

Serialized Parts Counting Solutions with 6 Customer Examples



3 Reasons to Automate Parts Counting

Accuracy

- Accurate Part counts
- Accurate Pack Counts and Container Labeling
- Accurate Production reporting

Efficiency

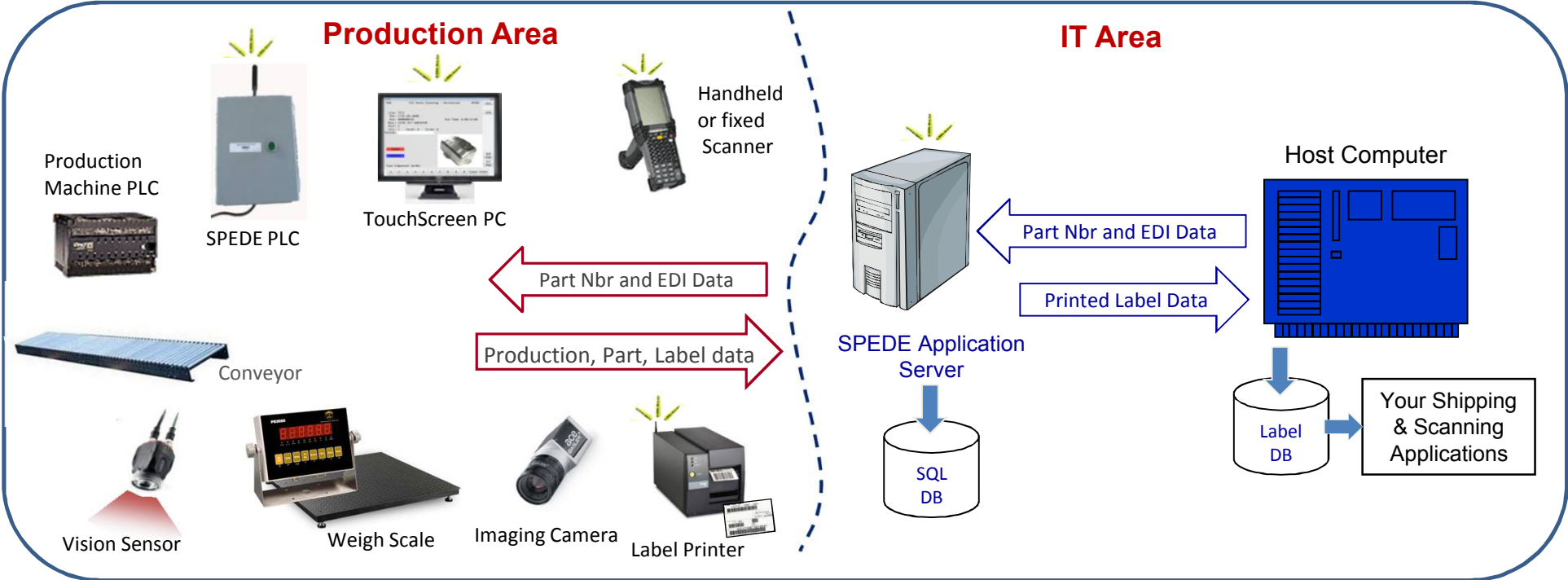
- No labor and expense for manual counting
- No data entry or recordkeeping
- Real-time production run data displays at line-side
- Automatic updates to host systems

Traceability

- Automatic traceability from Production back to Raw
- Automatic traceability forward to Customer
- Enables focused inquiries by part, run date, lot, etc.



Overview of SPEDE Solution Interfaces



- SPEDE Software resides on SQL Server, with access by Client PCs, Handhelds, PLCs, etc.
- SPEDE Apps interface to and control networked devices
- Collects / Displays Real-time PLC Production Data
 - Time-stamps & Logs Piece Count, Scrap & Cycles data into MS/SQL DB for Traceability, OEE
- Prints Labels; Logs Printed Label Data for Inventory, Shipping, Traceability
 - Gets label data from host ERP, EDI, Release Accounting system
 - Time-stamps and logs the printed label data into MS/SQL DB; updates to host systems

Serialized Parts Counting: 6 Customer Examples

Example 1:

Serialized Part from PLC with Part Validation

- SPEDE reads “Part Serial Number” address from PLC
- SPEDE reads “PLC Part Number” address
- SPEDE compares PLC Part Number to Current Part; “Error” if incorrect
- SPEDE checks for duplicate and/or re-use of serial number with Reject
- Increments Piece Count for each valid serial number

Customer:

Autoliv-Nissin

- HVAC duct
- Dedicated part poke yoke



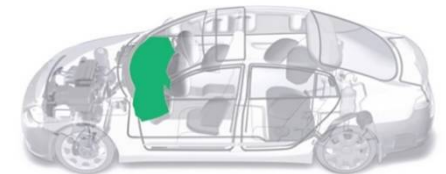
Autoliv-Nissin
Brake Systems

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Example 2:

Serialized Part from Fixed/ Handheld Scanner

- 2D code contains Part Number / identifier, unique serial number (YYMMDDHHMMSS)
- Operator scans Piece barcode
- SPEDE “finds” Part Number ; compares it to Current Part; “Error” if incorrect
- SPEDE checks for duplicate and/or re-use of serial number with Reject
- Increments Piece Count for each valid serial number
- Scan twice to remove Part



Customers:

Nisco	Door/ Trunk Seal
TMD, Tiffin	Washer Bottle Assembly
Toyoda Gosei, MO	Front Grill Components, Center Console Assembly



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Example 3:

Serialized Part plus Camera Snapshot

- SPEDE gets Serial Number from handheld/inline/PLC input
- Hi Res 4K Cameras do snapshot
- SPEDE controls camera
- Image stored in SQL and/or external JPEG by Part Serial Number
- Serial number, date/time, file name watermark
- SPEDE Web inquiry
- Multiple cameras can be triggered simultaneously
- Can be Full Container photo by Container Serial Number with 1 or more layers



Tire Carrier image captured into
SPEDE SQL Database

Customer:

TMD, Tiffin Tire Carriers




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Example 3a: Serialized Part plus Camera Snapshot



TMD Tiffin Image of Tire Carrier captured into SPEDE SQL DB Website

The screenshot shows a web browser window with the URL 192.168.0.98/SPDPLC.net/camera.aspx. The page header includes the SPEDE Technologies logo and navigation links. A search form is present with the input '20007' and a 'Submit' button. Below the form is a table with the following data:

Component Serial Nbr	Camera	File Name	UniqueId	Image	Insert Date
20007	CAMB.11_22319370	c:\Basler\jpg\20007.CAMB.11.jpg	Z0007.CAMB.11	 Download	11/3/2017 11:48:48 AM
20007	CAMF.10_22354704	c:\Basler\jpg\20007.CAMF.10.jpg	Z0007.CAMF.10	 Download	11/3/2017 11:48:48 AM



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Example 4:

SPEDE-generated Part Serial Number plus Part Label

- PLC/ Onscreen Pushbutton input when new part
- SPEDE generates Serial Number based upon requirements
- SPEDE generates part label
- Count is incremented after Label Print or Scan
- Count is incremented by new Serial Number
- Scan twice to Remove Part

Customer:

T-Rad - Radiators



Automotive Radiator

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Example 5:

Serialized Parts + Vision + Conveyor Control

- A SPEDE-provided PLC controls panel box
- Dry contact to start/stop/reset conveyor
- SPEDE touchscreen conveyor controls for start/stop/reset
- Keyence 2D barcode reader
- Keyence Vision Sensor (up to 4 sensors to expand view field)
- Bad part when Vision fail, no read on serial number, or duplicate/re-used serial number
- Dry contact for pneumatic diverter for good/bad parts
- Good parts diverted by pack count
- Multiple pack out trays, printer per pack out tray



Customer:

Nasco Conveyor – Coil Suspension Springs



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Example 6:

Serialized Parts for Honda Batch Orders

- Serialized input from PLC/Inline/Handheld scanner
- Honda Batch EDI imported into SPEDE
- Batch Order quantities list on SPEDE touchscreen
- Operator selects batch, SPEDE verifies part number/quantity
- Honda container/batch/mixed master generated per EDI
- Batches removed from list as completed
- Management view of all batches/completion status

Customers:

Nasco Conveyor – Suspension Coils

TGMO – Center Consoles

TMD – Washer Bottle Assemblies



Added Benefit: Serial Traceability

Automatic Traceability by Part / Container

- A serial number is linked to each Part's production data:
 - Production Machine, Run Date, Shift, Operator, Lot, Location, etc.
 - Container Serial Number(s) in which the Part was packed
 - All other Serialized Parts in a generalized Container
- Provides Traceability by Part, Lot, Container, Line, Run Date, etc.
- Forward Traceability from Production out to Customer
- Backward Traceability from Production back to Receiving, Raw Components, Supplier

Printed By: Dan Worthington
Report Date: 01/08/2013
Report Time: 08:35:00
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Container Trace: 0319804-05088465

Part Nbr	Description	Run Nbr	Line Nbr	Create Date	Create By	Qty	Item S/N
C729-101-0000	CIVIC M/T RADIATOR	000012001	CLINCH2	11/05/2012	JSMITH	5	AB879762351 AB879762352 AB879762353 AB879762354 AB879762355



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SPEDE Technologies is a software and systems company with 39 years of experience in the automotive industry. We specialize in Automated Line-side Solutions that control and standardize production area processes to ensure consistent accuracy, increase efficiency and provide 20/20 visibility into line-side operations.

Our Customers are mid-size to Fortune 500 auto suppliers with multiple plant sites throughout the U.S. and in Mexico. They rely on SPEDE Automated Line-side Solutions to keep their mission-critical processes running smoothly, 24/7.



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