

CASE STUDY

Automating Predictive Maintenance

at semiconductor manufacturer GlobalFoundries



“It’s not economical for us to go and sensorize every piece of equipment in this really vast facility. It’s probably more practical and actually quite a bit easier for us to use the mobile robotics approach.”
—Samantha Garrison, Deputy Director Factory Automation, GlobalFoundries

OVERVIEW

GlobalFoundries (GF) weighed two options for automating condition monitoring and predictive maintenance at its facility in Burlington, Vermont. It could install thousands of fixed sensors or deploy Boston Dynamics’ Spot robot to inspect equipment using a mobile suite of sensors. Because its manufacturing equipment has a long life cycle, it didn’t need fixed sensors producing a constant stream of static data. Periodic inspections from Spot was the most practical solution.



SOLUTION

GF teamed with Boston Dynamics partner Levatas to set up Spot’s autonomous missions. Levatas computer vision models based on gauges and motors at GF teach Spot how to take readings and choose a course of action. “We train Spot to know what it’s looking at and then to make decisions based off that,” said Dan Zuba, Boston Dynamics Key Account Manager. “Alerting somebody that this equipment is too hot or there’s something trending.”

OUTCOMES

Spot has significantly enhanced GF’s maintenance and monitoring capabilities by collecting valuable data across thousands of inspection points—instrumental in reducing downtime by building predictive models for planned maintenance. “It’s really important for us to keep operations moving and also to maintain a flow of product for our customers,” said Samantha Garrison. “The application of mobile robotics is really unique because we’re able to implement these new technologies in a way that’s flexible and also keep our facilities up and running during that implementation process.”



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