

Agenda



01 Technology partner Porsche Engineering

02 Game Engines

03 Simulation and PEVATeC

04 Mixed Reality

PORSCHE

Technology partner Porsche Engineering



01

Technology partner Porsche Engineering

Game Engines

Simulation and PEVATeC

Mixed Reality

PORSCHE

The Future. Since 1931.



Since **90** years, we have been developing the **vehicle technology of tomorrow**.

We are carrying on the **tradition of Ferdinand Porsche's design studio**.

Along with our customers, we are developing the **intelligent, connected vehicle of the future** – utilising wide **vehicle and digital expertise**.

PORSCHE

Porsche Engineering - An overview

MAIN FOCUS

Digital vehicle technologies

Whole vehicle integration

LOCATIONS

11 sites

In Germany, Italy, Czech Republic, Romania and China

HERITAGE



PORSCHE

100% subsidiary of
Dr. Ing. h.c. F. Porsche AG

EMPLOYEES

1,500 employees

Around **60%** working on
digital technologies and
e-mobility

450 software specialists
in the group already



PORSCHE

Inno Network



The Porsche Engineering sites are integrated in an international network of competence centres with focus on digital technologies

PORSCHE

Game Engines



Technology partner Porsche Engineering

02

Game Engines

Simulation and PEVATeC

Mixed Reality

PORSCHE

Game Engines



PORSCHE

Game Engines



PORSCHE

Game Engines



PORSCHE

Game Engines – An overview

Currently most used Game Engines:



*"The most powerful
real-time
3D creation platform"*



*"The leading platform
for creating interactive,
real-time content"*

Game Engines as a **framework** for the creation of real-time 3D applications

Component parts of Game Engines
Input/output

Graphics engine

Physics engine

Sound system

Storage management

Game Engines as a **basic framework** that is expanded upon with users' **own implementations**



Simulation and PEVATeC



Technology partner Porsche Engineering

Game Engines

03

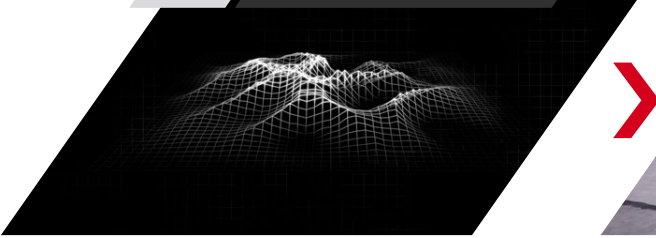
Simulation and PEVATeC

Mixed Reality

PORSCHE

Game Engines meet automated driving: Virtual testing in the PEVATeC simulation environment

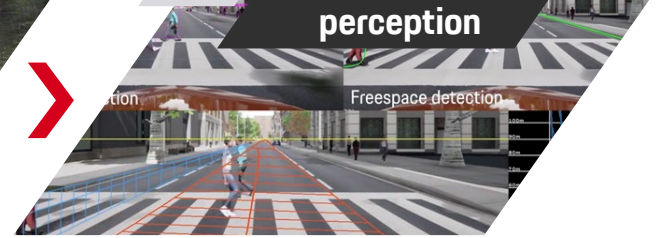
01 Scene & scenario



02 Vehicle dynamics



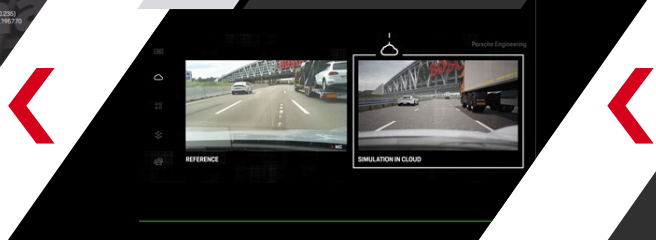
03 Sensors & perception



06 Cloud



05 Re-simulation



04 Test automation & KPIs



Mixed Reality



Technology partner Porsche Engineering

Game Engines

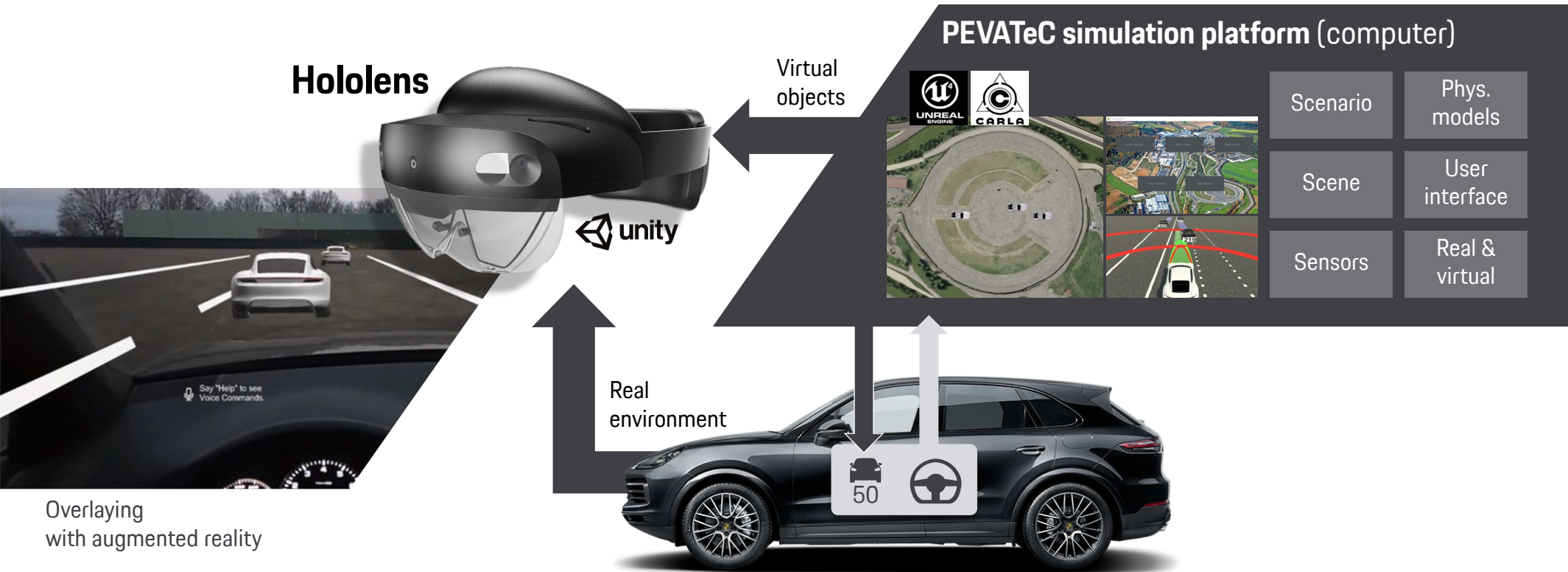
Simulation and PEVATeC

04

Mixed Reality

PORSCHE

Example: Mixed Reality – Testing of ADAS/HAD by PEVATeC

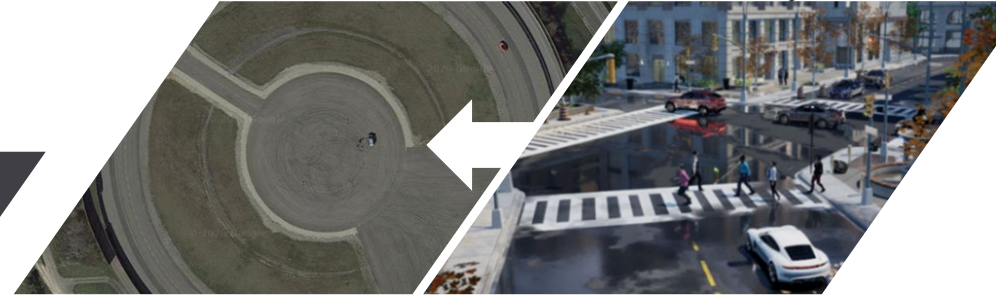


PORSCHE

Example: Mixed Reality – Testing of ADAS/HAD by PEVATeC

Simple running of the test

- **Low-risk** execution of **critical** and **complex test manoeuvres**
- **High reproducibility**
- **Saving time and costs**
- Portability between SiL/ HiL/ FiL
- Distributed systems and scenario-based testing



Integration into early-function development

- Independency from interface partners (sensors, control devices, etc.)
- Use of different sensors/ interchangeable in simulation
- Ability to compare different software/ algorithm versions
- Subjective perception **of driving comfort** by the driver