

# CASE STUDY: FOOD MANUFACTURER

## QUICK OVERVIEW: IN A NUTSHELL



Automated Control Concepts, Inc.  
**Smart solutions.**

## Optimizing operations for a new manufacturing facility: ACC unlocks potential with plant-wide MES for a food manufacturer

### THE PROBLEM

A well-established snack and nut manufacturer building a new greenfield manufacturing facility wanted to ensure quality and efficiencies across all functions including work order management, compliance, and manufacturing performance.

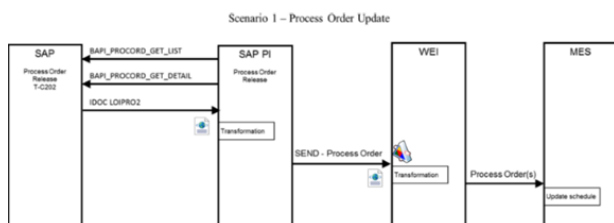


### ACC'S SMART SOLUTION

ACC implemented a Manufacturing Intelligence Solution for master schedule, process order release, consumption transactions, and production results structured on the Wonderware Operations and Performance MES platform with ERP (SAP) integration using the Wonderware Enterprise Integrator. The ACC team also coordinated with the equipment's PLC control system integrator for data collection and communication interfaces.

- ACC implemented a plant-wide Manufacturing Intelligence Solution built on the Wonderware Operations and Performance MES platform with ERP (SAP) integration using the Wonderware Enterprise Integrator.
- Providing users with multiple interfaces for accessing and controlling system information eliminated paper on the plant floor and helped improve accuracy, timing, and work order status.
- Real-time performance displays allow plant personnel optimize workflows and reduce downtime.
- The inherent checks and balances created through the integration of work order equipment requirements and materials scanning minimize operator error and foster high performance.

## Let's take a closer look at the resulting benefits.



Scenario Logic:  
1. ERP releases process order on transaction C202, changing status to RELEASED  
2. Only process orders for Turlock plant are affected  
3. ERP transforms IDOC  
4. SAP PI subscribes to web service (UDDI used for discovery)  
5. If service is available, posts to web service  
6. Updates from ERP can be either new process orders or adjustments to existing process orders  
7. MES receives IDOC, transforms and updates process schedule

Process Orders are released by SAP in real time. The change in status of a process order causes a transfer from SAP-PI via web services to the Wonderware Enterprise Integrator (WEI). The data package utilizes ISA95 B2MML for modeling the message content. The result is parsed and placed into the job schedule. Materials used to form the BOM are also queried by WEI via this interface to SAP. Additional transactions include material consumption at the point of use and production events (both finished goods and by products).

### ERP INTEGRATION AND SCHEDULING PRODUCTION ORDERS

Paper on the plant floor is eliminated by giving the users several interfaces for accessing information from the system. Work orders created from the SAP transfer process become MES jobs that are started and controlled by the operator at a display. The accuracy and timing of material usage and work order status is improved using standard interfaces eliminating redundant data entry.

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Production Schedule

WO ID	Item ID	Item	Recd Qty	Good Qty	Reject Qty	Job State
HAL_MES_04	10234	BU/TTT SSP 2709 L3	77676	29839	0	COMPLT
HAL_MES_05	09642	BU/TTT SSP 2607	12050	14880	0	COMPLT
HAL_MES_06	07369	DCD L5 PA83	72284	62181	0	COMPLT
HAL_MES_07	01514	SLC NAT	34400	21462	0	COMPLT
HAL_MES_08	01380	DCD 204 C	48000	19900	0	COMPLT
HAL_MES_09	00304	DCD 124 B	46000	37020	0	COMPLT

Buttons: Start Job, Change Over, Runout (End Job), Ready

## KPI DASHBOARDS

Plant personnel have real time performance displays and proactively work to maximize utilization and reduce downtime. Enabling this is the system's ability to combine consumption data, production data, time and labor to produce a series of metrics that display current system performance. The Utilization Display shows a summary of these metrics to convey to the user current production status. The metrics are known as Key Performance Indicators or KPIs. KPIs are typically represented as a single number like OEE % or Yield % and convey a quick picture of production performance.

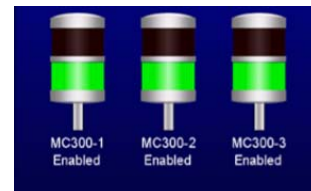


## CONSUMPTION DISPLAY

Operator error is minimized by integrating work order equipment requirements with the scanning of materials. Checks and balances such as this are critical to high performance.

The Consumption Display is used while running a work order. The user can execute consumption transactions or view consumption records that are sent from SAP.

Each consumption record includes the target Bin/Dumper for dispense of the raw material. The Bin/Dumper relay is only enabled after the consumption record is received. The operator can only dispense the material after he/she has scanned in the material and selected the correct dumper.



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