

Module description

The system architect is responsible that a system fits in its context and that a system has a sound design. Meeting system reliability requirements is very important from a business point of view. Not meeting system reliability requirements may result in dissatisfied customers, high warranty cost, and negative business results.

The objective of this course is to provide the participants understanding and knowledge on:

- the impact of product reliability on all aspects of a business
- the influence of the reliability characteristics of hardware and software on system reliability
- engineering techniques and methods to build a reliable system
- architecting for reliability

Further the participants are trained in how to present reliability issues to management.

Module organization

This modular course combines lectures, exercises and real life case studies. Participants will be invited to bring in their own experiences

Module audience

This modular course is of interest to system designers and system architects with multiple years of industrial experience in multi-disciplinary system design who are in the need to understand reliability on a system level scope, or are involved in system design trade-offs.

Courseware

Participants receive a binder containing notes specially developed for this course.

Module registration & information

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Day 1	Session 1	Introduction and Positioning: general overview of the impact of system reliability on the business, on product development, and the role of the system architect; introduction of participant's cases.
	Session 2	Business views on reliability: impact of system design on reliability in the product life cycle; impact of reliability on customer satisfaction; product and program management, service, supply chain, and production; improvement processes; how to present reliability issues to management.
Day 2	Session 3	Reliability theory: reliability definitions and calculations; reliability characteristics of mechanics, electronics, and software; impact of mono-disciplinary reliability on system reliability.
	Session 4	Reliability engineering and system engineering: an overview of methods and techniques to develop a reliable system: life time testing, life data analysis, failure mode and effect analysis, 8D problem solving, graphical representations; examples and exercises.
Day 3	Session 5	Architecting: architecting techniques to improve system reliability: modularity, budgeting, defensive design, software patterns; architecting for new developments; architecting in sustaining phase.
	Session 6	Management presentation: during the course the participants work on the presentation of their own reliability case; presentation of the cases to a management team.

