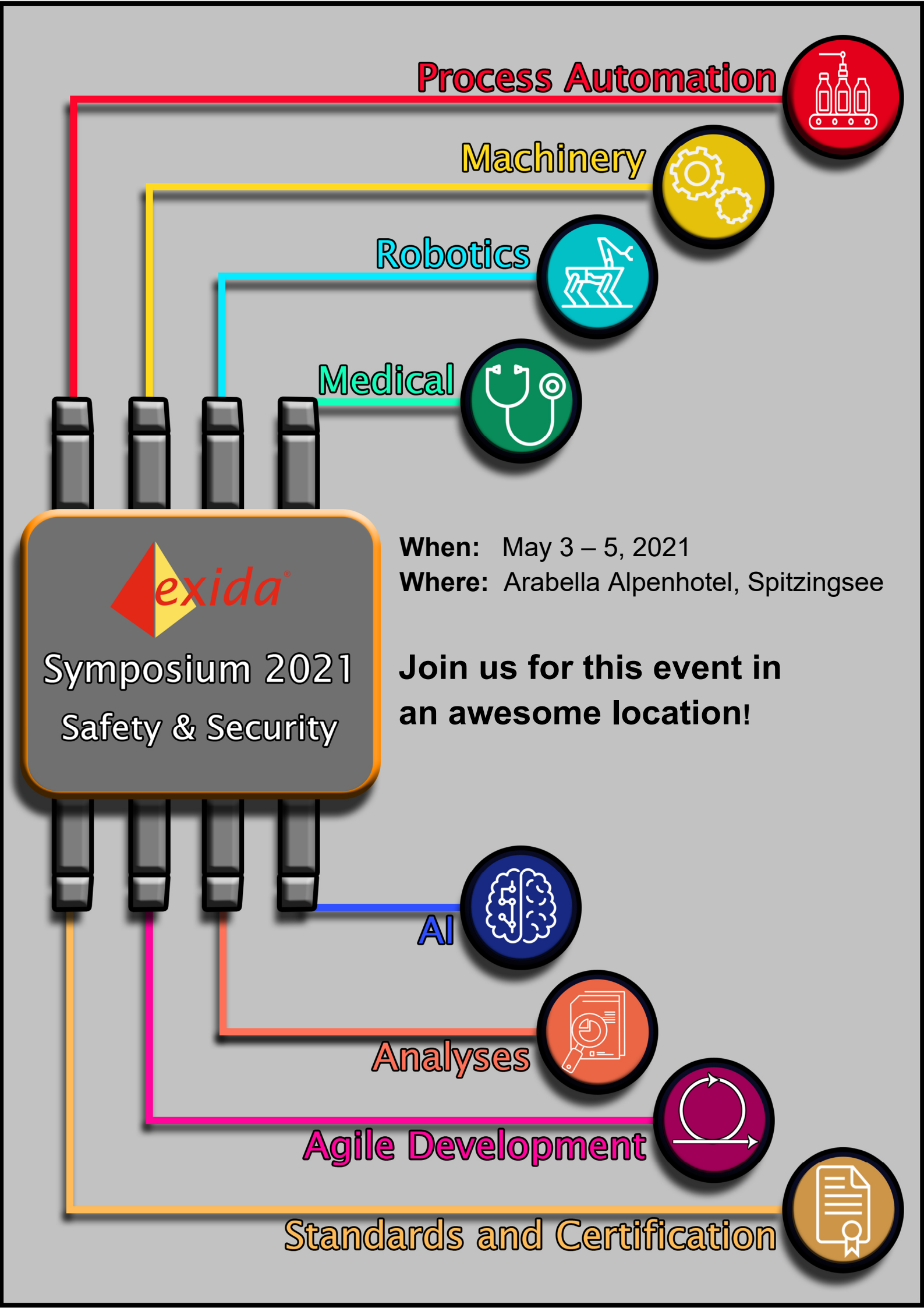

Process Automation
Machinery
Robotics
Medical
exida
Symposium 2021
Safety & Security
When: May 3 – 5, 2021
Where: Arabella Alpenhotel, Spitzingsee
Join us for this event in an awesome location!
AI
Analyses
Agile Development
Standards and Certification

exida Symposium 2021
Functional Safety and Cybersecurity

Functional Safety and Cybersecurity have an impact on a lot of different domains. Nearly all of them face a fast-paced development regarding new technologies and concepts.

In parallel the 3rd revision of IEC 61508 referred to as the mother of all functional safety standards will be revised. This standard needs to be considered for all these domains.

With this Symposium *exida* will give an overview of the current status, common challenges and possible solutions for the different domains like:

- Process Automation
- Machinery
- Robotics
- Medical

For further information and registration please contact:

Kerstin Tietel
+49 89 44118232
kerstin.tietel@exida.com

Topics – Short overview

Failure rates for random HW faults

Quantitative analyses of random HW faults (e.g. FMEDA, quantitative FTA) are required for many safety related elements and systems. To determine proper failure rates for the HW components, which are the basis for these quantitative analyses, is a major challenge, especially if it involves complex semiconductor ICs! Measurements, calculations based on international standards and handbooks, or other estimations techniques, each with their own pros and cons can be used. In this presentation we analyse and compare the most widely used international standards for IC failure rate estimation and provides practical tips to achieve realistic and consistent results.
Presented by Alexander Griessing

Systematic integrity (SIL) and probabilities

For the design of high availability systems (and machine learning), probabilities play a significant role in the architectural system design beyond random hardware faults. IEC 61508 enables the use of probability to confirm the Systematic Integrity (SIL). Modelling the sequence of events in a Layer of Protection Analysis (LOPA) and the resulting probability is very helpful for determining measures to mitigate systematic failure effects and consequently to lower SIL of subsystems and evaluate how much testing is enough.
Presented by Rainer Faller

Coming up next - 3rd revision of IEC 61508, the mother standard of Functional Safety

IEC 61508 is currently in its third revision. The goal is to publish a first CD (Committee Draft) by end of March 2021. The 3rd edition of IEC 61508 is to be published within 3 years. This presentation shows which topics are intended to be changed. These changes of the “mother standard” can also have an impact on your daily work and future planning. Therefore, it is very helpful to be aware of it. Since the presenter of the topic is also a leading member of the board the discussions after the official speech might also be helpful to clarify further detailed questions.

Presented by Stephan Aschenbrenner

Topics – Short overview

Functional Safety for mechanical parts

This speech discusses the question why Functional Safety should also be applied for mechanical parts and how this can be achieved. It refers to relevant standard and the requirements to achieve a certain Safety Integrity Level.
Presented by Stephan Aschenbrenner

My product has IEC 61508 certificate – what about machinery now?

There are many cases where products designed for process automation are also used in machinery applications and customers ask for ISO 13849 compliance.
This session compares the relevant requirements of ISO 13849 with IEC 61508 requirements. The aim is to give an idea, which evidence can be re-used for machinery compliance – and what needs to be added or even changed.

Presented by Jürgen Hochhaus, Stephan Aschenbrenner

Learnings from Agile & Scrum

Agile methods promise to get rid of wasteful overhead and boost efficiency. Cutting back overhead is essential to master the challenge of rapidly increasing complexity. But what is really overhead and what is useful or even essential?
exida summarizes the practical experience from truly agile projects:
- What about „the truth is in the code “?
- Patterns and Anti-Patterns for agile Safety
- Product Owner - responsible for Safety?
- What fits in a Sprint and what does not?

Presented by Florian Bogenberger

Topics – Short overview

System engineering – the great unknown

System engineering is very often seen as only needed for very complex devices. But to a certain extend all automation devices containing hardware and software are systems. Negating this fact can have a deep impact on the success of a project as well as on functional safety. The session will show and discuss the meaning of the system view for requirements management, (safety) analysis, verification and validation as well as for functional safety management. And we will see how it can influence the success of a project via the project organization and planning.
Presented by Jürgen Hochhaus

Requirements and architectural design

Experience of *exida* shows, that there are many cases where design descriptions are coming in the form of requirements – and are treated as requirements. And vice versa: so called requirements that are not requiring anything but only give a description on the planned design. The session will show examples for this and discuss reasons for this phenomenon. We will see and discuss the (bad) impacts on traceability and verification and validation. Finally, we work out how to avoid all those bad impacts.
Presented by Jürgen Hochhaus

Lessons learned in ground-based automation

Taking in a wide range of ground based robotic machines from small security robots to 400t mining trucks this presentation shares lessons learned from applying standards and product development best practice in isolated parts of the world at high altitude to your local shopping area.
Presented by Jonathan Moore

Robotics certification

This speech summarizes the state-of-the-art approaches to certifying robotics.
Presented by Jonathan Moore

Topics – Short overview

Combining Safety and Cybersecurity in the product development lifecycle

In order to keep industrial automation and control systems safe it is imperative that these systems are secure as well. In order to achieve this, a secure development lifecycle must be followed during the development of such systems. The IEC 62443-4-1 standard provides guidance on how to do this. This session will explore the commonalities between IEC 61508 and IEC 62443 to show how you can include both functional safety and cybersecurity in your product development lifecycle.
Presented by Mike Medoff

exida approach to threat modelling using ArchX tool

A key component in developing secure products, as defined by IEC 62443, is to create a threat model. However, the standard only provides minimal information on what should be included in a threat model and no guidance on how to do one. This session will describe a proven approach to the threat modelling problem along with the ArchX tool which supports this approach.
Presented by Mike Medoff

Safety Assessments, expectations from the Assessors point of view

- Expectations
- How to prepare proper?
- Does and don'ts
- Open discussion

Presented by Peter Müller, Jürgen Hochhaus, Peter Söderblom

Topics – Short overview

Safety Analyses in Medical Device Development

Safety analyses are an effective method to detect potentially safety critical defects already during development. In the medical area, these analyses are carried out as part of the overall risk management process according to ISO 14971. In addition to the appropriate selection and combination of a variety of possible methods such as FME(D)A, FTA, HAZOP, DFA, SCA, etc., it is often difficult to find an appropriate time slot to carry out these analyses in the development life cycle - keeping track of the situation can quickly become a critical discipline in the project.
Especially in complex systems, the challenges are constantly increasing:

- Which methods are suitable to cover different levels of abstraction?
- How can different methods be effectively combined in the development life cycle?
- What criteria are suitable for covering single fault conditions?
- How can the risk management process according to ISO 14971 be fulfilled?
- How can safety and security aspects be considered?

This presentation is intended to provide an overview of established safety analysis methods and to demonstrate a practical approach that addresses the above-mentioned questions.
Presented by Tim Jones

An Introduction to Medical SPICE

Medical SPICE (VDI 5702) is an adaptation of ISO/IEC 15504 to the medical device development. The standard aims to cover the specific requirements of the medical industry - in the same way as Automotive SPICE does for the automotive industry.
This presentation will give a brief overview of Medical SPICE and how to apply it in development projects practically.
Presented by Tim Jones

Topics – Short overview

AI in Medical Device Development

Artificial intelligence (AI) is a hot topic across all industries. However, the potential of these methods is often confronted with high complexity and intransparency. Especially in safety-critical applications in the medical area, one of the major challenges is to formulate a credible safety argumentation - the regulatory framework has no answer to this yet. With increasingly complex systems, the requirements for Safety & Security will further increase in the future, too:

- How safe is safe enough?
- How can safety for AI be quantified?
- Which mechanisms can be used to safeguard AI systems?

Based on selected applications in medical technology and the automotive industry, we show pitfalls and, based on these, make recommendations for a practicable procedure for the systematic protection of AI in safety-critical systems.

Presented by Tim Jones

Evaluation of communication failure rates

IEC 61508 requires estimating the residual error rate for communication processes. This includes the calculation the residual error probability, means the probability that the message is corrupted thus it is protected by CRC. this speech will explain the related procedure and will also discuss how to define the bit error probability for different kinds of communication technologies.

Presented by Sylvio Nolte

Topics – External Speaker

Systematically correct instead of accidentally wrong - life cycle experience in the process industry

According to a cliché, engineers or technicians often tend to think in numbers and deterministic schemes of how things work and may be relate to each other. Therefore, despite considerable uncertainties and specific boundary or operating conditions, it can happen that one pays attention to exact calculations and decimal places in results. But is this really the best approach? Unfortunately, over the last decade, this quantitative requirements for SIS have been pushed to the fore by many parties.

However, the fact that these quantitative approaches are based on a foundation of robust life cycle processes has been often ignored. Based on end user lifecycle experience from the process industry, this presentation will demonstrate why it is not sufficient to calculate only the PFD figures and check numerical limits, but rather functional safety is the sum of people competency, lifecycle experience, systematic approaches, boundary or operating conditions, and additional … a probabilistic estimation.

However, safety is achieved by always reliably implemented and easy-to-use safety systems. The human factor is still of decisive importance.

Presented by Marco Knödler, Team leader at YNCORIS GmbH & Co. KG

Our Team of Experts

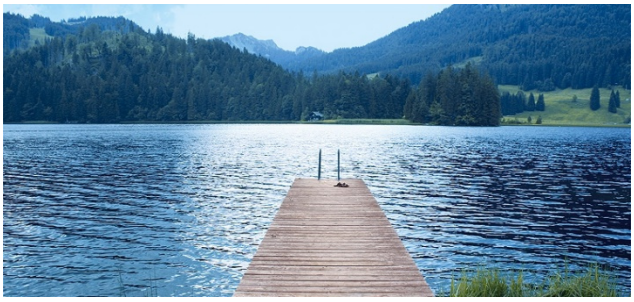
Meet our experts with several 100 years of cumulative experience in Functional Safety, Cybersecurity.

Let us exchange experience and talk about the future challenges.

We are looking forward to seeing you at our Symposium 2021!

Our Symposium Location

Conferences that offer new perspectives



Hear the stillness. Find tranquility and concentration. This is the ideal place for creative and effective work.

ARABELLA ALPENHOTEL AM SPITZINGSEE
Schliersee – Oberbayern

You can expect two unforgettable days full of information, exchange and impressions at an altitude of 1100m in a dreamlike scenery.

- **Come together/champagne reception on May 3rd at 8 p.m.**
- **Two nights (May 3rd / 4th) in a single room**
- **May 4th and 5th: two days symposium with food and drinks***

Location: http://www.arabella-alpenhotel.com/how-to-get-there/

*soft drinks, beer, wine, coffee, tea. Other alcoholic drinks will be on your own expenses.

Registration Form

Hereby I register for the:

***exida* Symposium 2021 Safety & Security**

Date: May 4 and 5, 2021

Location: Arabella Alpenhotel am Spitzingsee
Seeweg 7
D-83727 Schliersee-Spitzingsee
Germany
www.arabella-alpenhotel.com

Price: € 1695. -- + tax
The price includes the accommodation.

For registration until 31st of October 2020 we will grant an early bird discount of 10% (1525. -- + tax).
Deadline for the registration is 31st of March 2021.

Please enter the billing address:

Company: _____

Name: _____

Department: _____

Street: _____

Post code and city: _____

Email: _____

Phone number: _____

Please send the filled page via email to kerstin.tietel@exida.com.

Booking conditions: The symposium will be held in English and the presentation slides will be in English, too. In case the registered participant sends a written cancellation 21 day before the start of the symposium the cancellation will be free of charge. Until 14 days before the start of the symposium a cancellation fee of 50% of the fee will be charged. For later cancellations done by registered participants the complete training costs will be charged. A replacement of the registered participant with another person is possible at any time. The acceptance of the conditions is part of the registration. *exida.com* GmbH reserves the right to cancel the symposium short-term in a written way. In this case only the symposium fees will be refunded.

Data protection: The collected personal data is only stored and used for internal purposes related to the management of the training. This data is protected by limited access rights. The duration of the archiving depends on the legal requirements.

_____
Date Signature