CASE STUDY

Heard it through the grapevine:

Ag tech partnership scales up success

Trimble

Transforming food production with precision

As you are enjoying that next sip of merlot, you may want to toast the innovative ag tech trailblazers who are transforming the way we produce our food. The Norwegian autonomy pioneer, Saga Robotics, is a good example. This private company is about to make a splash in the U.S. winery sector with its AI-powered robots that can bypass pesticide use and track fruit growth with unparalleled precision.

Saga Robotics has built a strong reputation for offering vineyards and strawberry growers, primarily in Europe and increasingly in the U.S., an extensive and growing toolbox of automated integrated pest management services via its autonomous platform, Thorvald. This robot provides high-intensity ultraviolet-C (UV-C) light treatment for powdery mildew control, as well as data collection, predatory mites dispensing and runner cutting.

Thorvald is multiple robots rolled into one, autonomously performing several labor intensive tasks on the farm. With weekly treatments throughout the growing season, Thorvald gathers an extensive amount of data for future functions such as yield forecasting and disease detection.

Precision you can count on inch by inch, row by row.

New markets, new potential as ag industry hungry to embrace autonomy

These kinds of precision agriculture innovations are only as good as their accuracy in the field. For the past five years, Saga Robotics has used Trimble® RTK GNSS solutions – a BX992 receiver as a rover with AV28 antennas and the BX992 receiver as a base station with Trimble Zephyr™ antennas – to ensure reliable accuracy.

"Autonomous navigation in strawberry polytunnels requires accurate and reliable robot localisation," says Saga's Head of Robotics Software, Michael Hutchinson, adding that after testing several receivers, Trimble receivers were shown to to achieve high performance at a good cost. "A particular feature of the Trimble devices was its ability to report their positioning accuracy reliably and accurately. Also, on several occasions we received rapid support from customer service on technical issues and others." He also notes the ease of integration into the robots' hardware and software, and seamless base station set-up offered by the Trimble solution.

This partnership becomes increasingly important as Saga ventures into the North American market, says Hutchinson. "Autonomous navigation is our main objective," he explains. "One of the most important factors here is the ability of the device to reliable and accurately report its position. The robot must be aware when its data are inaccurate. This enables more accurate sensor fusion algorithms and more reliable autonomy health monitoring."

While using UV to treat mildew brings huge sustainability gains – lower CO2 emissions and a 60-90% reduction in pesticides – there's also an important data play. **Thorvald is equipped with cameras that collect images and information from each plant** (current = very high frequency) to enable money and time-saving data-driven decisions through detailed crop prediction.

The robots, equipped with Trimble receivers, have now **navigated over 40,000 kilometers autonomously – equivalent to circumnavigating Earth**. The company is expected to quickly post new milestones as it ramps up expansion into the US and UK.

Alongside this growth curve, Trimble remains **committed to providing accurate and reliable GNSS services** to support Saga's continued success.

Trimble BX992

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