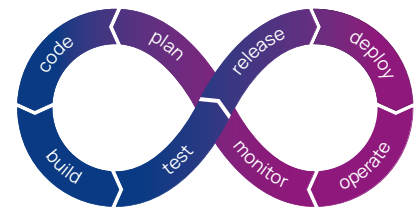


# Efficient development of automated driving systems ETAS Middleware Solution for ADAS/AD

## Fast-Track Your Development of Safe ADAS/AD Functions

ETAS supports and facilitates the development of Software-defined Vehicles (SDV). The ETAS Middleware Solution for ADAS/AD comes with a combination of the following characteristics:



### Areas of application

- Accelerating the development cycle of ADAS/AD software with faster iterations
- Efficient development and validation of software for advanced driver assistance systems (ADAS) and automated driving (AD) with:
  - High data rates,
  - high requirements for functional safety and
  - different virtual and real targets
- Use of recorded data for debugging and validation (replay and recomputing)

### Characteristics

- Dedicated middleware solution for the special challenges of ADAS/AD systems
- Consistent Software Development Kit with
  - specification language,
  - development tools for architecture design and replay and
  - runtime components
- Seamless integration in "DevOps" environments with customer-specific adaptations if necessary
- Complements AUTOSAR Adaptive
- Training and consulting

### Benefits

- Significant reduction of real test drives through reproducible, simulation-based validation with recorded real data
- Enhanced debugging with recorded real data (forensic recomputing)
- Increased performance of the overall system through fast communication between software applications of more than 10 gigabytes per second (GB/s)
- Realization of functional safety up to ISO 26262 ASIL D for microprocessor-based systems

# How ETAS Deterministic Middleware Solution reduces real test drives

Thanks to deterministic behavior, many of today's very complex development steps can be carried out virtually with recorded real data. The reproducible simulation-based validation reduces the number of costly test kilometers in real road traffic.

## Real system

## Simulated system

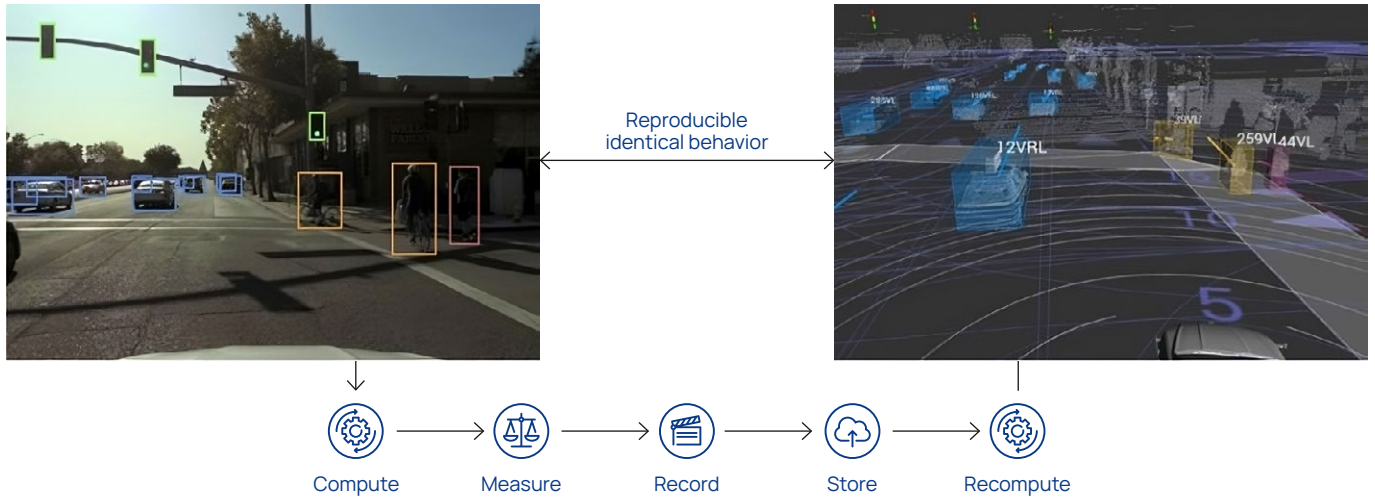


Figure 1: The simulation can only be used for validation if the real and simulated systems behave in a reproducibly identical manner.

## Components of the ETAS Middleware Solution for ADAS/AD

The ETAS Middleware Solution for ADAS/AD is a supplement to the existing AUTOSAR middleware solutions. In addition to the runtime components on the ECU, the solution includes development tools for design and recomputing.

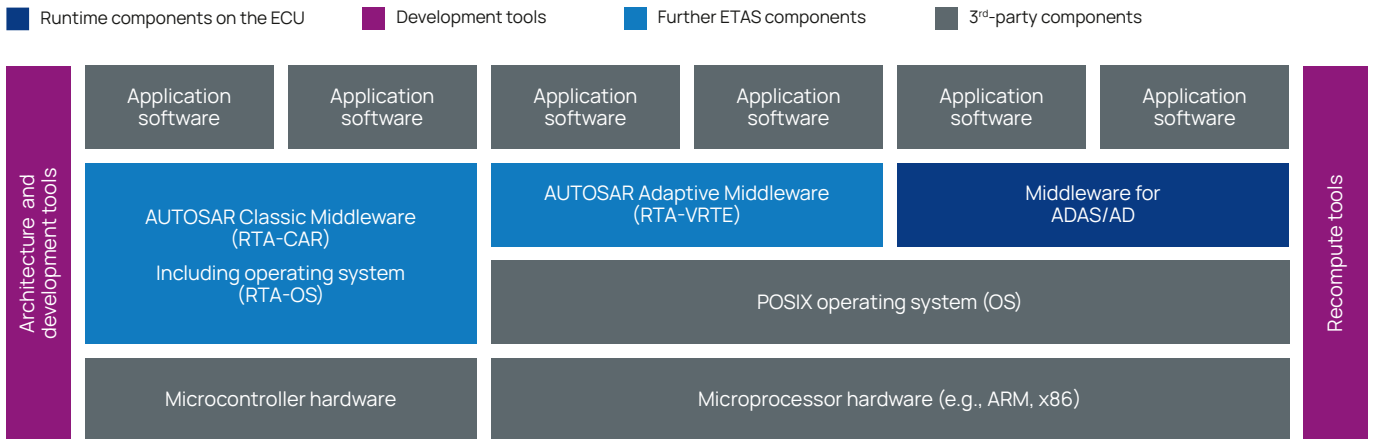


Figure 2: The ETAS Middleware Solution for ADAS/AD in the overall system

## Good to know

- The ETAS Middleware for ADAS/AD was developed over many years. It is used in projects that go into series production at the end of 2024.
- Use in automated CI/CD pipelines is possible.