

# OpenTURNS, Phimeca, a long story...

OpenTURNS User's Day #18

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# Outline

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## PHIMECA

## A look in the rear-view mirror

## Today

## Preparing tomorrow

# The company

## History

**2001:** Founded  
by M. Pendola &  
M. Lemaire

**2009 :** Opening  
of the Paris  
Office

**2018 :** Acquisition of  
Phimeca by its  
managers

**2019 :** Opening  
of the Pays de  
Savoie Office



## Key Figures

**Turnover :** 2,2 M€ w/out R&D

**R&D :** approx. 15% of the turnover

**Effectif :** 34, counting 31 engineers/PhDs

**Mean age:** 33 yo

# Phimeca – The Responsible Engineering

## Our raison d'être

*« Shaping together an industry that respects people and their environment through innovative engineering »*

### Our mission directions

To innovate with our clients for the protection of the environment, through the resilience and durability of structures and systems

To strengthen the engineer's contribution to society, in an open and collaborative spirit

To be involved in the development of our territories, be a full actor in our ecosystems

To promote personal development and diversity in a cooperative company

# Resilience and durability of structures and systems

Helping our customers to...

Design



Maintain

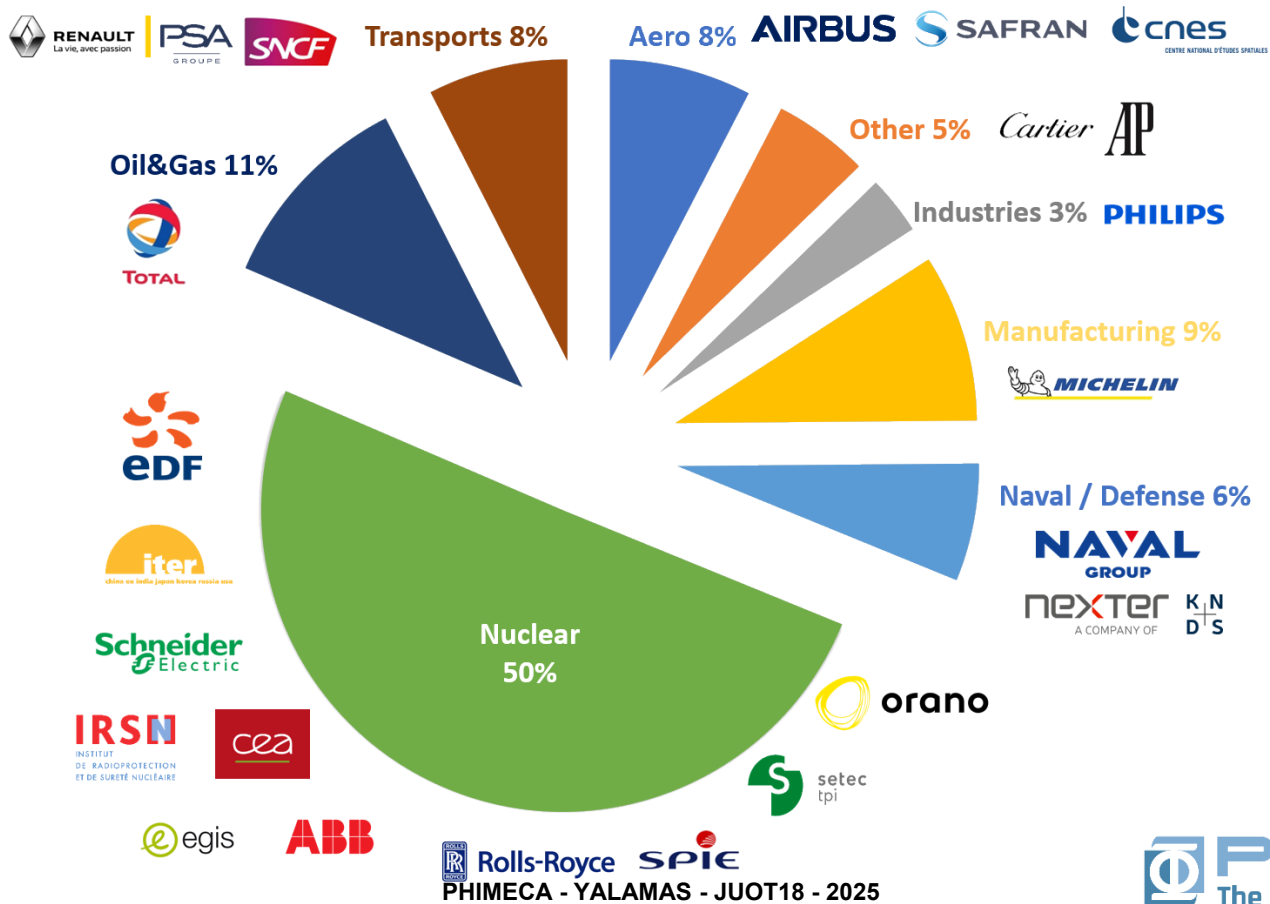


...their products/structures in a robust and reliable way

**Our approach:** making the most of physical modelling and data-science

**A wide range of services:** consulting, studies, software development, training

# A few references



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# The early stages (begin in 2004)

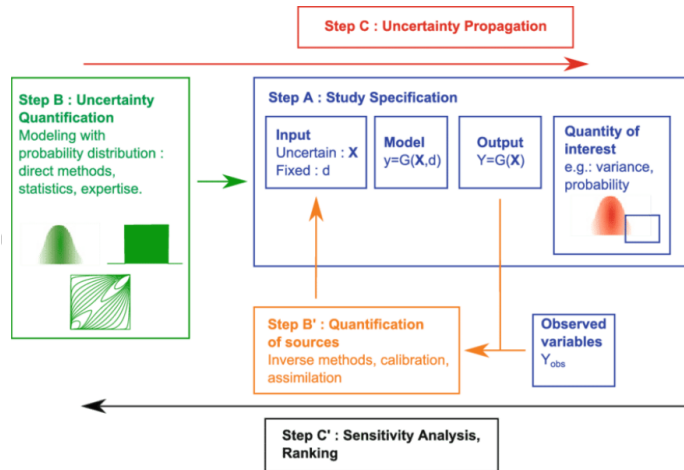


## Phimeca...

- Very young SME (3 years and 10 peoples)
- Mechanical and reliability engineering
- Software editor

## ... inside OpenURNS

- Partnership with Airbus & EDF
- Open source software
- Mathematical approach

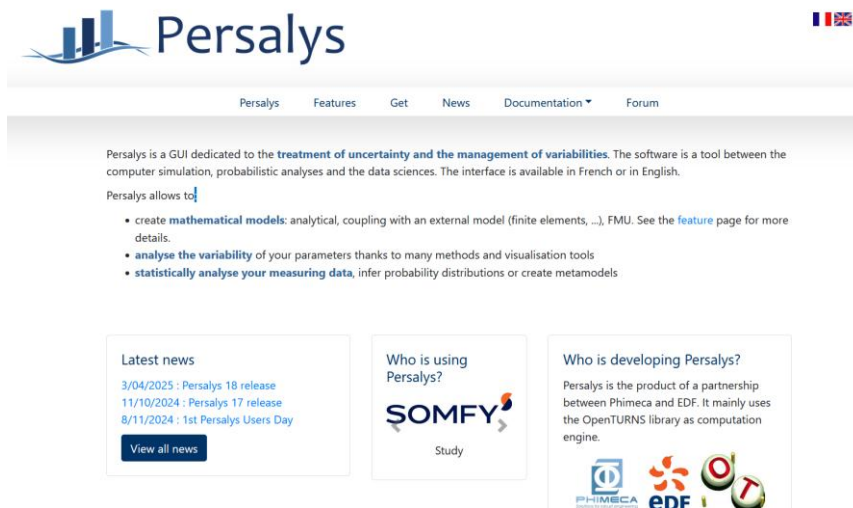




# Paths converging

- ☐ A new PhimecaSoft version based on OpenTURNS
- ☐ Use of Python as unique language for methods prototyping and industrial study (outside PhimecaSoft)
- ☐ Some contributions from Phimeca to OpenTURNS : windows porting, specific methods for reliability, OpenTURNS community...
- ☐ Use of OpenTURNS for several clients : Lafarge, CSTB, CEA DAM, Technip, Renault...

# From PhimecaSoft to Persalys



<https://www.persalys.fr/>

An open source user friendly GUI for :

- Data analysis
- Uncertainty Quantification
- Reliability
- Optimisation

Phimeca is not anymore a software editor...

But a proudly contributor to the real adoption of advanced methods with french and open source software !

Service provider !

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# A smooth partnership

- ☐ Partnership extended to ONERA
- ☐ Some contributions from Phimeca to OpenTURNS : software packaging, continuous integration, diffusion, link with system modeling (otfmi), contribution to methods development...
- ☐ Around 50% of Phimecaniciens work for or with OpenTURNS a little, a lot, passionately or madly!
- ☐ A still fragile business model...

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# Preparing tomorrow

- ☐ On the data sides, from statistics to big data, data science and IA... what should be the place for Open TURNS ?
- ☐ On the numerical (physical) simulation side a lot evolution also during last 20 years... digital twin, IA... what should be the place for Open TURNS ?
- ☐ Environmental impact of simulation, algorithm... any impact for Open TURNS ?
- ☐ Where is the place, what are the moment, to discuss from strategic and long term orientation for OpenTURNS ?



Thanks for your attention !

