THERCAST®

NEW

# Using the Python API to Automate Data Processing and Analysis with THERCAST®

**Would you like to increase your productivity? Get to know the tools available to you to automatically perform data preparation steps and analyze your results.**

The time you spend creating simulation projects and analyzing the results of your calculations is usually significant. The operations you carry out are often repetitive and can sometimes be very time-consuming. Python scripts will enable you to create projects, run calculations, and analyze results with maximum automation. Specifically, you can create your custom process, manage your objects, import and generate meshes, define all types of parameters, automatically generate calculation variants, display only the results you need in the optimal configuration, export your results, and much more. This new feature offers numerous benefits: time-saving, automation, project security, and interconnection with your other digital tools.

Whether you want to automate all or part of your operations, define constant or dynamic data, or even call a third-party application from THERCAST®, everything is possible and imaginable. This training is designed for you!

## LEVEL

**Intermediate**

## PREREQUISITES

**Have some experience with TRANSVALOR software. You should be familiar with using the NxT interface.**
**Have basic experience in coding with the Python language.**

## GOALS

- **Discover what the Python API can offer in terms of automation.**
- **Make the most of the new features of the interface to speed up data preparation and result analysis.**

| TRAINING | DURATION | PRICE EXCL. TAX | PARTICIPANTS |
|---|---|---|---|
| In-company | 2 days | €2800 per training | 1 to 3 people |

## DAY 1 > 8.30 a.m. to 12.00 p.m. & 1.30 p.m. to 5.00 p.m.

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|---|---|
| **Introduction** | • Presentation of Transvalor<br>• Training objectives |
| **Why this API ?** | • Context<br>• Previous tools made available<br>• Prerequisites<br>• Current limitations<br>• Perspectives |
| **Script Structure** | • Operation of the Python console<br>• Vocabulary (concepts of classes, functions, and arguments)<br>• Relationships between various objects, simulations, attributes, properties |
| **Data Preparation Scripts** | • Understanding existing scripts<br>• Working on a complete data preparation script for a step<br>• Coding your own data preparation script |
| **Analysis Scripts** | • Understanding existing scripts<br>• How to adapt them to your needs?<br>• Coding your own result analysis script |
| **Documentation** | • Explanation of the documentation available for coding your own data preparation and analysis scripts<br>• Python Help |

## DAY 2 > 8.30 a.m. to 12.00 p.m. & 1.30 p.m. to 5.00 p.m.

| | |
|---|---|
| **Practical session on automating data preparation** | • Defining the problem and steps to automate<br>• Developing the automation script |
| **Practical session on result analysis** | • Description of the analysis steps<br>• Developing the automation scripts |
| **Perspectives** | • What possibilities for going further and fully automating data preparation and analysis?<br>• Variable parameters, custom interfaces, command-line execution |
| **Conclusion** | • Questions and course assessment |