



COURSES

Upcoming Public Classroom Courses



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Course Name

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Systems Engineering - Professional Development Programme (SE-DPD)

SE: In a Nutshell

Systems Reliability

Technical Problem Solving

Technical Project Management



BASICS OF ENTERPRISE AND SOFTWARE ARCHITECTURES

Course Descriptions

Perhaps more than other industries, engineering for energy has become an increasingly complex process with demands for digitalisation and interconnected services and products in increasing. Thus, a fundamental understanding of utilities applications and energy digitalisation is essential for all systems engineers working in this domain.

The course provides the basics of energy systems, power grid and energy market operation principles, processes, models and trends, hence allowing participants to understand the development of the energy sector in the past years and in the near future. It also allows to understand the reasons and impacts energy systems architectural changes.

Learning Outcomes

- Gain a brief and practice-oriented overview of the basics of the Enterprise Architecture and related topics.
- Gain new insights to generate your own ideas.

- Understand and apply best practices that allow productive discussion of problems with other suppliers (including non-electrical utilities).
- Understand how to structure one's business in an effective yet standard compliant way.
- Define the business and IT-applications landscape so that you, your management and your suppliers (also new ones) can understand it.
- Apply the “out-of-TSO/DSO-box-thinking”

Who Should Attend?

- Project Managers
- System Operators
- Software Engineers
- Product Owners

Attendees must have basic training in Systems Engineering (e.g. SE Foundations).

Course Rates

Regular: 800 CHF

Duration

1 day

Delivered By



Dmitri Tchoubraev

Dr. Dmitri Tchoubraev has had different leading roles over the last 20 years in Swiss industry. He was responsible for the introduction of Swiss Ancillary Market services, engineering and operation of numerous business-critical systems of

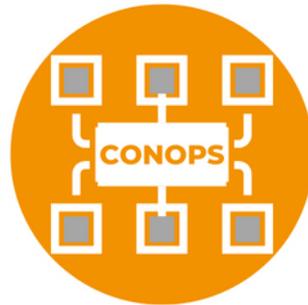
Swiss Transmission Grid National Control Center, establishing of Enterprise Integration and Solution Architecture at Swiss TSO.

Today he lectures, consults and mentors on the Power Utilities System Architecture, Energy Digitalisation and System Integration. His experience includes multiple applications of Project Management and Architectures Development in the area of complex heterogeneous IT System Landscapes. He also teaches Utilities IT Systems and Substation Automation Systems at the Technical High School Fribourg, Switzerland and was an Assistant Professor on Power Utilities Systems and Processes for 10 years, at the University of Aerospace Instrumentation, St. Petersburg, Russia.

Dr. Tchoubraev has more than 20 years of experience as project and program manager and as operational manager in development, engineering, integration and operation of complex industrial systems for both government and private sector industries.

Dr. Thoubraev is author and co-author of 30 papers and author of the book "Information Technologies for Electromechanical and Power Systems".

In addition, he is specialised on the System Design based upon Mini- and Micro-Services and optimisation of Industrial Operational Environments using Design Thinking and Usability approaches.



CONCEPT OF OPERATIONS (CONOPS) - WHAT YOUR SUPPLIERS NEED TO KNOW AND HOW TO DELIVER IT

Course Descriptions

This course will provide the structure, guidance and best practice to allow “Customer” teams to create detailed and executable Concept of Operations (CONOPS), allowing better interactions with their suppliers and more accurately representing the needs of their users. This will save the customer time and rework, whilst creating the building blocks for system design and integration. The course can be used by candidates from across all sectors of industry that are procuring complex systems and system of systems.

Learning Outcomes

- To be able to define the types of information that shape a problem space
- To understand how to capture user needs
- To understand why CONOPS are required by industry and suppliers
- To understand the design process which is initiated by the development of a CONOPS

- To be able to describe users and their roles consistently
- To understand environmental constraints and impacts
- To enable the students create their own CONOPS when they return to work

Who Should Attend?

- Requirements Engineers & Managers
- User representatives
- Systems and Project Engineers
- Project and Programme Managers

Course Rates

Early Bird Rates: 1,350 CHF. Regular Rates: 1,500 CHF

Duration

2 days

Delivered By



Pete Burgess

Pete has worked leading complex system development within the Defence, Security and Aerospace industries across the UK, US and Middle East.

He has worked from high level concepts to delivery of integrated systems, from requirements capture to user acceptance, bringing together technical teams to deliver and exceed customer expectations.

Pete started his career as an Engineering Apprentice within the British Army, rapidly promoted to Corporal and deployed to Kosovo during the Balkans conflict as well as multiple peace-time training activities across the globe. Beginning his

career this way has given him an excellent insight into the needs of the user within the Defence industry as well as the ability to adapt to many different environments. From here, he worked his way up through different Engineering roles, to a Team Lead and Engineering Manager within Boeing Defence UK. This role provided him with the opportunity to teach and mentor all technical and programme staff to have an understanding and appreciation of how Systems Engineering can enhance their own roles and projects, delivering training and mentoring across the entire UK business as well as their customers. Pete is now working as a Principal Consultant, continuing to deliver to customers and as well as develop his own skillset. Pete has been a member of the IET since 2011 as well as having a wide range of professional qualifications gained through his international experiences.



CONFIGURATION MANAGEMENT

Course Descriptions

Managing the complexity of products along their lifecycle is an increasing challenge in many industries. Knowing and controlling the state of mechatronical systems during development, in the supply chain and after sales is a basic requirement for today`s manufacturer. Manyfold requirements set by customers and regulatory bodies, paired with increasing number of product variants set challenges for managing product data, documentation and changes along the product`s lifetime.

Configuration Management helps to manage this complexity and to enable efficient development and operations of systems.

The objectives of Configuration Management are to:

- Manage all relevant product data and documentation in the product context
- Provide a consistent and complete view about all product components and their valid documentation along the lifecycle phases (Analysis, Feasibility, Development, Implementation and Manufacturing, Operations and Service)

- Integrate the product data management in the product lifecycle processes (development, testing, supply chain, operations, logistics, maintenance)
- Manage product variants, changes in the product`s definition and configuration baselines
- Support efficiency in the value chain.
- Enable the delivery of new services.

In this one-day course a basic understanding will be provided about how Configuration Management supports each stage of the product lifecycle starting with the first product idea until retiring complex industrial systems. We will learn about the different Configuration Management activities and how they help us making complexity manageable. By walking through the product lifecycle, we will highlight in this course the needs of the different lifecycle phases. Through examples we identify different approaches how to avoid common pitfalls and how to tailor the Configuration Management process to their needs.

Learning Outcomes

- Understanding product lifecycle from the perspective of the product`s data.
- Understanding the requirements for managing product data according to the individual needs of an industrial company or a specific project.
- Getting familiar with common terms, methods and approaches required to understand in order to set up a proper Configuration Management process in your project.
- Experiencing the challenges in product data management based on a simple mechatronic system example.

Who Should Attend?

- Systems Engineers
- Development Engineers
- Project Leads
- Requirement Engineers
- Verification and Validation Engineers
- Quality Engineers

All who are interested in this subject and want to learn about it during an one-day opportunity.

Course Rates

Regular: 800 CHF

Duration

1 day

Delivered By



Seb Klaves

Sebastian has authored and reviewed numerous publications and likes to implement systems engineering principles.

After working at the Institute of Transport Science of RWTH Aachen as research associate, he worked at the German Aerospace Centre as Project Officer and as Project Systems Engineer at Bombardier.

Currently, Sebastian is heading the RAMS department at Siemens' Mobility division. He is actively involved in the committee of the Swiss Society of Systems Engineering, is a certified Systems engineering professional and is giving systems engineering training at Siemens.

Sebastian enjoys approaching organisational and technical challenges with a 'rock solid' systems thinking approach.



Kevin Howard

Dr Kevin Howard has more than 40 years' experience in engineering. He initially worked in radar and radio frequency systems, and for the last 25 years has focused on Systems Engineering and managing complexity. He has been Chief Engineer for a range of systems ranging from military vehicles to space-based sensor systems. He has been VP Systems Engineering for a Global organisation providing safe city and big data technology. He now provides Systems Engineering consultancy, and as Engineering Director helped establish Optima Systems Consultancy Ltd as one of the leading Systems Engineering specialists providing consultancy to the defence and energy sectors around the world.

Kevin has a PhD in Optimising Complex Systems, supported by Post Graduate qualifications in Psychology and Business Administration. He is a Chartered Engineer, an external examiner for Cranfield University.



CPRE FOUNDATION

Course Descriptions

Course Overview: The programme provides a comprehensive introduction to the fundamentals of Requirements Engineering, focusing on the foundational understanding of Requirements Engineering techniques, methods and application and the basic theoretical frameworks available.

Learning Outcomes

Be optimally prepared to take the CPRE Foundational level examination

Acquire familiarity with common terminology around Requirements Engineering, Requirements Management and Business Analysis

Understand the basic techniques and methods for Requirements Engineering and their applications

Acquire familiarity with the most established notations for Requirements Engineering

Who Should Attend?

Systems Engineers
Requirements Engineers
Project Managers
Business Analysts
Product Designers and Developers
Integration, Verification & Validation Engineers

Course Rates

Early Bird: 1,620 CHF; Regular: 1,800 CHF

Duration

3 days

Delivered By



Marco Di Maio

Marco has had many roles in Systems Engineering: Professor at a technical university, and Consultant for and Employee in the development of complex systems. He was the managing director of projectglobe - a boutique consultancy firm specialising in Model Based Systems Engineering (MBSE) and Information Management (IM) to support innovation driven engineering projects. Major customers are the fusion research community, the automotive industry, and 3D laser-welding and robotics companies.

Marco holds a PhD in nuclear engineering and a Masters in Operational Research. In his role as research fellow at Europe's largest fusion laboratory, JET near

Oxford, he devised a novel diagnostic system, which earned him a world-wide patent. Marco then worked for the automotive industry managing product development and launch projects for the emerging markets of Eastern Europe and Russia before co-founding projectglobe with the purpose to devise novel methodologies, frameworks and tools that combine MBSE with IM to enable effective innovation and product development.

Together with partners from industry and academia, projectglobe have developed CLOSE - a Closed-Loop MBSE methodology based on robust semantic reference model. This model allows to automatically generate the required engineering artefacts in the correct format for SE teams and domain experts alike. The loop is closed by so-called "Experimentable" Digital Twins that provide in-the-loop feedback for all developers throughout the whole product life cycle. CLOSE runs on projectglobe's fractal data engine and thus allows for unlimited scalability in managing all project information.



Oliver Fels

Oliver Fels has been the first independent European speaker at the 1997 JAVAOne conference and the first independent to speak three years in a row.

Since then, Oliver Fels has been working in major industries developing complex systems, filling various roles - as a project manager, department lead, systems engineer, architect, product owner, requirements and methodology engineer, and more.

As a leading systems engineer, he supported revolutionize the Zürich public transport system, being responsible for the new passenger information concept. In a department lead role, he redesigned hands-on the first and business class sections for the 21st century of various international airlines.

With his high interest for sustainability and renewable energy, Oliver was also an

active member of the Solar Impulse 2 project, the first solar flight around the world accomplished by Swiss entrepreneur and pioneer Bertrand Piccard.

Oliver is currently actively supporting sustainability and renewable energy projects using blockchain technology and is the inventor of the sustainability engineering methodology, which uses system engineering principles to aid enterprises structuring their sustainability strategies.

Oliver has held several speeches and international workshops in the area of systems engineering, IT security, and software development as well as coached engineers in leadership, requirements engineering, and other topics.

Having worked in various diversity environments, he highly emphasizes an intercultural and interoperational approach to working with people in which individuality and empathy are highly valued. As such, bringing his broad expertise to a wider audience is an important passion for him.

Oliver holds an engineering degree in computer science and electrical engineering.



DESIGN FOR PRIVACY

Course Descriptions

EU law requires that controllers put in place measures to effectively implement data protection principles and to integrate the necessary safeguards to meet the requirements of the regulation and protect the rights of data subjects.

These measures should be implemented both at the time of processing and when determining the means for processing. In implementing these measures, the controller needs to take into account the state of the art, the costs of implementation, the nature, scope and purposes of personal data processing and the risks and severity for the rights and freedoms of the data subject.

In addition, controllers and processors are obliged to design the data processing in such a way as to prevent or minimise the risk of interference with those rights and freedoms and implement technical and organisational measures which take into account the implications of the right to the protection of personal data at all stages of the data processing.

We will focus on the following principles:

- Lawfulness of processing & Fairness of Processing & Transparency of Processing

- The principle of purpose limitation
- The data minimisation principle
- The Data accuracy principle
- The Storage limitation Principle
- The Data security principle
- The Accountability principle

Learning Outcomes

At the completion of training, the trainee will be able to achieve the following outcomes:

- GDPR principals and rules related with Data Privacy by Design
- How to approach to each process within System engineering of a new or existing platform.
- How to make Risk Analysis of each process which contains vital data such as Personal Data.
- How to mitigate the process with high risk to low risk within any platform existing and or new.
- How to define / create Technical and organizational Measures to protect the vital data which is both Company confidential Data and Personal Data according to GDPR.
- How to make decision of putting the processes under right legal basis according to GDPR.
- How to make the platforms secured especially in case of Cyber-attacks and attacks from Internal organization.

Who Should Attend?

- Engineers
- Product developers
- Programme, software or website designers
- Other managers responsible the development of products and services where data privacy is critical.

Course Rates

Early Bird: 1350 CHF | Regular: 1500 CHF

Duration

2 days

Delivered By



Hakan Hasserbetci

Hakan acts as a Data Protection Officer in Path Duesseldorf GmbH and manages international Data Privacy projects. He has been implementing Codes of Conduct of GDPR across diverse organizations. He is actively training Data controllers and data processors according to GDPR.

In Hakan's 20 year+ experience he has worked across ICT, Automotive, Packaging Corrugated and Textile industries and acted as:

- Director in Sales & Marketing, Business Development & Global Key Accounts & Channel Alliances in Mobile Network Operators.
- Project manager in Data Protection/Privacy & Cyber Security in Automotive, Medical, SW Houses, Distribution.
- Project manager in CRM & e-commerce & Sw. Development in SMEs.
- Trainer in GDPR and DPO Practices.
- DPO in Data Privacy and Compliancy Projects



DESIGN FOR SECURITY

Course Descriptions

This course will provide attendees with a solid foundation in the design of secure systems and products. We will define what cyber security means in a product development context and how it contributes to safe and reliable operation. To this end, we will need to clarify how security engineering differs from traditional safety and reliability engineering and how it is embedded into the overall systems engineering context. Although the entire product life cycle will be covered, emphasis will be put on the design and development phases, as these are the most important ones from the cyber security perspective. We will look into how to define a product security context and how to derive basic security architecture principles from it. We will then proceed with developing security risk assessment techniques and apply them to the system under design, i.e. we will elaborate on how risk assessment outcomes will result in security requirements that will need to be implemented in the system. Finally, we will discuss how security properties of a system can be validated and verified, both during the development and after entry into service. The course will focus on dependable systems in order to emphasize the intimate relation between safety and security.

Learning Outcomes

- Gain a good understanding of dependable systems and the role of security in their design and development
- Gain an understanding about the security implications of a system design
- Assess the business and project risks associated with specific design decisions
- Estimate the cost of security incidents
- For all stages of the product life-cycle, be able to outline the key elements associated with “designing for security”
- Have an overview of the tools and techniques employed by cyber security specialists when adopting a risk-based approach to security
- Have an appreciation of the security issues associated with software, human/system interactions, novel technologies, complex system of systems and autonomy

Who Should Attend?

- Design engineers needing to improve or refresh their product security knowledge to enhance their integration within a Systems Engineering team
- Safety engineers who need work together with security engineers on a common system design and have not yet been exposed to the topic
- Project and program managers wishing to understand how poor security engineering can lead to prohibitive business and project risks
- Engineering managers wishing to improve their specialist knowledge order to gain the most from their security team
- Business leaders wishing to understand their legal and moral responsibilities to ensure that products and systems are designed, commissioned and operated safely and securely

Course Rates

Early Bird: 1350 CHF | Regular: 1500 CHF

Duration

2 days

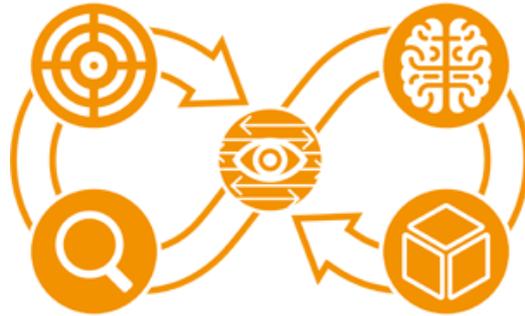
Delivered By



Stephan Marwedel

Stephan works as a product security engineer at Airbus commercial aircraft. In his work, he brings together diverse engineering disciplines, such as hardware and software engineering, mechanical engineering, safety and reliability and cyber security aiming at creating safe and secure solutions.

Stephan has more than 30 years of experience as a software and systems engineer in diverse areas, such as chip design, secure networking, health care, online banking and logistics. He spends more than half of his professional life at Airbus commercial aircraft working as a systems engineer on aircraft communication systems and as a product security engineer on communication and recording systems as well as landing gear systems. He is actively involved in developing security standards by participating in international working groups at EUROCAE, AEEC and SAE.



DESIGN THINKING AND LEAN INNOVATION INTRODUCTION

Course Descriptions

Learn how to combine Systems Engineering with Design Thinking and Lean Start-up in the upfront Innovation phase (Pre-Development-Phase). The Design Thinking course gives you a deep understanding of the Design Thinking mindset and its problem-solving cycle based on fast iteration and customer interaction.

The importance of a well-defined concept including product/service conception, business design and clear determination of the customer needs is fundamental before the development starts. The later misconceptions are discovered, the more costly it gets and there is a lot of wasted work, money and time.

Design Thinking and Systems Engineering are both problem-solving methods that try to cope with the increasing complexity. Both approaches are on a first sight completely different but on a closer look they become more and more complementary and share many thoughts. Combining both approaches and switching the thinking mode is essential when dealing with ambiguity.

The course is very practice-oriented and hands-on. The participants will spend more

than half of the time practicing, e.g. meeting the user and practicing need-finding, creating new ideas, building prototypes and testing with the user.

Learning Outcomes

- Understand the basics of Design Thinking and Lean Innovation
- Know how to combine Design Thinking and Systems Thinking and when to switch thinking modes
- Apply to tools to determine the customer needs and carry out need-finding
- Build and test different types of low-resolution prototypes (e.g. Critical Experience or Dark Horse prototype) with the user and improve your understanding of the situation
- Use the Lean Canvas to summarize the findings and to improve it iteratively
- Practice Design Thinking and Lean Innovation on a practical challenge during the three days.
- Reflect and transfer the learnings into your daily business and own projects

Who Should Attend?

- Managers and engineers who would like to enrich their problem solving competences with user-centric and agile approaches
- Managers who are looking for ways to create radical innovations
- Managers who would drive the digital transformation in their area
- Anyone who is responsible to create new products, services, business models and would like to integrate design oriented methods

Course Rates

Early Bird Rates: 1,350 CHF. Regular Rates: 1,500 CHF

Duration

2 days

Delivered By



Patrick Link

Since 2009 Patrick is Professor for Product Innovation in the study program “Industrial Engineering|Innovation” at the Lucerne University of Applied Sciences and Arts(LUASA) School of Engineering and Architecture.

He studied Mechanical Engineering and got his doctorate in the field of innovation management at the BWI ETH Zurich. After that, he worked for Siemens in various positions. His research and teaching interest are in the field of agile product management, Design Thinking and Entrepreneurship and the combination of these approaches, for example Design Thinking, Systems Thinking and Data Analytics. Together with Larry Leifer from Stanford University and Michael Lewrick from Swisscom, he is the Co-editor of the book "Das Design Thinking Playbook"



DESIGN THINKING AND LEAN INNOVATION ADVANCED

Course Descriptions

Design Thinking and Lean Innovation are easy to understand concepts, however with the practice more questions arise. In this advanced workshop we dig deeper and learn additional tools and methods (like business ecosystem design), reflect the practical experiences and challenges of the participants and how to overcome them.

In addition to combining Design Thinking and Systems Thinking, we learn how to make a deep dive into designing a business ecosystem, creating stakeholder maps and have a look into the hybrid model (combining Design Thinking and Big Data Analytics).

The workshop will also focus on the challenge of implementing Design Thinking in your organisation.

Learning Outcomes

- Discuss challenges happened in facilitating groups and managing design thinking / Lean Innovation projects. Define ways to overcome those challenges.

- Solve practical challenges
- Understand the challenges in implementing Design Thinking in your organisation
- Learn how to design a business ecosystem using a Minimum Viable Ecosystem (MVE)-approach
- Create a stakeholder map of your organisation and define a strategy “how to take it home”
- Combine Big Data Analytics and Design Thinking to a hybrid management model
- What is the mind-set? And how to create this mindset?
- Reflect and transfer the learnings into your daily business and own projects

Who Should Attend?

The participants should have some practical experience with Design Thinking and/or Lean Start-up or Lean Innovation and bring their own challenges into the course. During the course we reflect on the experiences of the user and elaborate together possible solutions to solve those challenges.

- Managers and engineers who would like to enrich their problem solving competences with user-centric and agile approaches
- Managers who are looking for ways to create radical innovations
- Managers who would drive the digital transformation in their area
- Anyone who is responsible to create new products, services, business models and would like to integrate design oriented methods

Course Rates

Early Bird: 1,350 CHF; Regular: 1,500 CHF

Duration

2 days

Delivered By



Patrick Link

Since 2009 Patrick is Professor for Product Innovation in the study program “Industrial Engineering|Innovation” at the Lucerne University of Applied Sciences and Arts(LUASA) School of Engineering and Architecture. He studied Mechanical Engineering and got his doctorate in the field of innovation management at the BWI ETH Zurich. After that, he worked for Siemens in various positions. His research and teaching interest are in the field of agile product management, Design Thinking and Entrepreneurship and the combination of these approaches, for example Design Thinking, Systems Thinking and Data Analytics. Together with Larry Leifer from Stanford University and Michael Lewrick from Swisscom, he is the Co-editor of the book "Das Design Thinking Playbook"



Michael Lewrick

Michael Lewrick, PhD, MBA has had different roles over the last few years. He was responsible for strategic growth, acted as Chief Innovation Officer and laid the foundation for numerous growth initiatives in sectors that are in the digital transformation. He is a motivational international speaker and teaches Design Thinking as a visiting professor at various universities. With his help, a number of international companies have developed and commercialized radical innovations. In his latest international bestseller, “The Design Thinking Playbook”, he

postulated with his colleagues from Stanford University a new mindset of converging approaches of design thinking in digitization.
In addition, he is specialized on the Design of Business Ecosystems for Blockchain applications in the Crypto-Valley, Switzerland.



FUNDAMENTALS OF SYSTEM AND PRODUCT SAFETY

Course Descriptions

The course provides a solid foundation in the motivations for and techniques associated with, designing safer systems and products. We will review a variety of real life accidents and explore their root causes, to highlight that organisational failings, design errors and operational issues have the capacity to create catastrophic events. Within an SE approach, we'll explore methods to assess safety and human factors risks for a set of technologically diverse systems before considering how to define design requirements to control potential hazards. The course will also provide an overview of safety management systems, hazard logs, safety arguments, incident investigation, complex electronics safety (including software), CE marking and hazardous materials.

Learning Outcomes

- Gain an understanding of what "safe" means, the business and project benefits linked to robust safety management and the cost of accidents.
- For all stages of product's life-cycle, be able to outline the key elements associated with "designing for safety".

- Have an overview of the tools and techniques employed by safety specialists when adopting a risk based approach to safety.
- Have an appreciation of the safety issues associated with software, human/system interactions, novel technologies, complex system of systems and autonomy.

Who Should Attend?

- Design engineers wishing to improve or refresh their system safety knowledge to enhance their integration within a Systems Engineering team.
- Project and programme managers wishing to understand how poor safety engineering can lead to prohibitive project risk.
- Engineering managers wishing to improve their specialist knowledge in order to gain the most from their safety team.
- Business leaders wishing to understand their legal and moral responsibilities to ensure that products and systems are designed, commissioned and operated safely.

Course Rates

Early Bird Rates: 1,350 CHF. Regular Rates: 1,500 CHF

Duration

2 days

Delivered By



Richard Maguire

Richard Maguire BEng MSc CEng FIMechE MSaRS MBCS has vast experience in safety engineering across a number of diverse technologies including, aviation, weapons, communication systems, vehicles, unmanned air systems, sub-sea

platforms and software. Notably, Richard worked on assuring flight control software for UAS, as well as post-accident and predictive stress analysis and computational fluid dynamics modelling for oil, gas and fire protection pipework systems. As a renowned specialist, he plays a key role in developing UK safety and software standards and has published a vast array of diverse papers. Additionally, he is the author of the popular book "Safety Cases and Safety Reports – Meaning, Motivation and Management". Due to his standing within the safety community, Richard has taught at a number of institutions, including the: University of York - Safety Critical Systems Master's Degree; Empire Test Pilot School - Aviation System Safety; UK Ministry of Defence - Acquisition System Safety; and the Bundeswehr University Munich - Modelling Human Reliability.



Jim Mateer

JIM MATEER BSc, MSc, MIET, MRAeS has a background in engineering within the hazardous fast jet and weapons environment. For the last twelve years, however, he has specialised in safety engineering and management in a number of diverse domains including aviation, weapons, communications, autonomy, protective clothing, hydrogen fuel cells, armoured vehicles and software. During his time with a large electronics manufacturer Jim specialised in product safety, compliance to EU legislation and CE Marking. His study at the University of York on the Critical Systems Safety Engineering course, culminated within him presenting his research into the assessment of Safety Related Information Systems. Recently Jim has provided Independent Safety Auditing services for the UK Ministry of Defence's suite of future armoured fighting vehicles and been supporting a global aviation manufacturer improve its management of airworthiness. For QineitQ Jim developed two system safety courses dealing with safety risk identification and assessment and safety management.



INCOSE SEP EXAM PREPARATION

Course Descriptions

A 4-day course to gain Systems Engineering skills whilst also being effectively prepared to take the INCOSE ASEP and CSEP exam. The training course is focused on both understanding and applying key Systems Engineering principles consistent with the ISO 15288 standard and the INCOSE Systems Engineering Handbook, enabling course attendees to both apply Systems Engineering more effectively, and to pass the INCOSE SEP exam.

Learning Outcomes

- Introduction to INCOSE, the handbook and the INCOSE certification model (SEP)
- Understand the key concepts of Systems Engineering
- Thorough review of the processes described in the INCOSE handbook
- Understand the structure and relationships of the ISO 15288 processes

- Extensive practice of realistic questions
- Prepared to take the INCOSE SEP Examination

Who Should Attend?

- Systems Engineers
- Requirements Engineers
- Integration, Verification and Validation Engineers
- Configuration Managers
- Quality and Process Engineers
- Project and Program Managers
- All Engineers seeking a holistic approach to Engineering

Course Rates

Early Bird: 2475 CHF | Regular: 2750 CHF

Duration

4 days

Delivered By



Seb Klaves

Sebastian has authored and reviewed numerous publications and likes to implement systems engineering principles.

After working at the Institute of Transport Science of RWTH Aachen as research associate, he worked at the German Aerospace Centre as Project Officer and as Project Systems Engineer at Bombardier.

Currently, Sebastian is heading the RAMS department at Siemens' Mobility division. He is actively involved in the committee of the Swiss Society of Systems Engineering, is a certified Systems engineering professional and is giving systems engineering training at Siemens.

Sebastian enjoys approaching organisational and technical challenges with a 'rock solid' systems thinking approach.



Mike Johnson

Mike has worked leading challenging product development roles predominantly in the Space and Defence Industries since completing his Masters degree in Photonics and Optoelectronic devices at the University of St Andrews, UK.

He has worked predominantly in the roles of Systems Engineer, leading technical developments involving inter-disciplinary teams often consisting of Mechanical, Electrical, Technology, Software and Optical Engineers. He worked at RUAG Space, Zürich for five years. During this period he moved into management, leading the Systems Engineering group in the product unit Optoelectronics and Instruments. In addition he gave Systems Engineering training courses to the employees across the whole company, training circa 100 Engineers from a beginners to an advanced level.

Having moved to Roche Diagnostics International to lead the Systems Engineering team in Rotkreuz, Switzerland, he is now passionately applying his experience and knowledge of Systems Engineering to the Healthcare industry.

He is passionate about product development and especially the application of Systems Engineering. He is one of the founders of the Swiss Society of Systems Engineering (SSSE) and regularly attends Swiss based IET and INCOSE lectures/seminars. He is the organiser of SWISSED, Switzerland's annual conference on Systems Engineering. In addition, he is the co-founder of SE-Training GmbH, specialising in high quality delivery of Systems Engineering training courses in Switzerland.

Chartered Engineer (IET 97325920) and Chartered Systems Engineering Professional (CSEP).



Piet Belgraver

Piet Belgraver started his career as electronic development engineer for several engineering companies in the Netherlands. He continued extending his technical expertise in the high volume consumer electronics industry as a senior design engineer when he moved to Denmark. During this time, he took over the role of hardware project leader for several known Nokia mobile phones. In his role his focus was to coordinate the local and global projects teams to achieve on-time delivery in factories world-wide.

After six years working for Nokia, he moved to Switzerland to work in the Aerospace industry at RUAG Space. In 2016 he moved to Thales Alenia Space when part of RUAG Space was sold to Thales Alenia Space. He currently he has the position of senior project manager for several space projects at Thales Alenia Space.

He is certified (IPMA) senior project manager with more than 15 years of experience in technical project management ranging from high volume consumer electronics to high quality Aerospace industry



Marco Di Maio

Marco has had many roles in Systems Engineering: Professor at a technical university, and Consultant for and Employee in the development of complex systems. He was the managing director of projectglobe - a boutique consultancy firm specialising in Model Based Systems Engineering (MBSE) and Information Management (IM) to support innovation driven engineering projects. Major customers are the fusion research community, the automotive industry, and 3D laser-welding and robotics companies.

Marco holds a PhD in nuclear engineering and a Masters in Operational Research. In his role as research fellow at Europe's largest fusion laboratory, JET near Oxford, he devised a novel diagnostic system, which earned him a world-wide patent. Marco then worked for the automotive industry managing product development and launch projects for the emerging markets of Eastern Europe and Russia before co-founding projectglobe with the purpose to devise novel methodologies, frameworks and tools that combine MBSE with IM to enable effective innovation and product development.

Together with partners from industry and academia, projectglobe have developed CLOSE - a Closed-Loop MBSE methodology based on robust semantic reference model. This model allows to automatically generate the required engineering artefacts in the correct format for SE teams and domain experts alike. The loop is closed by so-called "Experimentable" Digital Twins that provide in-the-loop feedback for all developers throughout the whole product life cycle. CLOSE runs on projectglobe's fractal data engine and thus allows for unlimited scalability in managing all project information.



Marco Serra

Marco's professional experience, built over almost 30 years of working with clients in North America, Europe and Southern Africa, spans diverse roles in the aerospace, automotive, defence and energy industries. For example, as Systems Engineer Marco was involved in the initial conceptual development and technology transfer assessment of a sample handling and analysis system intended to receive and analyse material returned to Earth on Nasa's Mars Sample Return Mission. Marco also spends significant time consulting in the Oil & Gas and Energy industries providing system and component design support, conducting failure investigations, providing technical expertise in legal disputes, validating system designs, and developing analysis methodologies for complex fluid-mechanical simulations. More recently, Marco has been working on the thermomechanical design of optical terminals for inter-satellite communications.

Marco holds a Masters Degree in mechanical engineering from the University of Pretoria, South Africa (1993). He also holds a Masters Degree in Engineering and Management from the Massachusetts Institute of Technology, USA (2002), with a focus on Systems Architecture, Systems Engineering, and System and Project Management.



INTEGRATION, VERIFICATION AND VALIDATION (IV&V) PRACTITIONER

Course Descriptions

A 3-day interactive course to gain Practitioner's level skills for Integration, Verification and Validation (IV&V) of complex technical systems.

The training course is focused on both understanding and applying key principles, methods and processes consistent with the ISO 15288 standard and the INCOSE Systems Engineering Handbook, enabling course attendees to be prepared for working within and / or leading the IV&V phase for technical complex systems.

The course learnings are delivered through classroom teaching, short discussions, short exercises, and a facilitated group workshop.

Learning Outcomes

- Know the key concepts and terminology used in IV&V (Integration, Verification and Validation).
- Understand and apply key IV&V aspects from the ISO 15288 standard.
- Understand processes that contribute to IV&V in the design, development, acceptance, and operation of complex technical systems.

- Design and manage IV&V in time efficient interaction with programme logistics.
- Practice the preparation of the IV&V plan.
- Awareness of the main types of tests used in complex system verification.
- Know the use of analysis, inspection, and design review methods for verification and validation.
- Know the possibilities for re-using existing qualification within complex systems.
- Understand the IV&V Change Approval Board.

Who Should Attend?

- Integration, Verification & Validation (IV&V) Engineers
- Manufacturing, Assembly, Integration & Test (MAIT) Engineers
- Systems engineers
- Development Engineers needing a strong awareness of IV&V

Course Rates

Early Bird: 2025 CHF | Regular: 2250 CHF

Duration

3 days

Delivered By



Mike Johnson

Mike has worked leading challenging product development roles predominantly in the Space and Defence Industries since completing his Masters degree in Photonics and Optoelectronic devices at the University of St Andrews, UK.

He has worked predominantly in the roles of Systems Engineer, leading technical

developments involving inter-disciplinary teams often consisting of Mechanical, Electrical, Technology, Software and Optical Engineers. He worked at RUAG Space, Zürich for five years. During this period he moved into management, leading the Systems Engineering group in the product unit Optoelectronics and Instruments. In addition he gave Systems Engineering training courses to the employees across the whole company, training circa 100 Engineers from a beginners to an advanced level.

Having moved to Roche Diagnostics International to lead the Systems Engineering team in Rotkreuz, Switzerland, he is now passionately applying his experience and knowledge of Systems Engineering to the Healthcare industry.

He is passionate about product development and especially the application of Systems Engineering. He is one of the founders of the Swiss Society of Systems Engineering (SSSE) and regularly attends Swiss based IET and INCOSE lectures/seminars. He is the organiser of SWISSED, Switzerland's annual conference on Systems Engineering. In addition, he is the co-founder of SE-Training GmbH, specialising in high quality delivery of Systems Engineering training courses in Switzerland.

Chartered Engineer (IET 97325920) and Chartered Systems Engineering Professional (CSEP).



Marco Di Maio

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Kevin Howard

Dr Kevin Howard has more than 40 years' experience in engineering. He initially worked in radar and radio frequency systems, and for the last 25 years has focused on Systems Engineering and managing complexity. He has been Chief Engineer for a range of systems ranging from military vehicles to space-based sensor systems. He has been VP Systems Engineering for a Global organisation providing safe city and big data technology. He now provides Systems Engineering consultancy, and as Engineering Director helped establish Optima Systems Consultancy Ltd as one of the leading Systems Engineering specialists providing consultancy to the defence and energy sectors around the world.

Kevin has a PhD in Optimising Complex Systems, supported by Post Graduate qualifications in Psychology and Business Administration. He is a Chartered Engineer, an external examiner for Cranfield University.



MODEL DRIVEN ENGINEERING, ARCHITECTURE, AND DEVELOPMENT

Course Descriptions

This course targets professionals interested in model-driven engineering (MDE) in system and software development. It covers principles and techniques for creating and manipulating models at different abstraction levels. Trainees will learn about domain-specific modeling languages, metamodeling, model transformations and code generation. The course emphasises the benefits of MDE in improving productivity, maintainability, and reusability of systems. The aim is to equip trainees with practical skills in applying MDE approaches in their professional software development projects.

Learning Outcomes

- Understand the principles and benefits of model-driven engineering (MDE).
- Learn how to create and manipulate models at different abstraction levels.
- Acquire knowledge of domain-specific modeling languages and metamodeling.
- Develop skills in model transformations and code generation.
- Apply MDE approaches in software development projects for increased productivity and maintainability.

Who Should Attend?

- Systems Architects
- Systems Engineers
- Software Architects
- Software Developers
- Modelers

Course Rates

Early Bird: 2025 CHF | Regular: 2250 CHF

Duration

3 days

Delivered By



Vincent Arnould

Vincent Arnould brings over two decades of experience as a versatile leader and expert in the field of System Engineering and Architecture. His career spans in the defense domain, on avionics and maritime warfare systems. His expertise lies in Software Intensive Systems and Systems-of-Systems Architecture and System Engineering, supported by a robust skill set that includes transversal management, communication, and international collaboration. He has excelled in leadership roles at companies like Naval Group and Hensoldt Sensors GmbH, contributing to prestigious projects such as the Gowind-class Frigate, the Future Combat Air System (FCAS) and Maritime Airborne Warfare System (MAWS). Vincent's expertise lies in operational analysis, architectural design, and Model-Based System Engineering (MBSE), driving successful outcomes in the defense and avionics sectors. His transnational collaboration and commitment to rigorous quality standards like SysML further underscore his influence in the industry.



MODELING AND SIMULATION

Course Descriptions

This course is designed for professionals seeking to enhance their understanding and analysis of complex systems through modeling and simulation. Trainees will learn various modeling approaches, including discrete event simulation, agent-based modeling, system dynamics and Monte Carlo methods. The course covers topics such as model formulation, experimentation, verification, validation, training and exercises. Trainees will gain practical skills in developing simulation models and analyzing system behavior to support decision-making in their respective professional domains.

Learning Outcomes

- Understand the role of modeling and simulation in analysing complex systems.
- Learn various modeling approaches, including discrete event simulation and agent-based modeling.
- Acquire skills in model formulation, experimentation, verification, validation.

- Analyse system behavior through simulation to support decision-making.

Who Should Attend?

- Systems Analysts
- Decision-makers
- Researchers
- Engineers in various domains requiring simulation skills

Course Rates

Early Bird: 2025 CHF | Regular: 2250 CHF

Duration

3 days

Delivered By



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and avionics sectors. His transnational collaboration and commitment to rigorous quality standards like SysML further underscore his influence in the industry.



PRACTICAL ESTIMATIONS

Course Descriptions

Estimating is often a challenging competence within projects developing complex systems. Often this is caused by the application of inappropriate estimation methodologies, leading to severe consequences such as projects running out of budget prior to their planned completion.

This course establishes a profound fundament through the various phases and why different viewpoints on the numbers are necessary. Learn the different techniques and how to apply each within the lifecycle phase. Learn who to involve and when, how risk management comes into play and the importance of documenting the right assets at the right point of time.

In addition, the various psychological aspects involved with estimating are covered during the course.

Learning Outcomes

- Fundamental understanding about estimations. Purpose, Motivation, error sources
- Understand the psychological challenges of Estimation
- Fundamental understanding of stakeholders involved
- Know what to expect from different estimators

- Understand different estimation phases
- Know major estimation techniques and their application
- Understand the Estimation recipe - what belongs into an estimation and what to document
- Apply Risk and Assumptions Management to Estimations

Who Should Attend?

- Engineers
- Team Leads
- Project Managers
- Engineering Leaders
- Integration, Verification & Validation Engineers
- Product Owners

Course Rates

Early Bird Rates: 1,350 CHF. Regular Rates: 1,500 CHF

Duration

2 days

Delivered By



Oliver Fels

Oliver Fels has been the first independent European speaker at the 1997 JAVAOne conference and the first independent to speak three years in a row.

Since then, Oliver Fels has been working in major industries developing complex systems, filling various roles - as a project manager, department lead, systems

engineer, architect, product owner, requirements and methodology engineer, and more.

As a leading systems engineer, he supported revolutionize the Zürich public transport system, being responsible for the new passenger information concept. In a department lead role, he redesigned hands-on the first and business class sections for the 21st century of various international airlines.

With his high interest for sustainability and renewable energy, Oliver was also an active member of the Solar Impulse 2 project, the first solar flight around the world accomplished by Swiss entrepreneur and pioneer Bertrand Piccard.

Oliver is currently actively supporting sustainability and renewable energy projects using blockchain technology and is the inventor of the sustainability engineering methodology, which uses system engineering principles to aid enterprises structuring their sustainability strategies.

Oliver has held several speeches and international workshops in the area of systems engineering, IT security, and software development as well as coached engineers in leadership, requirements engineering, and other topics.

Having worked in various diversity environments, he highly emphasizes an intercultural and interoperational approach to working with people in which individuality and empathy are highly valued. As such, bringing his broad expertise to a wider audience is an important passion for him.

Oliver holds an engineering degree in computer science and electrical engineering.



PRACTICAL MBSE & SYSML

Course Descriptions

The Practical MBSE and SysML course provides a combination of the fundamentals of MBSE and the practical aspects of the adoption of MBSE with its concepts and key enablers for successful MBSE adoption.

The course first deals with explaining the why of MBSE based on the participants challenges with actual practices. Next, the elements of the MBSE adoption, i.e., process, method, language, and tool are explained and demonstrated with several practical exercises. Particularly, the how, i.e., the method element and its development is trained based on the participants objectives without promoting any specific modelling tool.

Finally, the course wraps up with a discussion of the human-factors of MBSE adoption and the business factors for defining, developing and deploying MBSE in real-world applications. Including what comes after MBSE is deployed to ensure a long-term strategical MBSE adoption.

The course includes individual exercises, as well as group exercises with a daily interactive workshop covering detailed MBSE use cases.

The course can be attended exclusively at a Customer's site or in one of our regular

external course venues, where there's a healthy mixture of engineers from different backgrounds.

No prior training is required.

Learning Outcomes

- What is MBSE, modelling language, modelling method and modelling tool?
 - SysML basic concepts, elements, relations, and diagrams
 - Why should we use MBSE and how it manages system engineering challenges •
- How to start with MBSE, what to do and what not to do
- How to develop or customize the aimed MBSE method
 - The human-factor aspects related to MBSE adoption
 - How to ensure the delivery of valuable and usable system models

Who Should Attend?

All engineers, particularly systems and software engineers/architects or those who work with requirements, concept description, traceability and aim at improving how they analyse, design, and manage their systems.

All managers, particularly those who aim at deploying MBSE to reduce design time, improve product quality, manage complex products, save cost and ensure reusability.

Course Rates

Early Bird Rates: 1,890 CHF. Regular Rates: 2,100 CHF

Duration

3 days

Delivered By



Mohammad Chami

Model based systems engineering expert with a solid academic and industrial experience in modelling languages, processes, developing and deploying methods for system modelling and customising its tools.

Other qualifications:

- Mohammad holds two master's degrees in Electronics and Mechatronics, and the OMG Certified Systems Modelling Professional Certificate (OCSMP)
- Has the Bombardier Recognition of appointment as "Engineering Management, Processes, Methods and Tools" Expert
- Is a member of INCOSE and actively participating in its chapters GfSE, SWISSED and other activities (e.g. OMG, NOSE, AFIS, MODELS).
- Author or co-author of numerous publications and gave various presentations and talks at international conferences.



PRODUCT-LINE ENGINEERING AND VARIANT MANAGEMENT

Course Descriptions

This course is an introduction to techniques for developing a package of related products using a common set of assets and reusable components. Trainees will learn about feature modeling, configuration management, variability management, product-line architecture, product derivation and software product-line development processes. The course aims to enhance the trainees' ability to manage product variants effectively and optimise their product-line development practices.

Learning Outcomes

- Understand the concept of product-line engineering and its benefits.
- Learn about feature modeling and configuration management.
- Acquire knowledge of variability management and its application in product-line development.

- Familiarise trainees with product-line architecture and product derivation techniques.
- Develop skills in software product-line development processes.
- Optimise product variant management practices for improved productivity.

Who Should Attend?

- Systems Architects
- Systems Engineers
- Software Engineers
- Product Managers
- Product Development Managers
- Configuration Managers

Course Rates

Early Bird: 2025 CHF | Regular: 2250 CHF

Duration

3 days

Delivered By



Vincent Arnould

Vincent Arnould brings over two decades of experience as a versatile leader and expert in the field of System Engineering and Architecture. His career spans in the defense domain, on avionics and maritime warfare systems. His expertise lies in Software Intensive Systems and Systems-of-Systems Architecture and System Engineering, supported by a robust skill set that includes transversal management, communication, and international collaboration. He has excelled in

leadership roles at companies like Naval Group and Hensoldt Sensors GmbH, contributing to prestigious projects such as the Gowind-class Frigate, the Future Combat Air System (FCAS) and Maritime Airborne Warfare System (MAWS). Vincent's expertise lies in operational analysis, architectural design, and Model- Based System Engineering (MBSE), driving successful outcomes in the defense and avionics sectors. His transnational collaboration and commitment to rigorous quality standards like SysML further underscore his influence in the industry.



QUALITY ON TIME

Course Descriptions

We will study and exercise techniques how to continuously improve our effectiveness and efficiency, how to predict what we will have done when and taking the consequence, solving the discipline problem, exploiting our intuition mechanism, continuously balancing priorities, keeping focus, coping with differences in disciplines and cultures, adopting a Zero-Defect attitude and preventing any stakeholder's complaints. Are you already doing all these things and do you think you are already very effective and efficient? That's what other people thought before they found out otherwise.

Learning Outcomes

- How to define the real requirements
- How to select the right solutions
- How to know what you can promise and then deliver as promised
- How to optimize efficient communication among people in projects
- In short: how to deliver the right things at the right time

Who Should Attend?

This workshop is intended for:

- Systems Engineers
- (Project) Managers
- Systems Architects
- Developers, Product Owners
- Scrum Masters
- QA Engineers

Course Rates

Early Bird Rate: 1,350 CHF. Regular Rate: 1,500 CHF

Duration

2 days

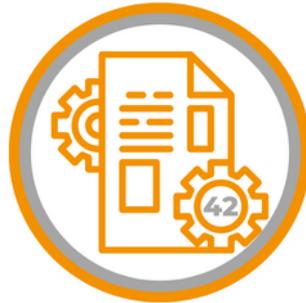
Delivered By



Niels Malotaux

Niels Malotaux is an independent Project Coach and expert in optimizing project performance. He has some 40 years of experience in designing electronic and software systems, at Delft University, in the Dutch Army, at Philips Electronics and 20 years leading a systems design company. Since 1998 he has devoted his expertise to helping projects and organizations to deliver Quality On Time: delivering what the customer needs, when they need it, to enable customer success. To this effect, Niels developed an approach for effectively teaching Evolutionary Project Management (Evo) Methods, Requirements Engineering, Review and Inspection techniques, as well as Reliable Embedded Systems Design and how to achieve Zero Defects for the customer. Since 2001, he has taught and coached well over 400 projects in 40+ organizations in the Netherlands, Belgium,

China, Germany, Ireland, India, Israel, Japan, Poland, Romania, Serbia, South Africa, the UK and the US, which has led to a wealth of experience in which approaches work better and which work less well in practice.



REQUIREMENTS ENGINEERING - THE HITCHHIKERS GUIDE

Course Descriptions

Did you ever come across a 42 problem? Probably yes. The 42 problem is an answer, for which we do not have the question. Like products, we have been developing over the years, omitting proper requirements documentation, which is the answers to needs, which have been forgotten long ago. Now, everybody is trying reverse engineering with great tools and struggles.

This course gives you the fundamentals of requirements engineering, stakeholder management, and requirements documentation. It builds the basis for a later CPRE certification and introduces you to the basics of RE and its purpose as well as tooling, organizing and communicating requirements in a collaborative and agile workflow. No more misunderstandings and no more 42 problems. Guaranteed.

Learning Outcomes

- Deep understanding about the motivation for requirements & stakeholders -

Capability to differentiate between challenge & solution spaces

- Awareness for the role of the Requirements Engineer
- Application of different types of requirements
- The good and the bad - requirements and quality
- Awareness of the importance of requirements for risk management
- Sorting, structuring and managing requirements
- Requirements verification and validation
- Application of the feature-based approach to requirements
- Toolings and sorting
- Requirements reuse and their role for modularity
- How to apply requirements for regulatory issues

Who Should Attend?

- Requirements Engineers
- Product Leads
- Product Owners
- Product Managers
- Sales Engineers
- Integration, Verification and Validation Engineers
- Project Managers

Course Rates

Early Bird Rate: 1,350 CHF. Regular Rate: 1,500 CHF

Duration

2 days

Delivered By



Oliver Fels

Oliver Fels has been the first independent European speaker at the 1997 JAVAOne conference and the first independent to speak three years in a row.

Since then, Oliver Fels has been working in major industries developing complex systems, filling various roles - as a project manager, department lead, systems engineer, architect, product owner, requirements and methodology engineer, and more.

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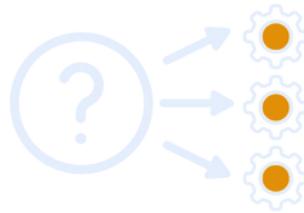
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Having worked in various diversity environments, he highly emphasizes an intercultural and interoperational approach to working with people in which individuality and empathy are highly valued. As such, bringing his broad expertise to a wider audience is an important passion for him.

Oliver holds an engineering degree in computer science and electrical engineering.



ROOT CAUSE ANALYSIS (RCA) FOR COMPLEX SYSTEMS

Course Descriptions

Systems engineering is focused on managing the development of a product or system rigorously to ensure failure-free operation, ideally for its whole life. Try as we might though, for many reasons things do fail. The complexity of many of the systems we design, combined with a complex and sometimes unpredictable environment, is such that emergent behaviour can have unforeseen consequences that have to be rectified. To address these problems we have to understand the root causes of such failures and in order to do this successfully, and avoid wasting precious time and resources, we have to approach this complex task in a structured way. We have to understand not only the technical aspects of the problem, but the political aspects associated with the involved stakeholders. The basic systems engineering approach and systems thinking methodologies can help us do that.

This course is presented primarily as an interactive workshop where participants get to solve a practical problem based on the failure of a real system. By working on an unfamiliar problem, the focus on the method is strengthened and its advantages are highlighted. An initial review of systems engineering principles that apply and an in-depth analysis of the problem solving techniques employed in these situations

equips the participants with the tools necessary to address the challenge presented in the workshop. The workshop provides the participants with the opportunity to work through a real failure case and present their findings. The outcome of the actual investigation is presented and discussed in a final review that enables the participants to evaluate their own performance.

Learning Outcomes

- Participants understand systems engineering principles that are applicable in complex problem solving.
- Participants understand the importance of considering stakeholder perspective and motivation.
- Participants develop an awareness of analysis methods and tools that can be applied in solving complex technical problems.
- Participants understand how to approach complex technical problems holistically.
- Participants are able to put the knowledge into practice and successfully identify the root cause of the actual system failure presented in the workshop.

Who Should Attend?

- Systems engineers
- System architects
- Project managers
- Development engineers
- Reliability engineers
- Quality engineers
- Integration, Verification and Validation Engineers
- Product owner

Course Rates

Early Bird: 2025 CHF | Regular: 2250 CHF

Duration

3 days

Delivered By



Marco Serra

Marco's professional experience, built over almost 30 years of working with clients in North America, Europe and Southern Africa, spans diverse roles in the aerospace, automotive, defence and energy industries. For example, as Systems Engineer Marco was involved in the initial conceptual development and technology transfer assessment of a sample handling and analysis system intended to receive and analyse material returned to Earth on Nasa's Mars Sample Return Mission. Marco also spends significant time consulting in the Oil & Gas and Energy industries providing system and component design support, conducting failure investigations, providing technical expertise in legal disputes, validating system designs, and developing analysis methodologies for complex fluid-mechanical simulations. More recently, Marco has been working on the thermomechanical design of optical terminals for inter-satellite communications.

Marco holds a Masters Degree in mechanical engineering from the University of Pretoria, South Africa (1993). He also holds a Masters Degree in Engineering and Management from the Massachusetts Institute of Technology, USA (2002), with a focus on Systems Architecture, Systems Engineering, and System and Project Management.



IMPROVING THE RESULT OF REVIEWS AND INSPECTIONS

Course Descriptions

Document Inspections are one of the most economical and necessary techniques for eliminating, and, even more important, preventing defects. Reviews are often done, but produce only a fraction of the really important defects that should be found. With only a few hours of proper Inspection training, people can find many more defects in a document, where they first found only one or two minor issues. This should give evidence that with proper education Reviews and Inspections indeed can provide the benefits promised. In this course we will discuss the Goal of projects, define Quality and Defect, explain the concept and the effect of Zero Defects, provide an overview of types of Inspections (Walkthroughs, Reviews, Fagan, Cleanroom, Gilb/Graham, Early Inspections), which Inspection type to choose, and how to calculate the Return on Investment of Inspections. We'll exercise what you learnt on your own document. Preparation: Bring three copies of one or two pages of a document that is not too confidential and being used in your current project, perhaps even already reviewed your usual way. Then you will show yourself the power of proper Inspections. Warning: after the Inspection you may decide to discard the document as unacceptable!

Learning Outcomes

- What are the various Review & Inspection approaches
- Why and when to use which approach
- How to find many more real issues in documents than you even can imagine •
- How to organize very effective reviews/inspections very efficiently
- How to prevent the emotions often arising in reviews
- How to calculate the Return on Investment of reviews and Inspections
- How to solve the issues found as efficiently as possible
- How to prevent the issues found to be caused again

Who Should Attend?

Anyone who is producing documents, should be producing documents or is supposed to evaluate documents, like contracts, business cases, requirements, use cases, story cards, designs, drawings, code, test plans.

Course Rates

Rate: 800 CHF

Duration

1 day

Delivered By



Niels Malotaux

Niels Malotaux is an independent Project Coach and expert in optimizing project performance. He has some 40 years of experience in designing electronic and software systems, at Delft University, in the Dutch Army, at Philips Electronics

and 20 years leading a systems design company. Since 1998 he has devoted his expertise to helping projects and organizations to deliver Quality On Time: delivering what the customer needs, when they need it, to enable customer success. To this effect, Niels developed an approach for effectively teaching Evolutionary Project Management (Evo) Methods, Requirements Engineering, Review and Inspection techniques, as well as Reliable Embedded Systems Design and how to achieve Zero Defects for the customer. Since 2001, he has taught and coached well over 400 projects in 40+ organizations in the Netherlands, Belgium, China, Germany, Ireland, India, Israel, Japan, Poland, Romania, Serbia, South Africa, the UK and the US, which has led to a wealth of experience in which approaches work better and which work less well in practice.



SE ADVANCED

Course Descriptions

This intensive 5-day course is delivered by four experts, each with a distinct range of knowledge, skills, and experience, meaning you will gain a diverse and comprehensive view of advanced SE, and an unparalleled, interactive learning experience.

This course has been devised to compliment your work within complex product development as you take on more responsibility and mature into more senior roles.

Learning Outcomes

- Identify common attributes and causes of complexity.
- Master the application of Systems Engineering methodologies to complex system developments.
- Master key technical management competences required for matrix/project

leaders.

- Apply soft skills applicable for technical matrix/project leaders.
- In a moderated workshop develop sustainable solutions in the System of Systems context.

Who Should Attend?

Intended for those who have completed an SE Foundations course or those looking to progress to/or currently in technical matrix leadership positions.

Course Rates

Early Bird: 3375 CHF | Regular: 3750 CHF

Duration

5 days

Delivered By



Seb Klaves

Sebastian has authored and reviewed numerous publications and likes to implement systems engineering principles.

After working at the Institute of Transport Science of RWTH Aachen as research associate, he worked at the German Aerospace Centre as Project Officer and as Project Systems Engineer at Bombardier.

Currently, Sebastian is heading the RAMS department at Siemens' Mobility division. He is actively involved in the committee of the Swiss Society of Systems

Engineering, is a certified Systems engineering professional and is giving systems engineering training at Siemens.

Sebastian enjoys approaching organisational and technical challenges with a 'rock solid' systems thinking approach.



Mike Johnson

Mike has worked leading challenging product development roles predominantly in the Space and Defence Industries since completing his Masters degree in Photonics and Optoelectronic devices at the University of St Andrews, UK.

He has worked predominantly in the roles of Systems Engineer, leading technical developments involving inter-disciplinary teams often consisting of Mechanical, Electrical, Technology, Software and Optical Engineers. He worked at RUAG Space, Zürich for five years. During this period he moved into management, leading the Systems Engineering group in the product unit Optoelectronics and Instruments. In addition he gave Systems Engineering training courses to the employees across the whole company, training circa 100 Engineers from a beginners to an advanced level.

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Chartered Engineer (IET 97325920) and Chartered Systems Engineering

Professional (CSEP).



Marco Di Maio

Marco has had many roles in Systems Engineering: Professor at a technical university, and Consultant for and Employee in the development of complex systems. He was the managing director of projectglobe - a boutique consultancy firm specialising in Model Based Systems Engineering (MBSE) and Information Management (IM) to support innovation driven engineering projects. Major customers are the fusion research community, the automotive industry, and 3D laser-welding and robotics companies.

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Together with partners from industry and academia, projectglobe have developed CLOSE - a Closed-Loop MBSE methodology based on robust semantic reference model. This model allows to automatically generate the required engineering artefacts in the correct format for SE teams and domain experts alike. The loop is closed by so-called "Experimentable" Digital Twins that provide in-the-loop feedback for all developers throughout the whole product life cycle. CLOSE runs on projectglobe's fractal data engine and thus allows for unlimited scalability in managing all project information.



Sandra Roth

Sandra is a leadership, team and change management coach with a decade of experience in R&D as a usability engineering expert, user experience leader and SW development department head in a global medical device manufacturer.

Sandra has a M.Sc. in Psychology, a Ph.D. in Human Computer Interaction and holds several coaching degrees.



SECURITY, CYBER AND RESILIENCE ENGINEERING

Course Descriptions

The focus of this course is on introducing principles and practices for analysing, designing and implementing secure and resilient systems, including cyber systems. Trainees will learn about threat analysis, risk assessment, risk mitigation, business continuity and the security accreditation process. The course aims to equip trainees with the knowledge and skills necessary to understand security management.

Learning Outcomes

- Understand the principles of Security, Cyber and Resilience Engineering.
- Analyse and identify potential threats and vulnerabilities in systems.
- Perform risk assessments and develop risk mitigation strategies.
- Implement security measures and practices to protect systems from cyber threats.

- Learn about business continuity and disaster recovery planning.
- Familiarise trainees with the security accreditation process for systems.
- Acquire skills in security management to ensure robust and resilient systems.

Who Should Attend?

- Security Analysts
- Cybersecurity Professionals
- Systems Architects
- Systems Engineers
- IT Managers
- Risk Managers

Course Rates

Early Bird: 2025 CHF | Regular: 2250 CHF

Duration

3 days

Delivered By



Vincent Arnould

Vincent Arnould brings over two decades of experience as a versatile leader and expert in the field of System Engineering and Architecture. His career spans in the defense domain, on avionics and maritime warfare systems. His expertise lies in Software Intensive Systems and Systems-of-Systems Architecture and System Engineering, supported by a robust skill set that includes transversal management, communication, and international collaboration. He has excelled in leadership roles at companies like Naval Group and Hensoldt Sensors GmbH,

contributing to prestigious projects such as the Gowind-class Frigate, the Future Combat Air System (FCAS) and Maritime Airborne Warfare System (MAWS). Vincent's expertise lies in operational analysis, architectural design, and Model-Based System Engineering (MBSE), driving successful outcomes in the defense and avionics sectors. His transnational collaboration and commitment to rigorous quality standards like SysML further underscore his influence in the industry.



SE FOUNDATIONS

Course Descriptions

The Systems Engineering foundations course provides a solid background of the core Systems Engineering discipline. Including learning and practicing the application of Systems Engineering methodologies, enhancing know-how with an interactive workshop, as well as individual and group exercises covering detailed use cases.

The course is intended for people working in engineering, across a diverse spectrum of roles and industries, with at least 18 months experience in their engineering field. The course attendance is strictly limited to a ratio of no greater than 8:1 Participants: Presenters, thus enhancing the effectiveness of the training. Given that Systems Engineering needs to be tailored to each Participant's unique needs,

increasing the Presenter's availability per Participant, is a key quality measure of this training course.

The course can be attended exclusively at a Customer's site or in one of our regular external course venues, where there's a healthy mixture of engineers from different backgrounds.

In addition, an evening meal with the course presenters is included in the course fees.

Learning Outcomes

- To know the origins of Systems Engineering
- To know the role, responsibilities and skills of a Systems Engineer
- To know the terms and definitions in accordance with ISO 15288 and the Systems Engineering Handbook
- To know how to apply Systems Engineering methodologies to complex project developments
- To conduct functional analysis for architecture optimisation
- To plan milestones with their corresponding baseline designation and control gate criterions
- To conduct a technical project risk analysis
- To define appropriate and cost-efficient Verification & Validation activities
- To know key document templates such as the Systems Engineering Management Plan
- To assess the scope of applying for Systems Engineering professional accreditation, ASEP or CSEP.

Who Should Attend?

This workshop is intended for:

- Requirements Engineers
- Systems Engineers
- Project Managers
- Verification Engineers
- Architects, Development Engineers
- Product Owners.

Course Rates

Normal price 2,700 CHF / EUR; Early Bird discount 2,430 CHF / EUR

Duration

3 days

Delivered By



Seb Klaves

Sebastian has authored and reviewed numerous publications and likes to implement systems engineering principles.

After working at the Institute of Transport Science of RWTH Aachen as research associate, he worked at the German Aerospace Centre as Project Officer and as Project Systems Engineer at Bombardier.

Currently, Sebastian is heading the RAMS department at Siemens' Mobility division. He is actively involved in the committee of the Swiss Society of Systems Engineering, is a certified Systems engineering professional and is giving systems engineering training at Siemens.

Sebastian enjoys approaching organisational and technical challenges with a 'rock solid' systems thinking approach.



Mike Johnson

Mike has worked leading challenging product development roles predominantly in the Space and Defence Industries since completing his Masters degree in Photonics and Optoelectronic devices at the University of St Andrews, UK.

He has worked predominantly in the roles of Systems Engineer, leading technical developments involving inter-disciplinary teams often consisting of Mechanical, Electrical, Technology, Software and Optical Engineers. He worked at RUAG Space, Zürich for five years. During this period he moved into management, leading the Systems Engineering group in the product unit Optoelectronics and Instruments. In addition he gave Systems Engineering training courses to the employees across the whole company, training circa 100 Engineers from a beginners to an advanced level.

Having moved to Roche Diagnostics International to lead the Systems Engineering team in Rotkreuz, Switzerland, he is now passionately applying his experience and knowledge of Systems Engineering to the Healthcare industry.

He is passionate about product development and especially the application of Systems Engineering. He is one of the founders of the Swiss Society of Systems Engineering (SSSE) and regularly attends Swiss based IET and INCOSE lectures/seminars. He is the organiser of SWISSED, Switzerland's annual conference on Systems Engineering. In addition, he is the co-founder of SE-Training GmbH, specialising in high quality delivery of Systems Engineering training courses in Switzerland.

Chartered Engineer (IET 97325920) and Chartered Systems Engineering Professional (CSEP).



Marco Di Maio

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SELF AND SOCIAL COMPETENCE FOR ENGINEERS

Course Descriptions

The Self and Social Competence course provides theoretical background and hands-on practical exercises across various “soft skills” topics that are pertinent to working in teams, especially tailored to the context of Engineers.

We all know technical ability is essential to every system engineer, but soft skills are just as valuable if you want to become an asset in the workplace. They are the characteristics imperative to building successful relationships and the attributes which empower you to make decisions and give you the confidence to manage yourself and inspire others.

Soft skills encompass a vast range of skills from communication, innovation, conflict resolution, adaptability, collaboration and motivation - all of which are vital in negotiating the dynamic engineering landscape. Yet, these are often overlooked in favour of technical learning, leaving many with a void of skills, and the opportunity to boost work practices.

Teams are complex systems, and so they must be managed as such.

Over two full days, we will cover the following areas:

- Self-management, self-competence and social competence.
- Understanding how our mental models and cognitive biases affect our actions.
- Refining and improving your communication style.
- How to have more successful interactions at work (and at home).
- Addressing conflicts and assessing ways to best resolve them.
- Identifying our individual stress coping techniques and discovering concrete ways to improve our energy balance in the long-term.

Learning Outcomes

Upon completion of the programme, participants will:

- gain awareness of their own mental models and cognitive biases
- be able to identify certain communication patterns in themselves and others, and thus be empowered to respond constructively.
- be confident in managing conflicts and in a productive manner.
- have developed conscious awareness of their own stress coping strategies, and the tools and techniques to navigate them for improved communication and overall wellbeing.

Who Should Attend?

Research and Development Engineers, Project Managers, Team Leaders and Individuals who:

- are interested in more constructive social interactions
- are looking to improve their stakeholder management skills
- are looking to enhance their team's spirit and engagement

Course Rates

Early Bird: 1,350 CHF | Regular: 1,500 CHF

Duration

2 days

Delivered By



Sandra Roth

Sandra is a leadership, team and change management coach with a decade of experience in R&D as a usability engineering expert, user experience leader and SW development department head in a global medical device manufacturer.

Sandra has a M.Sc. in Psychology, a Ph.D. in Human Computer Interaction and holds several coaching degrees.



SE MANAGEMENT

SE MANAGEMENT

Course Descriptions

The SE Management course's target audience are people working in engineering management roles, such as, Research and Development manager, Systems Engineering manager, Design and Development manager or any such role that involves implementing engineering organisational strategies and/or involves high interactions with the Systems Engineering leaders.

The course attendance is strictly limited to a ratio of no greater than 6:1 Participants: Presenters, thus enhancing the effectiveness of the training. Given that Systems Engineering needs to be tailored to each Participant's unique needs, increasing the Presenter's availability per Participant, is a key quality measure of this training course.

In addition, an evening meal with the course presenters is included in the course fees.

Learning Outcomes

- Understanding the value of Systems Engineering.
- How to establish an SE led organisation.
- Effectively implement processes to support an SE organisation.
- Implement SE roles and responsibilities and a SE professional development strategy.
- Integrate SE as a core discipline in the organisation, knowing how SE interacts from an inter-disciplinary perspective.

Who Should Attend?

- Engineering Team Leaders & Department Managers
- Engineering Managers
- Engineering Process Owners
- Senior Management
- Quality Managers

Course Rates

Early Bird Rate: 1,350 CHF. Regular Rate: 1,500 CHF

Duration

2 days

Delivered By



Mike Johnson

Mike has worked leading challenging product development roles predominantly in the Space and Defence Industries since completing his Masters degree in

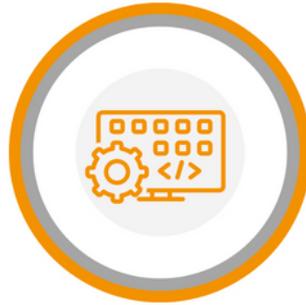
Photonics and Optoelectronic devices at the University of St Andrews, UK.

He has worked predominantly in the roles of Systems Engineer, leading technical developments involving inter-disciplinary teams often consisting of Mechanical, Electrical, Technology, Software and Optical Engineers. He worked at RUAG Space, Zürich for five years. During this period he moved into management, leading the Systems Engineering group in the product unit Optoelectronics and Instruments. In addition he gave Systems Engineering training courses to the employees across the whole company, training circa 100 Engineers from a beginners to an advanced level.

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He is passionate about product development and especially the application of Systems Engineering. He is one of the founders of the Swiss Society of Systems Engineering (SSSE) and regularly attends Swiss based IET and INCOSE lectures/seminars. He is the organiser of SWISSED, Switzerland's annual conference on Systems Engineering. In addition, he is the co-founder of SE-Training GmbH, specialising in high quality delivery of Systems Engineering training courses in Switzerland.

Chartered Engineer (IET 97325920) and Chartered Systems Engineering Professional (CSEP).



SOFTWARE REQUIREMENTS ENGINEERING

Course Descriptions

This course covers the process of eliciting, documenting, analysing and managing software requirements requiring the use of techniques for capturing and validating requirements, including interviews, surveys, prototyping and case modeling. The course also covers requirements prioritisation, traceability and management throughout the system and software development lifecycle. The aim is to empower trainees with the skills to bridge the gap between stakeholders and development teams by translating user needs into well-defined system requirements.

Learning Outcomes

- Understand the requirement engineering process and its importance in software development.
- Learn various techniques for eliciting and documenting software requirements.
- Acquire skills in requirements analysis, validation, and prioritisation.
- Explore methods for traceability and requirement management throughout the

development lifecycle.

- Bridge the gap between stakeholders and development teams effectively.

Who Should Attend?

- Business Analysts
- Systems Analysts
- Requirements Engineers
- Software Developers
- Project Managers

Course Rates

Early Bird: 2025 CHF | Regular: 2250 CHF

Duration

3 days

Delivered By



Vincent Arnould

Vincent Arnould brings over two decades of experience as a versatile leader and expert in the field of System Engineering and Architecture. His career spans in the defense domain, on avionics and maritime warfare systems. His expertise lies in Software Intensive Systems and Systems-of-Systems Architecture and System Engineering, supported by a robust skill set that includes transversal management, communication, and international collaboration. He has excelled in leadership roles at companies like Naval Group and Hensoldt Sensors GmbH, contributing to prestigious projects such as the Gowind-class Frigate, the Future Combat Air System (FCAS) and Maritime Airborne Warfare System (MAWS).

Vincent's expertise lies in operational analysis, architectural design, and Model-Based System Engineering (MBSE), driving successful outcomes in the defense and avionics sectors. His transnational collaboration and commitment to rigorous quality standards like SysML further underscore his influence in the industry.



SYSTEM DYNAMICS

Course Descriptions

Making the right decision in a complex context is difficult. We are able to understand and resolve simple cause and effect relationships, or causal loops, without too much trouble. However, in the real world these simple causal loops have themselves relationships with other causal loops and once more than a few combine, the emergent behaviour is very often complex and non-intuitive. The world is full of examples of seemingly simple solutions to apparently clear problems that then turn out to be more complex than initially thought, resulting in unintended and sometimes disastrous consequences.

In this course, participants learn to apply systems thinking principles to interpret cause and effect relationships in different systems in order to model them. A short introduction to system dynamics modelling software enables participants to initially build and simulate simple systems in order to gain practical confidence in the use of these types tools. Following this, participants collaborate in teams, with the guidance of the instructor, in an interactive workshop in which they get to build a generic project model that is used to evaluate the effect of a number of technical project management policies on schedule and cost. The gained insights are used to make a number of key decisions and recommendations to senior management (represented by the instructor) in a public presentation.

Learning Outcomes

- Participants understand the concept of systems thinking and can apply it.
- Participants understand the concept of causal loops and know how to represent them for simple relationships.
- Participants understand that different causal loops can relate to each other and know how to represent those relations.
- Participants understand the issues associated with non-intuitive emergent behaviour due to increasing complexity.
- Participants are able to assemble basic causal loops into larger system dynamic models.
- Participants are able to simulate and interrogate a system dynamics model to gain insight into non-intuitive emergent dynamics

Who Should Attend?

- Systems engineers
- System architects
- Project managers
- Product owners
- Engineering Team leaders
- Anyone with an interest in system dynamics

Course Rates

Early Bird: 2700 CHF | Regular: 3000 CHF

Duration

4 days

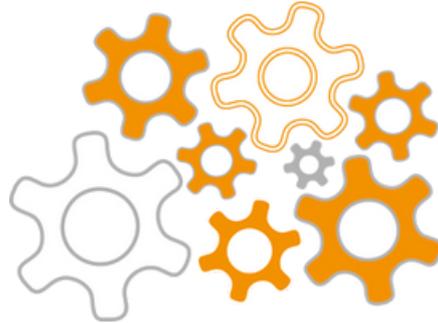
Delivered By



Marco Serra

Marco's professional experience, built over almost 30 years of working with clients in North America, Europe and Southern Africa, spans diverse roles in the aerospace, automotive, defence and energy industries. For example, as Systems Engineer Marco was involved in the initial conceptual development and technology transfer assessment of a sample handling and analysis system intended to receive and analyse material returned to Earth on Nasa's Mars Sample Return Mission. Marco also spends significant time consulting in the Oil & Gas and Energy industries providing system and component design support, conducting failure investigations, providing technical expertise in legal disputes, validating system designs, and developing analysis methodologies for complex fluid-mechanical simulations. More recently, Marco has been working on the thermomechanical design of optical terminals for inter-satellite communications.

Marco holds a Masters Degree in mechanical engineering from the University of Pretoria, South Africa (1993). He also holds a Masters Degree in Engineering and Management from the Massachusetts Institute of Technology, USA (2002), with a focus on Systems Architecture, Systems Engineering, and System and Project Management.



SYSTEMS APPROACH TO PROJECT MANAGEMENT

Course Descriptions

This course defines a holistic approach to project management for the development of new complex techno-centric systems. The emphasis is on the relationships and interconnections between project management processes and systems engineering processes for new complex systems. Specific topics include change management, strategy, project organization, team development, leadership styles, priorities, task development, scheduling, cost estimation, performance monitoring, constraint management, and project audits. Students apply these concepts on a project while working in teams. Mastery of these key tools is important for career development, as projects are a major approach for organizations to achieve their strategic goals.

Learning Outcomes

- Understand and be able to apply the systems approach to project management.
- Know the methodology of project planning, monitoring and control.
- Know how the methodology is applied.
- Be able to plan and validate plans for techno-centric systems.
- Be able to anticipate, plan and manage change in systems development projects.

Who Should Attend?

- Managers and engineers who wish to sharpen their project management skills in managing the development of increasingly complex techno-centric systems.
- Managers looking for a better way to manage.
- Managers facing complicated problems.
- Managers wanting to improve their thinking and communication skills

Course Rates

Early Bird Rates: 2,160 CHF. Regular Rates: 2,400 CHF

Duration

4 days

Delivered By



Joe Kasser

Joseph Kasser has been a practicing systems engineer for almost 50 years and an academic for 20 years. He is a Fellow of the Institution of Engineering and Technology (IET), a Fellow of the Institution of Engineers (Singapore), the author of “Perceptions of Systems Engineering”, “Holistic Thinking: creating innovative solutions to complex problems”, “A Framework for Understanding Systems Engineering” and “Applying Total Quality Management to Systems Engineering” and many INCOSE symposia and other conference and journal papers.

He is a recipient of NASA’s Manned Space Flight Awareness Award (Silver Snoopy) for quality and technical excellence for performing and directing systems engineering and other awards.

He holds a Doctor of Science in Engineering Management from The George Washington University.

He is a Certified Manager, a Chartered Engineer in both the UK and Singapore and holds a Certified Membership of the Association for Learning Technology.

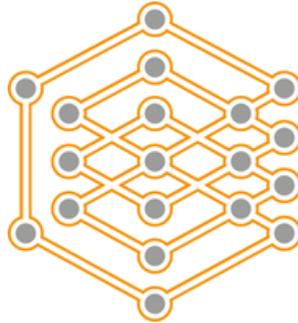
He has performed and directed systems engineering in the USA, Israel and Australia. He gave up his positions as a Deputy Director and DSTO Associate Research Professor at the Systems Engineering and Evaluation Centre at the University of South Australia in early 2007 to move to the UK to develop the world's first immersion course in systems engineering as a Leverhulme Visiting Professor at Cranfield University.

He spent 2008-2016 as a Visiting Associate Professor at the National University of Singapore where he taught and researched the nature of systems engineering, systems thinking and how to improve the effectiveness of teaching and learning in postgraduate and continuing education. He is currently based in Adelaide, Australia.

His many awards include:

- National University of Singapore, 2008-2009 Division of Engineering and Technology Management, Faculty of Engineering Innovative Teaching Award for use of magic in class to enrich the student experience.
- Best Paper, Systems Engineering Technical Processes track, at the 16th Annual Symposium of the INCOSE, 2006, and the 17th Annual Symposium of the INCOSE, 2007.
- United States Air Force (USAF) Office of Scientific Research Window on Science program visitor, 2004.
- Inaugural SEEC "Bust a Gut" Award, SEEC, 2004.
- Employee of the Year, SEEC, 2000.
- Distance Education Fellow, University System of Maryland, 1998-2000.
- Outstanding Paper Presentation, Systems Engineering Management track, at the 6th Annual Symposium of the INCOSE, 1996.
- Distinguished Service Award, Institute of Certified Professional Managers (ICPM), 1993.
- NASA Goddard Space Flight Center Community Service Award, 1990.
- The E3 award for Excellence, Endurance and Effort, Radio Amateur Satellite Corporation (AMSAT), 1981, and three subsequent awards for outstanding performance.

- Letters of commendation and certificates of appreciation from employers and satisfied customers including the:
- American Radio Relay League (ARRL).
- American Society for Quality (ASQ).
- Association for Quality and Participation (AQP).
- Communications Satellite Corporation (Comsat).
- Computer Sciences Corporation (CSC).
- Defence Materiel Organisation (Australia).
- Institution of Engineers (Singapore).
- IET Singapore Network.
- Loral Corporation.
- Luz Industries.
- Systems Engineering Society of Australia (SESA).
- University of South Australia.
- United States Office of Personnel Management (OPM).
- University System of Maryland.
- Wireless Institute of Australia.



SYSTEMS ARCHITECTING INTERMEDIATE LEVEL

Course Descriptions

This three-day intermediate level course covers the WHY, WHAT and HOW of Systems Architecting by teaching the following:

Understanding the WHY: The need for employing architectures to help cope with the overwhelming nature of complexity.

Explaining the WHAT: Architectures provide different system perspectives and are ideal entry points to effectively structure your information.

Introducing HOW: Modelling System Architectures using the COFLP Framework: Contextual/Operational/Functional/Physical/Logical.

- Top-Down modelling of Operations (Missions/Scenarios/Use Cases) yields clarity

and allows for re-use of Functions;

- The Functional Architecture elicits Requirements: Functions = Functional RQ; Object Flows = Performance
- The Logical Architecture makes high-level technology and responsibility choices providing the means for identifying Operational & Functional IF
- The Physical Architecture is different in nature, as its elements have to match the Functional Specs which typically happens at the lowest level (bottom-up). They then have to be integrated taking into account all physical constraints concentrating on the optimum (co-)location.

Learning Outcomes

- What is systems architecture and how does it differ from the system design?
- How does it relate to Systems and Holistic Thinking?
- What makes a good architecture: how many architectures do we need?
- What makes up a good architecture so important in the context of complex systems?
- Why are Interfaces such a fundamental concept in Systems Architectures?
- What is the relationship between the Operational Architecture and systems control?
- Can/should we develop the architectures for a system and its Digital Twin together?
- How does it help with decision making for an uncertain development environment?
- Why is it important to develop variants and provide variation points and how do they relate to the interfaces?
- What is a logical and repeatable methodology to develop architectures?
- How can we model the architectures? Do we need MBSE? Do we need tools?
- How can we ensure that the models are consistent and connected?
- Where can one customise the architectures?
- When is an agile approach permissible, when should you take extreme caution?
- How do architectures help developing the system for safety, reliability, availability, maintainability, and inspectability?
- Why is it important to separate the system's (sometimes called "logical") from the physical architectures?
- How do all architecture map to the others? Why is mapping a powerful mechanism in developing for complexity?
- What is the timing relationship between the various system (logical) architectures and the physical design?
- What are the main skills of a senior Systems Architect?

Who Should Attend?

Systems Engineers, Lead/Senior Engineers, Systems Analysts and Systems Architects.

Course Rates

Early Bird: 2025 CHF | Regular: 2250 CHF

Duration

3 days

Delivered By



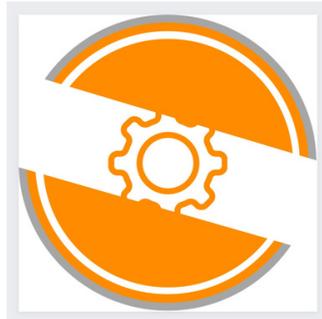
Marco Di Maio

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Together with partners from industry and academia, projectglobe have developed CLOSE - a Closed-Loop MBSE methodology based on robust semantic reference

model. This model allows to automatically generate the required engineering artefacts in the correct format for SE teams and domain experts alike. The loop is closed by so-called "Experimentable" Digital Twins that provide in-the-loop feedback for all developers throughout the whole product life cycle. CLOSE runs on projectglobe's fractal data engine and thus allows for unlimited scalability in managing all project information.



SYSTEMS ENGINEERING: IN A NUTSHELL

Course Descriptions

Are you curious about the role of a Systems Engineer? How are they different to other engineers and what benefits do they bring to teams and organisations? Are you considering employing a systems engineer but would like to have more clarity about the role first?

Or perhaps you would like to understand the discipline of Systems Engineering a little more? What is it and why does your company need it? How can it enhance complex product design, development and realisation? How does Systems Engineering relate to your department?

If these are the questions that you would like the answers to then let Systems Engineering expert Mike Johnson help. He will explain the who's, what's and why's of Systems Engineering in a straightforward way. By giving you real-life examples of how Systems Engineering can add value to your organisation and efficiency to your

projects (think improved processes, revenue targets, quality & performance) you will have a clear understanding of both the role and the discipline.

Mike will also discuss pointers to include in your job advertisements for Systems Engineers' positions as well as highlight which qualifications, experience and skills make a well-rounded Systems Engineer.

You will also learn some handy tips for interview questions so you can feel confident in selecting a suitable candidate for your team/organisation.

This is an interactive course with opportunities to ask questions throughout.

Learning Outcomes

- Understand the basic principles of the Systems Engineering discipline benefiting the adjacent departments such as, Human Resources, Quality, Procurement, Finance, Operations and Support.
- Understand the value of Systems Engineering.
- Understand the role and responsibilities of a Systems Engineer.
- Understand the value a Systems Engineer can add to a team or organisation.
- Understand how to attract a quality Systems Engineer to your company when advertising for a position.
- Know what to ask in an interview.
- Know what to look for when selecting a candidate.

Who Should Attend?

- Human Resources
- Quality engineering Department
- Finance and Procurement Departments
- Operations and Support Departments

Course Rates

Early Bird: 360 CHF | Regular: 400 CHF

Duration

1.0 day

Delivered By



Mike Johnson

Mike has worked leading challenging product development roles predominantly in the Space and Defence Industries since completing his Masters degree in Photonics and Optoelectronic devices at the University of St Andrews, UK.

He has worked predominantly in the roles of Systems Engineer, leading technical developments involving inter-disciplinary teams often consisting of Mechanical, Electrical, Technology, Software and Optical Engineers. He worked at RUAG Space, Zürich for five years. During this period he moved into management, leading the Systems Engineering group in the product unit Optoelectronics and Instruments. In addition he gave Systems Engineering training courses to the employees across the whole company, training circa 100 Engineers from a beginners to an advanced level.

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He is passionate about product development and especially the application of Systems Engineering. He is one of the founders of the Swiss Society of Systems Engineering (SSSE) and regularly attends Swiss based IET and INCOSE lectures/seminars. He is the organiser of SWISSED, Switzerland's annual conference on Systems Engineering. In addition, he is the co-founder of SE-Training GmbH, specialising in high quality delivery of Systems Engineering training courses in Switzerland.

Chartered Engineer (IET 97325920) and Chartered Systems Engineering Professional (CSEP).



SYSTEMS ENGINEERING - PROFESSIONAL DEVELOPMENT PROGRAMME (SE-PDP)

Course Descriptions

The SE-PDP addresses a fundamental need of many Organisations. With a shortage of senior Systems Engineers and Lead Systems Engineers, how can their teams rapidly increase their SE maturity and capabilities in a low risk, cost effective and fully customised professional development programme.

The SE-PDP is structured to be delivered over four on-site training sessions, covering three main areas of Systems Engineering:

1. End-to-end complex systems development (6-days)
2. Integrating specialities / quality attributes applicable to the Customer (3-days)
3. SE Matrix Management & Leadership (3-days)

The SE-PDP is only offered in-house and is highly customisable to project teams and their organisations.

Learning Outcomes

- Identify common attributes and causes of complexity.

- Master the application of Systems Engineering methodologies to complex system developments.
- Master key technical management competences required for Senior Systems Engineers, technical matrix leaders.
- In a moderated workshop develop sustainable solutions in the System of Systems context.

Who Should Attend?

- Systems engineers
- System architects •
System analysts
- Project managers
- Product owners
- Engineering teams

Course Rates

Please contact us for a customised offer.

Duration

12 days

Delivered By



Seb Klaves

Sebastian has authored and reviewed numerous publications and likes to implement systems engineering principles.

After working at the Institute of Transport Science of RWTH Aachen as research

associate, he worked at the German Aerospace Centre as Project Officer and as Project Systems Engineer at Bombardier.

Currently, Sebastian is heading the RAMS department at Siemens' Mobility division. He is actively involved in the committee of the Swiss Society of Systems Engineering, is a certified Systems engineering professional and is giving systems engineering training at Siemens.

Sebastian enjoys approaching organisational and technical challenges with a 'rock solid' systems thinking approach.



Mike Johnson

Mike has worked leading challenging product development roles predominantly in the Space and Defence Industries since completing his Masters degree in Photonics and Optoelectronic devices at the University of St Andrews, UK.

He has worked predominantly in the roles of Systems Engineer, leading technical developments involving inter-disciplinary teams often consisting of Mechanical, Electrical, Technology, Software and Optical Engineers. He worked at RUAG Space, Zürich for five years. During this period he moved into management, leading the Systems Engineering group in the product unit Optoelectronics and Instruments. In addition he gave Systems Engineering training courses to the employees across the whole company, training circa 100 Engineers from a beginners to an advanced level.

Having moved to Roche Diagnostics International to lead the Systems Engineering team in Rotkreuz, Switzerland, he is now passionately applying his experience and knowledge of Systems Engineering to the Healthcare industry.

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conference on Systems Engineering. In addition, he is the co-founder of SE-Training GmbH, specialising in high quality delivery of Systems Engineering training courses in Switzerland.

Chartered Engineer (IET 97325920) and Chartered Systems Engineering Professional (CSEP).



Mohammad Chami

Model based systems engineering expert with a solid academic and industrial experience in modelling languages, processes, developing and deploying methods for system modelling and customising its tools.

Other qualifications:

- Mohammad holds two master's degrees in Electronics and Mechatronics, and the OMG Certified Systems Modelling Professional Certificate (OCSMP)
- Has the Bombardier Recognition of appointment as "Engineering Management, Processes, Methods and Tools" Expert
- Is a member of INCOSE and actively participating in its chapters GfSE, SWISSED and other activities (e.g. OMG, NOSE, AFIS, MODELS).
- Author or co-author of numerous publications and gave various presentations and talks at international conferences.



Marco Di Maio

Marco has had many roles in Systems Engineering: Professor at a technical university, and Consultant for and Employee in the development of complex systems. He was the managing director of projectglobe - a boutique consultancy firm specialising in Model Based Systems Engineering (MBSE) and Information Management (IM) to support innovation driven engineering projects. Major customers are the fusion research community, the automotive industry, and 3D laser-welding and robotics companies.

Marco holds a PhD in nuclear engineering and a Masters in Operational Research. In his role as research fellow at Europe's largest fusion laboratory, JET near Oxford, he devised a novel diagnostic system, which earned him a world-wide patent. Marco then worked for the automotive industry managing product development and launch projects for the emerging markets of Eastern Europe and Russia before co-founding projectglobe with the purpose to devise novel methodologies, frameworks and tools that combine MBSE with IM to enable effective innovation and product development.

Together with partners from industry and academia, projectglobe have developed CLOSE - a Closed-Loop MBSE methodology based on robust semantic reference model. This model allows to automatically generate the required engineering artefacts in the correct format for SE teams and domain experts alike. The loop is closed by so-called "Experimentable" Digital Twins that provide in-the-loop feedback for all developers throughout the whole product life cycle. CLOSE runs on projectglobe's fractal data engine and thus allows for unlimited scalability in managing all project information.



Sandra Roth

Sandra is a leadership, team and change management coach with a decade of experience in R&D as a usability engineering expert, user experience leader and SW development department head in a global medical device manufacturer.

Sandra has a M.Sc. in Psychology, a Ph.D. in Human Computer Interaction and holds several coaching degrees.



Marco Serra

Marco's professional experience, built over almost 30 years of working with clients in North America, Europe and Southern Africa, spans diverse roles in the aerospace, automotive, defence and energy industries. For example, as Systems Engineer Marco was involved in the initial conceptual development and technology transfer assessment of a sample handling and analysis system intended to receive and analyse material returned to Earth on Nasa's Mars Sample Return Mission. Marco also spends significant time consulting in the Oil & Gas and Energy industries providing system and component design support, conducting failure investigations, providing technical expertise in legal disputes, validating system designs, and developing analysis methodologies for complex fluid-mechanical simulations. More recently, Marco has been working on the

thermomechanical design of optical terminals for inter-satellite communications.

Marco holds a Masters Degree in mechanical engineering from the University of Pretoria, South Africa (1993). He also holds a Masters Degree in Engineering and Management from the Massachusetts Institute of Technology, USA (2002), with a focus on Systems Architecture, Systems Engineering, and System and Project Management.



Gordon Woods

Gordon has a wealth of experience in requirements management, driving innovations in the defence, aerospace and nuclear and rail industries. He has previously worked on fast jets, military drones, UK and US tank system and trainers, satellite systems and nuclear submarines. For the last eight years he has specialised in supporting requirements management in rail projects including HS2 and East West Rail in the UK; High Speed Rail, Mass Rapid Transit, Light Rail Transit projects in Malaysia; the Qatar metro and tram projects; the Riyadh metro and lately the NEOM Backbone railway projects in Saudi Arabia.

He has brought his own unique style to the elicitation and specification of requirements, the Verification and Validation of the design products and safety assurance, all within a progressive assurance environment.



Kevin Howard

Dr Kevin Howard has more than 40 years' experience in engineering. He initially worked in radar and radio frequency systems, and for the last 25 years has focused on Systems Engineering and managing complexity. He has been Chief Engineer for a range of systems ranging from military vehicles to space-based sensor systems. He has been VP Systems Engineering for a Global organisation providing safe city and big data technology. He now provides Systems Engineering consultancy, and as Engineering Director helped establish Optima Systems Consultancy Ltd as one of the leading Systems Engineering specialists providing consultancy to the defence and energy sectors around the world.

Kevin has a PhD in Optimising Complex Systems, supported by Post Graduate qualifications in Psychology and Business Administration. He is a Chartered Engineer, an external examiner for Cranfield University.



SYSTEMS RELIABILITY

Course Descriptions

The system reliability course provides in depth knowledge and training on the practical analysis and modelling of system reliability. The participants will firstly be introduced to the relationships between reliability, availability and maintainability. They will learn how to manage availability and maintainability while analysing and determining the system's reliability. The participants will not only learn about the concepts but will deepen their understanding in workshops.

Course Outline:

- Introduction to reliability concepts and reliability models
- Calculation, Analysis and Prognosis of Reliability
- Failure Modes and its use in FMECA
- Assuring System reliability
- Providing Evidence of System's reliability

Learning Outcomes

Participants know how to analyse, model and predict system reliability.

Participants understand the common reliability terminologies and commonly used reliability models.

Participants learn and practice :

- Functional Failure Modes, Effects, and Criticality Analysis (FMECA)
- FMECA's for Electro-mechanical systems
- Analysis, prediction and monitoring of system reliability

Who Should Attend?

- Engineers
- Quality Assurance Managers
- RAM Managers
- Reliability engineers and anyone who needs to assure and/or analyse system's reliability.

Course Rates

Early Bird: 1,350 CHF; Regular: 1,500 CHF

Duration

2 days

Delivered By



Seb Klaves

Sebastian has authored and reviewed numerous publications and likes to implement systems engineering principles.

After working at the Institute of Transport Science of RWTH Aachen as research associate, he worked at the German Aerospace Centre as Project Officer and as Project Systems Engineer at Bombardier.

Currently, Sebastian is heading the RAMS department at Siemens' Mobility division. He is actively involved in the committee of the Swiss Society of Systems Engineering, is a certified Systems engineering professional and is giving systems engineering training at Siemens.

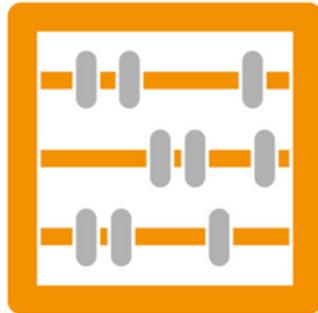
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TECHNICAL PROBLEM SOLVING

Course Descriptions

Solving complex problems is one of the most urgently required skills in our current time. As technologies become more advanced, the possible solutions created by them become more and more complex to understand, design for and successfully implement. This can be seen across multiple industries and is causing significant front line issues to reliability, maintenance, project cost, product performance and overall schedules.

In this one-day course a systematic methodological process for applying to technical complex problem solving shall be taught. Each stage of the process shall be expanded to include real-world examples in addition to various approaches for tailoring and applying the process. The course includes a moderated group workshop where a modern day example shall be worked through.

In addition, an evening meal with the course presenter is included in the fees.

Learning Outcomes

- Understanding and application of a Systematic methodological process for applying to technical complex problem solving
- Experience using numerous techniques for finding and developing high value

solutions, eg Triz.

- Experience using numerous techniques for evaluating the value of technical solutions, eg Extended trade-off.
- Experience leading the technical workshop group for one session.

Who Should Attend?

- Systems Engineers
- Technical Leaders
- Project Managers
- Requirements Engineers
- System Architects
- Development Engineers
- Verification and Validation Engineers
- Quality Engineers

Course Rates

Regular: 800 CHF

Duration

1 day

Delivered By



Mike Johnson

Mike has worked leading challenging product development roles predominantly in the Space and Defence Industries since completing his Masters degree in Photonics and Optoelectronic devices at the University of St Andrews, UK.

He has worked predominantly in the roles of Systems Engineer, leading technical developments involving inter-disciplinary teams often consisting of Mechanical, Electrical, Technology, Software and Optical Engineers. He worked at RUAG Space, Zürich for five years. During this period he moved into management, leading the Systems Engineering group in the product unit Optoelectronics and Instruments. In addition he gave Systems Engineering training courses to the employees across the whole company, training circa 100 Engineers from a beginners to an advanced level.

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Chartered Engineer (IET 97325920) and Chartered Systems Engineering Professional (CSEP).



TECHNICAL PROJECT MANAGEMENT

Course Descriptions

The Technical Project Management course provides a solid background of the core Project management disciplines applicable for Engineers taking greater responsibilities for delivering Work Packages and projects where the Project Manager and Systems Engineer need to work close together or where their roles have been combined due to the the project constraints.

The course includes the learning and practicing the application of the Project management methodologies, knowledge areas and enhancing know-how with an interactive workshop covering Project life-cycle and project management knowledge areas. Of focus is the interaction of technical project management and engineering in the areas where both disciplines overlap, to know the synergies and gain understanding of their constraints.

The course attendance is limited to no greater than 12 Participants, thus enhancing the effectiveness of the training.

Learning Outcomes

- To know the project life-cycle and framework
- To know the major project management knowledge areas as scope, time and cost

- To know configuration and change management
- To understand resource and quality management
- How to implement project risk management and mitigation strategies
- To effectively communicate with stakeholders within and outside the project

Who Should Attend?

The workshop is intended for:

- Systems Engineers
- Technical Project Managers
- Engineering Development Matrix Leaders
- Work Package Owners
- PMO

Course Rates

Early Bird: 1,080 CHF; Regular: 1,200 CHF

Duration

2 days

Delivered By



Piet Belgraver

Piet Belgraver started his career as electronic development engineer for several engineering companies in the Netherlands. He continued extending his technical expertise in the high volume consumer electronics industry as a senior design engineer when he moved to Denmark. During this time, he took over the role of hardware project leader for several known Nokia mobile phones. In his role his

focus was to coordinate the local and global projects teams to achieve on-time delivery in factories world-wide.

After six years working for Nokia, he moved to Switzerland to work in the Aerospace industry at RUAG Space. In 2016 he moved to Thales Alenia Space when part of RUAG Space was sold to Thales Alenia Space. He currently he has the position of senior project manager for several space projects at Thales Alenia Space.

He is certified (IPMA) senior project manager with more than 15 years of experience in technical project management ranging from high volume consumer electronics to high quality Aerospace industry