

Technical perfection, automotive passion

**faurecia**

Interior Systems

# FAURECIA Experience with Altair Automation Process

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Altair EHTC • 17/10/2010



# FAURECIA Experience with Altair Automation Process

## Introduction :



Acteur mondial de l'automobile

# FAURECIA Experience with Altair Automation Process

faurecia

Interior Systems

## Introduction :



**17,400**  
employees

**74**  
plants

**7**  
R&D centers

**21**  
countries

- Instrument Panels: above 6.5 million parts / year
- Door Panels: 20 million parts / year
- Acoustic Modules: 13 million parts / year



Cockpits



Instrument panels



Door panels



Door modules



Acoustic systems

# FAURECIA Experience with Altair Automation Process

## Introduction :



# FAURECIA Experience with Altair Automation Process

## FIS CAE Network

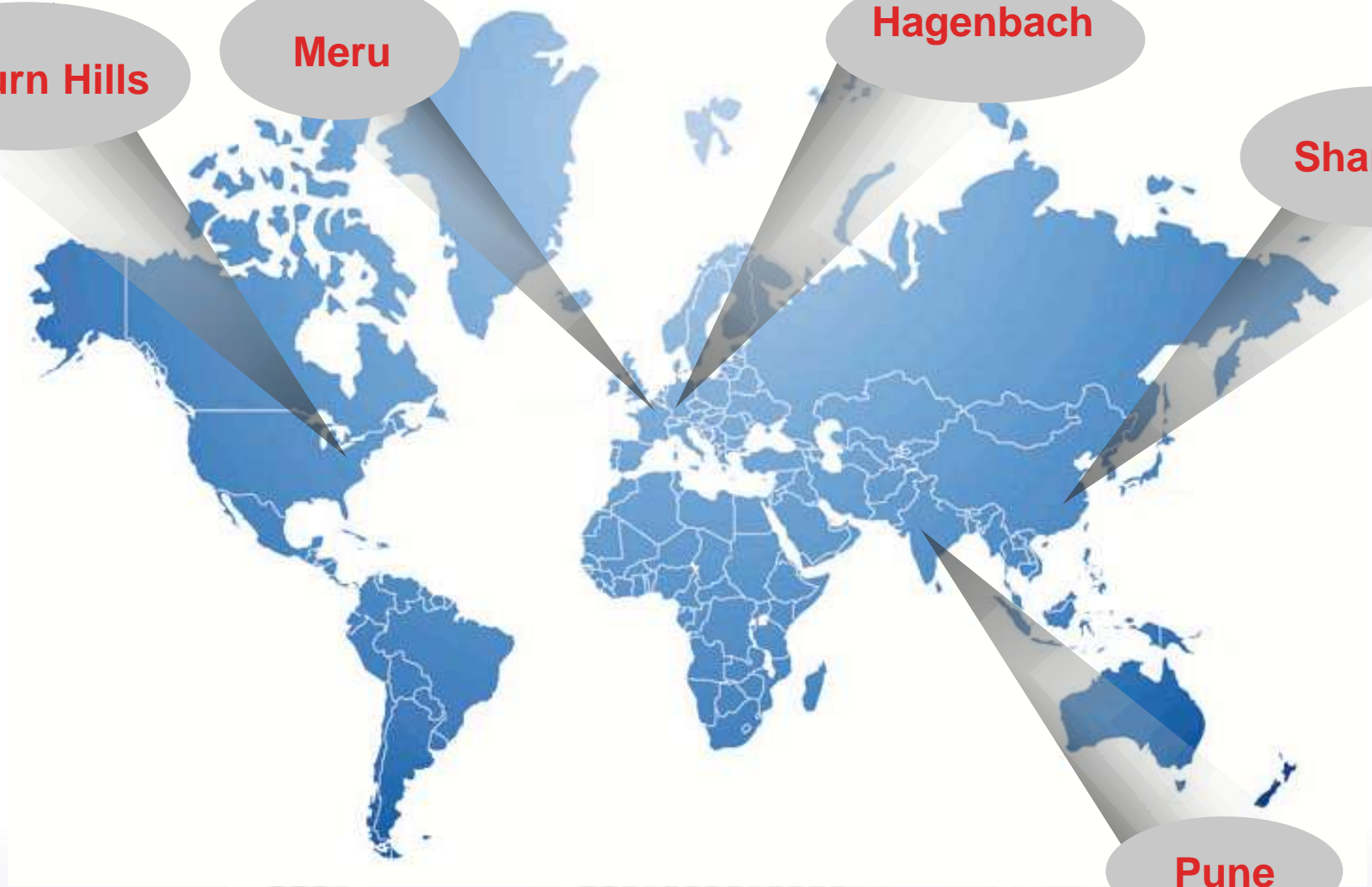
**Auburn Hills**

**Meru**

**Hagenbach**

**Shanghai**

**Pune**



## CAE into Faurecia Interior System

### CAE within PMS



Program  
Management  
System

### Product simulation

#### Cockpit / IP / Console

- Head impact
- Knee impact
- Airbag deployment
- Pedestrian Impact
- Static
- Creep-expansion
- Vibration
- Air flow

#### Door panel / Door Module

- Side impact
- Static
- Vibration
- Sun simulation
- Creep-expansion

#### Cross car beam

- Crash
- Vibration

### Process simulation

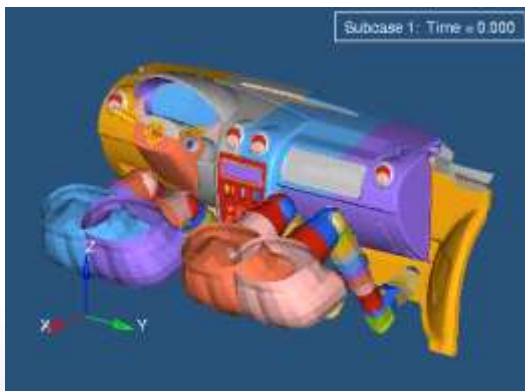
#### Injection molding

#### Warpage

#### Decoration process

- Thermocovering
- Skin thermoforming
- Fabric overmolding

#### Foaming



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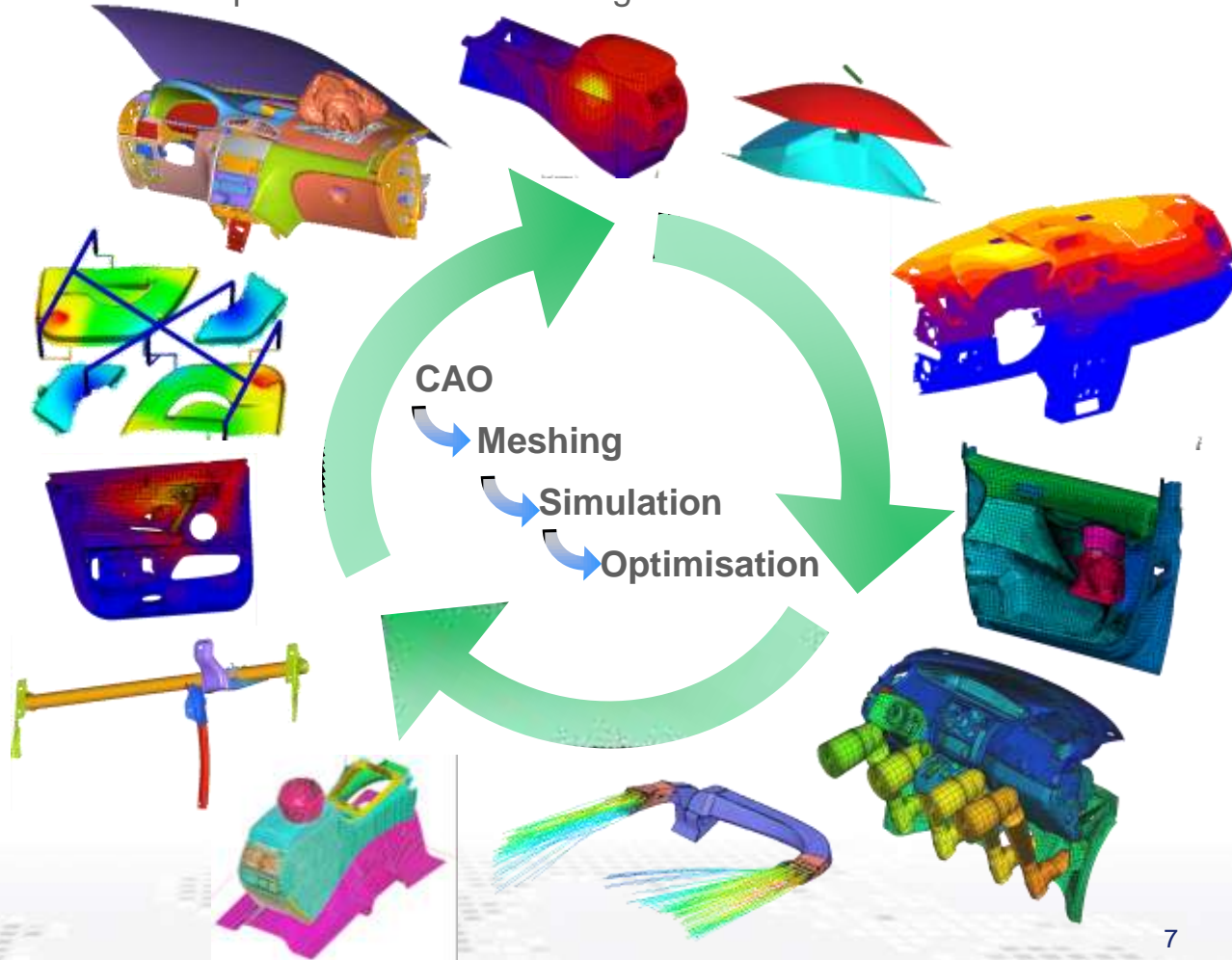


## CAE Program Management System

### Design & development

In design & development step, we work on all the products for the following tasks :

- ✓ crash
- ✓ static, vibration
- ✓ creep/expansion
- ✓ airflow
- ✓ injection
- ✓ covered part



**2**  
a&b

PRODUCT & PROCESS  
DESIGN & DEVELOPMENT

# FAURECIA Experience with Altair Automation Process

## Why Automate CAE process ?

### Efficiency

- Cost reduction
- Lead time reduction
- Planning reduction

### Quality

- Standardization
- Quality increase (ISO certification, ...)
- Reduce human sensitivity / Rework

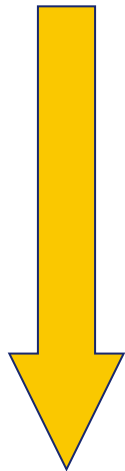
### Global CAE

- Global load balance

# FAURECIA Experience with Altair Automation Process

Altair Hyperworks Automation possibility : a survey  
Focus on Hypermesh and Hyperview / Hypergraph

Basic



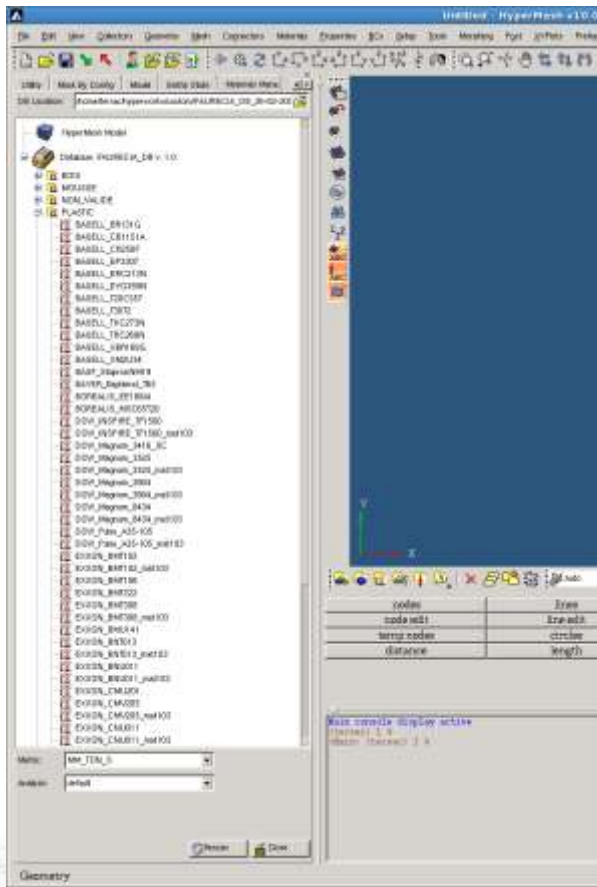
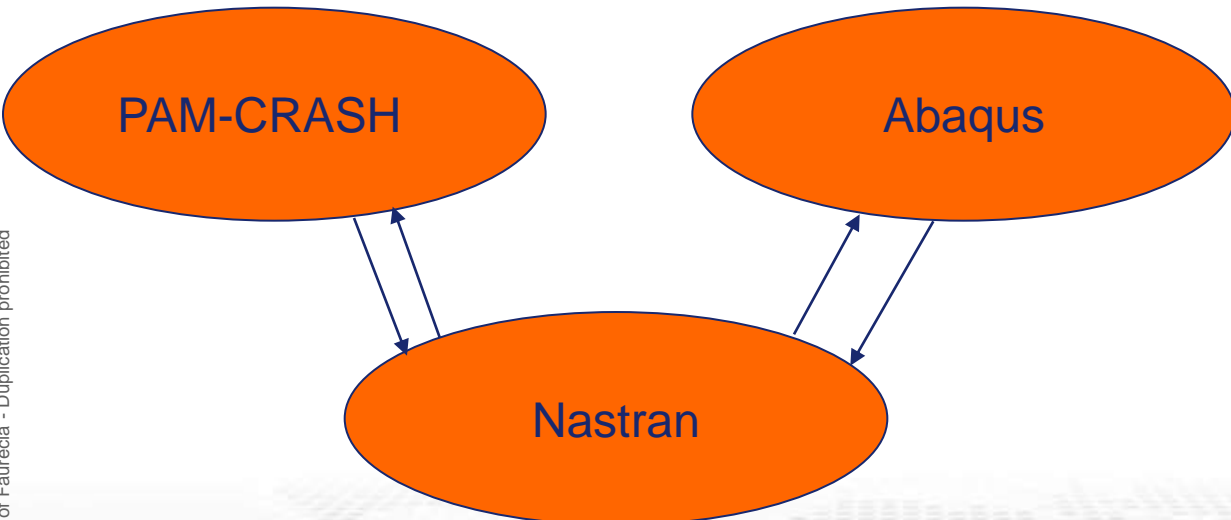
Advanced

	Hypermesh	HyperView / HyperGraph
Basic	Command file (re)play (cmf)	Session file (re)play (mvw) Template file (tpl)
	Macros (tcl)	Templex Macros (tcl)
	Macros + GUI (tcl)	Macros + GUI (tcl)
Advanced	Process Manager (tcl or java)	

# FAURECIA Experience with Altair Automation Process

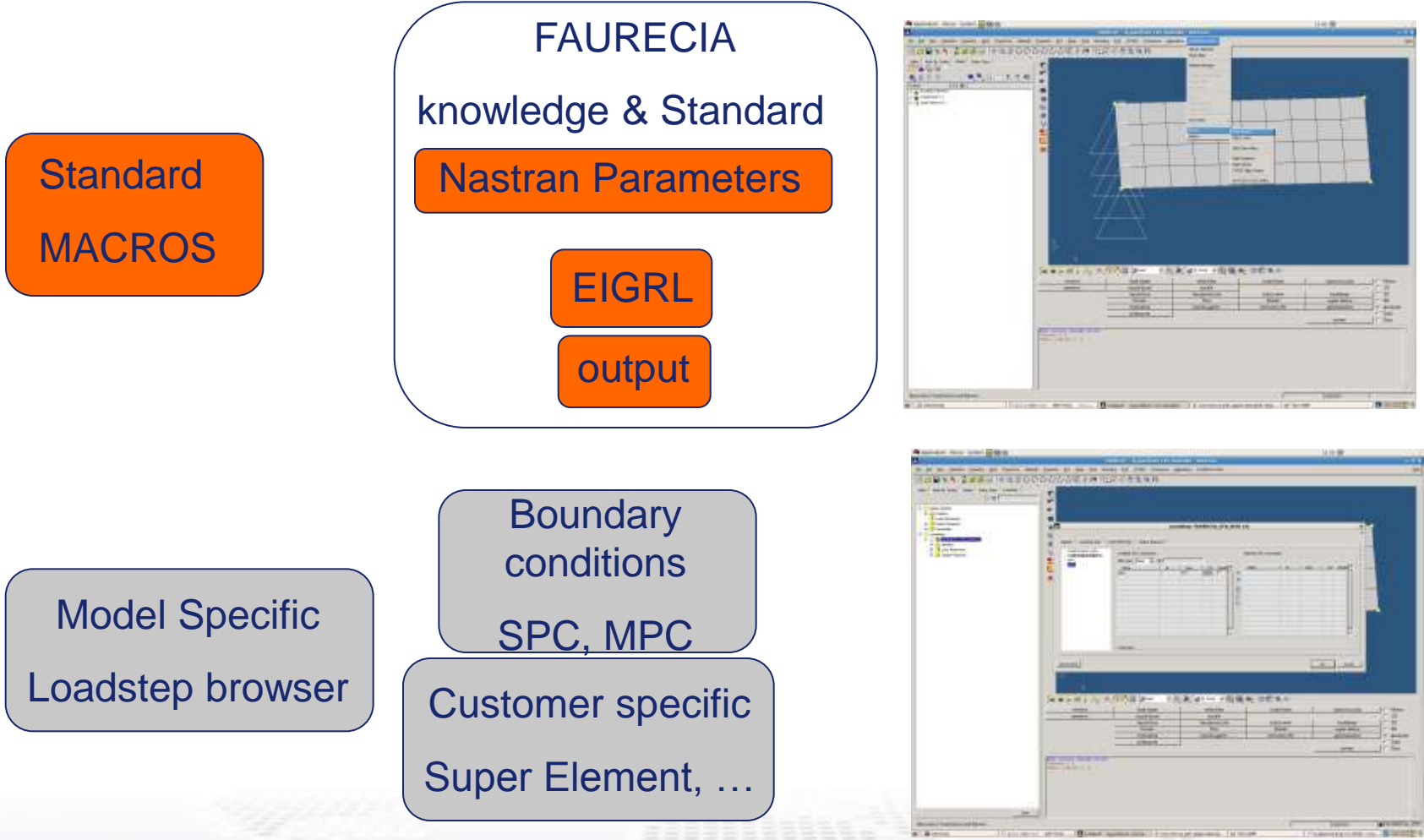
## Process Automation example 1 : inter-template communication

- NASTRAN** is the central Template
- FROM / TO** macros to quickly exchange data between templates
- Unified material database



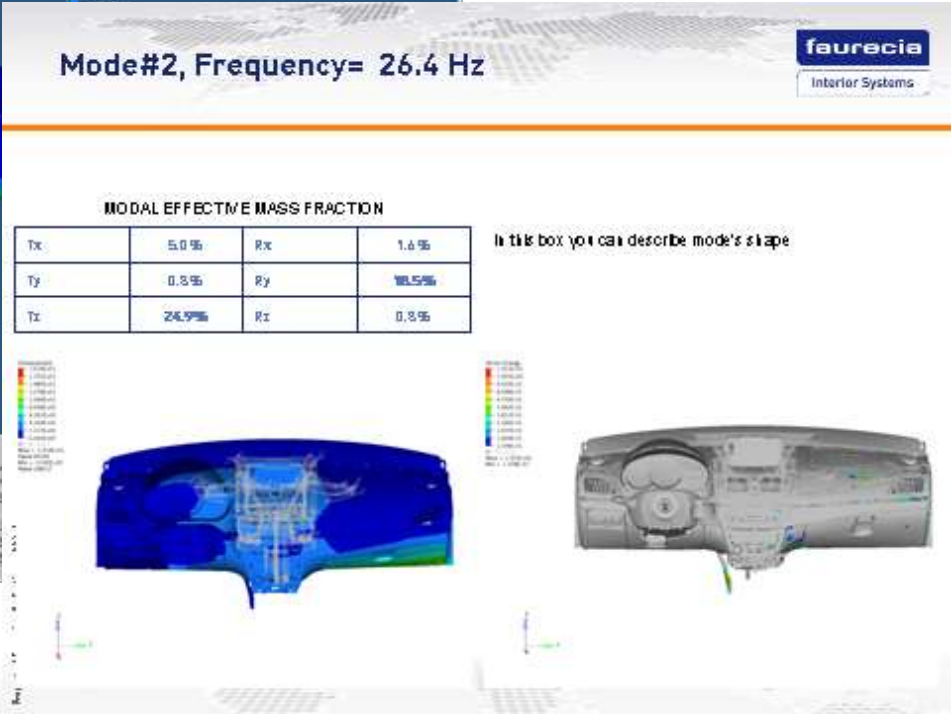
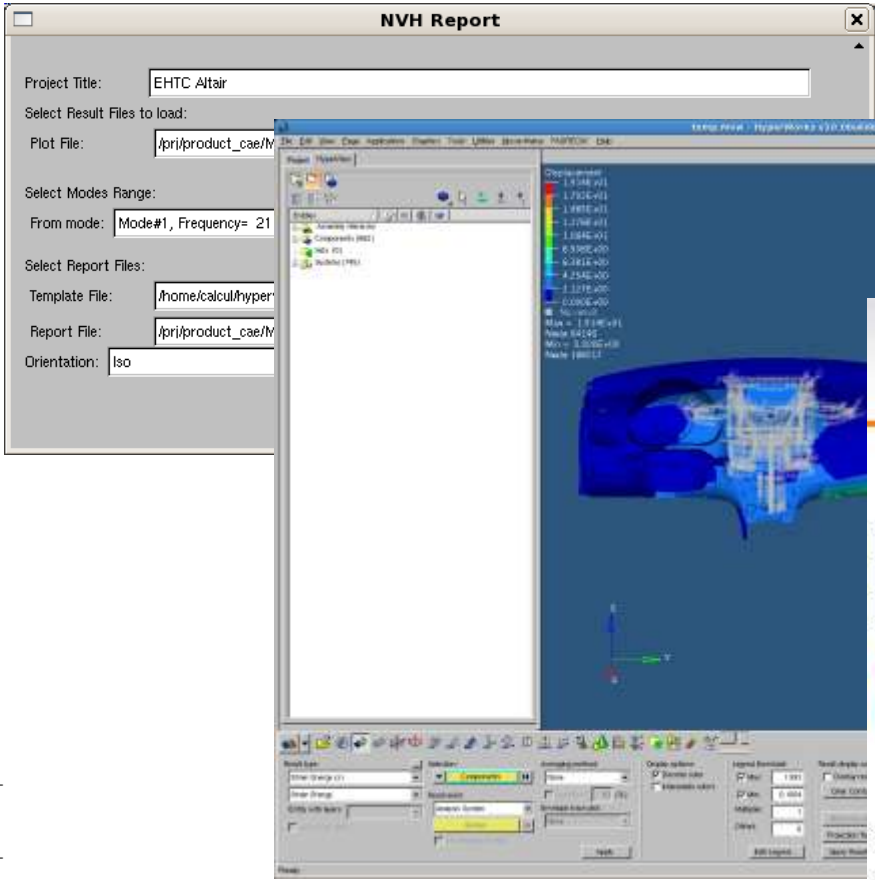
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## Process Automation Example 2 : NVH Pre-Processing automation

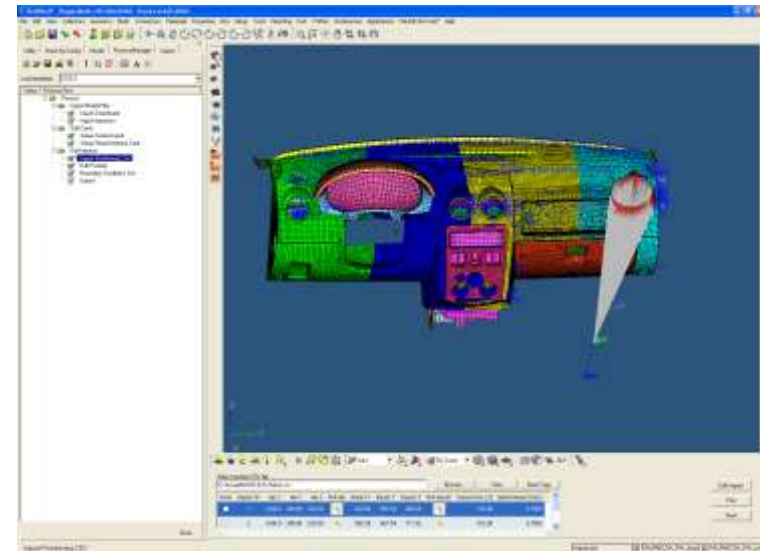
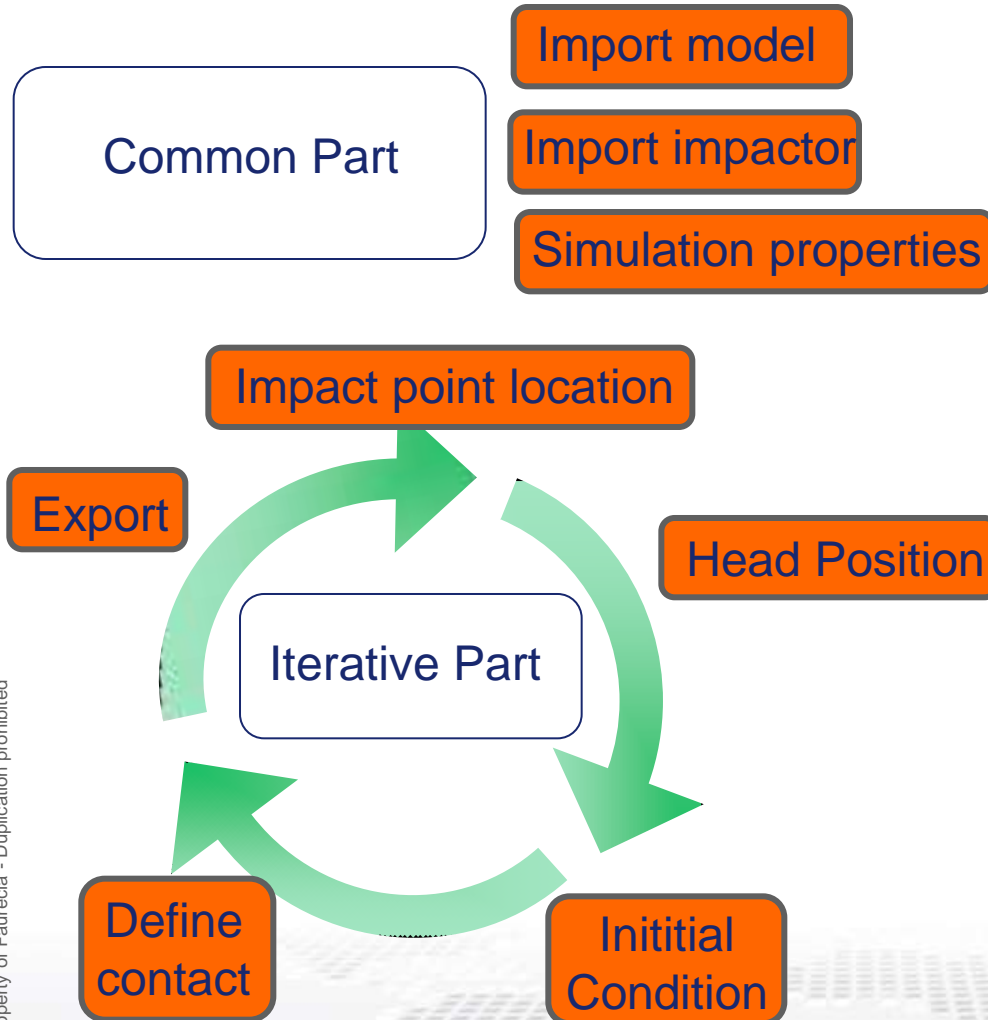


# FAURECIA Experience with Altair Automation Process

## Process Automation Example 2 : NVH Post-Processing and report automation



## Process Automation example 3 : Head Impact ECE21 analysis



Process Manager :  
Interactivity  
Browser like look'n feel

## Conclusion

- Objectives reached
- Faurecia / Altair partnership
- Standardization is a prerequisite
- Don't forget user's formation

**Thank you for your  
attention**

**Question Welcome**

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