Funded under: FP7-NMP

ROBOT FLEETS FOR HIGHLY EFFECTIVE AGRICULTURE AND FORESTRY MANAGEMENT

From 2010-08-01 to 2014-07-31, closed project | RHEA Website

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<td><strong>Total cost:</strong></td>
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<th>Topic(s):</th>
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<td>NMP-2009-3.4-1 - Automation and robotics for sustainable crop and forestry management</td>
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See other projects for this call

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Objective

In the last two decades, a precise management of agricultural land has been made possible due to the availability of new technologies, including global positioning systems (GPS), geographic information systems (GIS), sensors, automation of agricultural machinery, and high resolution image sensing. As a result, the concept of Precision Agriculture has emerged as the management strategy that uses information technologies to collect and process data from multiple sources in order to facilitate decisions associated with crop production. Moreover, the EU’s sixth environmental action programme addresses the need to encourage farmers to change their use of plant protection products’.

RHEA is focused on the design, development, and testing of a new generation of automatic and robotic systems for both chemical and physical –mechanical and thermal– effective weed management focused on both agriculture and forestry, and covering a large variety of European products including agriculture wide row crops (processing tomato, maize, strawberry, sunflower and cotton), close row crops (winter wheat and winter barley) and forestry woody perennials (walnut trees, almond trees, olive groves and multipurpose open woodland).

RHEA aims at diminishing the use of agricultural chemical inputs in a 75%, improving crop quality, health and safety for humans, and reducing production costs by means of sustainable crop management using a fleet of small, heterogeneous robots –ground and aerial– equipped with advanced sensors, enhanced end-effectors and improved decision control algorithms. RHEA can be considered as a cooperative robotic system, falling within an emerging area of research and technology with a large number of applications as reported by the FP6 Network of Excellence EURON, Special Interest Group on Cooperative Robotics, funded by the European Commission.

RHEA will be a unique opportunity to gather a very large number of multidisciplinary research groups with adequate funds to accomplish an authentic step forward in applying precision agriculture techniques in a massive way.

This consortium joints a number of multidisciplinary, experienced researchers capable of improving individual scientific knowledge, but a large cooperation project is demanded to sum up the individual efforts in a holistic manner. The success of RHEA could bring a new means of applying automatic systems to agriculture and forestry crops with an important impact in improving the economy and environment as well as in maintaining the sustainability of rural areas by launching new technological jobs.

Related information

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<td>Final Report Summary - RHEA (ROBOT FLEETS FOR HIGHLY EFFECTIVE AGRICULTURE AND FORESTRY MANAGEMENT)</td>
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Subjects