Companies and universities in demonstration action

rePLANT PRESENTS TECHNOLOGICAL SOLUTIONS FOR FOREST AND FIRE MANAGEMENT

rePLANT, an innovative technological project that brings together companies, universities, and research centres for the enhancement and defence of forests, today presented innovative technologies for the defence and management of forests and fire at Serras do Porto Park. Among them is the monitoring of the forest through optical cameras, which are already installed in that natural space and help to simulate and predict the behaviour of fire. New digital sensors and processes for forest machines and the use of robotics in forest clearing operations will also be presented.

Developing the forest, making it safer, and proving that people and machines can work together, by creating an ecosystem of greater active protection, is the motto of rePLANT, an initiative supported by Compete/Portugal 2020, through the POCI and Lisbon 2020 programmes. rePLANT seeks to have an impact on the entire productive and business ecosystem of the forestry sector, by improving the safety of populations with fire prevention and fire fighting systems, while reducing threats to biodiversity and increasing the resilience of the forest and infrastructures. It also seeks to innovate in making the forest more productive, efficient, and less hazardous, thus ensuring the sector's competitiveness.

"The technologies we present today are among a range of results and products that stem from this mobilising project, which brings together the best technical-scientific knowledge of the business and non-business entities that shape rePLANT. It has been three years of work for the future of the forest, with solutions that contribute to its sustainable development and to the valorisation of the entire forestry value chain", explains Carlos Fonseca, Scientific and Technological Director of CoLAB ForestWISE, who coordinates the project along with Navigator Forest Portugal.

Demonstration action on Forest Management

The initiative, led by Navigator Forest Portugal and CoLAB ForestWISE, brought together this project's main partners (REN, University of Coimbra, whereness, University of Trás-os-Montes and Alto Douro, Altri, INESC TEC, Trigger, Fravizel) in the presentation of four innovative projects:

Support Systems for wildfire monitoring

REN and the University of Coimbra have installed surveillance systems on REN poles located in the territory of Serras do Porto Park. These systems are composed of optical and thermal cameras, and they monitor, protect, and anticipate the impact of wildfires on the forest, by providing real-time images with information about the weather and vegetation. Scientific research will make it possible to simulate fire behaviour and to monitor fires, thus contributing to the resilience and integrity of the forest and infrastructure.

Mobile Applications for Forest Inventory

Good forest management practices require the use of monitoring tools that enable decision-making, such as the forest inventory. The information collected enables us to know the number of trees, the volume, and other information of quantitative and qualitative nature, which is crucial for effective planning. These mobile applications can be used by small landowners and forest associations, as well as by large companies in the forestry sector, and they enable a very reliable, low-cost, simple, and quick estimation.

Digital integration of data in equipment along the value chain

In the course of the project, technologies were developed making it possible to remotely and automatically gather information from the equipment associated with forestry operations. This information is important for the entire value chain, and obtaining it involves recording and reporting all the data collected by the sensors of the machines used in forestry operations. This technology could enable, for example, real-time management of forestry machines, monitoring production, location, and movement of the felling operation.

New equipment for fuel management using robotics

INESCTEC tested the Modular-E robot in forest cleaning tasks along the plantation lines. They also carried out some preliminary tests in Serras do Porto Park, which yielded results that allowed the drawing of conclusions regarding the improvement of the equipment. With centimetre-precision recording, this equipment can detect areas that need cleaning with minimal margin of error. Additionally, it is compact and affordable, making it a practical and economical solution for forest maintenance.

RePLANT is structured around three major areas of activity. Forest and fire management (led by Sonae Arauco and by Instituto Superior de Agronomia of the University of Lisbon); Risk management (under the coordination of REN – Redes Energéticas Nacionais and the University of Coimbra); and Circular economy and value chains (under the management of Navigator Forest

Portugal and ForestWISE). Led by Navigator Forest Portugal, with the technical and scientific coordination of CoLAB ForestWISE, rePLANT has an investment of 5.6 million euros.

About rePLANT:

rePLANT is a mobilising project that brings together 20 entities, including leading companies in the sector and non-business entities in R&I, in a common and coordinated effort to contribute to enhancing the Portuguese forest's value through the implementation of strategies for integrated forest and fire management. The Portuguese Forest is a source of environmental, social, and economic wealth, mobilising around 24,000 companies and being responsible for around 100,000 jobs, as well as for 10% of Portuguese exports. rePLANT is a project co-funded by the Competitiveness and Internationalisation Operational Programme under the Lisbon Regional Operational Programme, Portugal 2020, and the European Union through the European Regional Development Fund (ERDF).

Additional information at: www.rePLANT.pt