VDA QMC

German Association of the Automotive Industry
Quality Management Center

EOS - Electrical Overstress in the Automotive Industry

The new guide to dealing with claims

An exciting affair!

Editor

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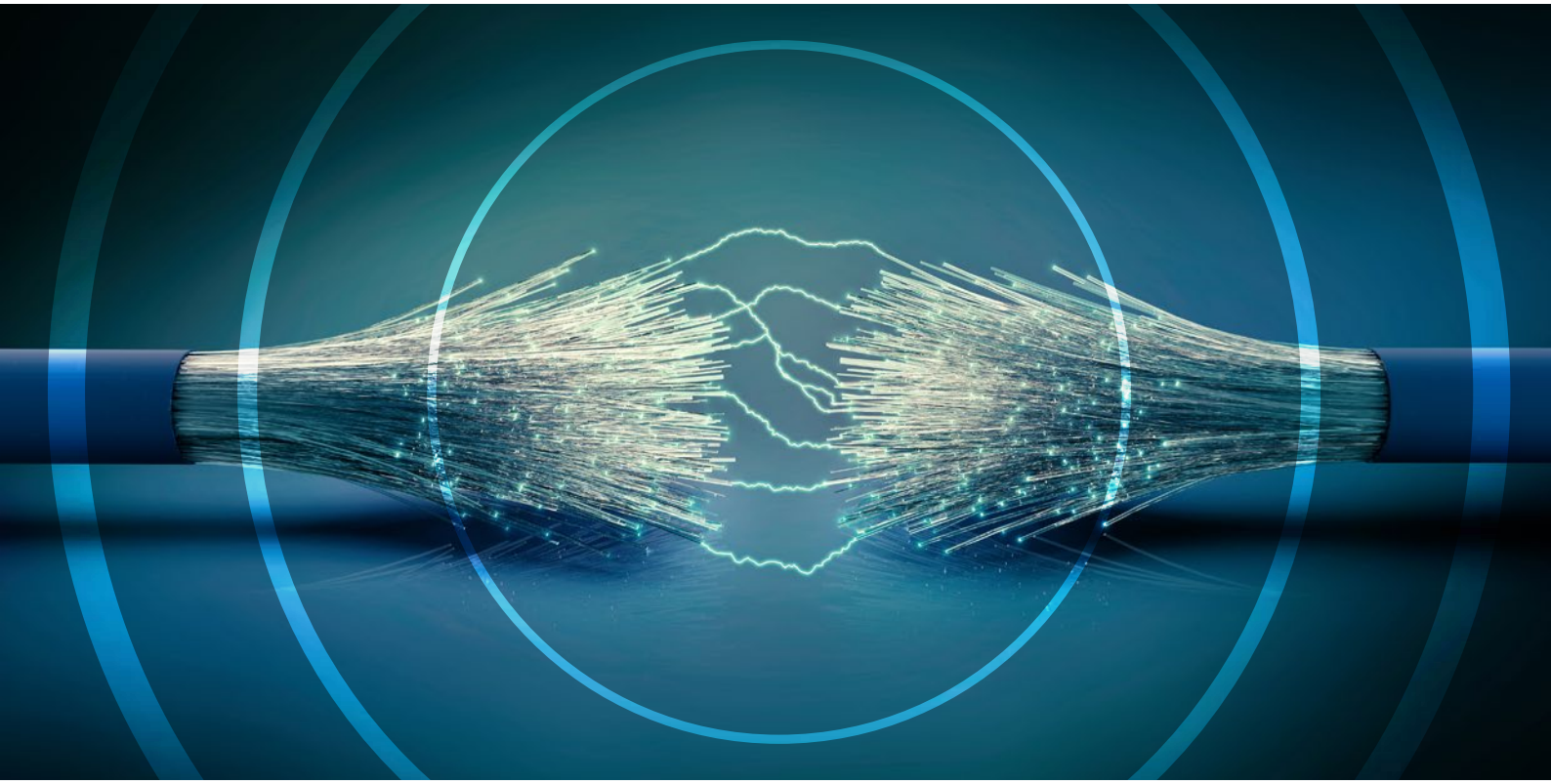


Electrical Overstress (EOS)

is an electrical overload that causes thermal destruction or damage to electronic components such as diodes, ICs and sensors.

The EOS-related damages represent a major problem in the field of electronics in the automotive industry. Above all it has to be taken into consideration that the amount of electronic components in vehicles is continuously increasing over the years and will continue to increase in the future further on.

With the VDA guideline "EOS - Electrical Overstress in the Automotive Industry", the German Association of the Automotive Industry e.V. (VDA) for the first time releases a systematic approach to processing such cases of damage caused by this kind of overload.

Why such a guideline?
EOS root cause finding & problems with analysis

EOS mostly arises from excessive voltages or currents that lead to the local destruction of semiconductor components. There are multiple reasons for that. One possibility is e.g. the operation outside the electrical specification of the component. The fact that more and more electronic components are used in vehicles and the operating voltages in the on-board power supply systems are increasing, leads to a higher risk of EOS-like failures.

In addition to that, the search for the particular root cause of the overload is impossible for the supplier alone - the interrelationship between a semiconductor component and its use on application or vehicle level is very complex and the individual history of the failing component is often unknown in sufficient detail.

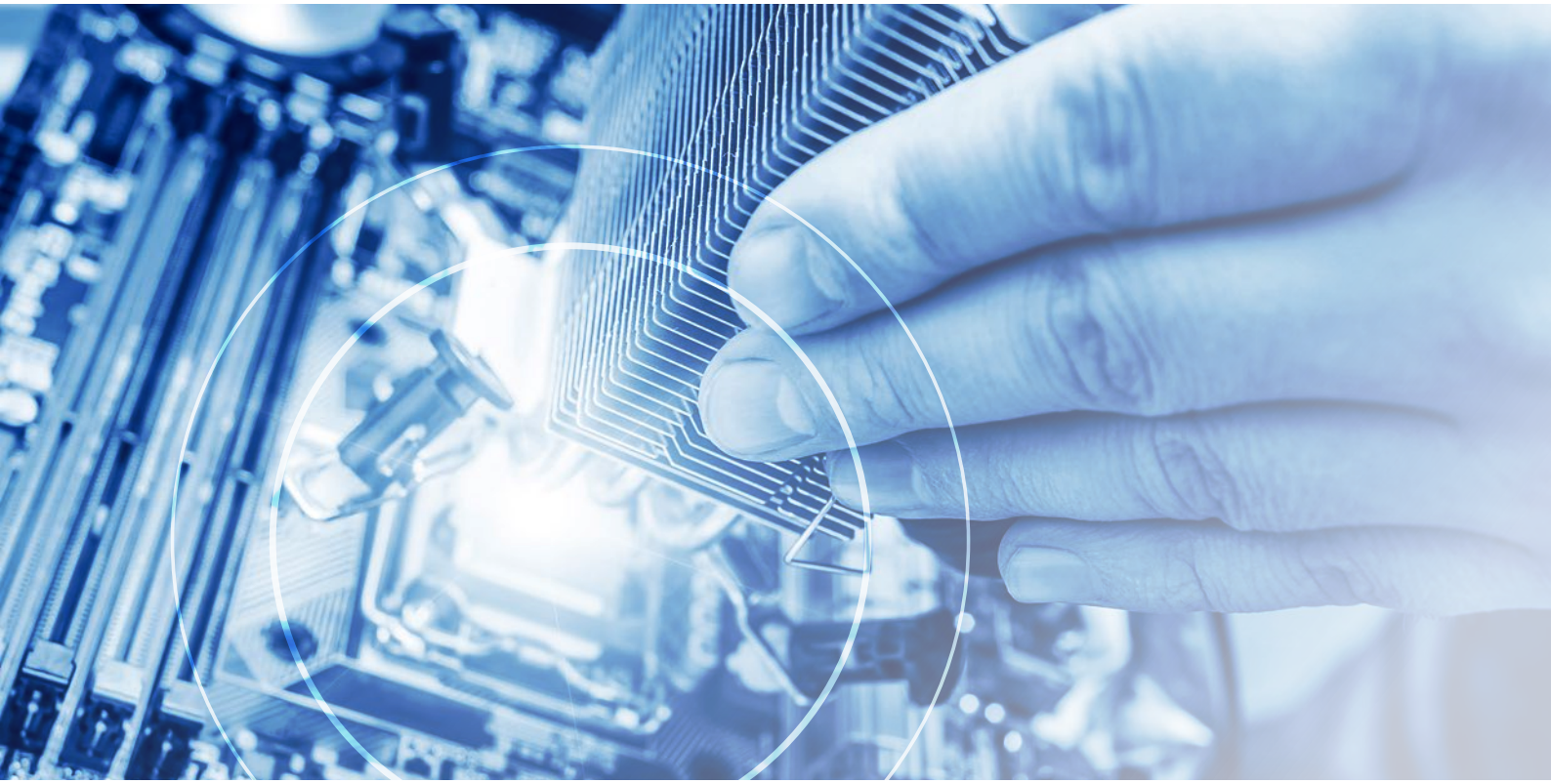
Since the parties involved in the supply chain often do not cooperate sufficiently with one another, such cases of damage usually take a long time to process and close. In addition, there were no rules for classifying failures or further guidelines on how to proceed - until now!

Targets of the VDA guideline "EOS - Electrical Overstress in the Automotive Industry"

The recommendations in the new VDA guideline EOS provide instructions on how damages that show signs of electrical overload are to be handled within the supply chain:

- Definition of a two-level complaint process that enables prioritization and targeted processing of such damages
- Definition of simple trigger criteria for an assignment to one of these two levels of the complaint process
- Provision of EOS guidelines and a questionnaire on which information has to be exchanged by the parties involved in the supply chain
- Creation of a common point of view and understanding for EOS along the supply chain and use a unique nomenclature.

Outlook



Thanks to the instructions in the VDA volume "EOS - Electrical Overstress in the Automotive Industry", the available resources can be spent wisely thus increasing the success rate in solving EOS-like failures.

In addition, the structured communication and processing within the supply chain should be optimized and their common level of knowledge increased. Ultimately, the target is to reduce the EOS failure rates and thus to minimize safety risks.

The VDA guideline EOS is available in German, English and Mandarin while the VDA QMC has started offering training courses on EOS in 2020.

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