Sweet Pepper Harvesting Robot

Fiche descriptive

Informations projet

SWEEPER

N° de convention de subvention: 644313

Financé au titre de
H2020-EU.2.1.1.5.

Date de début
1 Février 2015

Date de fin
31 Octobre 2018

Budget total
€ 4 345 912,49

Contribution de
l'UE
€ 4 028 311,50

STICHTING WAGENINGEN
RESEARCH

Pays-Bas

Ce projet apparaît dans...

RESULTS PACK

Agriculture de précision: semer les graines d’une nouvelle révolution agricole

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

Programme(s)

Thème(s)
### Appel à propositions

H2020-ICT-2014-1

### Régime de financement

IA - Innovation action

### Coordinateur

<table>
<thead>
<tr>
<th>STICHTING WAGENINGEN RESEARCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adresse: Droevendaalsesteeg 4 6708 PB Wageningen Pays-Bas</td>
</tr>
<tr>
<td>Type d’activité: Research Organisations</td>
</tr>
<tr>
<td>Contribution de l’UE: € 1 287 284,48</td>
</tr>
</tbody>
</table>

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### Participants (6)

<table>
<thead>
<tr>
<th>UMEA UNIVERSITET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type d’activité: Higher or Secondary Education Establishments</td>
</tr>
<tr>
<td>Contribution de l’UE: € 876 375</td>
</tr>
<tr>
<td>Adresse: Universitetomradet 901 87 Umea</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>PROEFSTATION VOOR DE GROENTETEELT</th>
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<tbody>
<tr>
<td>Type d’activité: Research Organisations</td>
</tr>
<tr>
<td>Contribution de l’UE: € 558 386,63</td>
</tr>
<tr>
<td>Adresse: Duffelsesteenweg 101 2860 Sint-katelijne-waver</td>
</tr>
</tbody>
</table>

[Contacter l’organisation](#)
BEN-GURION UNIVERSITY OF THE NEGEV

Israël
Contribution de l’UE
€ 565 196,38
Adresse
84105 Beer Sheva
Type d’activité
Higher or Secondary Education Establishments

IRMATO INDUSTRIAL SOLUTIONS VEGHEL B.V.

Pays-Bas
Contribution de l’UE
€ 372 501,51
Adresse
Leeuwenhoeckweg 6
5466 AL Veghel
Type d’activité
Private for-profit entities (excluding Higher or Secondary Education Establishments)

DE TUINDERSHOEK BV

Pays-Bas
Contribution de l’UE
€ 105 192,50
Adresse
Tuindersweg 32
8271PK Ijsselmuiden
Type d’activité
Private for-profit entities (excluding Higher or Secondary Education Establishments)

B&A AUTOMATION BVBA

Belgique
Contribution de l’UE
€ 263 375
Adresse
Hinnenboomstraat 1A
2320 Hoogstraten
Type d’activité
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Dernière mise à jour: 14 Juillet 2017
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