TRAINING PROGRAMME · INTER-COMPANY COURSE

openTELEMAC: water quality and sediment morphodynamic

openTELEMAC

DATES	DURATION	FORMAT	LEVEL	PRICE
May 13 and 20, 2027	**2 days · 14 h**	**Remote · English**	**Advanced**	**€1,800 excl. VAT** Academic €800 excl. VAT

Audience

- **Industry:** environmental and hydraulic engineers working on water quality or sediment morphodynamics.
- **Academia:** researchers and PhD students in aquatic ecosystems or sediment dynamics.

Prerequisites

Hands-on experience of TELEMAC-2D or TELEMAC-3D hydrodynamics. No prior experience of WAQTEL or GAIA required.

Practical arrangements

Maximum group size: 6 participants per trainer during practical work. Inter-company course.

Registration and access time

Registration through the online form on the session page, at least 30 days before the start of the session: https://simvia.tech/services/training/open-telemac-advanced-usage-online-training-202705

Overview
(context, benefits)

Master openTELEMAC's advanced couplings: simulate water quality with WAQTEL and the evolution of sediment beds with GAIA, through concrete engineering cases.

A resolutely hands-on course: practical work built on a review of the theoretical fundamentals, with exercises of increasing difficulty, from discovery to an industrial case.

The complete workflow: the tools of the simulation chain (QGIS, openTELEMAC, post-processing tools) are used together, as in a real study.

Practising trainers: our engineers and PhDs use these codes every day on industrial projects.

Close supervision: 1 trainer for a maximum of 6 trainees during practical work.

An inter-company format that encourages participants to share their experience with peers.

Objectives and targeted skills

Learning objectives, assessed during and at the end of the course. By the end of the course, participants will be able to:

- Activate and configure WAQTEL sub-modules coupled with TELEMAC-2D or 3D.
- Simulate pollutant dispersion and critically analyse the results.
- Configure GAIA: sediment classes, bedload transport, consolidation.
- Model the morphodynamic evolution of a tidal estuary.

Course content

DAY 1 · MORNING **WAQTEL sub-modules in depth (lecture)**

- Coupling modules with TELEMAC-2D and TELEMAC-3D
- O2, BIOMASS, EUTRO, MICROPOL, THERMIC, degradation laws
- Activating and using the models in TELEMAC

DAY 1 · AFTERNOON **WAQTEL (practical)**

- Adding tracers and couplings, critical reading of results
- Engineering case: dispersion of a micropollutant in lake-bed sediments over one year

DAY 2 · MORNING **Sediments and morphodynamics with GAIA (lecture)**

- Sediment classes, 2D advection-diffusion, flocculation
- Bedload transport and corrections (slope, secondary currents)
- Consolidation, active layer, stratigraphy; .cli files, restart, NESTOR

DAY 2 · AFTERNOON **GAIA (practical)**

- Tidal estuary study with several sediment classes
- Deposition zones, salinity and clay flocculation

Teaching methods

Remote course in a virtual classroom, in English.

Active teaching alternating theory and hands-on practical work on the participant's own computer, with exercises of increasing difficulty.

Resources: virtual classroom with screen sharing, course materials given to each participant, remote assistance from the trainer during practical work.

Pre-course call to understand participants' needs; end-of-day review (feedback and adjustments); immediate satisfaction survey at the end of the course.

Supervision

Simvia adapts each course to the actual needs of the trainees. Sessions rely on active teaching, with practical and personalised exercises that anchor learning in real time.

Theory sessions alternate with supervised practical work.

Equipment

Computer with an internet connection, microphone and speakers or headset; software installed before the session (installation help is provided).

Duration

Total duration: 2 days, i.e. 14 hours.
Schedule: 9:00 am – 12:30 pm and 1:30 pm – 5:00 pm.

Dates

May 13 and 20, 2027 (two days one week apart)

Location

Remote course in a virtual classroom, inter-company format. The connection link is sent with the joining instructions.

Price per participant

Company: €1,800 excl. VAT per participant.
Academic: €800 excl. VAT per participant.
Included: help with installing the latest version of the software, training completion certificate.

French companies may have the course covered by their OPCO (French skills operator) under the skills development plan. Not eligible for CPF (French personal training account).

Accessibility

Simvia is committed to making its courses accessible to people with disabilities; our premises are accessible to people with reduced mobility. Our trainers adapt their teaching methods to each situation. For any specific need, please contact our disability officer: oumaima.nassif@simvia.tech.

Course manager, contact	**Teaching manager:** Florian Hermet, florian.hermet@simvia.tech **Administrative and disability officer:** Oumaima Nassif, oumaima.nassif@simvia.tech **General contact:** training@simvia.tech
Trainers	**Louis Haurie** PhD in theoretical physics, scientific computing and HPC engineer Practising openTELEMAC trainer at Simvia, working daily on industrial projects. If unavailable, a trainer with equivalent expertise is appointed and confirmed in the joining instructions.
Attendance and certificate	Attendance sheet signed by trainees and trainer for each half-day. Training completion certificate issued upon passing the final assessment.
Assessment	Formative assessment at the end of day 1 (checking what has been learned that day). Summative assessment at the end of day 2 (validating learning across the whole course). Immediate satisfaction survey at the end of the course. Delayed assessment 2 months after the course, for the trainee and the company.
Going further	Simvia offers specialisation modules and a technical support service to deepen and extend skills development. Full catalogue: https://simvia.tech/services/training/catalog