

LCR4.0

Together for Manufacturing.



**European Union**  
European Regional  
Development Fund

# Farm Urban

**Date:** 07/12/2017

**Technologies:** Product testing and validating

**Sector:** Bio-Sciences

**Primary partner:**  
Virtual Engineering Centre



## Background

Farm Urban's founder members are bio-scientists based at the University of Liverpool and aim to link leading scientific research with local food production.

By taking science fresh from the lab and implementing it at the farm in the heart of urban communities, Farm Urban aim to change both how we do science and how we farm our food.

Farm Urban develop and test the most efficient ways to grow food in urban environments, focusing primarily on aquaponics.

## Approaching LCR 4.0

Farm Urban have a product concept they wanted to explore and develop further which would allow them to better assess environments and techniques for farming efficiently.

The product concept ideally will allow for food to be grown and sourced sustainably in a number of environments, using next generation manufacturing to help manufacture micro agriculture products whilst employing industrial innovative Internet of Things (IoT) technology.

## Partner Support

The Virtual Engineering Centre (VEC) undertook a project to demonstrate a prototype system that can monitor environmental variables. This included the aggregation of sensor data from an aquaponics station which was then presented within a cloud platform.

In addition to this, a technical report was delivered that describes the system design and provides some guidance on further development.

## Working into the Future

Farm Urban are moving rapidly towards their goal of producing affordable and sustainable urban aquaponics solutions on a large scale.

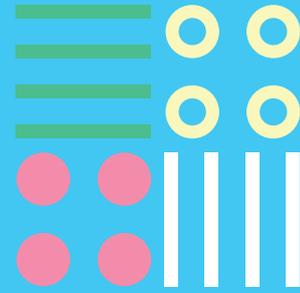
The IoT and systems integration support provided by the VEC has helped the company bring in to focus its technology roadmap for enabling industrial scale urban agriculture solutions and pushing the boundaries of agrotech taking the latest thinking in aquaponics and life science and integrating Industry 4.0 technologies.

The lessons learnt through the collaboration with the VEC have allowed the company to take the first step to developing ever more sustainable and affordable urban food production by employing sensory, machine learning and ultimately, robotics to optimise the crop yields and quality.

Jens Thomas of Farm Urban said:

*"The VEC's offer a unique combination of capabilities; sensors, IoT and systems integration afforded Farm Urban an opportunity to employ Industry 4.0 technologies to the agrotech field of urban aquaponics.*

*The lessons learnt from Industry 4.0 have helped Farm Urban to move closer to realising its vision of providing sustainable and affordable aquaponics solutions on an industrial scale"*



## Results

The Virtual Engineering Centre reviewed commercially available sensors and development platforms for which Farm Urban could use for this project.

The team then designed a system architecture, whilst developing the software according to the system architecture and available hardware.

The VEC built a demonstrator which would allow for testing and provided Farm Urban with any source code and relevant documentation created for this project including making any recommendations for future developments.

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