

# The System Engineering of Interfaces

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**Abstract.** This course is designed for systems engineering practitioners with some practical experience of requirements specification and / or integration. Some previous experience handling interfaces is desirable, but not essential. If you are newly transferred into systems engineering, this training will provide you with the structure and fundamental skills required to grow in your role. It will also work well as a refresher with challenging exercises for those that are well established as a design authority or systems engineering manager. Unresolved interface issues, and mishandling of interface requirements, are huge cost drivers in today's complex system projects. More than just running through a standard process, the thinking behind best practice and cost avoidance is explained. The course capitalizes as much as possible on the instructors' real-life experience and from delegates' experiences. It incorporates group work to demonstrate the practices and the difficulties that can arise. The style of the course is interactive, based on an exercise for a hypothetical system, rather than delivered by PowerPoint. However, a set of reference notes and slides will be provided. By the end of the course you will be able to:

- Identify necessary interfaces using context diagrams and N-squared charts
- Understand how to separate functional design from interface specification
- Flow down system design and external interfaces to subsystems and interfaces between them
- Specify the characteristics of interfaces
- Plan the negotiation of interfaces with other organisations
- Construct a complete and coherent documentation set
- Manage changes to the design of interfaces
- Plan a testing program for interfaces

The tutorial is intended for SE practitioners with some practical experience of requirements and / or integration. Some previous experience handling interfaces is encouraged, but not essential.

## Biography

**Hazel Woodcock** (IBM) - [hazel.woodcock@uk.ibm.com](mailto:hazel.woodcock@uk.ibm.com)

Hazel Woodcock is an experienced systems engineer with a unique blend of technical competence and interpersonal skills. Hazel has a background of fifteen years in the defence industry, and experience at all phases of the project lifecycle, as well as five years in the automotive industry as a systems engineer. She has worked with customers in different industries and has applied lessons from one industry to another. She has provided systems engineering process consultancy, and consultancy on the effective use of DOORS and the practice of requirements management. Hazel has experience of configuring design tools to work with interface management data and has experience of both suffering from and managing interface design at various levels of a system.

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Paul Davies is head of Systems Engineering Research at Thales Research and Technology in Reading UK. In this newly-established role, he is responsible for the setup and management of an SE research programme for the Thales group. In previous roles he has held a number of positions there including Head of Systems Engineering, Chief Engineer on a variety of projects, and Head of Innovations for a Thales division in the UK. In his 15+ years of project engineering management experience, he has first-hand knowledge that resolution of badly specified interfaces is the most effective step in technical risk mitigation. Paul has served as President of the UK Chapter of INCOSE, and has chaired national (UK) and international conferences in SE.