



# Maintaining electronic components as part of conversion and modernisation projects

When modernising rolling stock, the focus is on optimising technical equipment and improving passenger comfort.

As different as the individual projects are, they all have one thing in common: they are all intended to preserve the value of vehicles and ensure a long service life.

Often, however, the “nervous system” of the train, i.e. the electronic instrumentation and control systems, are not considered. It is important to consider key aspects in order to achieve the desired value preservation in the long term.

## Ageing and contamination

Just like mechanical components, vehicle electronics are subject to ageing and contamination. This can affect proper functioning of the component. In the worst case, the component may fail completely en route, which can have severe financial repercussions.

## What we offer

### Refurbishment of electronics components and assemblies

We remove contamination, replace aged components (e.g. batteries, condensers, relays, switches, etc.), professionally clean components (e.g. with dry ice, professional rinsing equipment or ultrasound) and repair damage. At the same time, we can remove design vulnerabilities to the extent possible.

After the refurbishment, we can coat the electronic components with a protective paint if desired. The coating will prevent future contamination, protect against moisture and ensure proper functioning.

## Your advantages

- Approved components
- Extended service life
- Continued use of approved design thanks to retro-fitting measures
- Full warranty for the entire product and not just for the component replaced
- Availability of materials on par with that of a new part, or in some cases even better



## Availability problems

In addition to the wear of electronic components, the focus of modernisation projects is increasingly on the central question about the future availability of electronic components. The answer to this question is very complex and requires a deep understanding of the components, product structure and the components installed.

## What we offer

### Assurance of future availability of (electronic) components

We ensure that your replacement parts are available in the future. Our long-standing, proven obsolescence risk analysis provides the answers and solutions.

The analysis includes parts lists, repair statistics as well as the operational environment and includes all solutions to avoid obsolescences.

We will examine:

- Age condition
- Material availability
- Long-term storage properties
- Required quantities and failures during previous operation
- Repair and test capability of component/s

Based on our analyses, we will recommend measures to retain the value of components, for example refurbishment, final stockpiling, long-term storage and other safeguarding measures.

## Your advantages

- Assurance of long-term availability at predictable costs
- Optimal supply security of your electronic components
- Minimisation of downtime risk thanks to professional spare parts supply

### Contact

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**Our promise: “As good as new or even better”**