WHO WOULD HAVE
THOUGHT THAT KEEPING
PEOPLE CONNECTED WITH
THEIR ROBOTS COULD
GROW PRODUCTIVITY
BY 20%?
WE DID.

OSHKOSH DEFENSE | GENESIS SYSTEMS GROUP | IGEAR
Genesis Systems Group is busy making Robotics 3.0 a reality. If the game-changing industrial robots of Versatran and Unimate fifty years ago were the first generation and sensor/microcomputer-controlled robots the second, Genesis, North America’s largest robotic arc welding systems builder, is leading this new era: a time in which robots are like intelligent workers, communicating with their superiors and seeking new ways to do their jobs better.

A few years ago, Genesis Systems Group took an important step in the next generation of robotics by building a shared, cloud-based business application into their automated workcells. The innovation would allow Genesis and its customers to transmit, store, and analyze data on robot performance in real time, via the Internet.

“We realized that like the manufacturing steps they execute, robots themselves could benefit from process control,” said Mike Stoecker of Genesis Systems Group. “Collecting and transmitting data on robot performance would let us, and our customers, analyze workcell anomalies and continually increase our products’ reliability and productivity.”

Stoecker and his team strongly believed that proven, off-the-shelf technology would be the fastest and most cost-effective way for Genesis to go to market with a remote workcell management solution. The first few commercial alternatives they found, however, were a disappointment.

“Our initial foray was with a company that focused purely on the end user. Bringing us into the loop was important to us, since that would allow us to work closely alongside our customers,” Stoecker said. “But it was clear the vendor was going to have trouble sending data to us as well as to our end users. They couldn’t give us a working example—or even tell us how much a solution would cost.”
SOLUTION

Things changed quickly when Genesis discovered iGear. “iGear’s Pulse software technology platform had nearly all the functionality we wanted,” recalled Stoecker. “After meeting with the iGear development staff, we knew Pulse could be the basis of a truly powerful private-label solution.”

iGear Pulse is an online content solution for machine builder OEMs who want to better understand their machine performance, utilization, and service needs. Pulse enables each machine in the field to automatically push data to iGear servers where the information is stored and analyzed by both the OEM and the end customer. Because the information is securely stored in the cloud, any authenticated Web device can access it via the Internet.

With a Pulse-powered solution, Stoecker said his team could collect an impressive array of information from its robotic automation workcells. “Pulse is able to track critical robot and weld parameters, file backups, as well as statistical data on workcell performance,” he noted. “It also can record, for our benefit as well as that of our customers, alarm histories, frequency reports, diagnostics and a lot more.”

Within months, Genesis Systems Group announced its new IntelligenceCenter™ workcell management solution, powered by iGear Pulse, to the industry. One of the first Genesis customers to adopt IntelligenceCenter was Oshkosh Defense, a global designer and manufacturer of tactical military trucks and armored wheeled vehicles headquartered in Oshkosh, Wisconsin.

“In the beginning we were the primary user of the data collected from Oshkosh’s welding workcells,” said Stoecker, who had been named Genesis Systems Group’ IntelligenceCenter product manager. “We found it invaluable for remote tech support. It gave us real-time health indicators for a particular machine and highlighted errors that were causing downtime.”

Before long, however, Oshkosh began leveraging the data for its own internal use. The impact was transformational.
RESULTS

“At the time, our cells were not hitting their production demands but our time studies showed that the numbers we needed were achievable,” said Chris Stedl, Manufacturing Technician at Oshkosh Defense. “Genesis modified some of the views in IntelligenceCenter so that we could more clearly see the data that is important to us.”

By analyzing the data from its robots on the assembly line, Oshkosh was able to determine root causes for the most common source of downtime and eliminate them. The manufacturer then went on to provide performance data to its operators through a simple video display system.

“We have installed flat screen TVs in the lunch room to show how each individual cell is currently performing, real-time and the past 24 hours,” stated Stedl. “This way, the operators can see how they are doing in relation to the previous shifts and their own production from the day before. Also, the management can walk by and see at a glance how everyone is performing. It makes it so we are all transparent, and everyone wants to do better if everyone else can see what you are doing, or not doing.”

By using Genesis Systems Group’ IntelligenceCenter data strategically, Oshkosh Defense has realized measurable gains in productivity. “After the initial install of the TVs we noticed a 20% increase in cell uptime,” said Stedl. “I have also had operators come to me and ask me what they are doing wrong because the shift before them always seems to have better numbers than them. They don’t want to be at the bottom.”

Genesis System’s Stoecker says that the list of benefits from his company’s iGear-powered product continues to expand. “Almost instantly, we’re able to know the condition of our customer’s machine and what attention is needed — and by diagnosing robots remotely we can often return them to production faster than if we dispatched a technician to the facility,” he stated. “We believe remote machine monitoring is having a major impact on our competitiveness, as well as our ability to serve our customers.”