Profile Status: Published

Technology Offer

A Portuguese non-profit R&D organization offers modular and distributed weather/abiotic sensing based on a wireless network for precision agriculture, focused in viticulture.

Summary

Developed by a Portuguese non-profit R&D organization, the system allows for wireless monitoring of temperature, humidity, leaf wetness, soil moisture, solar and UV radiation, rainfall, atmospheric pressure, wind speed and direction. The technology is available to be transferred to a company that provides services in environmental monitoring or the internet of things (IoT) for agriculture, under a licence agreement or technical cooperation agreement.

Creation Date	30 October 2017
Last Update	14 November 2017
Expiration Date	14 November 2018
Reference	TOPT20171030001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/02665e02-d680-4b77-afb4-9d64be485236

Details

Description

An RTD institution focused on technology transfer in the areas of electronics, automation, robotics and instrumentation is offering a licensing agreement or technical cooperation agreement for a solution that uses wireless monitoring for precision agriculture. The RTD team has been working in precision agriculture in national and European projects for more than 10 years.

The offered system is a solution based in a wireless sensor network (WSN) that allows for the detailed monitoring of abiotic parameters covering the entire length of the vineyard. This product is intended for medium and large-sized vineyards. The number of nodes is defined according to the specificities of each vine (size, gradient of the terrain, sun exposure, among others), as well as the set of sensors to be installed in them.

Main application scenarios:
• Identify the points of the vineyard with the highest risk of pests;
• Identify irrigation needs of the vineyard;
• To carry out the environmental characterization of the various sectors of the vineyard permanently or temporarily.

In comparison with traditional weather stations, this solution was designed to be compact and easily integrated into vineyards, without any impact on the handling procedures, in order to provide a distributed and scalable sensing solution with integrated actuators in the nodes.

Advantages and Innovations

Main benefits: modular system; scalable system; low impact in crop handling; compact; no recharging maintenance by using solar panels.

The technology advantages and innovations in relation to competitors are:
- Monitoring parameters such as: air temperature, air humidity, leaf humidity, soil moisture, solar radiation, UV radiation, atmospheric pressure, rainfall, wind speed and direction;
- Smart actuators to remotely or automatically control irrigation systems, fertilizers or others;
- The modular system allows to replace, add or remove sensor modules without stopping or shutting down the node (sensor modules hot swapping);
- Due to its compact size, it is possible to install anywhere being integrated in the vineyards without impact in the handling procedures;
- The system is fully automatic scalable, there is no need to program or reconfigure to install new nodes on the network (coverage capacity areas above 100 Ha);
- The solution doesn't use wires which makes it easy to install, re-install or reconfigure;
- No maintenance for battery replacement or recharging (using solar panels as small as a credit card).

The modular system is unique and an International Patent was applied.

Stage of Development

Prototype available for demonstration

Comments Regarding Stage of Development

The system has been applied to the largest grapevines producers in Portugal, one with 10 node sensors reaching 5 hectares and other with 8 nodes reaching 4 hectares.

IPR Status

Patent(s) applied for but not yet granted

Comment Regarding IPR status

The international patent request was submitted on October 2016.

Profile Origin

National or Regional R&D programme

Keywords

Technology

01003023	Environmental and Biometrics Sensors, Actuators

Market

01004008	Other data communications
09005	Agriculture, Forestry, Fishing, Animal Husbandry & Related Products

NACE

A.01.6.1	Support activities for crop production
C.26.5.1	Manufacture of instruments and appliances for measuring, testing and navigation
M.72.1.9	Other research and experimental development on natural sciences and engineering

Network Contact

Issuing Partner

ASTER - SOCIETA CONSORTILE PER AZIONI

Contact Person

Vera Lullo

Phone Number

+39 0516398090

Email

vera.lullo@aster.it

Open for EOI : Yes

Dissemination

Send to Sector Group

Environment

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Year Established

1991

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
Portuguese

Client Country

Portugal

Partner Sought

Type and Role of Partner Sought

The organization is interested in a licence agreement (looking for licensees to use the technology for an agriculture use) or technical cooperation agreement with a technology company that can further develop and launch the solution to the market.
The partner sought must be a company that provide services in environmental monitoring or IoT for agriculture.

Type and Size of Partner Sought

>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

License agreement
Technical cooperation agreement

Attachments

Profile Status: Published

Technology Offer

Inspection of infrastructures with 3D laser technology

Summary

Spanish technology centre is offering its inspection of infrastructures with 3D laser technology to companies interested in these services in roads, tunnels, railways...The technology offered is thorough and precise and allows obtaining digital data. Partnerships sought are service agreement with companies and public authorities involved in controlling infrastructures and research cooperation agreement with any type of entity in the field of 3D technology

Creation Date	07 March 2018
Last Update	13 March 2018
Expiration Date	14 March 2019
Reference	TOES20180307002
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/fef4e268-92bd-48fc-848d-0a2ed77b518d

Details

Description

Spanish horizontally integrated technology centre is specialized in offering global solutions to companies. It provides them since 1994 in developments, processes, systems and products. It operates in five economic sectors: industry, energy and environment, construction and infrastructure, agrofood, health and quality of life.

Inspection of infrastructures is an action taken in all the companies on the sector under a regular basis over the years. Normally, the procedure consists of employing staff who walks over the selected infrastructure (roads, tunnels, railways…) and notes all the irregularities found.

The systems used on infrastructures inspection are based on human perceptions. Nevertheless, when workers are measuring a specific infrastructure they have to spend many hours and suffering noises (especially from cars driving close to them) and experiencing troubles on their view. The results can vary depending on the working conditions or even workers can have different points of view about the same specific part of the infrastructure checked.

Using technology centre technologies based on 3D laser inspections, all these variables are overpassed as the technology allows obtaining data on higher speed and detecting not only what can be checked on the surface, but also deeper on. Apart from that, laser technologies count with a light system able to illuminate and then better visualize the inspected infrastructure (especially on tunnels).

The technology centre offers its technology and know-how to companies interested in:
- Reducing risks on infrastructure’s inspection.

- Obtaining more exhaustive results.
- Increasing speed of inspections.
- Obtaining digital data.
- Improving the working conditions of the workers and the quality of results.

Partnership is sought for service agreement with companies, especially on the construction or engineering sector, administrations and maintenance companies in need to apply this 3D laser technology.
The technology centre is also interested in research cooperation agreement for developing 3D technologies in a Horizon 2020 project, such as in LEIT-ICT programme.

Advantages and Innovations

Spanish technology centre has broad experience optimising processes and formulations on infrastructure's inspection and techniques offered, based on laser technologies, are more exhaustive and precise than the already used ones based on human´s perceptions.

Technology centre's 3D laser inspection systems is based on:
- Precision measured on centimetres.
- Exhaustive data positioning.
- Results delivered under "dxf" or "ascii" format.
- 3D geo-referenced cloud of points including reflectivity under XYZ format.
- Transversal road profiles and its environment under XYZ or AutoCad format.
- Video registration of the measurement implemented under Avi format.
- All the information is supplied by an external hard disk adaptable to USB 3.0 (or USB 2.0).

Stage of Development

Available for demonstration

IPR Status

Secret Know-how

Profile Origin

Other

Keywords

Technology

01001001	Automation, Robotics Control Systems
02007012	Optical Materials
09001007	Optical Technology related to measurements

Market

02002008	3D
03005	Laser Related
08002002	Industrial measurement and sensing equipment
09007004	Engineering and consulting services related to construction

NACE

M.72.1.1	Research and experimental development on biotechnology
M.72.1.9	Other research and experimental development on natural sciences and engineering

Network Contact

Issuing Partner

ASTER - SOCIETA CONSORTILE PER AZIONI

Contact Person

Vera Lullo

Phone Number

+39 0516398090

Email

vera.lullo@aster.it

Open for EOI : Yes

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Year Established

1994

Turnover

<1M

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
Spanish

Client Country

Spain

Partner Sought

Type and Role of Partner Sought

Service agreement:
- Partners sought are industries from construction, engineering, maintenance sector and administrations interested in inspecting infrastructures.

Research Cooperation Agreement:
- Any type of entity: companies, universities or research and technology centres interested in developing an international R&D project in the field of inspection using 3D technology in a call of Horizon 2020 (LEIT-ICT programme).

Type and Size of Partner Sought

SME 11-50,University,R&D Institution,SME <10,251-500,SME 51-250

Type of Partnership Considered

Services agreement
Research cooperation agreement

Attachments

Profile Status: Published

Technology Offer

Specialist geo-information system for data integration and mining

Summary

A Ukrainian University of Dnepr city offers a software product for monitoring of mineral resources, environmental conditions, forecasting of seismically hazardous events. Advantages - complex processing of various spatial data, operate on Windows, user-friendly interface with built-in hint system. The university is looking for companies for commercial agreement with technical assistance and R&D Institutions for technical cooperation agreement in geological exploration and mineral mining.

Creation Date	19 January 2017
Last Update	10 July 2018
Expiration Date	20 January 2019
Reference	TOUA20170118002
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/f5be6b0a-4c6c-4b9a-b938-cb6501fcf815

Details

Description

The University has a long-term experience of training staff, R&D and applied research, solving practical problems for mining industry and efficient usage of energy resources. An integrated approach allows not only to offer engineering solutions, but also to optimize the entire system on the basis of the automatic control systems and software that enable monitoring of any process. The developments and projects of the University are used in many sectors of economy. The researcher of the University developed powerful tool of integrated intellectual analysis of spatial data RAPID GIS (Recognition, Automated Prognoses, Interpretation of Data). This software combines the possibilities of storage, processing, spatial data visualization and their intellectual analysis by Data Mining methods.
RAPID GIS allows to perform complex processing and analysis various of spatial data – the results of geochemical, geological and geophysical, landscape shots, cartographic materials, space images and data obtained in mines. Data can be provided in a vector, grid and raster forms and converted from one to another. The system includes a core that provides data management, as well as a set of modules, grouped in the following functional subsystems: data management, transforms calculation, lineament analysis, comprehensive data analysis, forecasting, graphics.
In total, the RAPID GIS includes more than 70 functional modules with a single user interface in English and Russian versions. RAPID provides analytical, information and referral, and measuring functions; data pre-processing; construction of related maps, research of dependencies and statistical analysis, detection, clustering and classification of objects and

phenomena; mapping of situations, 2D and 3D-visualization of data, layout and printing of output documents. It supports import and export in Surfer, ArcGIS, ArcView, Micromine, AutoCAD and other formats. RAPID GIS differs from other computer systems solving problems of bowel studying by its focusing on wide application of Data Mining methods for the complex processing of miscellaneous-altitude information - borehole, ground surface and space.
The staff is equipped with all necessary equipment and software and has a long-term experience in solving geological problems using RAPID GIS, which is used in the deposits of Ukraine, Kazakhstan, Uzbekistan, Germany and other countries.
The university is looking for partners such as industrial companies and local authorities for commercial agreement with technical assistance for developed GIS. It can be as its acquisition followed by its technical support, as the joint solution of geological and environmental problems, environmental monitoring problems of the environment and subsurface situation. The team has an opportunity to solve these problems on the basis of the contract on outsourcing. Also welcomed R&D Institutions for the scientific and technical cooperation in order to improve the GIS RAPID or the own developments of a partners are also welcomed

Advantages and Innovations

Advantages:
- Similar systems are not available in Ukraine and almost not represented in the world;
- All modules of the system have a single interface, creating an integrated computing environment;
- It has the minimum system requirements; it can operate on the computer of any generation under the control of any version of Windows OS;
- Work with different types of land, aerospace and well data.

Innovations:
- Unique features for calculating of input data transformation and selecting the most informative of them;
- Developed subsystem of lineament analysis, providing the opportunity to use the results of this analysis in Data Mining procedures;
- Powerful subsystem of solutions prognostic problems by Data Mining methods, including a number of copyright algorithms;
- On the basis of the system's instrumentation it was created the specialized technology of integrated analysis of different type and different level data, oriented on the solving of forecasting tasks of natural resources management.

These innovations distinguish the system from such well-known software products such as Micromine, Erdas Imagine, ENVI, ArcGIS and other.

Stage of Development

Available for demonstration

Comments Regarding Stage of Development

The system needs to be harmonized with EU standards, the appropriate certification and licensing

IPR Status

Copyright

Comment Regarding IPR status

It had been got the state certificate of copyright

Profile Origin

National or Regional R&D programme

Keywords

Technology

01003006	Computer Software
01003012	Imaging, Image Processing, Pattern Recognition
01004007	GIS Geographical Information Systems
10002007	Environmental Engineering / Technology
10002010	Remote sensing technology

Market

02006004	Data processing, analysis and input services
02007007	Applications software
02007016	Artificial intelligence related software
06001001	Exploration services
09006	Mining (non-energy related)

NACE

B.09.9.0	Support activities for other mining and quarrying
J.63.9.9	Other information service activities n.e.c.

Network Contact

Issuing Partner

ASTER - SOCIETA CONSORTILE PER AZIONI

Contact Person

Vera Lullo

Phone Number

+39 0516398090

Email

vera.lullo@aster.it

Open for EOI : Yes

Dissemination

Send to Sector Group

Environment

Client

Type and Size of Organisation Behind the Profile

University

Year Established

1899

Turnover

1 - 10M

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English
Russian

Client Country

Ukraine

Partner Sought

Type and Role of Partner Sought

Type of partner sought - industrial companies, local authorities, scientific and research institutes.

Specific area of activity - companies specializing in the field of geology, geophysics, mineral exploration, forecasting, geological exploration, as well as the companies dealing with energy efficiency and environment.

Tasks to be performed - usage this technology, including monitoring of the local heat losses or environmental load.

Type and Size of Partner Sought

SME 11-50,R&D Institution,251-500,SME 51-250

Type of Partnership Considered

Commercial agreement with technical assistance
Technical cooperation agreement

Attachments