

TrakSYS™

CASE STUDY

**Engine Manufacturer Improves Supplier Accountability and Productivity
through the use of Accurate, Real-time, OEE and Downtime Data**



Location: Midwest, USA

Industry: Metal Fabrication & Assembly

Solution was implemented using client's internal resources with Parsec providing mentoring for the first CNC and first Robot Cell.

"Real time, accurate, objective data is critical for effective analysis of machine status conditions for root cause analysis. TrakSYS™ has proven itself to be a dynamic, essential tool that serves our need to make the decisions that are best for our business and our customers."

*Manufacturing Engineer
OEE Lead*

BACKGROUND

This large engine plant's corporate parent has a mature Lean program; one focus of the TPM Pillar is to drive Overall Equipment Effectiveness (OEE) improvement throughout the business. Consequently, the project goals were to use TrakSYS™ as a means to automatically track OEE, and to use the data gathered to make process and machine improvements. In addition, the plant was purchasing a lot of new equipment associated with meeting Tier IV Emissions Standards, and wanted to use TrakSYS™ data to improve supplier accountability.

CHALLENGES

- Although other plants in the company were already using TrakSYS™, this was the engine plant's first introduction to TrakSYS™ and automatic OEE monitoring as a new technology; the customer had no experience in this section of their business.
- Internal acceptance of process monitoring by the workforce and management. Existing data collection systems were manual, resulting in inaccurate and subjective results.
- External acceptance of automated process monitoring by our machine suppliers, who were now contractually required to meet 98% uptime on new machines.



GOALS

- Achieve 100% supplier accountability for new machines using machine collected data from TrakSYS™ for calculations of machine uptime.
- Data generated should be real-time, accurate, objective, and available for historical analysis.
- Productivity improvement, as demonstrated by increasing OEE.
- Expand the TrakSYS™ system to collect data from all key assets of the factory; the plant is well on its way to that goal, with 73 key assets incorporated to date.
- Achieve acceptance of the system by the union machine operators. Although operators were originally skeptical regarding the purpose of the system, they now embrace its potential as a means for process improvement and ultimately for increased productivity. In an incentive-based pay system, increased productivity is important to operators, as it means more money for less busy work.
- Reducing maintenance costs by moving from calendar-based PM (Preventative Maintenance) to PM based on actual asset run hours. This was implemented by interfacing TrakSYS™ to the SAP ERP and Asset Management system, and is expected to result in annual savings of \$2,000 per asset, based on the reduced PM schedule.

TRAKSYS™ SOLUTION ARCHITECTURE

- TrakSYS™ was deployed on a Virtual Machine server.
- An additional LOGICTrak™ engine runs on a separate PC, so that configurations of new assets being added to the TrakSYS™ system, can be tested without affecting the existing production applications.
- TrakSYS™ communicates to a wide variety of PLCs, CNCs, and Robots using industry standard OPC IO servers.
- Actual run-hours for each asset are automatically uploaded to SAP each week, so that the SAP Asset Management system can generate PM based on machine time, rather than calendar days.
- All authorized team members can use their office PCs to view production and performance information via their Web browsers.

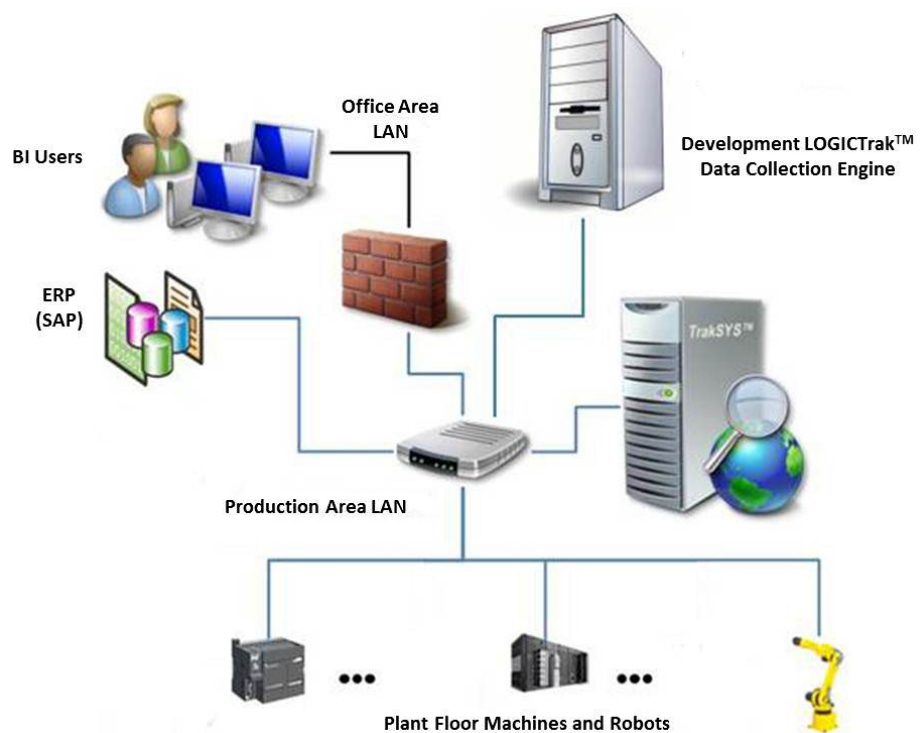


FIGURE 1 – System Architecture Diagram

The plant specifies that all new equipment purchased must be supplied with Ethernet and OPC interfaces; TrakSYS™ has been able to connect to every new asset purchased and many existing machines/robots. A staff engineer at the plant is continuing the TrakSYS™ rollout and assures that reports are tailored to fit the needs of management, production, maintenance, and quality teams. Current applications include a wide variety of Machining Centers, Robotic Assembly, Robotic Welding, Washers, Paint, Ovens, Conveyors, Gantry systems, Automated Test, and Automated Inspection. TrakSYS™ is currently used in a monitoring only mode, but the plant has future plans to implement EVENTTrak™ for operator involvement on key assets.

RESULTS

TrakSYS™ has been implemented on seventy-three (73) assets to date within the factory. As one example of the benefits, TrakSYS™ was implemented on a new Crank Assembly Robot Cell, with the following results:

- Data was captured and analyzed over a 4-month period. Findings were evaluated and shared with the machine supplier.
- The root cause of failures responsible for the excessive cell downtime was determined to be an inefficient crankshaft loading system, due to a less than robust and reliable design.
- The machine supplier agreed the data provided was accurate and objective, and therefore was unable to refute the plant's claims that the design did not meet agreed upon purchase specifications.
- The machine supplier redesigned and installed a new crankshaft loading system.
- After installation of the new loading system, OEE increased 7%.
- Machine supplier redesign after data collection from TrakSYS™ saved the plant more than \$125,000.



FIGURE 2 – OEE Overview Report for Crank Assembly Robot

ABOUT PARSEC

Parsec Automation Corp. (Parsec) is the developer of TrakSYS™, the leading real-time operations & performance management software. Manufacturing companies worldwide rely on Parsec for flexible and configurable tools to execute manufacturing operations across the value chain more effectively. Without production disruption TrakSYS™ helps manufacturers to significantly improve asset utilization and efficiency, increase capacity of existing assets, reduce production costs, decrease lead time, and improve profitability. With measureable ROI TrakSYS™ fuels Lean, Six Sigma, TPM, and Operational Excellence efforts. For more information about Parsec, please visit the corporate web site at www.parsec-corp.com.



TrakSYS™ is designed to effectively help manage manufacturing operations and their performance in real time.



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