Clemens Linnhoff

Persival GmbH

Sosuke Kimura

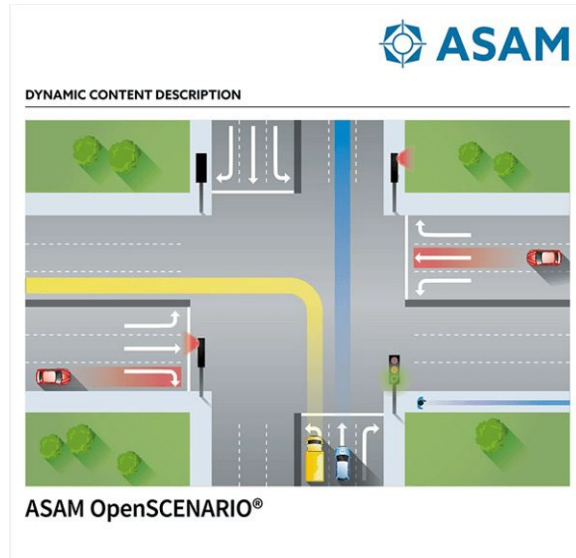**DIVP® Project, JAPAN**

17. April 2024
Germany

ASAM Association for Standardization of Automation and Measuring Systems

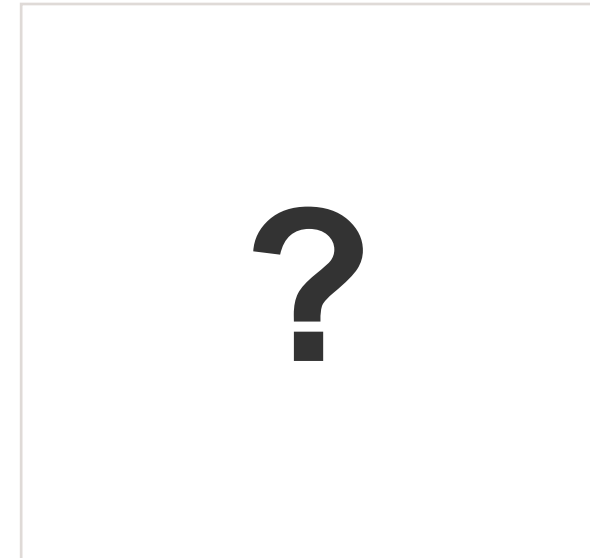# Project Motivation

Where are we driving?

What are dynamic elements doing?

How to transfer information between models?

What does the environment look like (to perception sensors)?

What is the project about?

3D assets

◈ ASAM

What is the project about?

Glass

Metal

Rubber
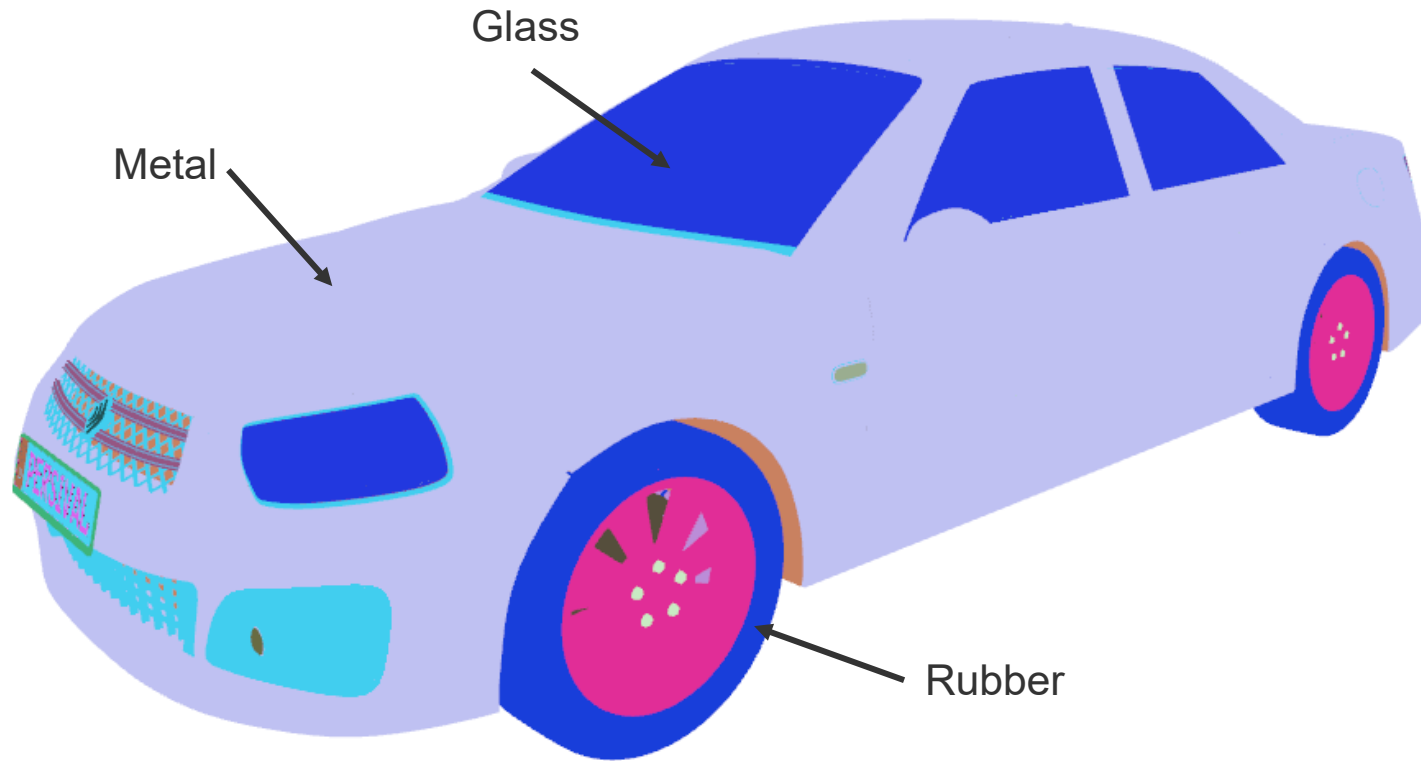
Define physical material properties

Assign materials to 3D geometry

◈ ASAM

What is the project about?
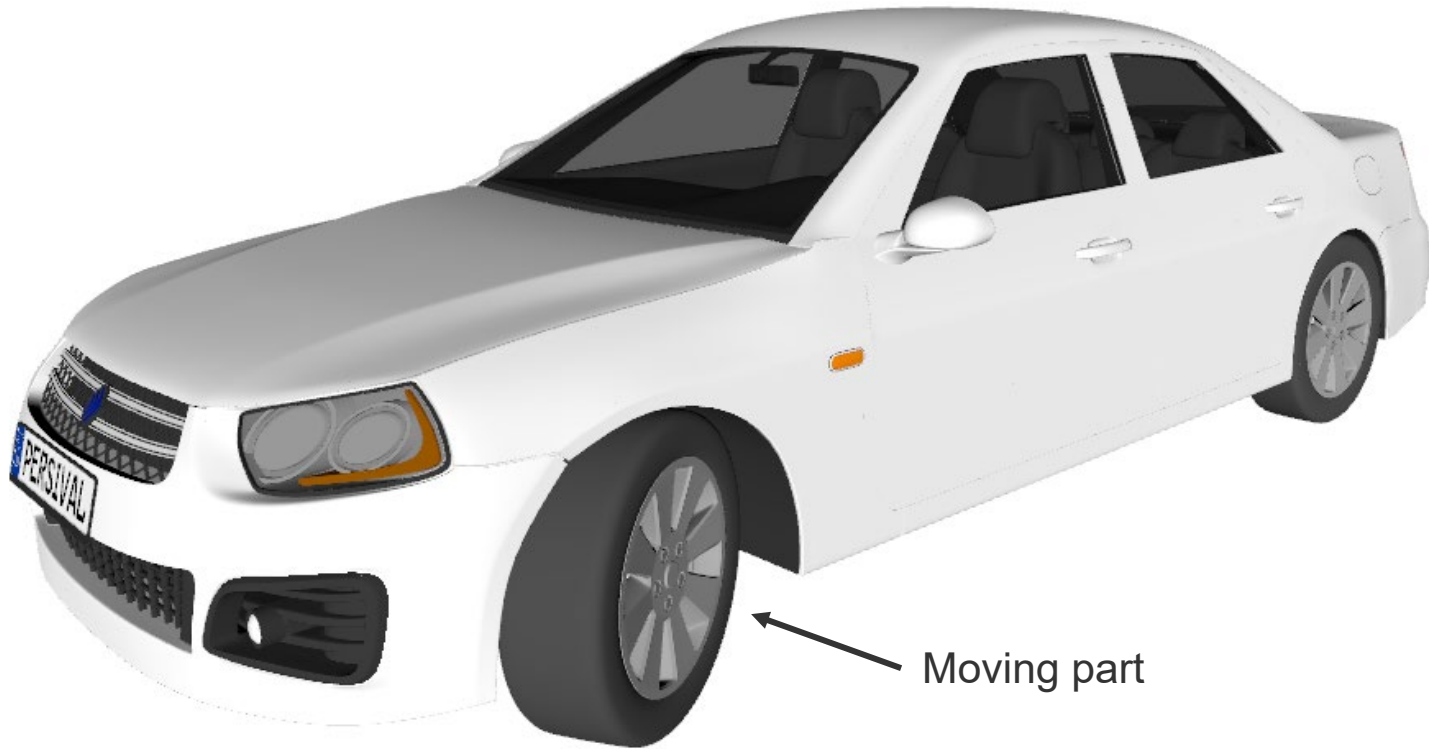
Moving part

Define hierarchy and structure

Coordinate systems of moving parts

ASAM

What is the project about?

Simulated lidar point cloud
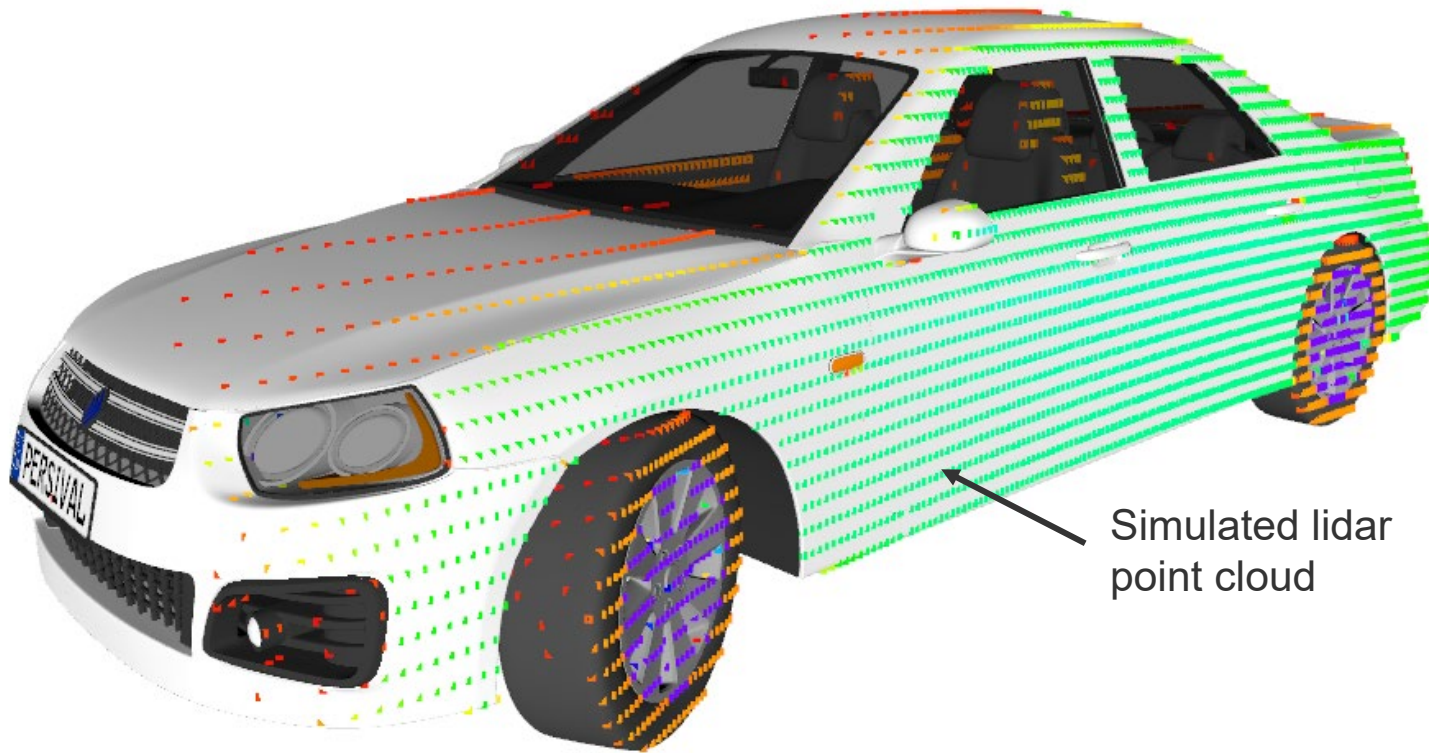
Enable perception sensor simulation

ASAM

Use Cases

Create 3D assets and material data → Distribute 3D assets and material data → Import 3D assets and material data into simulation platform or FMU → Move object parts in simulation → Use material properties to simulate signal propagation → Use sensor simulation to train perception algorithms

ASAM
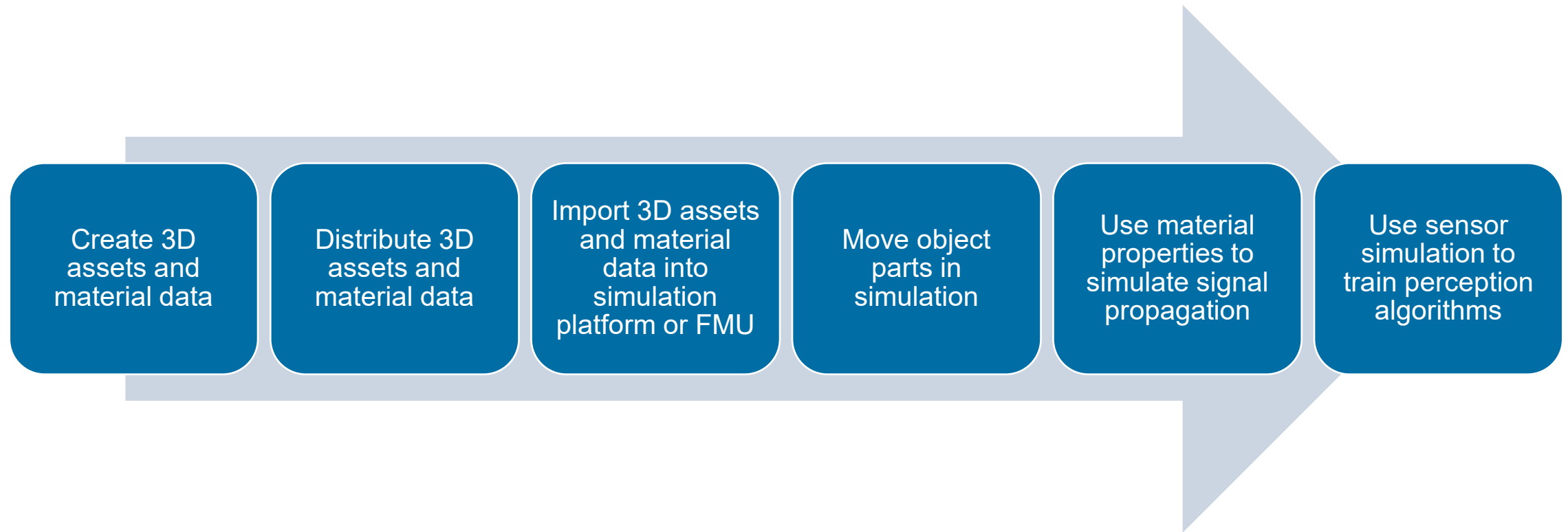
Project Participants

Number Project participants	Number Project member (company)	Countries
65	25	9

Company participants
51WORLD
Advanced Data Controls Corp.
Ansys
Automotive Data of China (Tianjin) Co.Ltd
BIPROGY
BMW
Continental
dSPACE GmbH
Foretellix, Inc.
Fraunhofer IESE
Hexagon MI
IAE Suzhou Technologies Co., Ltd.
IPG Automotive GmbH
Kanagawa Institute of Technology
Mitsubishi Precision Company
Persival GmbH
PilotD Automotive (Shanghai) Co., Ltd.
rFpro
RWTH Aachen (MMI)
Shanghai Jiao Tong University
Shanghai Waylancer Automotive Technology Co.
TrianGraphics
Virtual Vehicle Research GmbH
Volvo Group India Private Limited
WMG, University of Warwick

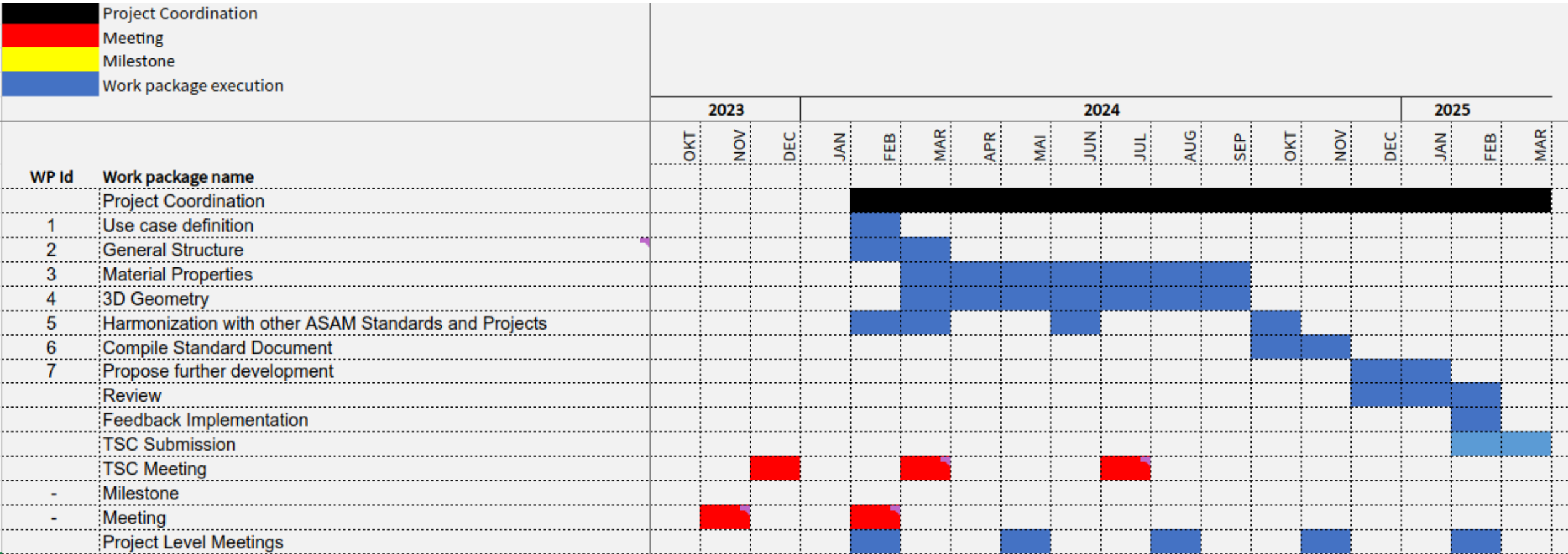ASAM

Project Plan

Legend:
- Black — Project Coordination
- Red — Meeting
- Yellow — Milestone
- Blue — Work package execution

WP Id	Work package name	2023			2024												2025		
		OKT	NOV	DEC	JAN	FEB	MAR	APR	MAI	JUN	JUL	AUG	SEP	OKT	NOV	DEC	JAN	FEB	MAR
	Project Coordination				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1	Use case definition				▪														
2	General Structure				▪	▪													
3	Material Properties					▪	▪	▪	▪	▪	▪	▪							
4	3D Geometry				▪	▪	▪	▪	▪	▪	▪	▪							
5	Harmonization with other ASAM Standards and Projects				▪	▪			▪				▪						
6	Compile Standard Document												▪	▪					
7	Propose further development														▪	▪			
	Review															▪	▪		
	Feedback Implementation																▪		
	TSC Submission																	▪	
	TSC Meeting		▪			▪				▪									
-	Milestone																		
-	Meeting	▪	▪		▪	▪													
	Project Level Meetings				▪			▪			▪				▪		▪		

ASAM

Any questions?
Feel free to contact us.

17. April 2024

Project Lead

Clemens Linnhoff

clemens.linnhoff@persival.de

ASAM Office

Diego SANCHEZ LAZARO

diego.sanchez@asam.net

ASAM