

By the end of the seminar, the trainees will have acquired the elements of knowledge and methods allowing them to :

- Evaluate contributions of a systematic and functional approach to specify needs and to obtain consensuses,
- Know innovating approaches for risk control based on "defence in depth" concept and its application to complex system as well as railway transports
- Use these tools to model and manage existing system but also anticipate and help with decisions according to system evolutions

Organization

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Coordination

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Inscriptions

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Targeted audience

Decision makers and managers in charge of infrastructure projects or transport systems, managers in charge of defining service quality and safety policies, advisers and consultants in transport projects, risk control expert

Monday, 15th of June

■ 9h30 **J-Olivier LAVAL** PFC-Metrattech

Opening of the seminar

■ 10h00 **Catherine LAVAL** Apte System

Succinct history and basic principles

- Benefits of approach within upstream phase while expressing needs and design choices
- Association of the quality of services offered to the users and the economic profits

Expression of needs and constraints

- How to elaborate a functional needs specification?
- How to exploit a systematic approach to control and innovate?
- How to formalize the awaited services of a system, of equipment, of an organization or of a data processing system?
- How to understand, to formulate and to classify needs and constraints according to a hierarchical system for the different stakeholders

Tuesday, 16th of June

■ 9h30 **Catherine LAVAL** Apte System

- Understand engineering of complex systems
- Establish scenario of possible solutions
- Objective criteria for evaluation and choice of the solutions just necessary
- Apply approach and tools for qualitative and economic diagnose
- Anticipate the risks related to the environment and the choice of design

■ 14h00 **Alain COINETET** Consultant

Risks control

- Notions of hazard, risk, safety and security
- Risk policy elaboration and implementation
- From policy to techniques and tools for analysis precursors and indicators follow-up, qualitative and quantitative approaches

Wednesday, 17th of June

■ 9h30 **Jean-Louis GALANO** Consultant

- What is a danger? A risk?
- The rigour of risks control process, anticipation, evaluation, risk reduction and risk follow up

Thursday, 18th of June

■ 9h30 **Alain COINETET**

Defence in depth

- History and interest of concept
- A systemic approach to control final effects on sensitive element such as men, system, company, environment
- Finality of defence and logic of hazard generation
- Risk acceptability levels
- Principles of defence means

Friday, 19th of June

■ 9h30 **Alain COINETET**

- How to identify and design a defence system?
- How to model it? For whom? What for?
- Defence system diagnosis: how to carry it out? What results in term recommendations?
- How to capitalize with reference frame?
- Synergy of functional and defence in depth approaches : clarification of actor's responsibilities (project managers, security expert, decision makers)

■ 16h00 **Jean-Olivier LAVAL**

Evaluations and closing of the seminar

Workdays end at 5:30 pm

The seminar takes place in Maison des Ponts 15 rue de la Fontaine au Roi 75011 Paris