Anthura BV welcomes a new precision weighing solution

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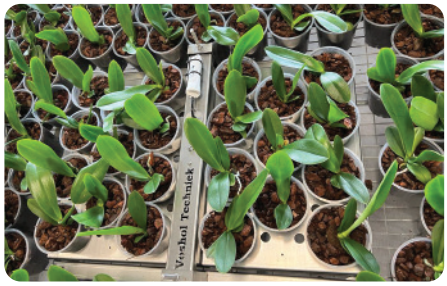
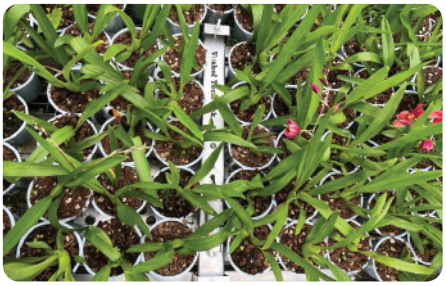
Introduction

Increasingly over the past few years, developments in internet of things have enabled numerous industries and businesses to increase efficiency and reduce costs by implementing centralized monitoring solutions for core processes. One prime example of this is in horticulture.

The cultivation of flora requires a continual balancing act between various factors. Even small changes in temperature, humidity, lighting, water, etc., can enact drastic effects on plant welfare. As such, measuring and monitoring techniques, devices, and approaches are regularly updated, proposed, and implemented to speed or secure growth.

Aranet is thrilled to cooperate with breeder Anthura and precision-machine manufacturer Voshol Techniek in developing a new weighing solution.



Challenge

Greenhouses regularly weigh plants at different times to track development and monitor changes over time. Periodic measuring means assessing health, growth, nutrient and water intake, etc. From there, adjustments (and experiments) to growing conditions can be tracked and updated. However, this necessary act encounters several challenges:

- **Consistency:** Ensuring representative measurements is a continual challenge, as plants vary in weight, size, water level, and much more. Aditionally plants can experience stress due to the measurement itself, potentially making the measurements non-representative.
- **Leveling:** When plants are measured, their water levels can differ from non-weighed plants. It’s important that water uptake and evaporation are similar, or sensor readings will not be representative of the whole crop.
- **Mobility:** Potted plants are often transported in mobile growing systems. But when plants are moving, it's difficult to ensure continual, accurate measuring.
- **Cost:** The right balance must be found between the number of sensors and the overall costs. More sensors mean more accurate data, but at higher costs. Monitoring every plant with individual sensors would be extremely expensive.
- **Data Management:** Managing the large amounts of data generated by continual weighing processes is significant. It requires an effective system for data storage, analysis, and reporting.

Solution

Anthura is now using a specialized, wireless weighing frame. This improves accuracy, mobility, and cost-efficiency. These strategically engineered platforms have played a key role in streamlining Anthura's operations and solving nagging horticulture problems.

- **Consistency:** Plants can now be weighed in their cultivation trays. When compared to other weight scales, this solution provides more representative readings – because all plants within a tray are in a similar condition. Weighed trays need to contain the same amount of water as the trays that are not weighed.
- **Leveling:** Each of the frame's corners has adjustable screws to ensure perfect leveling and prevent uneven water distribution.
- **Mobility:** Unlike stationary hook-and-hanging weighing systems, the new frames have wireless sensors. In addition to saving greenhouse space, this feature means that plants can be moved without compromising the measurements.
- **Cost:** Weighing plants simultaneously reduces the risk of non-representative measurements. Otherwise, this expensive and labor-intensive process only represents a single plant. By comparison, weighing frames are scalable, more efficient, and provide more accurate data.
- **Data Management:** The Aranet ecosystem is designed to be user-friendly and comprehensive. Sensor networks are connected to a base station, which relays information to Aranet Cloud. Cloud access means all information is manageable from anywhere. And even if the Internet goes down, the base station's memory will store data until connections are resumed.

Results

By using the new Aranet weighing frames, Anthura has gained valuable, plant-specific weight data. Furthermore, this solution improves data tracking and streamlines measurement consistency. With consistent flows of applicable data, future examination of this information can help growers further improve processes, boost plant growth, and save resources.

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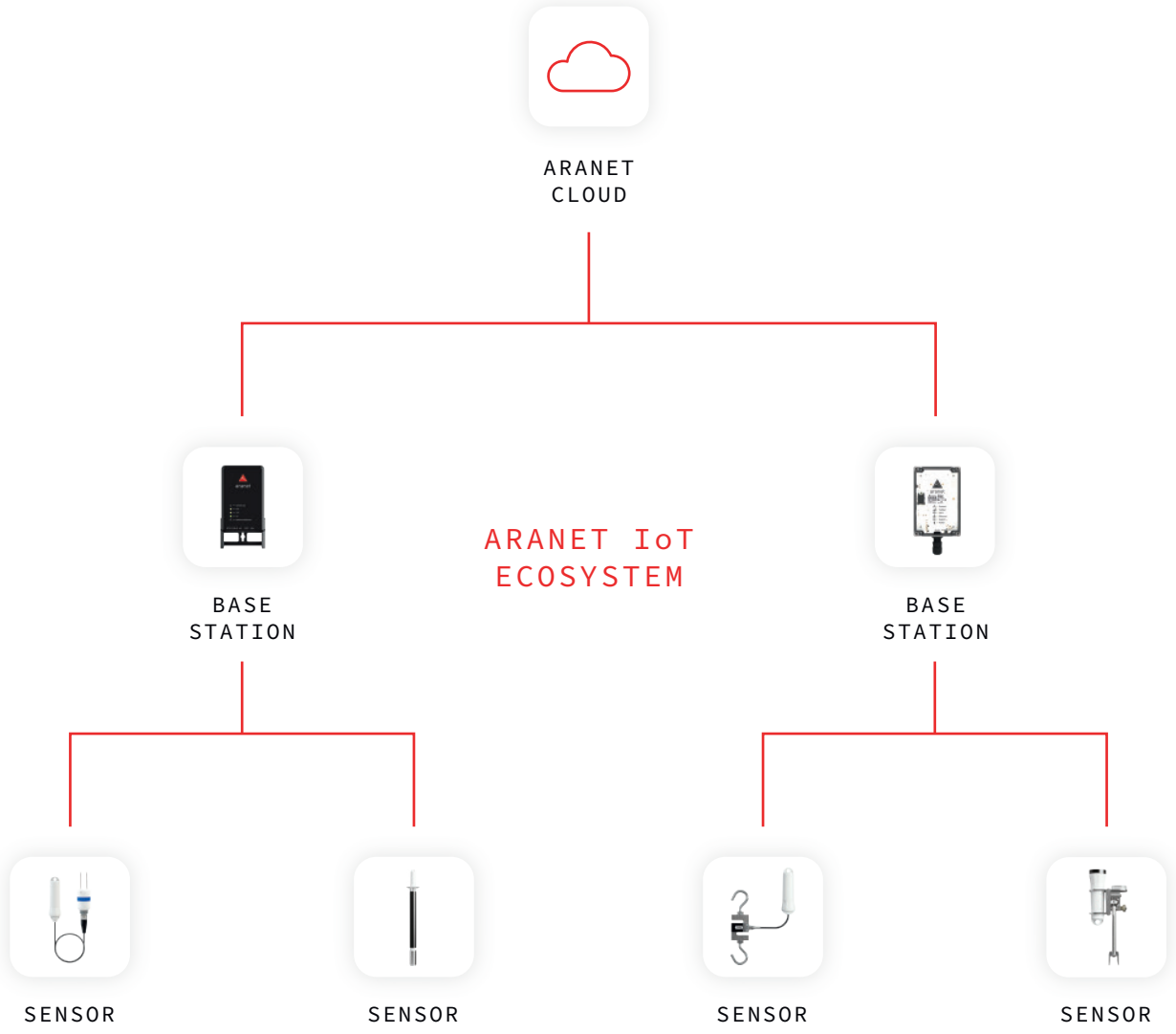

Sensors

A variety of wireless sensors that monitor conditions indoors and outdoors

Base stations

One or multiple base stations that gather and store data from sensors

Cloud

A cloud service to access, view, and analyze all your data in one place

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