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Background and context

Why develop a LRP design methodology for crisis management training ?

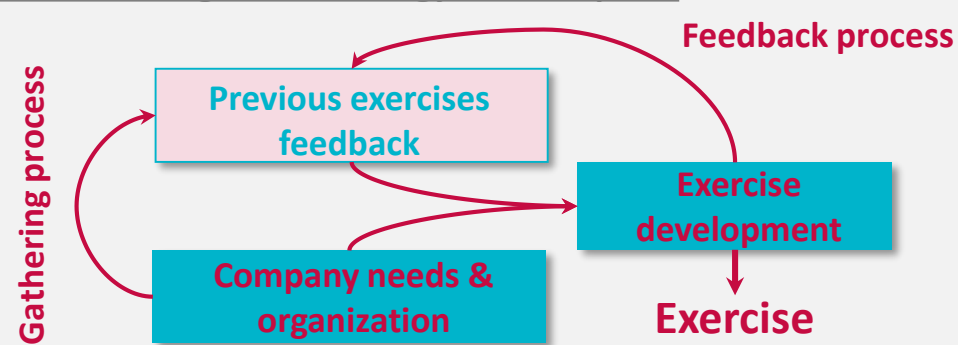
Despite improvements of major accident prevention since the 1970's, industrial accidents still occur :

→ Prevention based safety management is not enough

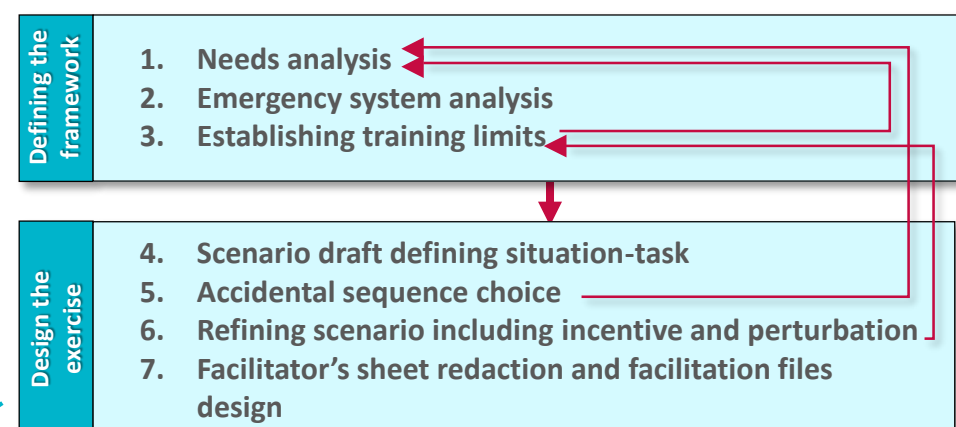
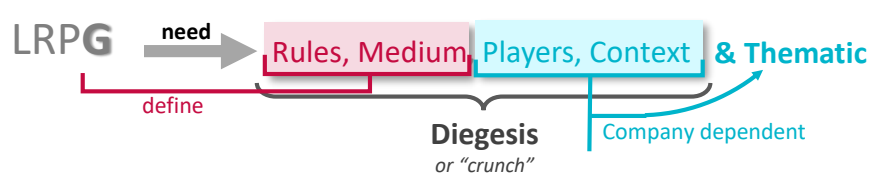
Need to implement protective system such as emergency and crisis management and to test it (cf. SEVESO directive requirement) through **specific exercises**.

Nevertheless developing such exercises is **complicated, expensive** and **time-consuming**. Therefore companies may be reluctant to set them up.

How this design methodology is developed ?



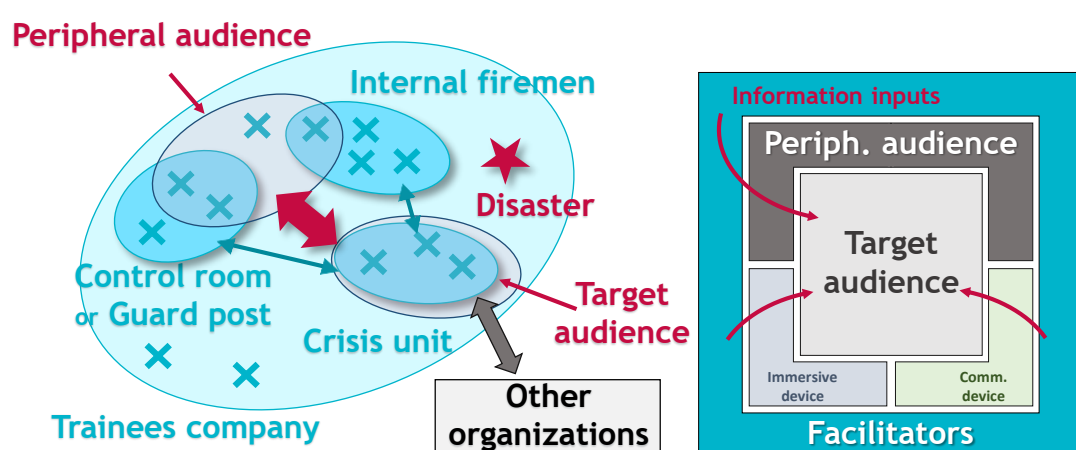
Structure of the methodology



These different steps imply to stay in relation with **one or more contact person** of the company who will explain needs and organization of the company and validate or amend proposition made.

Defining the scope and setting of the exercise

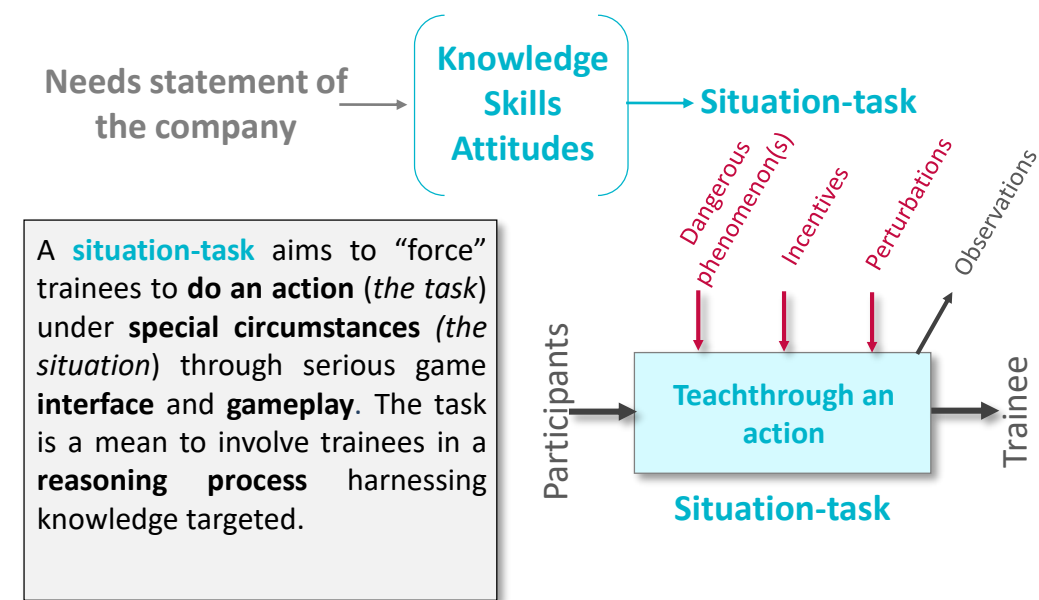
Needs and emergency system analysis lead to the scope of the exercise usually divided in 3 levels: **operational**, tactical (optional) and **strategic**.



According to the company organization, location and role of facilitator are defined. Direct facilitation is avoided and target audience remains alone during the exercise (only with observer). It interacts with facilitation through peripheral audience (directly or not) mentored by facilitators or **indirectly** (by phone, mail...) with facilitators playing other organization's roles.

Designing an interactive story to achieve pedagogical targets

The situations-tasks, hinges of the scenario



A **situation-task** aims to "force" trainees to **do an action** (the task) under **special circumstances** (the interface) and **gameplay**. The task is a mean to involve trainees in a **reasoning process** harnessing knowledge targeted.

Choosing the accidental sequence and first draft

Accidental sequence = Causes of the accident, the accident, dangerous phenomenon, and asset affected.

Accidental sequence should be a justification for perturbations and incentives.

→ Crisis/Emergency LRP "fluff" (in opposition with the "crunch" previously developed) and should lead to "situation-tasks"

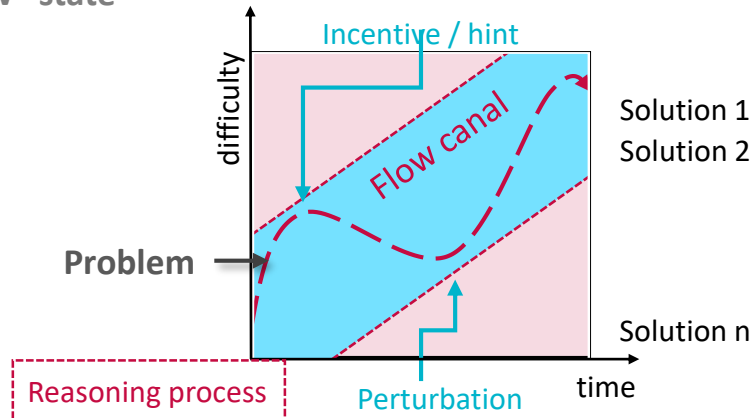
Situation-tasks are then arranged in a chronology inspired by the hero's journey of J.CAMPBELL

	Hero's journey step	Crisis management process	
Departure	Call to adventure	First step of the warning chain.	Warning
	Refusal of the call	Disbelief or minimization of the crisis. Fear to leave the normal operation mode.	
	Supernatural aid	There is no supernatural aid in crisis process. Nevertheless, during exercises, facilitation can play this role.	
Initiation	Crossing the first threshold	Awareness of the gravity of the situation. Emergency plan "engagement" and reflex procedures.	Crisis management
	The belly of the whale	Information and action flooding. Difficulty to picture correctly the situation.	
	The road of trials	First decision-making and awareness of operational difficulties.	
Return	Meeting with the goddess	Meeting with emergency services and information exchanges.	Back to normal
	Woman as a temptress	Temptation to not act anymore, letting all actions to emergency services.	
	Atonement with the father	Communication with authorities, medias and higher hierarchic level.	
	Apotheosis	Expectation of change, improvement or the end of crisis. Domino effect if any.	
	Refusal of the return	Expectation of recurrence, domino effect or unexpected consequences. Stay alert.	
	The magic flight	Last communications to authorities and media with, eventually press conference. Checklist verification.	
	Rescue from without	Other stakeholders close their crisis units and emergency services leaves plant.	
Crossing the return threshold	Report and debriefing		
Master of the two worlds	Crisis unit closing		
Freedom to live	End of the sequence		

Refining the scenario until facilitator's sheets

Developing situation-task with incentives and perturbations : How to have people do a task ?

Choice of **relevant inputs** is not easy : they must lead to the task to do **realistically** and in a **non-obvious way** to keep trainees in a "flow" state



Once inputs – incentiveS and perturbationS – are clearly defined, a **precise chronology** with a 5 minutes meshing is established and, based on it, **facilitator's sheets** are written :

Time block	Situation-task	Pedagogical target	Incentive / Perturbation	Facilitator sheet	Precise timing
14h00-14h15	Warning chain.	Procedures check	Imprecise alert Weak signals No feedback from operators	Intervention chief	14h00: Small event
	Crisis unit establishment				14h00/5: Information check not successful
					14h15: Warning confirmation. Major accident

Conclusion & Perspective

This methodology allows to design efficiently emergency and crisis exercises for chemical industries. Nevertheless, it still needs a high level of competences to choose and arrange situations-tasks and therefore cannot be directly used by EHS manager. The next step of development of the methodology will consist in identifying a limited number of situations-tasks that can be staged in exercises to offer an user-friendly method for EHS.

This poster describes a global methodology. Future publications will describe each step more precisely, especially how to choose and design situations-tasks, and how to arrange situations-tasks in the scenario to keep trainees focus.