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Medtronic

Burn-In Automation in Manufacturing

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Medtronic Tempe Campus

Executive Summary

The Automated Assembly Equipment Controller (AAEC) facilitates the interaction between the Burn-In system and the Manufacturing Equipment System (MES). The interaction is to provide MES functionality, including product traceability and material consumption, as they move through the Medtronic Tempe Campus (MTC) manufacturing line. The Assemblers interact with the user interfaces to monitor and/or manage the system during normal operations.

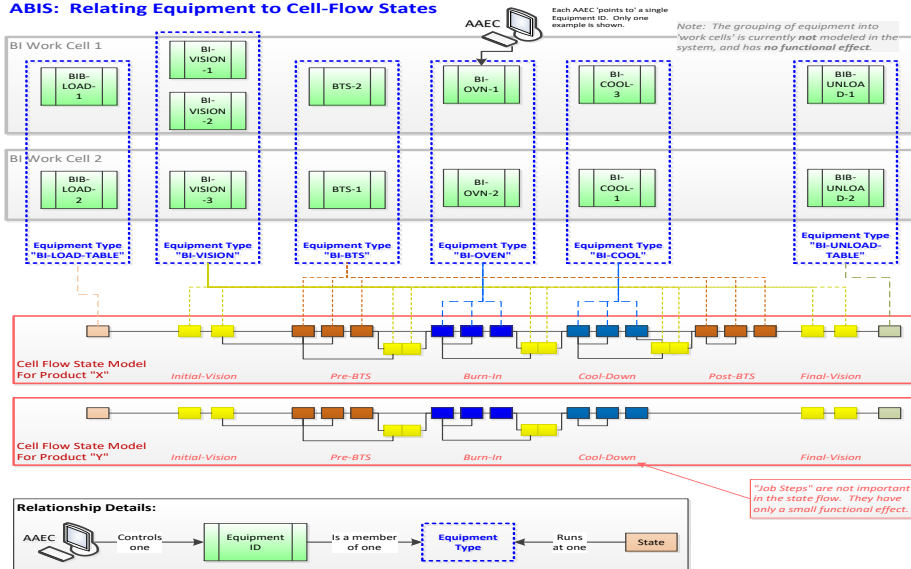
The Problem

The burn-in process is currently our most manual, error-prone process. There is no electronic traceability, no automation, and data is collected and managed by hand.

The Process

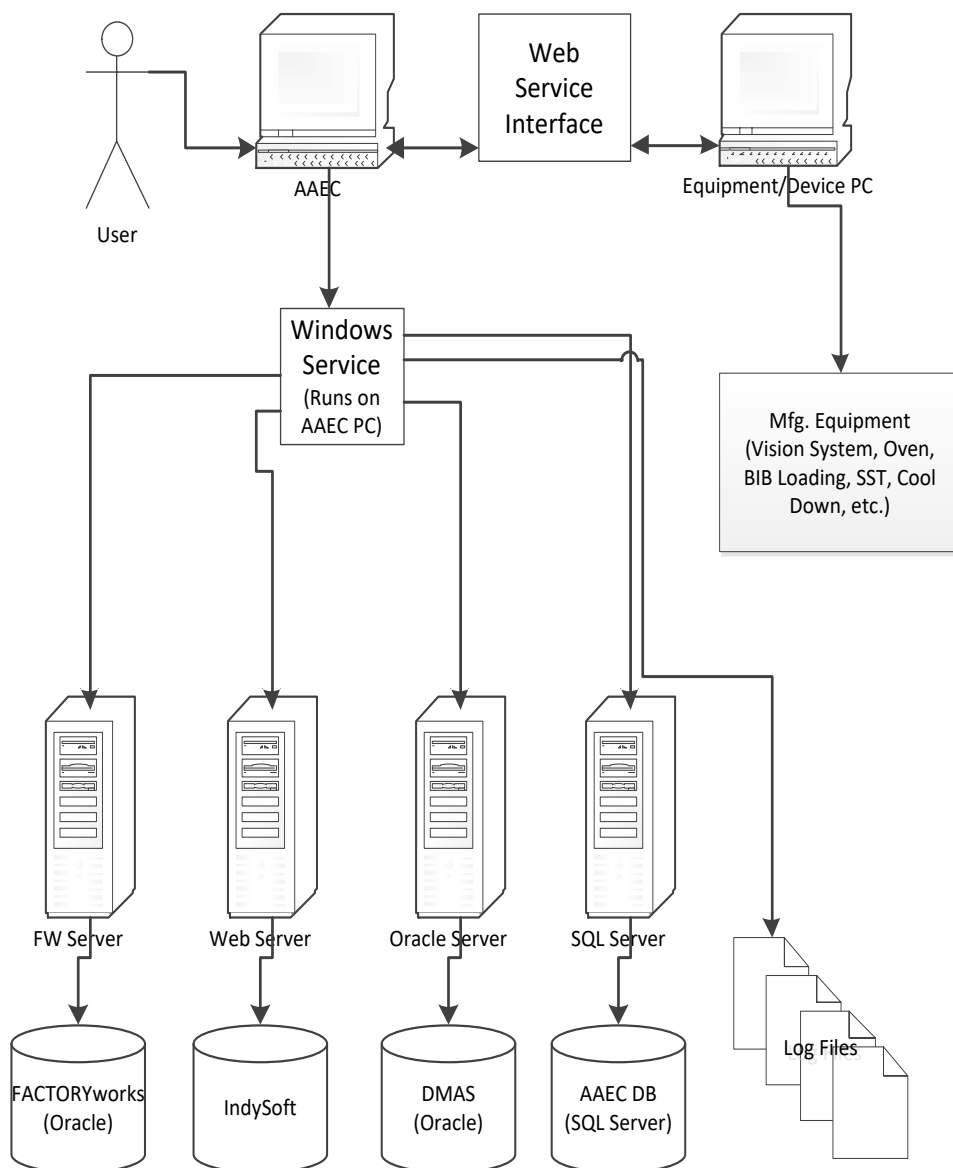
The burn-in workcell consists of 5 main processes: (1) BIB Loading, (2) Pre-Screening, (3) Burn-In Oven, (4) Post-Screening, and (5) BIB Unloading.

ABIS: Relating Equipment to Cell-Flow States



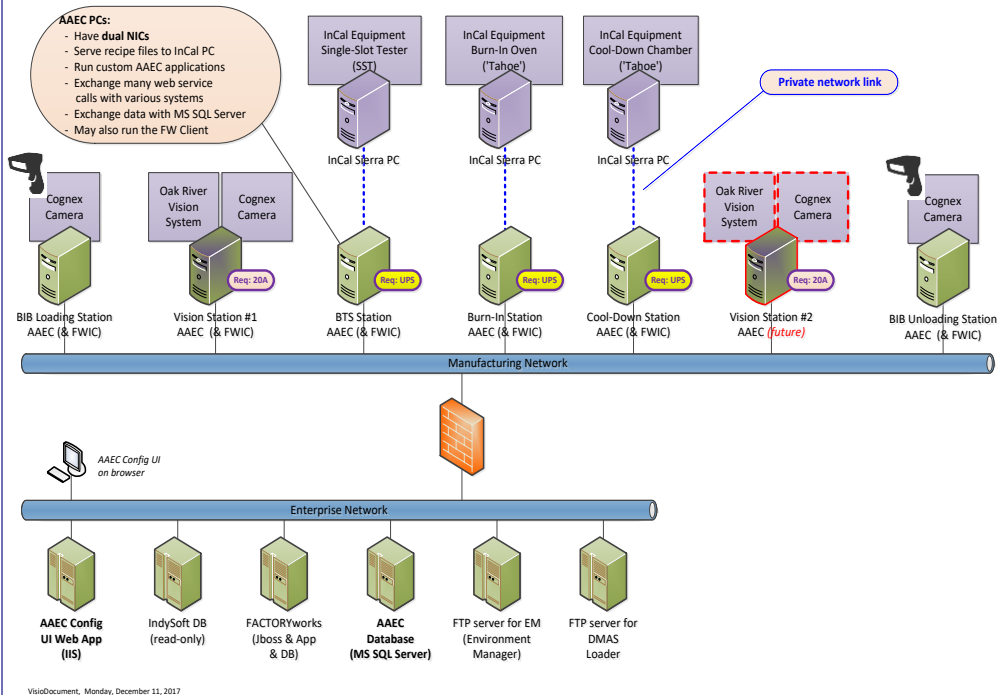
Solution

The AAEC is the primary user interface, acting as an intermediary between each process. Over 30 workflows are mapped within the process depending on various process deviations and are configurable based on product requirements.



Solution

Medtronic Burn-In Automation: Physical View for One Work-Cell



Value Proposition

- 22 manual data fields & 18 manual verifications → ZERO
- Non-Conformance Reporting reduced by 75%
- Out of Tolerance event reduced by 90%
- pFMEA risk mitigations (9 process risks)
- Improved Process Compliance
- Improved Repair Effectiveness, due to additional performance data