

Forestry machinery and sensor automation technologies are sought for the co-development of a patented wildfire prevention system

Summary

Profile type

Technology request

Company's country

Hungary

POD reference

TRHU20260831007

Profile status

PUBLISHED

Type of partnership

Research and development cooperation agreement
Commercial agreement with technical assistance

Targeted countries

• All countries

Contact Person

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Term of validity

31 Aug 2026
31 Aug 2027

Last update

31 Aug 2026

General Information

Short summary

A Hungarian environmental technology SME specializing in advanced fire prevention systems seeks international partners with expertise in forestry machinery and automation. The technology is requested to integrate with the client's patented tree-trunk cooling formulation to develop a field-ready mobile prototype. Cooperation is sought under research and development or commercial agreements with technical assistance.

Full description

This Hungarian SME specializes in the development of advanced wildfire prevention and mitigation systems. Based on several years of multidisciplinary research, the company has developed three patented inventions to enhance forest fire resilience. The core technology functions by coating tree trunks within a designated protection zone with a proprietary, highly viscous, water-cooling chemical formulation. This coating prevents the bark from heating to its ignition threshold, effectively creating an active firebreak to halt the spread of wildfires.

While the chemical formulation and core principles have been validated in laboratory environments, the company requires external technical capabilities to transition from a "pilot-ready" status to large-scale, field-ready deployment. Specifically, the company lacks the heavy mechanical platforms and automated spray-applicators required to distribute the fluid formulation efficiently across uneven and densely forested terrain. To bridge this gap, the Hungarian company is seeking international partners to contribute specialized engineering expertise, heavy-machinery platforms, and automated sensing systems to co-develop a mobile wildfire-suppression prototype.

The client seeks to establish partnerships under two distinct frameworks.

Research and Development Cooperation Agreement:

- To combine the company's patented chemical concept with external engineering expertise to design, build, and test a fully functional physical prototype.
- Partners will collaborate on mechanical and hydraulic integration, fluid dynamics modeling for high-viscosity distribution, and the execution of joint field trials to validate performance in real-world environments.

Commercial Agreement with Technical Assistance:

- To adapt existing high-mobility forestry machinery or agricultural mobile platforms to serve as the carrier vehicle for the distribution system.
- The partner will supply or adapt off-the-shelf machinery, integrated sensors, or control systems and provide the necessary technical documentation and operational training to the Hungarian development team.

Advantages and innovations

Addressing Critical Wildfire Mitigation: The technology addresses the critical and escalating European threat of severe forest fires by offering an active containment mechanism specifically engineered for rapid deployment in dense and topographically inaccessible terrain.

Targeted and Proactive Perimeter Protection: Unlike traditional reactive firefighting methods, this solution focuses on precise, perimeter-level prevention by treating tree bark to halt fire progression before it spreads out of control.

Modular Hardware Adaptability: The system is designed to be adapted to standard, existing agricultural or heavy forestry mobile equipment, eliminating the need for expensive, single-purpose proprietary vehicles.

Multi-Disciplinary Safety and Efficiency: The integration of automation, remote sensing, and mechanical carriers minimizes the exposure of emergency personnel to active fire fronts, establishing a safer, more predictable deployment environment.

Climate Resilience and Ecosystem Protection: The long-term objective of the development is to provide a scalable, low-environmental-impact tool that directly supports forest preservation, protects local biodiversity, and contributes to regional climate adaptation goals.

Technical specification or expertise sought

The company seeks to collaborate with SMEs (SME ≤10, 11-49, or 50-249), Big Companies, Research Institutions, or Universities active in forestry engineering, machinery manufacturing, or automation.

- **Under a Research and Development Cooperation Agreement:** The partner is expected to co-design the applicator system, conduct simulations, and provide independent scientific validation, laboratory modeling, or performance measurements during the pilot phases.
- **Under a Commercial Agreement with Technical Assistance:** Industrial partners are expected to customize and supply mobile platforms or hydraulic/sensor components, providing detailed technical documentation and training for system integration.
- **Field Validation Partners:** Operational forestry organizations or firefighting associations are sought to provide access to pilot forest terrains and support the logistical coordination of controlled field trials.

Stage of development

Concept stage

Sustainable Development goals

- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 15: Life on Land**
- **Goal 13: Climate Action**
- **Goal 17: Partnerships to achieve the Goal**
- **Goal 11: Sustainable Cities and Communities**

IPR Status

IPR applied but not yet granted

IPR Notes

Partner Sought

Expected role of the partner

The partner is expected to contribute specific technical or operational expertise to the development and validation of the wildfire suppression system.

Under a research and development cooperation agreement, the partner may support engineering design, prototype development, simulation, component selection, sensor or control integration, testing methodology and performance evaluation. Research organisations and universities may contribute independent measurements, modelling, laboratory testing and scientific validation.

Under a commercial agreement with technical assistance, an industrial partner may adapt or supply suitable forestry machinery, mobile platforms, mechanical or hydraulic components, control systems or other equipment required for a demonstrable prototype.

Partners with access to suitable forest environments, forestry operations or wildfire-testing facilities are especially valuable. FireNovum would provide the protected technical concept and coordinate development, while the partner would contribute complementary engineering, testing and operational capabilities.

The desired outcome is a jointly developed and technically validated prototype supported by documented test results and a basis for further commercialisation and European deployment.

Type of partnership

Research and development cooperation agreement
Commercial agreement with technical assistance

Type and size of the partner

- **University**
- **SME 50 - 249**
- **SME <=10**
- **Big company**
- **R&D Institution**
- **SME 11-49**

Dissemination

Technology keywords

- **10002009 - Natural Disasters**
- **10001004 - Hazardous Materials**
- **10001003 - Fire Safety Technology**

Market keywords

- **05009004 - Plant health**
- **09005 - Agriculture, Forestry, Fishing, Animal Husbandry & Related Products**

Targeted countries

- All countries

Sector groups involved