MANUFACTURING IT
SOLUTIONS OVERVIEW

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DESIGN SYSTEMS, INC.

Manufacturing Engineering & Consulting

Manufacturing IT Solutions Overview — Solution Factsheet

Overview

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Today's manufacturer faces a number of challenges. With increasingly complex processes and the need to stay competitive, goals such as increasing productivity and minimizing costs can seem daunting.

Manufacturing IT can play a significant role in realizing the challenges of the modern manufacturer. It can help optimize production through increased visibility and control of the manufacturing process. This overview breaks down the major building blocks of Manufacturing IT and identifies the tools that address these common challenges.

For a more detailed view of some of the specific solutions within Manufacturing IT, look for the links to our Manufacturing IT Solutions Factsheets.

Process Visualization

Effectively visualize production operations to drive performance and reduce waste

The effective operation of manufacturing facilities can be greatly enhanced by the provision of an accurate, real-time depiction of equipment and work-piece status. The increased availability of technology within a typical manufacturing facility provides the perfect environment to implement this increasingly important facet of the modern manufacturing world.

Specific Solutions: Plant Visualization and Alarm Monitoring

TOOLS

- Equipment Status Displays
- Alarm Monitoring and Notification
- Work-Piece Status and Process Flow Displays
- Calculation and Display of KPIs
- ANDON Displays

Order Management

Coordinate and control the manufacturing operation to the required work orders

The manufacturing facility is a complex environment with one end goal – to produce product according to the needs of the consumer. These Order Management functions are designed to coordinate the various operations within the facility to insure a timely and high quality delivery of the desired products.

Order Management functions effectively establish the production goals and provide the manufacturing facility with the data and materials to produce according to the consumers needs.

Specific Solutions: Genealogy and Build History, Yard Management

TOOLS

- Work-Piece Sequencing
- Work-Piece Genealogy and Build History
- Process Data Collection and Analysis
- Rework Management
- Yard Management and Product Delivery

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Assembly Operations

Reduce uncertainty by tightening control of the highest risk operations in the facility

Assembly operations typically represent the highest level of process variability within the manufacturing facility. As such, these areas represent the highest risk for introduction of errors into the manufacturing process.

Product variability, manual operations, high complexity and limited time all mean that assembly operations are one of the key areas where production enhancements can be realized.

Specific Solutions: Work Instructions, Error Proofing Tools

TOOLS

- Digital Work Instructions
- eChecklist Work Step Displays
- Automated Assembly Equipment Control
- Error Proofing Tools
- Rework Management

Logistics

Increase efficiency and eliminate waste within logistic operations

Material flow is key to the efficient operation of the manufacturing facility. Integrating logistics operations and manufacturing operations can simplify and enhance the effectiveness of material flow.

Effective logistics operations can minimize waste in material inventory, reduce the risk of downtime through material starvation, reduce material footprint within production areas and even enhance quality and reduce cycle time by transferring material selection operations to within the logistics areas.

Specific Solutions: Picking and Kitting, Inventory Management

TOOLS

- Inventory Management
- Material Flow Control
- Picking and Kitting Control
- Material Storage and Defect Recovery
- Material Call Handling

Maintenance Support

Support maintenance operations to reduce downtime and improve overall efficiency

Of all the sources of waste in the manufacturing environment, unplanned stoppages represent one of the largest and one of the easiest to treat. Providing detailed real-time information can create a faster response and hence a faster remedy. Historical data analysis aids continuous improvement processes. Reactive and Planned Maintenance management creates discipline in remedial activities.

Specific Solutions: Maintenance Support

TOOLS

- Real-Time Equipment Status Display
- Continuous Improvement Maintenance Reports
- Reactive Maintenance Order Management
- Planned Maintenance Control