

MERLIN boosts OEE from 35% to a Sustained 85%

MAGELLAN AEROSPACE LTD.

Magellan Aerospace Ltd., with over sixty years of experience in the aerospace industry, is the developer and producer of components for some of the most sophisticated supersonic jet fighter aircraft in the world. With roots that go back to some of North America's first fighter jets, Magellan Aerospace Ltd. out of its plant in Kitchener, Ontario, Canada, is a

manufacturer of major components for the futuristic F-35 Lightning II fighter, landing gear and other key components for all major aerospace OEM platforms. The 135-employee, 100,000 sq. ft. plant in Kitchener owes its longevity to its expertise in high-velocity, hard-metal machining with materials including Titanium, Inconel and Stainless Steel.

BUSINESS SITUATION

Alignment and automation are key success factors in the company's growth and development. With each project, manufacturing teams integrate the capabilities of global resources so as to deliver the value of the whole company to valued customers.

Magellan Aerospace Ltd. systematically implements development and production to generate corporate-wide quality and efficiency. To remain competitive in the fighter-jet industry and continue to win contracts like the F-35, Magellan Aerospace Ltd.'s executives traverse the world in search of advanced technologies that will offer a competitive edge.

TECHNICAL SITUATION

The challenge was that stand-alone machines were not reaching production targets. There were far too many downtime events happening on the shop floor, to the point that the purchase of another machine was under consideration to make up for the missed targets.

Shop floor supervisors would manually record information regarding the start and end times, and quantity produced during the shift. But this information didn't provide the required detail to take corrective action.

"OEE of 85% or more is considered world class, and again, there was surprise among our team and customers that we reached that number so quickly. It also swayed everyone to believe that MERLIN provided a very effective solution"

-Jonathan Ung.



MERLIN is an IIoT Shop-Floor-To-Top-Floor communications platform that provides manufacturing analytics in Real-Time.

SOLUTION

Magellan's relentless pursuit of excellence led the company to MERLIN, the industrial strength shop-floor-to-top-floor communications platform from MEMEX Inc. The company decided to deploy:

- MERLIN software for OEE dashboard and reporting metrics
- MERLIN Ax9150 Universal Machine Interface
- MERLIN Operator Portal
- G55 handheld scanner

Jonathan Ung, the Continuous Improvement Coordinator in charge of tracking the plant's progress with MERLIN, soon gathered some very promising ROI results. "We deployed MERLIN on our FMS/Makino cell," said Ung. "There are four robot-controlled CNC machines in the cell and we also outfitted three stand-alone CNC machines configured in a cell-like environment. The stand-alone machines utilize the MERLIN Ax9150 hardware board along with the G55 handheld scanner, giving us visibility on the machines that we previously did not have. The Makino cell has the MERLIN Operating Portal deployed on it which gives us detailed machine information right on the shop floor. We feed MERLIN software with work order and product standard data directly from our CINCOM ERP system."

The MERLIN data indicated that there were far too many M01s and other downtime events occurring. Magellan shared this information with its manufacturing team and with the help of MERLIN software, was able to reduce those downtime events from 400 hours per month to 100 hours leading to a net increase in machining capacity of 100 hours per month per machine. One of Magellan's machines was able to more than double its machining time for a 100%-plus efficiency gain, a performance increase so dramatic it was considered surreal by many experienced operators. The time spent previously gathering data manually was replaced with automated data collection available to management and operators in Real-Time.

"We captured real savings of over \$30,000 per month against an initial price of \$20,000 for MERLIN. That's a very satisfying payback." Jonathan Ung, Continuous Improvement Coordinator, Magellan Aerospace

MEMEX applied its "Roadmap to Success" methodology, a valuable tool to use in analyzing and interpreting all the information MERLIN makes available. Relying on MERLIN, some of the changes Magellan Aerospace Ltd. made to its shop-floor management were:

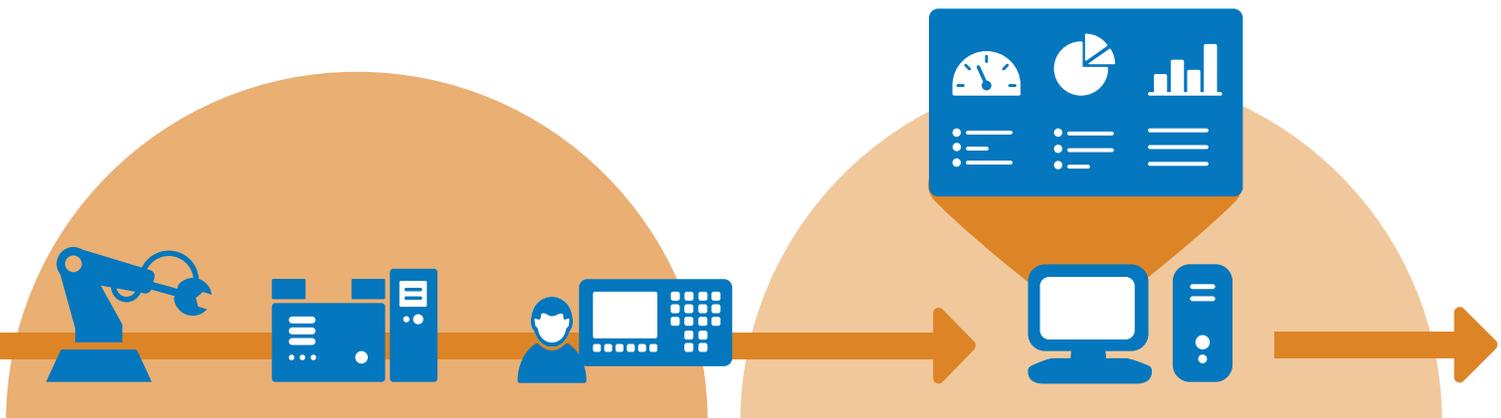
- Initiation of a lean Plan-Do-Check-Act (PDCA) methodology with corrective actions
- Placing the MERLIN information in front of operators so that they can see the change in performance as changes are made in operating procedures
- By using the MERLIN event chart they were able to identify all the micro-stoppages that affected production. Then by drilling down to the root causes they were able to streamline their operations

After completing the corrective actions that the Roadmap suggested, Magellan was able to show that MERLIN brought its OEE up from 36% to a sustained 85%.

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The Magellan Aerospace Ltd. manufacturing team saw many more productivity possibilities for MERLIN on its shop floor. They believed that they were just scratching the surface of MERLIN's capabilities and were now looking forward to seeing what else they can accomplish with the platform. The initial success of MERLIN ensured that Magellan Aerospace Ltd. now considered MEMEX Inc. as the go to supplier for OEE and connectivity solutions.

Data-Driven IIoT Manufacturing



BENEFITS

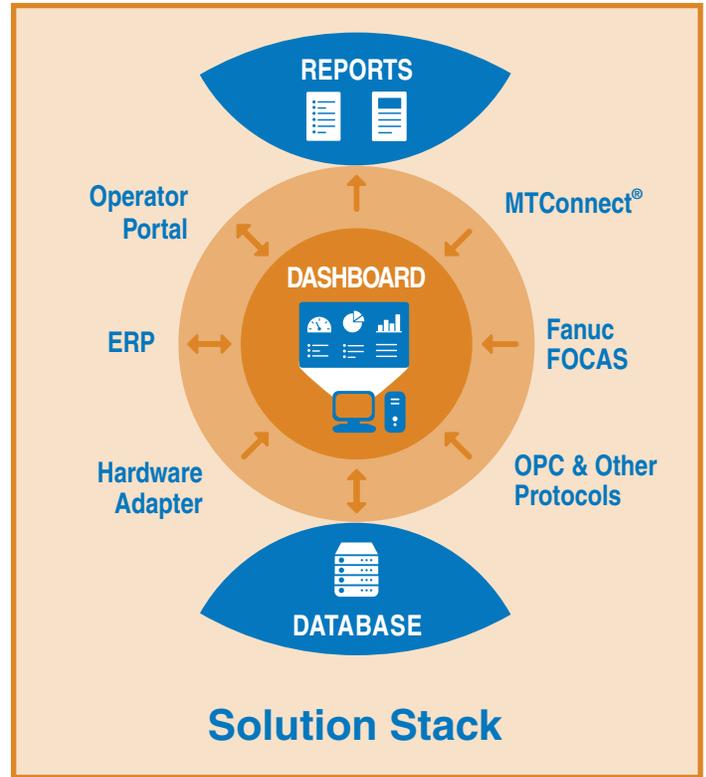
The effective deployment of Real-Time OEE automated data collection with MERLIN has resulted in the following benefits at Magellan Aerospace Ltd.:

- Instantaneous and timed email alerts to keep downtime to a minimum
- MERLIN dashboard reports displayed on video screens in highly visible locations on the shop floor, communicating the Real-Time status of machines to operators and supervisors
- Tracking close to 150 data elements which get summarized into specific KPIs
- Automatic report distribution facility with unlimited number of reports
- Daily MERLIN reports and Pareto charts to keep everyone informed of production achievements
- A complete picture of what is happening so the manufacturing team can focus on the 20% of issues that result in 80% of the problems

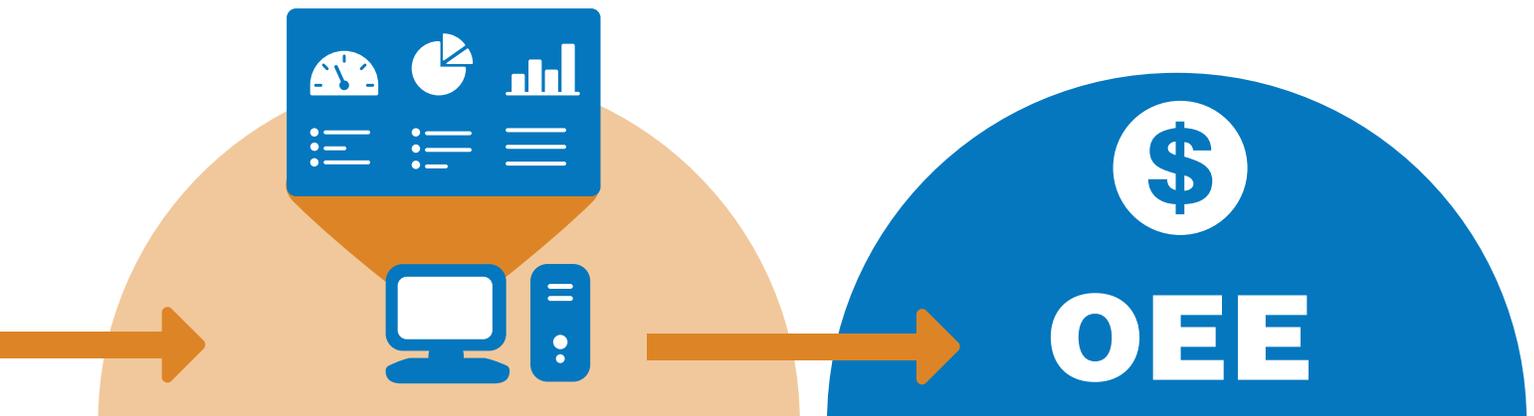
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From Shop-Floor-To-Top-Floor



ABOUT MEMEX™

The Industrial Internet of Things (IIoT) powered by machine to machine (M2M) connectivity coupled with software capable of collecting, analyzing, and intelligently presenting streams of manufacturing data represents no less than the next Industrial Revolution. MEMEX with its visionary attitude has been on the leading-edge of the convergence of the industry trends in Computing Power, Connectivity of Machines, Industry Standards, Advanced Software Technology, and Manufacturing Domain Expertise. Leading this transformation is MEMEX Inc., the developer of MERLIN, an award winning IIoT technology platform that delivers tangible increases in manufacturing productivity in Real-Time.

MEMEX, with its comprehensive understanding of the manufacturing industry, is the global leader in machine to machine connectivity solutions.

Committed to its mission of “Successfully transforming factories of today into factories of the future” and encouraged by the rapid adoption and success of MERLIN, MEMEX is relentlessly pursuing the development of increasingly innovative solutions suitable in the IIoT era. MEMEX envisions converting every machine into a node on the corporate network, thereby, creating visibility from shop-floor-to-top-floor.

MEMEX, with its deep commitment towards machine connectivity, offers solutions that are focused on finding hidden capacity by measuring and managing Real-Time data. This empowers MEMEX's customers to effectively quantify and manage OEE, reduce costs and incorporate strategies for continuous lean improvement.



PRODUCTIVITY

10%-50% average productivity increase



PROFITS

20% + profit improvement based on just a 10% increase in OEE



PAYBACK

payback in less than four months with an Internal Rate of Return (IRR) greater than 300%



CONNECTIVITY

connects to any machine, old or new

Contact MEMEX to implement IIoT data-driven manufacturing now.



MEMEX
Measuring Manufacturing Excellence™

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