

## WB06.1 ISO 26262 - Introduction to the hardware safety analysis (FMEDA)

- **Brief overview of ISO 26262 and classification of the hardware safety analysis (ISO 26262-5)**
- **Hazard and risk analysis: Definition of safety goals including ASIL classification**
- **Validation of hardware draft including interfaces (e.g. software) using the system FMEA**
- **FMEDA using MS Excel: Structure and calculation of training example "low beam light" (SPFM, LFM, PMHF)**
- **Definition of suitable safety mechanisms using Diagnostic Coverage (DC)**
- **Analysis of multiple-point failures by means of fault tree analysis (FTA)**
- **Review-fit documentation of results**

Systems with electrical and/or electronic components that carry out safety functions are to be assessed with regard to safety aspects (so-called *hardware safety analysis*). In this webinar, you will be introduced to a procedure using the example of "low beam light" that you can use to systematically derive safety goals for your item, validate the hardware draft using a system FMEA, and calculate the quantitative parameters (SPFM, LFM, and PMHF) in an Excel FMEDA. You will learn how to define suitable safety mechanisms and analyze multiple-point failures in a fault tree analysis (FTA). We will give you recommendations how to structure the results documents to make them fit for reviews.

### **Technical requirements:**

Inform yourself conveniently from any location about the advanced filter functionalities of the IQ Software and save travel expenses/time. To do this, take part in our online webinar. All you need is an Internet-capable computer with a browser and a headset (VoIP) or a telephone (audio).

💡 A TECHNICAL CHECK WILL BE CARRIED OUT IN ADVANCE TO ENSURE THAT EVERYTHING RUNS SMOOTHLY. DURING THE EXERCISES WE RECOMMEND YOU TO WORK WITH TWO MONITORS.

### **Quality promise: Not just an online lecture**

As with our classroom training courses, this webinar will not only provide you with knowledge, but will also give you time to practice and answer your questions individually. You can ask the trainer individual questions at any time via chat or hand signals.

💡 THE WEBINAR IS ACCOMPANIED BY A TRAINING DOCUMENT, WHICH YOU WILL RECEIVE IN ADVANCE AS PDF.

### **Live, no recording!**

The webinar is conducted live by an experienced TÜV-Süd trainer.

### **The Webinar Concept: Distributed Sessions instead of endless loops**

In contrast to classroom training, we have the advantage of training at a time when you have the best concentration. For this reason, the webinar is spread over three sessions from 8:30 a.m. to 12:30 p.m. and from 1:00 p.m. to 3:00 p.m. The breaks will be individually arranged in the group.

**Details of the Webinar**

💡 In collaboration with our partner TÜV-Süd, we offer the webinar *Functional Safety according to ISO 26262* in two blocks (*ISO 26262-5: Theory and ISO 26262-5: Practice using the IQ-Software*). You can book the blocks separately or as a package at a discount price.

WB06.1: ISO 26262 - Introduction to the hardware safety analysis  
 WB06.2: ISO 26262 - Hardware safety analysis using the IQ-Software

<b>Target group</b>	All participants in a Functional Safety project, who have to analyze their item systematically for single-point and multiple-point failures and calculate the quantitative parameters according to ISO 26262.
<b>Prior knowledge</b>	Knowledge of standard ISO 26262 (in particular part 5). Basic knowledge of operating the APIS IQ-Software. Such knowledge is imparted e.g. in seminar <i>Two-in-One (WB03)</i> .
<b>Webinar duration</b>	3 sessions: 8:30 a.m. to 12:00 p.m. and 1:00 p.m. to 3:00 p.m.
<b>Webinar fee</b>	Only <i>WB06.2</i> (2 days): net 1600 € or <i>WB06.1</i> and <i>WB06.2</i> in one package (5 days): five-day webinar at the package price of net 2145 €. You save about 5 percent compared to booking both webinars separately.

<b>Webinar content and schedule</b>	<i>3 sessions each from 8:30 a.m. to 12:00 p.m. and from 1:00 p.m. to 3:00 p.m.</i>
<b>Session 1 to 3</b>	<ul style="list-style-type: none"> <li>• Brief overview of ISO 26262</li> <li>• Important terminology and procedures</li> <li>• Introduction to hardware safety analysis according to ISO 26262-5</li> <li>• Step-by-step development of example "low beam light"</li> <li>• Derivation of safety goals including ASIL and hazard and risk analysis</li> <li>• Validation of hardware draft using the System FMEA</li> <li>• Presentation of important reference books for failure rates (e.g. SN29500)</li> <li>• Calculation of Functional Safety metrics in FMEDA (Excel)</li> <li>• Definition of suitable safety mechanisms for single-point failures</li> <li>• Analysis of multiple-point failures using fault tree analysis (FTA)</li> <li>• Definition of suitable safety mechanisms for multiple-point failures</li> <li>• Tips/recommendations by TÜV Süd with regard to documentation of results in different Functional Safety documents to make them fit for reviews</li> </ul>

## Organisational details

### Webinar booking form:

To register for the webinar, please fill in the following form and send it to us by e-mail or fax.

If you have any questions regarding the webinar, please contact us:

APIS Informationstechnologien GmbH  
Wolfenbütteler Straße 31 B  
D-38102 Braunschweig  
GERMANY

Tel.: +49 (0) 531 / 70736 - 0  
Fax: +49 (0) 531 / 70736 - 25  
E-Mail: [training@apis.de](mailto:training@apis.de)

## **General Terms of Business of APIS Informationstechnologien GmbH**

### **Registration**

All registrations for our seminars must be received in writing – by letter, fax or e-mail. By registering for one of our seminars, customers agree to be bound by our General Terms of Business.

Due to the limited number of places available for our seminars, they are awarded on a "first come, first served" basis. Registrations only become effective once they have been confirmed in writing.

If the minimum number of participants is not attained for a particular seminar then we will notify you immediately and offer an alternative date if required.

### **Cancellation**

A cancellation fee of 20% of the attendance fee is payable if cancellation notification is received between 8 weeks and 2 weeks before the start of the seminar. If the cancellation is received less than 2 weeks before the start of the seminar then the full attendance fee is payable. We appreciate your understanding in this matter. However, it is possible to appoint a substitute participant by arrangement. You will be notified immediately if an event needs to be canceled.

In all cases the liability of APIS Informationstechnologien GmbH is limited exclusively to the attendance fee. The course instructor and the seminar program are subject to change without notice.

### **Fees**

For details of our seminar fees, please refer to the list of seminar dates and fees. All prices are quoted per participant and are subject to VAT. The seminar fee is payable without deductions after the invoice is issued.

### **Scope of Validity**

These General Terms of Business apply to the running of seminars and training courses in the training facilities of APIS Informationstechnologien GmbH and in external training facilities. Any changes will only be valid if they are agreed in writing.

### **Data Protection**

By registering for a place on one of our courses you agree to your data being electronically stored and processed for the purpose of dealing with your registration.

### **Teaching Materials**

All rights reserved worldwide. The training documents must not, even in the form of excerpts, be duplicated, passed on, re-written, saved in a database or translated into a different language without the express written authorization of APIS Informationstechnologien GmbH. Duplication is not permitted either electronically, mechanically, magnetically or manually.



# REGISTRATION

Please send to:

**APIS Informationstechnologien GmbH**  
**Wolfenbütteler Straße 31 B**  
**D-38102 Braunschweig**

**Fax: +49-531-70736-25**

Seminar title	Date	Location

Participant(s):

(Title) Surname, First name	E-Mail

Information for the invoice (please fill in completely):

Company address:

Billing address (if differently from company address):

Order No.:

Tel. /Fax:

Tax ID Number:

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