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## **CT successfully concludes the ALARAD project: pioneering precision agriculture for sustainable, high-quality production**

- **CT has spearheaded the development and implementation of the ALARAD platform, integrating cutting-edge technologies to enhance the management and quality of agricultural production in Ribera del Duero vineyards.**
- **The project combines IoT technologies, artificial intelligence, and advanced sensors to optimise agricultural management and promote sustainable practices in the sector.**

**Madrid, January 20, 2025-** CT announces the successful completion of the ALARAD project, an international initiative aimed at developing a smart farming platform for traceable, high-quality agricultural production. This project has facilitated the implementation of a decision-making support system based on proximal and remote sensing, driving the digital transformation of the agricultural sector and laying the groundwork for more productive, sustainable, and high-quality precision agriculture.

In Spain, the project concluded with the installation of a comprehensive monitoring and decision-making system in the vineyards of Bodegas Bohórquez, located in the Ribera del Duero Designation of Origin in Valladolid province.

### **Technological innovation at the service of agriculture**

ALARAD integrates IoT technologies, artificial intelligence, and precision farming techniques to optimise vineyard management and maximise harvest yield and quality. In the vineyards of Bodegas Bohórquez, three sensor networks have been installed in different locations, providing real-time data accessible via a web application. This system monitors key variables such as the physiological state, vigour, and growth of the crop.

Additionally, CT's team has developed advanced artificial intelligence models capable of predicting production-related variables such as yield per hectare, fruit pH, and other quality indicators critical for the Ribera del Duero Designation of Origin.

### **International collaboration with a local impact**

The project is the result of international collaboration between South Korea's Korea Electronics Technology Institute (KETI) and Spanish partners led by CT, within the framework of the Spain-Korea bilateral call. This joint effort enabled the development



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of two use cases: one in vertical farms in Korea and another in the vineyards of Bodegas Bohórquez in Spain.

On its side, CT led the design of the sensor architecture and data analysis, while its partner, Air Institute, contributed generalisable hardware and software solutions tailored for small-scale producers with limited broadband access.

The project also promotes sustainable vineyard management practices, focusing on traceability and reducing environmental impact, aligning with global agricultural sustainability goals.

### **Looking ahead: applications and potential**

Not only has ALARAD demonstrated its effectiveness in vineyards, but its technology can also be applied to a wide variety of crops. The system gathers extensive data volumes, paving the way for future predictive models and customised optimisations for agricultural operations.

This innovative solution not only boosts crop productivity and quality but also supports data-driven decision-making, mitigates risks, and minimises environmental impact, heralding a new era in precision agriculture.

### **About ALARAD**

The ALARAD Project is an R&D initiative under the bilateral call for the 2021 KRESIP Spain-Korea international programme in Artificial Intelligence, partially funded by the CDTI under reference IDI-20210939.

# ALARAD

With financing from:





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**For further information:**

Ignacio Abbad  
Head of Marketing and Communications  
The CT Engineering Group  
Tel. +34 646 368 996  
[ignacio.abbad@ctengineeringgroup.com](mailto:ignacio.abbad@ctengineeringgroup.com)  
[www.ctengineeringgroup.com](http://www.ctengineeringgroup.com)

Denisa Iancu  
Corporate Communications Manager  
The CT Engineering Group  
Tel. + 34 676 835 571  
[dmiancu@ctingenieros.es](mailto:dmiancu@ctingenieros.es)  
[www.ctengineeringgroup.com](http://www.ctengineeringgroup.com)