OpenTURNS developers training: agenda

Trainer : Régis LEBRUN
Airbus
regis.lebrun@airbus.com

Developers training

The developers training

Objectives

This 4 days training will give you the first elements to:

- Understand the OpenTURNS aim and architecture,
- Discover the coding rules, the development process and the associated infrastructure,
- Make your first steps in the OpenTURNS development by adding a new specialization of an existing concept both in the C++ library and the Python interface,
- Make your first steps in the OpenTURNS module development.

General organization

Agenda

Each of these four days will be organized as follow:

10.00am Welcome (coffee & tea)

10.15am Theory

12.30pm Lunch

13.30pm Theory or experimentation

15.30pm Break (coffee & tea)

15.45pm Experimentation

18.00pm End of the day

Day by day...

Day 1: uncertainties, OpenTURNS platform, architecture

- Uncertainties: quick reminder on analysis, probability and statistics

- OpenTURNS platform: the global picture of OpenTURNS product and the website, short presentation of the development life-cycle.

- Architecture: the general organization of the product with some highlights on the key mechanisms and their implementation.

- Experimentation: basic manipulation of a numerical function and a probability distribution, navigation in the website (tickets, versioning system), exploration of examples in C++ and python.

Day by day...

Day 2: development in the C++ library

- The compilation infrastructure: some elements on CMake.
- The development process: use cases, architecture, C++ implementation, tests, documentation.
- Practical case: add a new distribution to the library.

Day 3: make the development visible in python

- Interfacing C++ and Python using SWIG.
- The development process: SWIG interface, python modules, tests, documentation.
- Practical case: make a new distribution available from Python.

Day by day...

Day 4: create an OpenTURNS module

- The concept of module, its standard structure.
- The key steps in the development of a module.
- How to install and use a module?
- Practical case: add a new distribution as a module.

Already a contributor

You are a new OpenTURNS developer!

- All the developments made during this training session will become part of OpenTURNS sooner or later, depending on their degree of maturity (quality ;) ?).

- The missing steps for a direct integration will be the testing phase, the validation phase and the documentation phase.

- The integration will be done using a development branch on GitHub.

Check the upcoming release or the next to see your work in action!