

## Official HiPerGreen Kick-Off: Event Summary

**F**riday 27<sup>th</sup> October marked a special day in the HiPerGreen project calendar as the official kick-off event unfolded at Inholland University of Applied Sciences in Delft. Participants from numerous companies and research establishments congregated to make new acquaintances and share their ideas.

### Welcome

The guests were greeted by the HiPerGreen management team upon arrival before being directed to the open buffet for lunch and refreshments. This was the first opportunity for those invited to mingle and discuss their involvement with the project. A wide variety of guests showed up ranging from expert professors to enthusiastic students, including everything in-between.



Once everybody had settled down in the auditorium, the dean of Inholland Delft, Gerard van Oosten, gave a welcoming speech to get things underway. Gerard raised a sobering thought regarding the potential food crisis humans may face in the future. With a total population forecasted to reach 9 billion by the year 2040, he hopes that applied science pick up the challenge and be at the forefront solving the food challenges of tomorrow. With the HiPerGreen project firmly promoting aspects of sustainability and innovation, Gerard was more than pleased to host the official kick-off at Inholland, Delft.



Next to the stage was Cock Heemskerk to formally introduce the project. As professor in the Lectorate of Robotics at Inholland Alkmaar, a PhD from TU-Delft and 30 years of experience in robotics, Cock is well suited for the role of HiPerGreen Project Manager. Cock gave a brief outline of the afternoon activities before handing over the floor to the guest speakers.

## Cue the Guest Speakers

Jeremy Harbinson, distinguished researcher in plant physiology at Wageningen UR, delivered a truly informative and entertaining speech as the first of the guest speakers. Jeremy cut straight to the point of what is most important for greenhouse growers; Productivity. The relation between crop quality and crop yield is complex, however, one is usually sacrificed at the benefit of the other. Jeremy is confident that with increased crop monitoring, such as provided by the HiPerGreen drone under development, growers can increase both yield and quality without the need to sacrifice one or the other. Jeremy went on to discuss the possible technologies which could be mounted on the drone; Including techniques which could be used to measure differences in chlorophyll content, or levels of transpiration from the leaves, both of which can be used to detect unhealthy plants.



When developing new hardware for drones, rapid prototyping is essential. David Pajares from AvioniCS – a company specialised in rapid prototyping and control systems for small UAVs – presented the so-called 'e-controller', a tailor-made climate module which can be used to monitor environmental conditions inside greenhouses with high precision.

The final guest speaker of the day was Arash Noroozi who introduced the localisation technology of his Delft start-up company, ElpaNav. A challenge faced by the HiPerGreen project is the accurate localisation of the drone inside the greenhouse. Conventional techniques such as GPS simply are not accurate or reliable enough for use inside the greenhouse. This is where Arash explained the possible contribution of his company's innovative indoor tracking system, which utilises Bluetooth signals to pinpoint an object's location to within 10 cm.

## Project Roots & New Beginnings

After the coffee break, Lucien Fesselet resumed the day with a brief history of the 'Drones in de kas' project. He spoke of the numerous failed attempts at acquiring project funding before the RAAK-SIA government subsidy was approved and HiPerGreen was born. Cock continued by emphasising the importance of sharing knowledge and cooperation between all parties involved.

## Risky Business?

The penultimate activity of the day was a workshop which saw the large group split into smaller groups to assess the risks associated within each project work package. This activity proved to be very useful as it resulted in many different suggestions to reduce risks and increase the chances of making this project into a success. A good example was the consensus that the business case validation should be started right from the beginning, i.e. much earlier than originally planned. This specific suggestion as well as many others will be picked up by the management team in the next phase. The day finished on a high note with a 'borrel', and a chance for all guests to further mingle and discuss the topics of the day.

