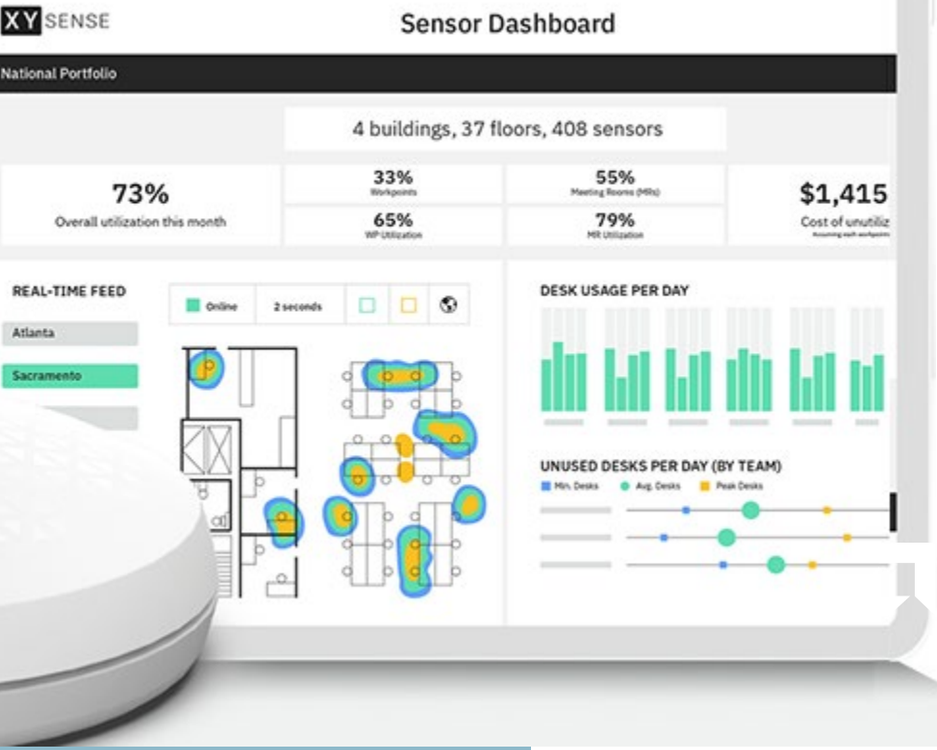


XY Sense Workplace Sensors, Powered by AMD, Help Companies Manage Office Space in Real Time

Using Adaptive Computing, This AI-Based Solution Helps Companies with Office Space Planning, Social Distancing

PARTNER

XY SENSE

INDUSTRY

Industrial

CHALLENGES

In the post-pandemic era, companies are challenged with trying to better understand the day-to-day use of their work environments in order to make better-informed decisions about real estate investments.

SOLUTION

XY Sense's workplace occupancy sensor offering is a sensor-based neural network solution that helps users understand occupancy and paths of employee movement so they can dynamically allocate workspace. The solution is powered by the Zynq™ 7000 adaptive computing platform from AMD.

RESULTS

XY Sense was able to develop a custom method for implmenting machine learning algorithms on an FPGA

AMD TECHNOLOGY AT A GLANCE

Zynq 7000 SoC

XY Sense was looking to build a solution that would help companies better understand the day-to-day utilization of their work environments.

Realizing that real-time tracking and reporting of such data would help companies make better-informed decisions about their real-estate investments, the company developed an AI-based neural-network solution, built on AMD's adaptive computing technology, that captures anonymous occupancy data and presents it in easy-to-read dashboards.

CHALLENGE

Real estate is the second- or third-largest expense for most companies, yet not many are able to accurately detail how (or whether) their space is being used. Not having a good handle on occupancy data in real-time, means that companies cannot properly manage space utilization.

There are some solutions on the market to address this issue, but they are either too expensive or not very accurate because they track devices, rather than people. XY Sense set out to find a way to simplify the capture and application of workplace utilization data.

The company wanted to build a solution that was affordable and flexible enough to understand the use of all office spaces at any given point in time, over time. They knew that making employees log into a device or carry a GPS tracker would not work, because some workers would inevitably forget to log in or carry their devices with them as they walked about the office. They wanted to build a solution that could run itself, and was accurate, yet kept employee identities' private by delivering only (X,Y) coordinate data.

SOLUTION

The solution is XY Sense's workplace occupancy sensor offering. This sensor-based neural network solution works in real time to help users understand office occupancy and paths of employee movement so that they can dynamically allocate available workspace. It can also help companies monitor compliance with pandemic-related social distancing requirements, and make it easier to develop safe, return-to-office workspace plans.

XY Sense positions workers as anonymous (X,Y) coordinates on a digital floorplan grid with positional accuracy to within one foot. A scalable, serverless cloud solution takes in billions of data points from the sensors and displays the information within two seconds of its occurrence. This historical data is then presented onto a dashboard for easy consumption. Each sensor can cover an area of about 20 desks (1,000 square feet), which is about twice the area covered by competing systems. This means there are fewer sensors for customers to buy and install.

Powering the system and helping to facilitate and process real-time sensor data is the Zynq 7000 adaptive

computing platform from AMD. This system-on-chip device has enough FPGA logic on-board to enable XY Sense to implement its custom neural networks and deliver high-resolution image detection and analysis.

Equipped with dual ARM core processors, there's plenty of speed to perform required pre- and post-processing, with enough headroom left to run Linux and maintain connectivity objectives.

"This industrial-grade chip is preferred for us because we can push our machine learning algorithms harder without causing thermal limits to be reached, given that we are operating in a constrained product environment (without strong airflow or a fan)," said Libby Owens, head of marketing at XYSense.

"Additionally, the long availability and support timelines for this chip mean we have confidence in our ability to scale our product manufacturing to meet global customer demands," she added.

Owens also praised the Zynq's comprehensive ecosystem, describing it as "a mature platform with lots of available resources, examples, and support."

RESULT

Owens said the benefits of partnering with AMD have been numerous, ranging from time and money saved to solving complex problems.

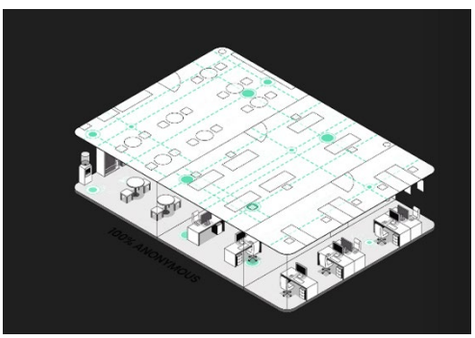
"There are many example designs and solutions available online that helped us get the basic platform infrastructure up and running, allowing us to spend more time solving our particular business problems," she said, adding that the chip's longevity means the company doesn't have to waste time managing end-of-life scenarios.

"We have developed a custom method of implementing machine learning algorithms on an FPGA, and I don't think we would have been able to achieve the same levels of performance and flexibility with a different platform," she said.

WANT TO LEARN MORE?

About AMD's Zynq SoCs

About XYSense



XY Sense tracks (X,Y) coordinates to help companies manage office space.

About XY Sense

Established in 2016 in Cremorne, VIC, Australia, XY Sense makes next-generation computer vision sensors and solutions that simplify the capture and use of workplace occupancy and space utilization data..

About AMD

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