FORSAID

Demonstrations and training course for forest stakeholders

Automation in detection and monitoring of forest pests: Automatic traps and insect identification

Organised by FORSAID

In collaboration with NEOVIZ GROUP

Centre d'Hébergement et de Loisirs - Vincent Pukart & Jacques Secrétin; 14 Av. de la Guerche; 44250 Saint-Brevin-les-Pins, France

Working language: French or English depending on the participants

Workshop intended for: forest managers, urban tree managers, plant health inspection services, custom officers, researchers

27th November 2026, Friday

09:00-17:00

- 08:30 - Welcome coffee
- 09:00 - An introduction to the risks of biological invasions in forests
- 09:30 - Presentation of the **FORSAID** project (Forest surveillance with artificial intelligence and digital technologies; Horizon Europe)
- 10:00 - Demonstration of automated methodologies: open source and low-cost Entomoscope for automatic identification of insect pests; smart traps for pine processionary moths with automatic transmission of catch data; aerial remote sensing coupled with AI for pine wood nematode symptoms detection
- 13:00 - Lunch
- 14:00 - Summary of the discussions on the tools presented
- 15:00 - Collective assessment of the strengths, weaknesses, expectations and opportunities for deploying these tools
- 17:00 - Closing of the workshop

Click here to register

Free registration until all available places are filled

For more information b.deguerry@iefc.net

Co-funded by the European Union

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Technologies to be demonstrated

Entomoscope

The Entomoscope, recently developed by the Karlsruhe Institute of Technology (KIT), is a low-cost, open-source photomicroscope which, using high-resolution digital imaging, enables a pre-trained convolutional neural network (AI-based) to accurately detect and classify images of insects (Wührl et al, 2024).

Target species: species of *Monochamus*, *Agrilus*, longhorn beetles, bark beetles as well as both exotic and native beetles

Key innovations:

- providing plant health inspectors and other practitioners with an alternative to molecular or manual identification of specimens preserved in ethanol
- free access to the construction plans, 3D print files and software
- high identification performance on early AI classification models

Smart traps

This innovation, developed by Trapview, consists of a green funnel trap that guides target species onto a roll of sticky paper, where a photograph is taken by a camera and transmitted via the GSM network along with climate data. The system is powered by a solar panel and a battery.

Target species: pine and oak processionary caterpillars and bark beetles

Key innovations:

- automatic, daily transmission of capture data without the need for regular visits to empty the trap and count the captured organisms
- access to the daily photo for manual verification
- high capture performance at both low and high population densities

Aerial remote sensing

Yet another detection method which is still at the experimental stage, it relies on the processing of images using AI. This requires a large training dataset, which is currently being developed in the Portuguese context. Moreover, detecting a dying tree does not necessarily mean that the cause of its decline is the pine wood nematode. Research is therefore underway to attempt to identify the distribution pattern of symptomatic trees (both in time and space) that are characteristic of damage caused by the pine wood nematode.

Target species: pine wood nematode

Key innovations:

- developing a diagnostic tool that combines high-resolution imagery with AI analysis
- a more effective and cost-efficient alternative to setting up a network of vector insect traps or conducting traditional field surveys
- considering a review of the regulatory control strategy to prioritise surveillance instead of clear-cutting (which is very costly and not sufficiently effective)

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