Automated Parts Counting Solutions
for Serialized Parts

with 6 Customer Examples

3 Reasons to Automate Parts Counting
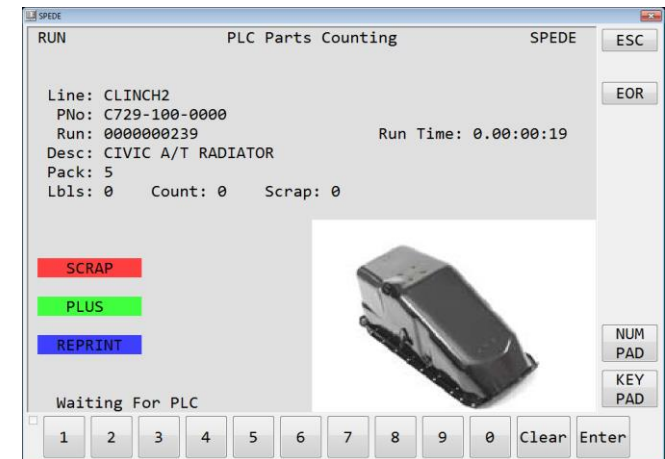
1. Accuracy

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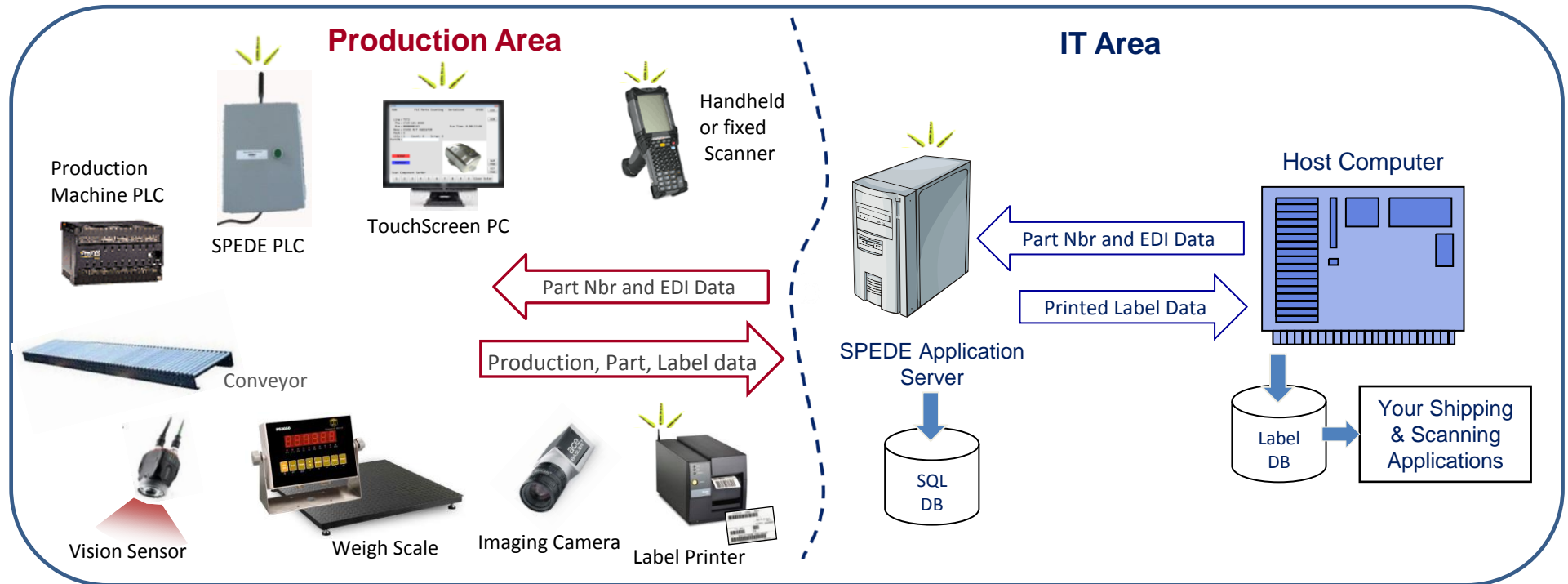- Accurate Production reporting

2. Efficiency

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

3. Traceability

- Automatic traceability of parts from Production back to Raw components
- Automatic traceability of finished parts forward to Customer shipment
- Enables focused inquiries , recalls, QC holds, by part, run date, lot, etc.
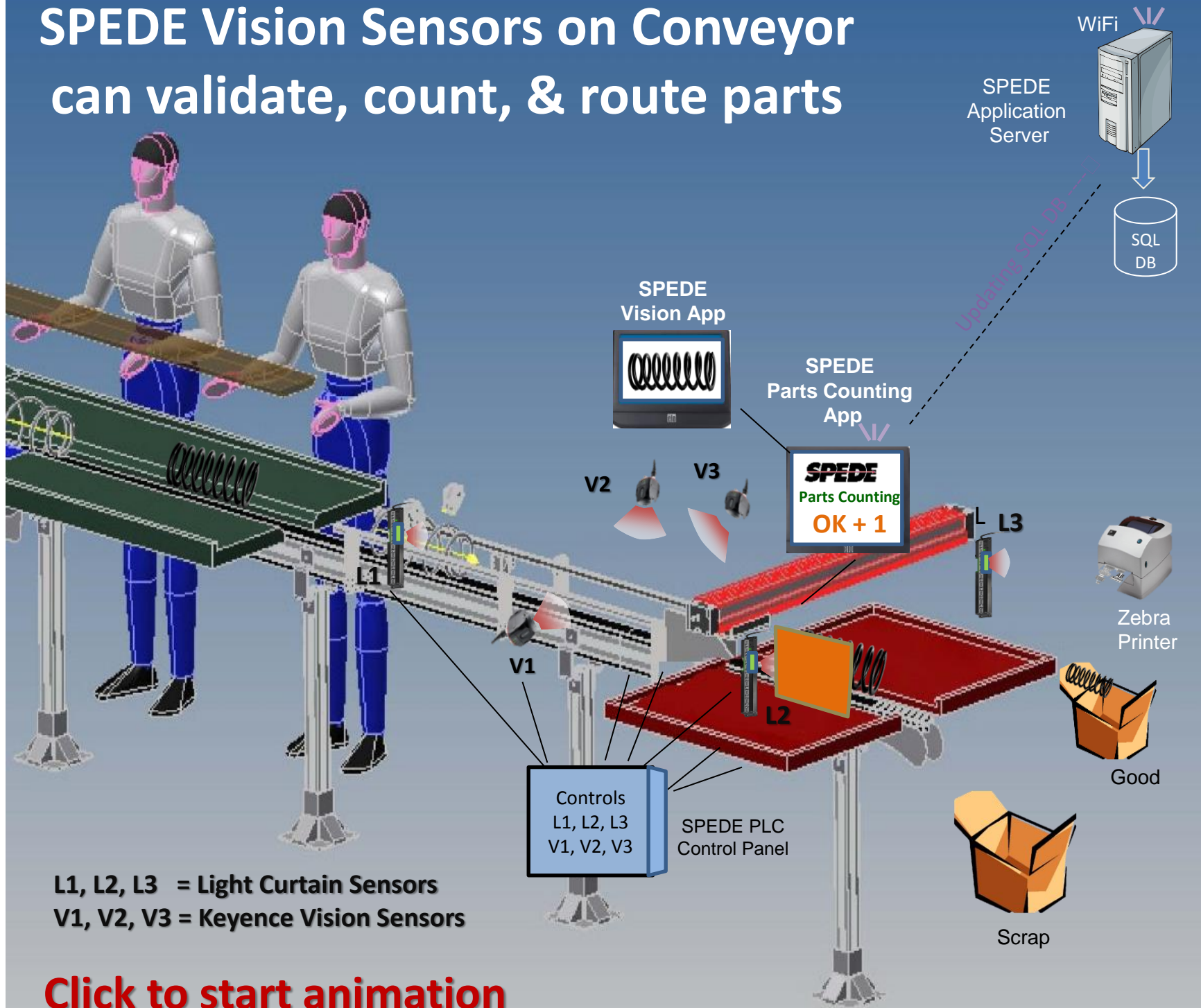
Overview of SPEDE Solution Interfaces

Production Area

Handheld or fixed Scanner

Production Machine PLC

SPEDE PLC

TouchScreen PC

Conveyor

Vision Sensor

Weigh Scale

Imaging Camera

Label Printer

Part Nbr and EDI Data

Production, Part, Label data

IT Area

SPEDE Application Server

SQL DB

Host Computer

Part Nbr and EDI Data

Printed Label Data

Label DB

Your Shipping & Scanning Applications

1. SPEDE Software resides on SQL Server, with access by Client PCs, Handhelds, PLCs, etc.

2. SPEDE Apps interface to and control networked devices

3. Collects / Displays Real-time PLC Production Data
   - Time-stamps & Logs Piece Count, Scrap & Cycles data into MS/SQL DB for Traceability, OEE

4. 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

SPEDE Vision Sensors on Conveyor can validate, count, & route parts

WiFi

SPEDE Application Server

SQL DB

Updating SQL DB

SPEDE Vision App

SPEDE Parts Counting App

V2 V3

SPEDE
Parts Counting
OK + 1

L3

L

Zebra Printer

V1

L1

L2

Good

Controls
L1, L2, L3
V1, V2, V3

SPEDE PLC
Control Panel

Scrap

L1, L2, L3 = Light Curtain Sensors
V1, V2, V3 = Keyence Vision Sensors

Click to start animation

Serialized Parts Counting: Customer 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
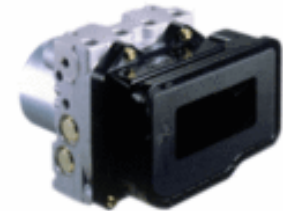
Serialized Parts Counting: Customer Example 2

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
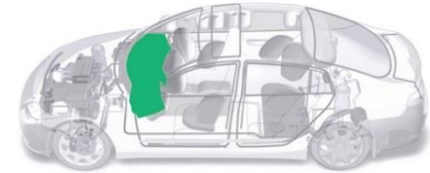
Customers:

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

Serialized Parts Counting: Customer 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
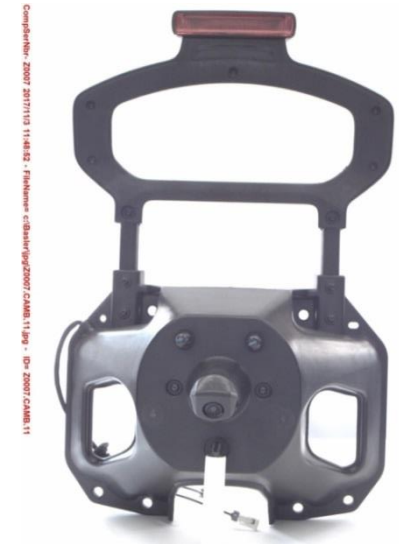
Tire Carrier image captured into
SPEDE SQL Database

Customer:
   TMD, Tiffin Tire Carriers

Serialized Parts Counting: Customer Example 3a

Serialized Part plus Camera Snapshot

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

Serialized Parts Counting: Customer 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

Serialized Parts Counting: Customer 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

Serialized Parts Counting: Customer 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

One More Benefit... Serial Traceability

Automatic Traceability by Part / Container

- A serial number is linked to each Part's production data:
    - o Production Machine, Run Date, Shift, Operator, Lot, Location, etc.
    - o Container Serial Number(s) in which the Part was packed
    - o 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
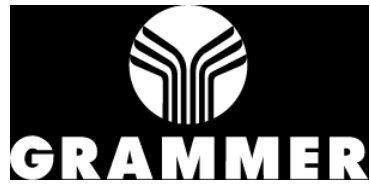
Printed By: Dan Worthington
Report Date: 01/08/2013
Report Time: 08:35:00
Page: 1 of 1

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

Meet a Few of our Customers...
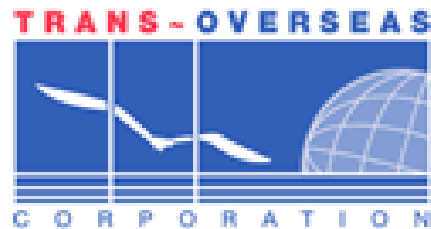
To Discuss Your Line-side Project...

Contact:

Bob Bunsey

440-808-8888   x22

info@spede.com

www.spede.com

About Us:

SPEDE Technologies is a software and systems integration company with 40+ years of experience in the automotive and manufacturing industries. We specialize in Automated Line-side Solutions that control and standardize production area processes to prevent errors, increase efficiency and provide 20/20 visibility into line-side operations.

Our Customers are mid-size to Fortune 500 companies 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.

AIAG
Automotive Industry Action Group
Active Member of AIAG
for 20+ years

SPEDE Technologies