## Fiche descriptive

### Informations projet

<table>
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<tr>
<th>SWEEPER</th>
<th>Financé au titre de H2020-EU.2.1.1.5.</th>
</tr>
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<tr>
<td>N° de convention de subvention: 644313</td>
<td>Budget total € 4 345 912,49</td>
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<td>Site web du projet</td>
<td>Contribution de l'UE € 4 028 311,50</td>
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<tr>
<th>Date de début</th>
<th>Date de fin</th>
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<td>1 Février 2015</td>
<td>31 Octobre 2018</td>
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### Coordonné par

STICHTING WAGENINGEN RESEARCH

Pays-Bas

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### Ce projet apparaît dans...

**RESULTS PACK**

*Precision Farming: Sowing the seeds of a new agricultural revolution*

23 Novembre 2018
Objectif

In modern greenhouses there is a high demand to automate labour. The availability of a skilled workforce that accepts repetitive tasks in harsh greenhouse climate conditions is decreasing rapidly. The resulting increase in labour costs and reduced capacity puts major pressure on the competitiveness of the European greenhouse sector. Present robotization of this labour has entered an high level of technological readiness. However, a gap remains which halts the transition from science to economic and societal impact; the so called ‘Technological Innovation Gap’. In the EU-FP7-project CROPS extensive research has been performed on agricultural robotics. One of the applications was a sweet pepper harvesting robot. It was shown that such a robot is economically and technically viable. The proven hardware and software modules (TRL:6) developed in CROPS will be used as the groundwork. The successful CROPS software modules based on the Robotic-Operating-System (ROS) will be maintained and expanded in SWEEPER. Also the gripper end-effector will be retained. This patent pending module is able to grasp the sweet pepper without the need of an accurate measurement of the position and orientation of the fruit. From the CROPS project, also gained knowledge will directly be put to benefit. In several experiments, it turned out that different growers use different cropping systems ranging in crop density. In SWEEPER, the cropping system itself will be optimized to facilitate robotic harvesting. In CROPS it was concluded that instead of a 9DOF, a 4DOF robot arm is sufficient, greatly reducing costs. To improve the level of robotic cognitive abilities, plant models will be applied to approximate location of sweet peppers. This “model-based vision” will increase and speed up fruit detection. Based on the insights of CROPS, sensors will be placed onto the gripper only. Also a LightField sensor will be introduced which is able to record both colour and 3D information simultaneously.

Champ scientifique

/sciences naturelles/informatique et science de l’information/logiciel
/sciences agricoles/agriculture, sylviculture et pêche/horticulture/fruit

Programme(s)

Thème(s)

Appel à propositions

H2020-ICT-2014-1
Régime de financement

IA - Innovation action

Coordinateur

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Type d’activité
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€ 1 287 284,48

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Research Organisations

BEN-GURION UNIVERSITY OF THE NEGEV
Israël
Contribution de l’UE
€ 565 196,38
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<th>Organisation</th>
<th>Pays</th>
<th>Contribution de l’UE</th>
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<tr>
<td>IRMATO INDUSTRIAL SOLUTIONS VEGHEL B.V.</td>
<td>Pays-Bas</td>
<td>€ 372 501,51</td>
<td>Leeuwenhoeckweg 6 5466 AL Veghel</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
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<td>DE TUINDERSHOEK BV</td>
<td>Pays-Bas</td>
<td>€ 105 192,50</td>
<td>Tuindersweg 32 8271PK Ijsselmuiden</td>
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<td>B&amp;A AUTOMATION BVBA</td>
<td>Belgique</td>
<td>€ 263 375</td>
<td>Hinnenboomstraat 1A 2320 Hoogstraten</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
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