



Conducting Functional Analysis Successfully

“Mastering a key discipline for successful complex projects”

Key benefits of this training course

This training course provides a practical introduction to Functional Analysis, enabling participants to apply both external and internal Functional Analysis techniques through a realistic case study representative of complex system development projects.

Throughout the training, participants explore how Functional Analysis contributes to the success of development projects by supporting requirements understanding, solution design and decision-making.

Learning objectives

This course enables participants to :

- Understand the key concepts of Functional Analysis and its role within the overall Systems Engineering process.
- Apply both external and internal Functional Analysis approaches.
- Understand the relationships between Functional Analysis, Value Analysis and Design-to-Cost approaches.
- Recognise the benefits of Functional Analysis and how it contributes to project performance and solution optimisation.

Teaching approaches

The course combines theoretical input (40%) with practical exercises (60%) based on a representative and realistic case study of a complex development project.

Participants gain an understanding of the value of Functional Analysis and learn how to apply the methodology effectively, selecting the most appropriate approach for their working environment and project context.

Target audience

This training course is suitable both for participants new to Functional Analysis and for professionals wishing to take a step back and strengthen their existing practices. It is particularly valuable for anyone involved in Systems Engineering during the design and development phases, including : System Architects, Design Engineers, Technical Experts, Systems Engineers

A basic understanding of Systems Engineering principles is recommended.

In-house training

Duration: 2 days

Presential or remote learning

Customisation available

Language: French or English

Prerequisite: none

Recommendation: a good knowledge of Systems Engineering Fundamentals

Access timeframe: 2 weeks

Implementation timelines:

Based on the analysis of the client's needs

Evaluation:

Self-assessment of prior knowledge at the start of the training program

Self-Assessment form upon completion of Training

Methods used for the workshop:

In full-group and sub-groups, role-playing based on a central case study

8 to 12 participants

Disability access:

Yes – please contact us to discuss possible arrangements

Prices: please contact us



SETEC IPMC

Immeuble Central Seine

42/52 Quai de la Rapée

75012 PARIS

Tél. +33 1 82 51 43 00

formation@ipmc.setec.fr

Program

Key Principles of Systems Engineering and Functional Analysis

- Overview of Systems Engineering fundamentals
- Functional Analysis: principles, objectives and benefits

Analysing and Understanding the Operating Environment

- Project scoping
- Project lifecycle considerations
- Stakeholders and external interactors

Conducting External Functional Analysis (EFA) / Needs Analysis

- Context analysis
- Function identification using the APTE methodology
- Function characterisation
- Function prioritisation
- Functional specification

Understanding Value Analysis Concepts

- Defining technical, industrial and project objectives (Systems Engineering Charter and Kano Model)
- Understanding customer value
- Introduction to Design-to-Cost approaches

Understanding Internal Functional Analysis (IFA)

- Introduction to FAST and SADT methodologies
- Functional decomposition using FAST diagrams
- Functional modelling using SADT block diagrams

Developing a Functional / Logical Architecture

- Architecture optimisation
- Functional chains and flows
- External and internal functional interfaces

Understanding the Relationship Between Functional Analysis and Product Lines

- Product optimisation
- Variability management
- Common and specific functions
- Modular design approaches

Understanding the Relationship Between Functional Analysis and Requirements Engineering

- Linking Functional Analysis with Requirements Engineering activities

Understanding the Relationship Between Functional Analysis and IVVQ

- How Functional Analysis contributes to the Integration, Verification, Validation and Qualification (IVVQ) strategy



SETEC IPMC

Immeuble Central Seine
42/52 Quai de la Rapée

75012 PARIS

Tél. +33 1 82 51 43 00

formation@ipmc.setec.fr

Key Figures

More than **20,000 participants** worldwide over nearly **20 years**.

For **90%** of participants (*), the training pedagogical progress is perfectly matching their needs.

97% of participants (*) highlight our trainers' ability to bring knowledge to life, drawing on their real-world professional experiences.

Our training programs meet the objectives (**) for **93%** of the participants (*)

(*) January 2025 – December 2025 period

(**) usefulness of the content for progress and overall satisfaction with the training course