

Agri Automation Scaled Farm Robot Monitoring

Autonomous farming innovator reduced manual monitoring and cost-effectively scaled with real-time edge alerts



Delivered cost-effective alerts



Increased automation gains



Scaled operations seamlessly

Enabling scalable autonomy across farms and vineyards

Agri Automation Australia is advancing farming with autonomous field robotics that help growers improve efficiency amid labor constraints. But as robot deployments expanded, operators struggled to monitor activity across large properties and long operating windows. By deploying a lightweight notification system on **Akamai Functions**, Agri Automation introduced real-time, event-driven visibility — enabling operators to step in only when needed while scaling operations with confidence.

Eliminating constant monitoring in autonomous farming

At Agri Automation, CEO Cam Clifford and his team help growers deploy automation that delivers measurable value in real farm conditions. This technology improves labor efficiency and operational consistency, reduces chemical and fuel use, and enables safer around-the-clock operation. Their work in autonomous spraying, transport robotics, and precision agriculture shows how autonomy is moving into practical, commercially viable farming.

Agri Automation supports row-by-row farming with robots that mow, spray, transport, and assist with harvesting. As Tim McCallum, Principal Autonomy Specialist and Customer Systems Lead, explained, autonomous systems deliver the most value when they operate continuously and independently, with humans intervening only when necessary.

As adoption of Agri Automation's robots grew across vineyards and farms, so did the operational burden. "Reliable visibility into robot status is important for efficient supervision. But operators were continually monitoring dashboards," McCallum recalled. "That doesn't scale when you're running multiple robots across large properties."

Operators often juggle multiple responsibilities, making it impractical to constantly check whether a robot has stopped, completed a job, or reached a critical location. In some cases, a single operator responsible for dozens of robots had to repeatedly check dashboards or travel across the property to investigate issues. "This approach limits the efficiency gains automation is meant to deliver," McCallum said. "It's also draining for operators, especially when robots are running throughout the night."



Location

Monarto, South Australia
agriautomation.com.au

Industry

Software and SaaS

Solution

Cloud Computing

Product

Akamai Functions



Building a serverless edge layer for real-time awareness

To address this, McCallum developed a lightweight notification system that runs continuously in the background, monitoring robot activity and sending alerts only when intervention is required. The system surfaces meaningful changes — such as pauses, completed tasks, or location-based events — so operators can respond quickly without constant oversight. “Our goal is to provide farmers and growers with practical autonomy that fits real operations,” he said.

Delivering this capability required fast, low-latency processing. After evaluating several approaches, Agri Automation selected Akamai Functions, a [serverless edge compute](#) platform built on WebAssembly (Wasm).

“Akamai’s solution stood out for its strong sandbox isolation, predictable execution, and ability to interact with multiple robots from a single application without side effects,” McCallum explained.

Akamai Functions runs lightweight logic close to where data is generated, eliminating infrastructure overhead. Using Spin, the open source developer tool, McCallum built the application in days and deployed it in minutes with a single command. “We didn’t need to manage servers, storage, or security,” he said. “We just wrote the logic and deployed it.”

He was equally impressed with the ability to update the system from the field. “I can connect to the deployment, refine logic, and push updates from remote locations. That makes a huge difference as requirements evolve,” he said.

Replacing dashboards with scalable, real-time visibility

The platform sits between the robot cloud API and the notification workflow, evaluating robot state, applying decision logic, and triggering alerts when conditions are met. It also supports both event-driven and scheduled execution. “Akamai Functions’ cron-based trigger allows the system to run on a time basis without human intervention,” McCallum noted. “For example, it can poll a robot every few minutes or check whether it has entered a geofenced area.”

The notification system changed how operators interact with robots. Instead of constant supervision, they rely on timely SMS alerts tied to key operational events, including entering a loading zone, approaching a public access point, completing a task, low battery levels, arrival at a geofenced destination, and when the robot is running behind schedule. “Our application has already sent over 1,500 SMS notifications. That means operators don’t need to stay glued to a dashboard. They’re free to do other work,” McCallum explained.

Notifications now support a growing range of agricultural workflows, including UVEX light treatment during overnight operations, mowing and slashing, spraying, fertilizing, and harvesting. More recently, Agri Automation introduced notifications for berry harvesting workflows, where [Burro](#) robots transport freshly picked berries back to the cool room. Real-time alerts keep pickers and packers aligned by notifying teams as soon as a Burro is ready for unloading, helping berries reach cold storage faster to preserve freshness and improve overall crop quality.



Akamai Functions delivers the speed, simplicity, and scalability we need to grow efficiently and cost effectively.

Tim McCallum
Principal Autonomy Specialist
and Customer Systems Lead,
Agri Automation Australia

Improving efficiency and scaling with confidence

Now deployed across multiple sites, the system has reduced manual monitoring and improved response times to pauses and faults. Operators can oversee multiple robots across large properties and extended operating periods through a single application, without added complexity. More than a dozen customer sites, some with multiple robots, have shifted away from continuous manual monitoring and are now confident in system performance.

“With notifications, one person can manage multiple robots easily,” McCallum said.

The pay-per-invocation model of Akamai Functions also aligns naturally with agricultural operations, where activity varies by season and site. Costs scale with actual robot usage rather than fixed infrastructure. “We’re not paying for idle capacity,” McCallum said.

Agri Automation plans to expand the system across more robot models and sites, and extend it beyond notifications into automated control using APIs. “Akamai Functions enabled us to build a reliable background system that keeps growers informed without constant supervision. That makes autonomy practical at scale,” McCallum concluded.



Agri Automation Australia presents the future of farming with innovative agri-tech solutions from around the world. We believe that the future of agriculture lies in the adoption of advanced technologies. From autonomous systems to precision farming equipment and other innovative solutions, we are committed to staying at the forefront of the industry and offering our customers the latest and most effective technologies available. Our easy-to-use and affordable products are built to tackle today’s farming challenges to increase the productivity and efficiency of your operation.