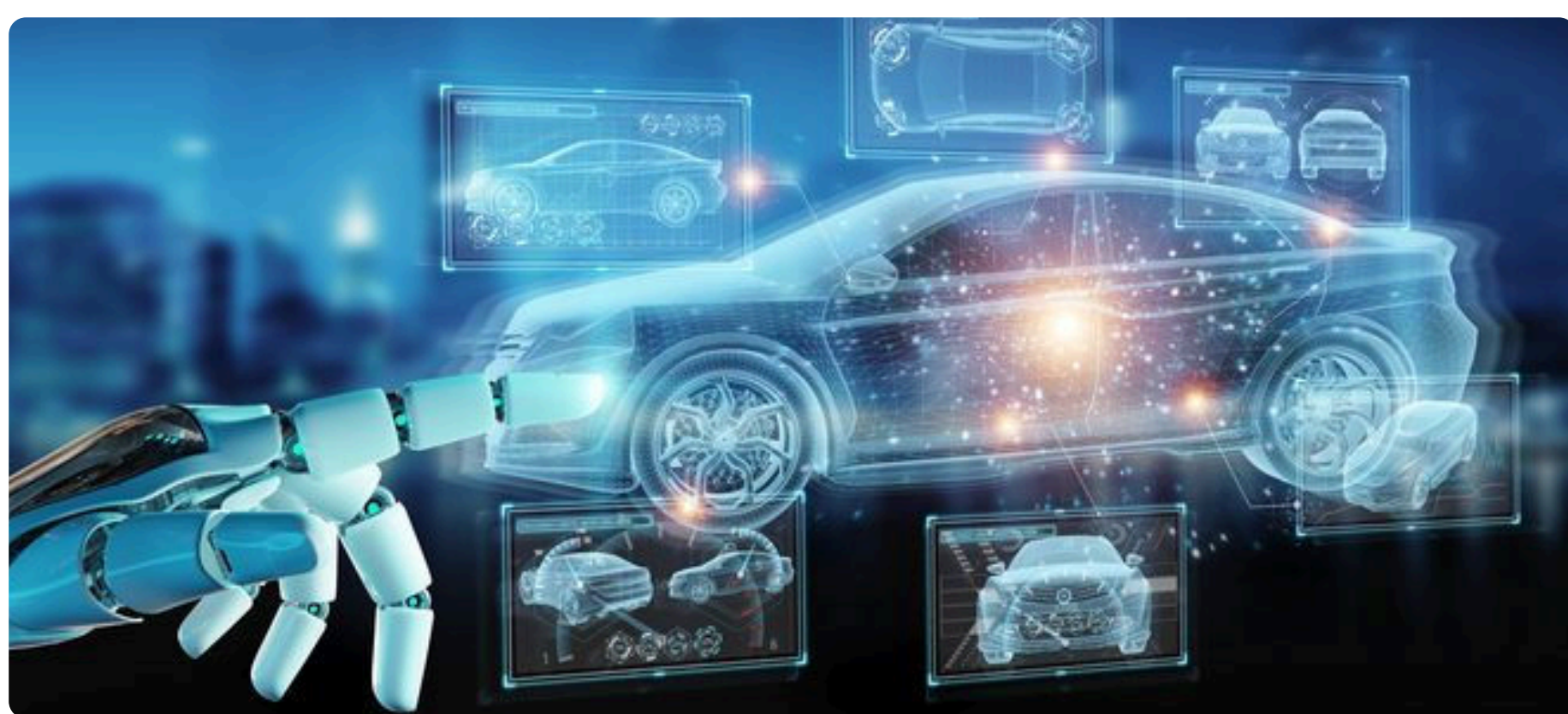


# AI, INTELLIGENT STEERING AND THE NEW REALITY OF THE AFTERMARKET

**Artificial Intelligence** is transforming the **automotive industry** at every level. From **advanced driver assistance systems** to **predictive maintenance** and increasingly **software-defined vehicle architectures**, vehicles are becoming more **intelligent**, more **connected** and more **complex**. While AI is often discussed from an **OEM innovation** perspective, its impact on the **Independent Aftermarket** is equally critical. At **JTEKT EUROPE**, we see this evolution not as a future trend but as an **ongoing structural shift**.

## From Mechanical Steering to Intelligent Control Systems

**Steering systems** clearly illustrate this transformation. What was once a **purely mechanical function** has become a highly integrated **electromechanical architecture**. Modern **Electric Power Steering** systems combine **torque and angle sensors, electronic control units, embedded software algorithms and functional safety logic** operating in real time. These systems interact directly with **ADAS features** such as **lane keeping assist, automated parking and semi-autonomous driving functions**. **AI-supported data processing** enhances **steering precision, responsiveness** and overall **vehicle stability**. This technological evolution increases performance and significantly increases **system complexity**. At **JTEKT EUROPE**, steering is not considered as a simple component. It is a **safety-critical system** that requires **deep engineering expertise, strict validation processes** and a full understanding of **vehicle architecture**.



## A Structural Shift for the Aftermarket

As vehicles are becoming increasingly **software-driven**, the expectations placed on **aftermarket components** rise accordingly.

Replacing a steering system today goes far beyond **mechanical installation**. It may involve:

- **Electronic compatibility** with the **vehicle network**
- **ADAS-related calibration procedures**
- **Software parameter verification**
- Compliance with **functional safety standards**
- Integration within **complex communication architectures**

In this environment, a malfunction does not only affect **driving comfort**. It can impact **driver assistance** and **safety functions**.

For **distributors** and **independent workshops**, this makes **component quality, traceability and validation standards** essential.

## Remanufacturing with Automotive-Grade Standards

Within this context, **remanufacturing** takes on a new dimension.

At **JTEKT EUROPE**, **electric steering systems** are remanufactured and validated according to **automotive-grade requirements**. This includes:

- **Complete disassembly and systematic inspection**
- **Replacement of critical mechanical and electronic elements**
- **Advanced functional testing on dedicated test benches**
- Verification of **torque curves, sensor accuracy and ECU performance**
- Validation of **safety-relevant parameters**

As **intelligent steering systems** integrate **electronics and software**, remanufacturing requires the same level of **system understanding as original production**.

Ensuring that **innovation on the road** is matched by **reliability in service** remains a core commitment for JTEKT.

