

TVS



INTEGRATING INTELLIGENCE

CASE STUDY

MOM/MES Implementation for
Aerospace Component
Manufacturer





THE CLIENT

The Client is a leader in High Value Component Manufacturing in Aerospace industry. They are well known for manufacturing shrouds and cones which are used in jet engines. Each shroud and cone is unique to an engine, to enable maximum efficiency to be achieved and are machined to within a few microns accuracy.



BUSINESS SITUATION

High Value Component Manufacturing unit is a joint venture between two leaders from UK and India. The client is setting up a bench mark manufacturing facility within the gas turbine supply chain, operating the very latest technology to the highest levels of aerospace compliance. This facility will use lean techniques to flow material, balance resources, maximize productivity and ensure waste is eliminated at every opportunity. Production of this joint venture was to begin shortly, an MOM/MES system integrated with ERP was considered as one of the most critical need to ensure operations objectives are met.



BUSINESS CHALLENGE

The first and foremost challenge defined for the new MOM/MES was to integrate it seamlessly with the shop floor hardware and with the enterprise applications. But, at the same time ensure lean objectives to flow material, balance resources, maximize productivity and eliminate waste at every stage
Other requirements included:

- Synchronization of deliveries with production process
- Standardizing of processes among multiple production lines
- Overall resource effectiveness
- Timely inventory updates in the ERP system (before shipping)
- Tracking and tracing of the parts from production start to shipping
- Scrap and rework management
- Quality analysis and historical production data metrics management
- Timely production reports and metrics
- Adequate provisions for engineering change management
- Sub contract operations handling



SOLUTION

To take on the challenge and deliver required solution, TVSi Operations Excellence experts teamed up with GE Intelligent Platforms team. Building on the GE Proficy platform, teams of the two divisions developed standardized connectivity between MES and the ERP and a methodology for seamless communication with the PLCs, CNCs, CMMs & Utilities using OPC on the respective MES/DNC protocols. Furthermore, a comprehensive shop floor reporting system was designed and implemented through Plant Apps. Workflows were used for handling bills of material, handling units, backflush, and system status information and Production Scheduling was handled through Scheduler integrated with MES system.

Operator Interfaces are equipped with help call system that would help operator to call qualified personnel to resolve the issues pertaining to Quality, Machine, Tools, Electrical, and Mechanical etc.

For data collection, aggregation, archiving as well as analysis, visualization, and reporting, the Proficy Historian was employed. Line status information including downtimes, amounts produced (good or scrap parts) and overall equipment effectiveness (OEE) is made available to users based on the data captured in the Proficy Historian. Management Dashboard showing availability, performance, quality rate and OEE levels is a key tool of the system, developed for informed decision making by the plant management and leveraging

- Continuous process improvement
- Automatic performance data acquisition in near real-time”
- Quality, Six-Sigma and lean production methods

 **BENEFITS**

In its live operation, Proficy manufacturing execution system has fully delivered on its operator's expectations. Tangible improvements were realized in many fields, the most important being:

- Continuous control of production workflows
- Plant to enterprise interoperability for optimal response to supply chain demand
- Monitoring and controlling overall equipment effectiveness, and downtime management
- Defect and quality tracking

As a further consequence, production performance feedback and reporting as well as associated human resources management also experienced improvements. The benefits gained by the client include reduced downtimes, scrap and rework volumes. The tight interface between shop floor hardware, MES, and the ERP application makes for shorter production control lead times and timely management decisions are facilitated by the improved manufacturing data visibility.

ABOUT TVSi

TVSi is a reliable enterprise solutions partner for mid-market companies in core industries like manufacturing, automotive, engineering, and trading, real estate and agriculture. TVSi has established its presence in India, US, and Europe and growing its penetration in the emerging markets of Middle East and Africa. Our in-depth ERP expertise, specifically SAP; track record and focus on long-term relationship help our customers gain operational efficiency, visibility & control while leveraging IT for business growth.



TVS INFOTECH LTD.

“ASV Chandilya Towers”, 7th Floor, 5/397, Rajiv Gandhi Salai (OMR),
Okkiyam Thoraipakkam, Chennai – 600096, India

P: +91 44 4909 8874 | F: +91 44 4909 8875