

**IRSN**

INSTITUT  
DE RADIOPROTECTION  
ET DE SÛRETÉ NUCLÉAIRE

*Faire avancer la sûreté nucléaire*

# Considering Safety Culture over the course of Supply Chain: IRSN's approach for R&D and expertise

NEA-MDEP Supply Chain Workshop

5 November 2018 (Boulogne – France)



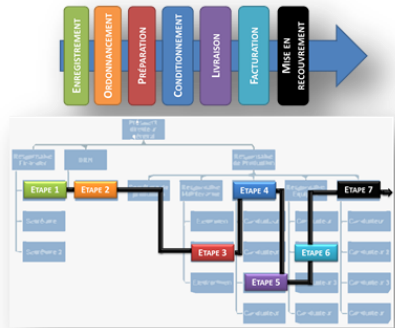
Système de management  
de la qualité IRSN certifié

S. Beauquier, C. Poret  
Human Organization Technology  
Department  
IRSN

# A research program on cross-functional organisations

## An IRSN interest for cross-functional organisations...

- A cross-functional organisation involves actors from different trades, entities or even different companies who have to **achieve a common production** with different performance requirements (quality, safety, economic efficiency)



## CROSS-FUNCTIONAL ORGANISATIONS



Supply chain is a kind of cross-functional organisation  
*(like process, workflow, etc.)*

- Cross-functional organisations are found in different situations that the IRSN experts have to study: new build projects, maintenance projects, decommissioning projects, etc.

## ... and in the case of a supply chain, cross-cultural organisations

- some supply chain actors are unfamiliar with the nuclear field and less easily integrate safety issues as a performance issue

# Results & research questions in progress

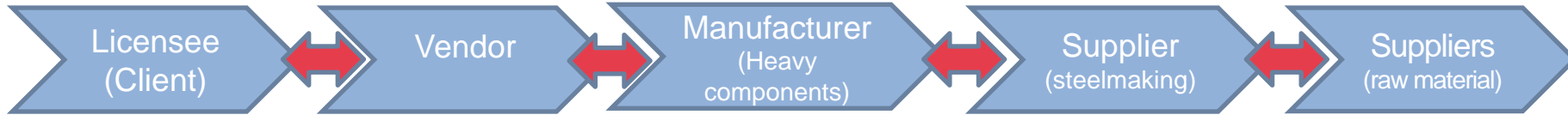
## Results issued from past research on cross-functional organisations

- The overall performance does not result from the sum of the different performances at each step → field of phenomena that **emerges at the collective, cross-functional & cross-cultural mesh**
- Maximization of the performance at the individual/local mesh **can go against the overall performance**
- To support this overall/transversal performance, it is important to:
  - make the actors **aware of the interdependencies** between their contributions
  - make visible the **common production as a whole**. This helps to better understand the impact of an activity *here and now* on the overall performance, including safety

## Research questions in progress & possible locations for analyzing these questions

- Domain of **shipbuilding**, in the context of a new build project which involves many subcontractors over a long period → relationships between client and subcontractors and how to improve these relationships that can be degraded, impacting common production in terms of quality (thus safety), economic efficiency, etc.
- Domain of **nuclear new build**, where the construction of heavy components involves different actors from different professions → relationships between client, vendor, manufacturer and suppliers; awareness of safety goals over the course of Supply Chain

# Application to a recent study case



## Context :

- 2015: detection of anomalies and non compliance of heavy components for NPP
- 2016: quality review on the manufacturing work carried out in the manufacture plant (external audit checks + a Multinational Evaluation Program)

Inconsistencies, modifications or omissions in the production files, concerning manufacturing parameters or test results

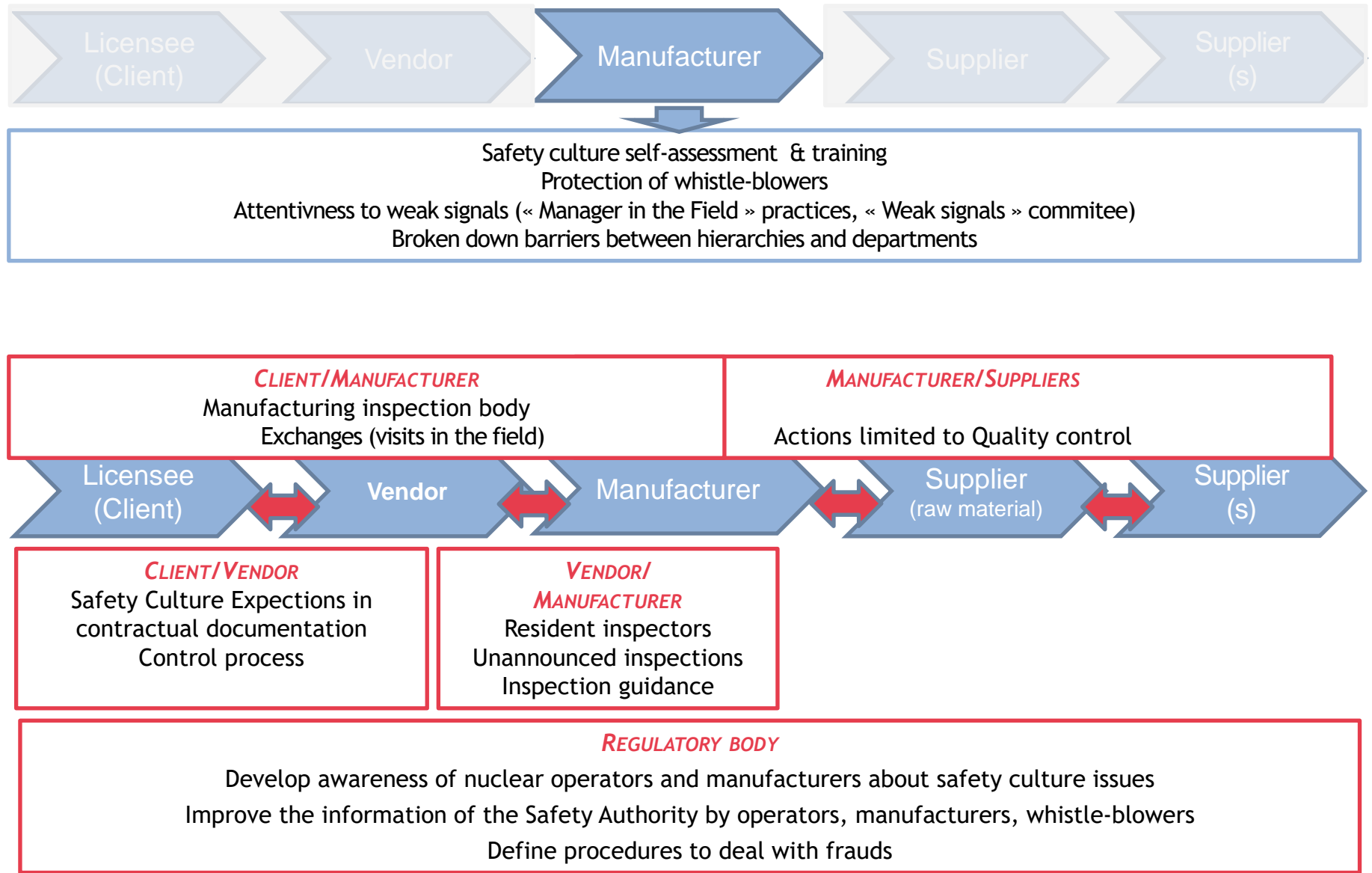
## Root cause analysis:

- Control process
- Management & Organisation
- Technique

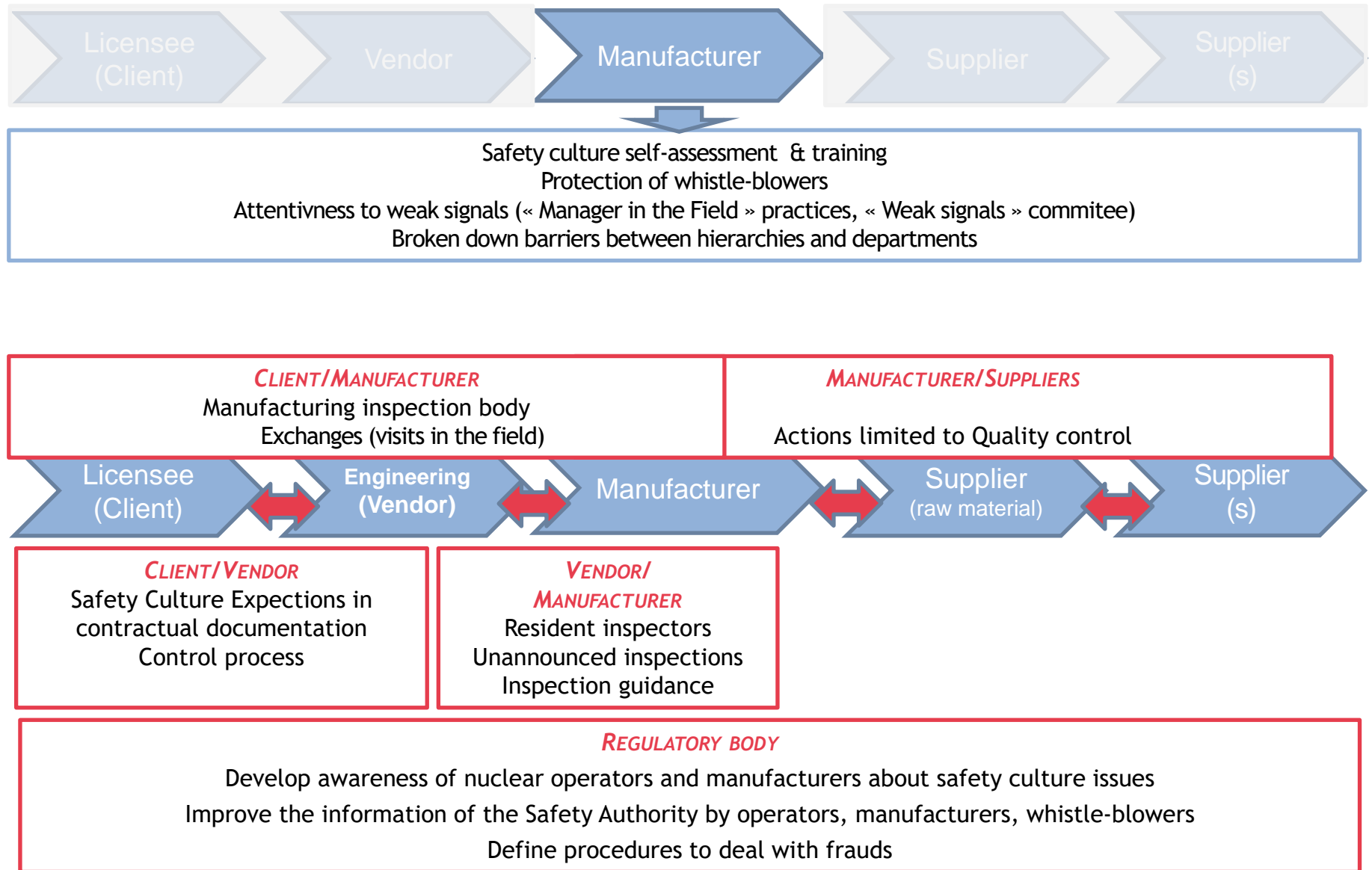
Contribute to a supply chain perspective

**Action plan defined by the reviewers and the regulatory body on these dimensions**

# Action plan for developing Safety Culture in the Supply Chain



# Action plan for developing Safety Culture in the Supply Chain



## Assessing Safety Culture in the Supply Chain: IRSN's areas of interest

- Does the perception impact on safety of daily activities of manufacturer have been improved after the implementation of the action plan?
- Do the distributed contributions of the different actors in the supply chain contribute to a collective performance that goes beyond performance at every stage?
- Is safety built in the articulation between the different actors of the supply chain and not only from the risk management at each step?
- How do the different interdependencies impact overall performance, including safety?
- Are there any specific risks that emerge in each of these interdependencies?

Thank you for your attention