Technology-driven early detection of biotic stressors threatening European plant health

Three Horizon Europe projects. One overarching mission.

CERBERUS

Facilitating the early detection of pest pressure in support of sustainable crop protection defined by reduced pesticide use and intelligent spraying approaches

FORSAID

Introducing technological innovations for building a comprehensive detection, surveillance and monitoring framework for EU-regulated forest pests and pathogens

STELLA

Developing a holistic digital and real-time system for early warning and detection of EU-regulated pests and pathogens, combatting prominent plant diseases with modern sensing and AI

A shared vision

THEMES

- Plant health
- Agent detection & monitoring
- Digital & smart technologies
- Cost-effectiveness
- Capacity-building

RESEARCH & PRACTICE

- Open sharing of outputs
- Commercial feasibility assessments
- Knowledge exchange loops
- Researcher – practitioner – policy dialogue

AIMS

- Early agent warning frameworks
- Improving existing digital tools
- Stakeholder engagement
- Citizen science empowerment
- Policy guidance

TECHNOLOGIES

- Remote sensing (satellite & UAV)
- Smart traps
- Proximal sensing & robotics
- AI-based detection models
- Citizen science platforms

Stakeholders in focus

- Researchers & technicians
- Farmers & forest owners
- Practitioners
- Citizen scientists
- Decision-makers & policy bodies

Funded by the European Union

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The projects at a glance

CERBERUS

DURATION
Jan 2024 – Dec 2027

CONSORTIUM
13 partners • 4 countries

FOCUS AREA
Mediterranean

TARGET AGENTS

Quarantine pests

Bactrocera dorsalis

Candidatus Phytoplasma vitis

Xylella fastidiosa

Commonly managed pests

Bactrocera oleae

Ceratitis capitata

Lobesia botrana

KEY TOOLS

Combined remote & proximal sensing

Ground scouting robots for large-area sampling

Smart precision sprayers

Cloud platform with risk & prescription maps

Automated stress mapping (biotic vs. abiotic)

cerberusproject.eu

FORSAID

DURATION
Sep 2024 – Feb 2028

CONSORTIUM
17 partners • 10 countries

FOCUS AREA
Europe

TARGET AGENTS

Fungi

Ceratocystis platani

Cryphonectria parasitica

Fusarium circinatum

Insects

Agrilus anxius

Agrilus planipennis

Corythucha arcuata

Ips typographus

Thaumetopoea pityocampa

Thaumetopoea processionea

Nematode

Bursaphelenchus xylophilus

KEY TOOLS

Satellite remote sensing of forest damage

Aerial remote sensing of tree damage

Proximal sensing of young tree damage

Automated AI-powered trapping devices

eDNA protocols for species detection

Citizen science platforms

forsaid.eu

STELLA

DURATION
Jan 2024 – Dec 2027

CONSORTIUM
14 partners • 7 countries

FOCUS AREA
Europe & New Zealand

TARGET AGENTS

Bacteria

Candidatus phytoplasma solani

Pseudomonas savastanoi

Ralstonia solanacearum

Fungi

Ceratocystis platani

Neofabraea alba

Verticillium dahliae

Viruses

Polerovirus genus - Potato Leafroll Virus

Ampelovirus univitis - GLRaV-1 (Grapevine Leafroll Disease Virus)

Ampelovirus trivitis - GLRaV-3 (Grapevine Leafroll Disease Virus)

KEY TOOLS

Satellite & UAV remote sensing

Proximal sensing technologies

IoT sensors & smart insect traps

AI pest detection & prediction models

Crowdsourcing (citizen science) tools

Integrated Pest Surveillance System (STELLA PSS)

stella-pss.eu