
NPDIO40 Andon Automatics Manufacturing Orchestration

Network Programmable Control & Analysis Solution

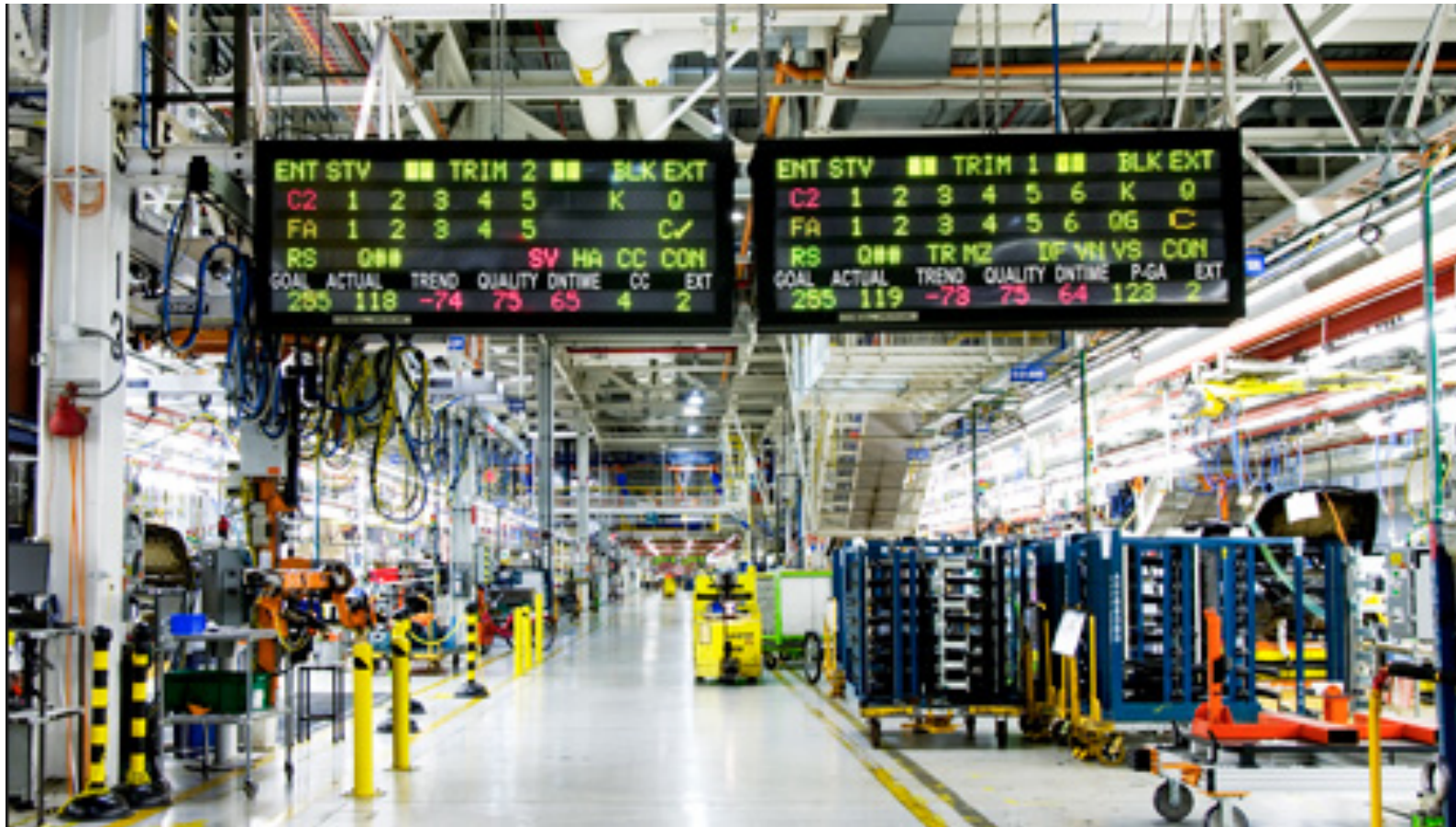
Solution overview

- Real Time control & data acquisition/processing capabilities
- Integration with third-party applications & databases (Oracle, SAP, SQL, etc)
- IP/Ethernet/Wi-Fi/ZigBee/2G&3G connectivity options, providing high network reliability
- Information gathering from sensors & counters with storage availability in external databases
- Distributed architecture implementation
- Centralized management platform
- Analysis & reporting customization options

Workflow

- Manufacturing line integration for Real Time data acquisitions regarding the production
- Digital signage presenting the LIVE manufacturing process
- Control (start, stop, pause) of the manufacturing line
- Real time visibility regarding :
 1. Manufacturing process – units completed, units remaining to be completed
 2. Quality control – good vs. rejected units analysis
 3. Performance indicators – estimated time of completion
 4. Visual and audio notification of quality or process problems

Implementation



Database communication

- Linux based application (TCP Server) transmitting

Real Time data on Ethernet/IP/wireless

- Real Time database messages synchronization
 - No additional hardware components required
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Management Platform

- ❑ Centralized management platform
 - ❑ Distributed access control accounts
 - ❑ Unified reporting options
 - ❑ Configurable parameters in real time
 - ❑ Scalable deployment across separate infrastructures
 - ❑ Export option towards analysis systems (SAP, Oracle)
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Applicability

- Manufacturing plants as inline monitoring & control solution
 - BMS (Building Management Systems) as distributed solution for parameters monitoring
 - WMS (Warehouse Management Systems) as communication & control components in Pick by Light solutions
 - Any other industries requiring data/communication control in Real Time with Industrial Grade characteristics
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Summary

- 100% bespoke design & manufacturing
 - Assured scalability, initiated from the Prototype phase
 - Real-Time processing control & visibility
 - Significant TCO savings compared with 'vendor specific' PLC programming
 - Hot-Swap extension boards providing 'in production' extension
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A proposition of
Mindspeed Communications & InnoDEV



Andon - solution wiki

- Andon is a system to notify management, maintenance, and other workers of a quality or process problem.
- The centerpiece is a signboard incorporating signal lights to indicate which workstation has the problem.
- The alert can be activated manually by a worker using a pull cord or button, or may be activated automatically by the production equipment itself.
- The system may include a means to stop production so the issue can be corrected. Some modern alert systems incorporate audio alarms, text, or other displays.
- It gives the worker the ability, and moreover the empowerment, to stop production when a defect is found, and immediately call for assistance. Common reasons for manual activation of the Andon are part shortage, defect created or found, tool malfunction, or the existence of a safety problem. Work is stopped until a solution has been found. The alerts may be logged to a database so that they can be studied as part of a continuous-improvement program.
- The system typically indicates where the alert was generated, and may also provide a description of the trouble. Modern Andon systems can include text, graphics, or audio elements. Audio alerts may be done with coded tones, music with different tunes corresponding to the various alerts, or pre-recorded verbal messages.