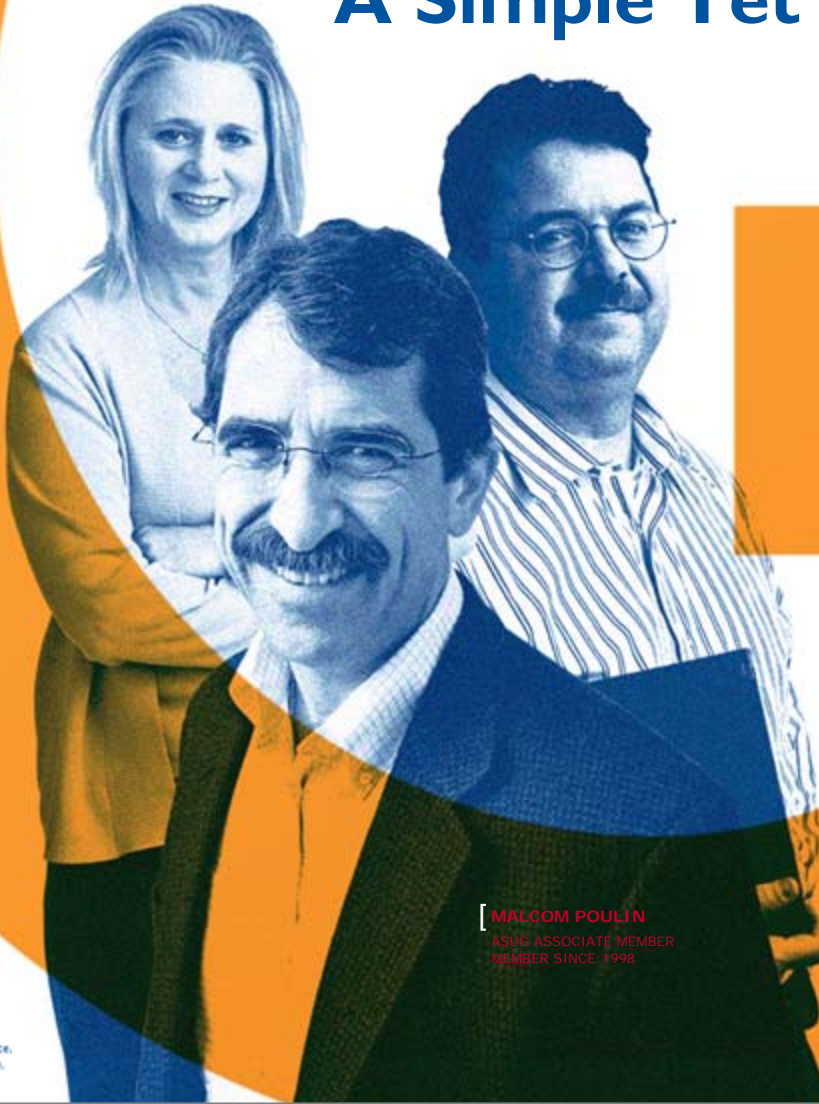


Carl Dunlap, Cohesion, Inc.
Alan Whitworth, Cardinal Health
John Harvey, Cardinal Health

Incoming Inspection at Cardinal Health A Simple Yet Elegant Solution

DENISE MISSONAK
SAP POINT OF CONTACT
MEMBER SINCE: 1998



2008 **ASUG** ANNUAL
CONFERENCE
May 4-7 2008 | Orlando, Florida

CHUCK WEBBER
ASUG INSTALLATION MEMBER
MEMBER SINCE: 2008

MALCOM POULIN
ASUG ASSOCIATE MEMBER
MEMBER SINCE: 1998



ASUG Real Experience.
Real Advantage.

Speaker Biographies

Carl Dunlap is the President of *Cohesion, Inc.* - an SAP Services company focused on software & services for the Life Sciences Industry. Carl has 14 years of experience with Enterprise Applications, including 13 years of SAP Quality Management (QM) experience. Carl has implemented QM at over 20 SAP Customer Sites Worldwide, serving as the project manager or team lead on several Global Implementations.

Alan Whitworth is the Senior Business Analyst for PLM and SCM for Cardinal Health's International CTSi Business in Europe. He has been working in a variety of roles in the Life Science Industry over the past 30 years (including the past 10 years in SAP). He has worked on numerous SAP projects at Warner Lambert/Pfizer, Alaris, and Cardinal Health.

John Harvey is the Quality Manager for Cardinal Health's Alaris Products division. The International Manufacturing site is located in Basingstoke, UK.



[Cardinal Health



- Leading provider of **products, services and technologies** for the healthcare industry
- Headquarters in **Dublin, OH**
- **No. 19** on Fortune 500
- FY 2007 revenues = **\$87 billion**
- **43,500** employees in more than **25** countries with business operations on **five** continents

Clinical and Medical Products

Clinical and Medical Products

Clinical Technologies and Services

- \$2.7 billion in revenue
- \$386 million in segment profit
- 7,200 employees
- Provides leading technologies and services that help hospitals prevent medication errors, reduce hospital-acquired infections and manage medications and supplies more efficiently

Medical Products and Technologies

- \$1.8 billion in revenue
- \$198 million in segment profit
- 14,200 employees
- Develops and manufactures essential medical and surgical products used in healthcare's most frequently performed procedures



Cardinal Health is the leader in medication safety.

Clinical Technologies and Services

How we serve customers

- Alaris[®] medication safety systems deliver more than **4.5 million Guardrails[®] infusions every year** for over 500 unique IV medications
- Pyxis[®] automation systems dispense more than **4 million doses of medication and 1 million medical supplies daily**
- Provides pharmacy management services with more than **1,000 pharmacists**, operating effective pharmacy functions and optimizing performance

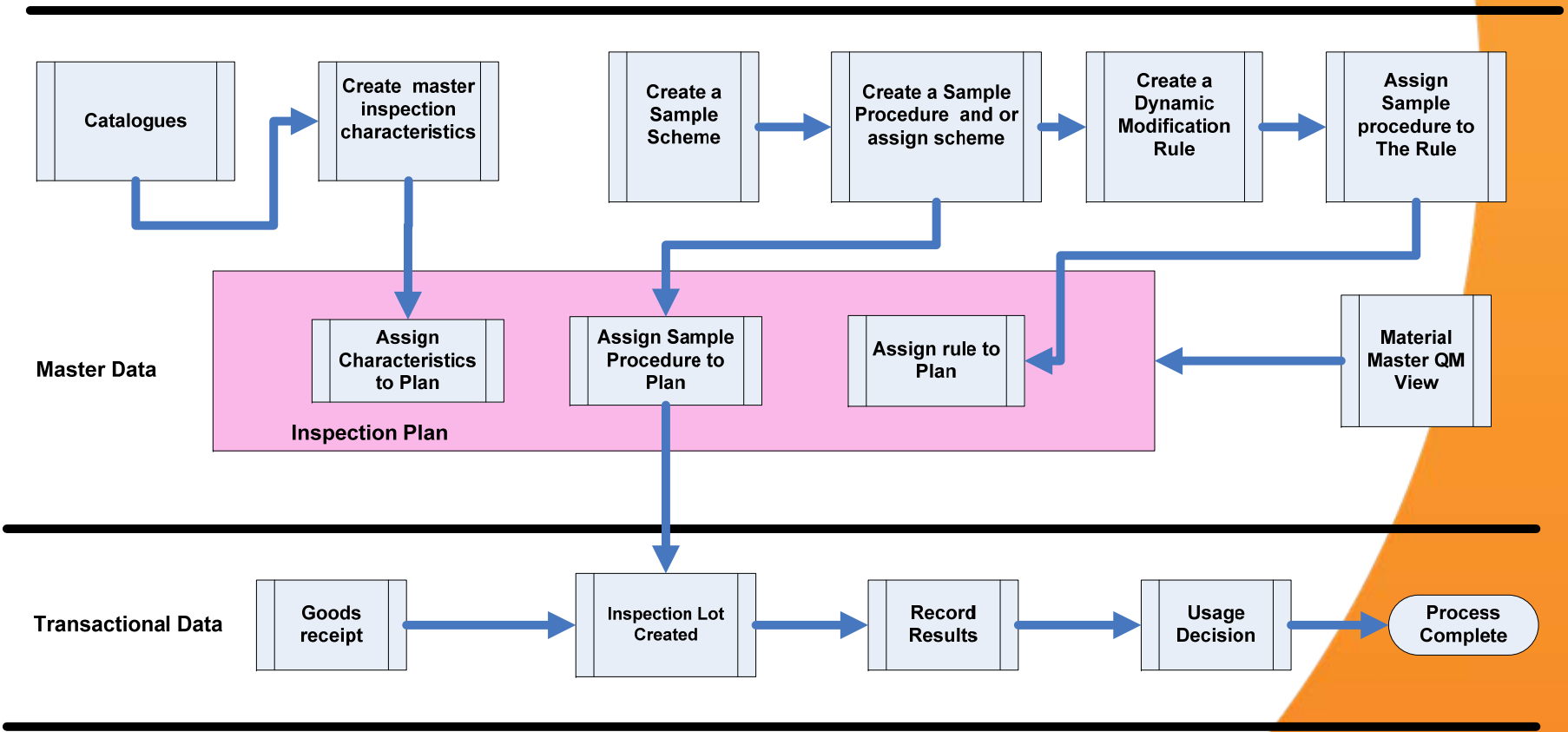


Learning Points

- How to design the inspection plan master data so it is simple to maintain and use (remember your end-users)
- Use electronic signatures and document management during results recording
- Discover how simplified quality notifications were used to capture defects from the production line
- Make your process more efficient with simple hardware solutions (bar code scanning, USB measuring equipment)

Process Flow

Overview



Inspection Plan Model

Display Inspection Plan: Characteristic Overview

PRT

 Dependent characteristic specs

Material 1000ME01440 PLATE MOUNTING P/CLAMP DOCK STAT ASENA Grp. ct. 7

Oper./Act.

Quant.Data Catalogs Sample Control indicators

Inspection characteristics

	Char.	Qn	QI	Master insp....	Plant	V...	Ref...	Short text insp.char	Unit of...	D...	Trgt value	Lower spec....	Upper Limit	Sampling...	S...	Base ...	Selected...	Plant
	10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	QUAL0001	0787	1		Check Certificate Of Conformance						0787_001	EA	1.00	PASSFAIL	0787
	20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	DIM_0001	0787	1		Dimension A	mm	4	135.0000	134.0000	136.0000	0787_000	EA	1.00		
	30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	DIM_0001	0787	1		Dimension B	mm	4	125.0000	124.7500	125.2500	0787_000	EA	1.00		
	40	<input checked="" type="checkbox"/>	<input type="checkbox"/>	DIM_0001	0787	1		Dimension C	mm	4	10.0000	9.7500	10.2500	0787_000	EA	1.00		
	50	<input checked="" type="checkbox"/>	<input type="checkbox"/>	DIM_0001	0787	1		Dimension D	mm	4	50.8000	50.3000	50.8000	0787_000	EA	1.00		
	60	<input type="checkbox"/>	<input checked="" type="checkbox"/>	QUAL0003	0787	1		Ensure accordance with 4.4.2 of IP						0787_000	EA	1.00	PASSFAIL	0787
	70	<input type="checkbox"/>	<input checked="" type="checkbox"/>	QUAL0004	0787	1		Ensure accordance with 4.4.3 of IP						0787_000	EA	1.00	PASSFAIL	0787
	80	<input type="checkbox"/>	<input checked="" type="checkbox"/>	QUAL0005	0787	1		Ensure accordance with 4.4.4 of IP						0787_000	EA	1.00	PASSFAIL	0787
	90	<input type="checkbox"/>	<input checked="" type="checkbox"/>	QUAL0006	0787	1		Ensure accordance with 4.4.5 of IP						0787_000	EA	1.00	PASSFAIL	0787

Insp. Plan Document (.pdf) available to inspector

Inspector: CDUNLAP Insp. start time: 00:00/0000 00:00:00

Char. filter: 100000000305 - 1000ME01440 - 2008030179 - C80

0010 Incoming Inspection

- 0010 Check for Certificate
- 0040 Dimension A
- 0050 Dimension B
- 0060 Dimension C
- 0070 Dimension D
- 0080 Ensure accordance with 4.4.2 of IP
- 0090 Ensure accordance with 4.4.3 of IP
- 0100 Ensure accordance with 4.4.4 of IP
- 0110 Ensure accordance with 4.4.5 of IP

A..	R..	S..	Short text for the inspection charac.	Specifications	Inspect	Inspected	St...	Result
<input type="checkbox"/>	<input type="checkbox"/>	1	Check for Certificate	Certificate?	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Dimension A	134.0000 .. 136.0000 mm	3	0		
<input type="checkbox"/>	<input type="checkbox"/>	1	Dimension B	124.7500 .. 125.2500 mm	3	0		
<input type="checkbox"/>	<input type="checkbox"/>	1	Dimension C	9.7500 .. 10.2500 mm	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Dimension D	50.3000 .. 50.8000 mm	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Ensure accordance with 4.4.2 of IP	Functional, Visual	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Ensure accordance with 4.4.3 of IP	Functional, Visual	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Ensure accordance with 4.4.4 of IP	Functional, Visual	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Ensure accordance with 4.4.5 of IP	Functional, Visual	1			

Production Resources And Tools List

Cat	Production resources/tools	Quan...	Unit	Description
<input checked="" type="checkbox"/>	1000ME01440 ZIP 000 00	1	EA	1000ME01440 Inspection Plan iss...

ZIP Document

Display Document: Basic Data Eng/Des. Drawing (ZIP)

Status Log

Document: 1000ME01440 Part: 000 Version: 00

Deletion Flag Document Structure

Document Data Descriptions Originals Document Browser Authorizations

Document Data

Description: 1000ME01440 Inspection Plan issue 01

Document Status: RE Released 01/16/2008

CM Relevance: 1

User: CDUNLAP Carl Dunlap

Lab/Office:

Change Number Valid From:

Authorization Group:

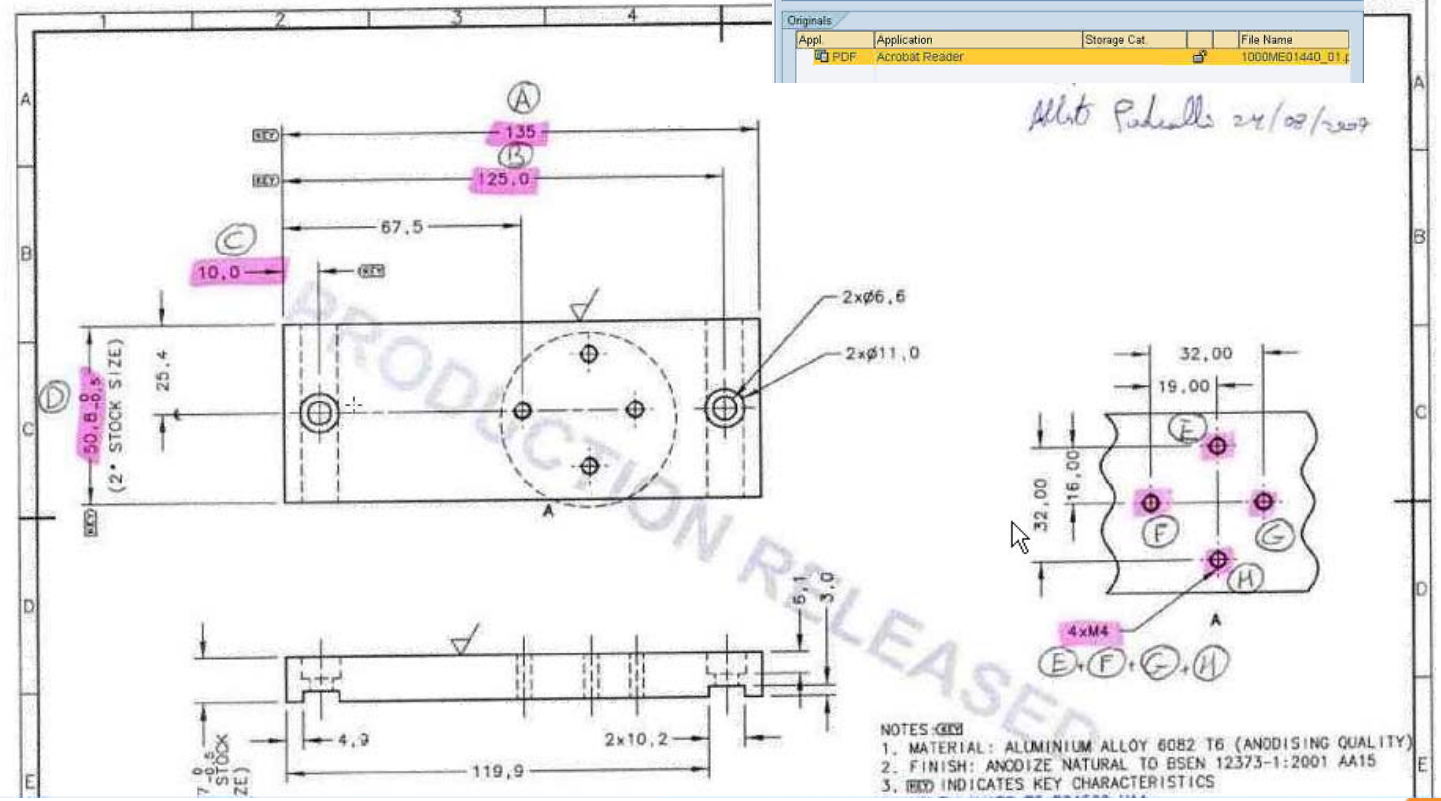
Superior Document

Document Type Part Version

Originals

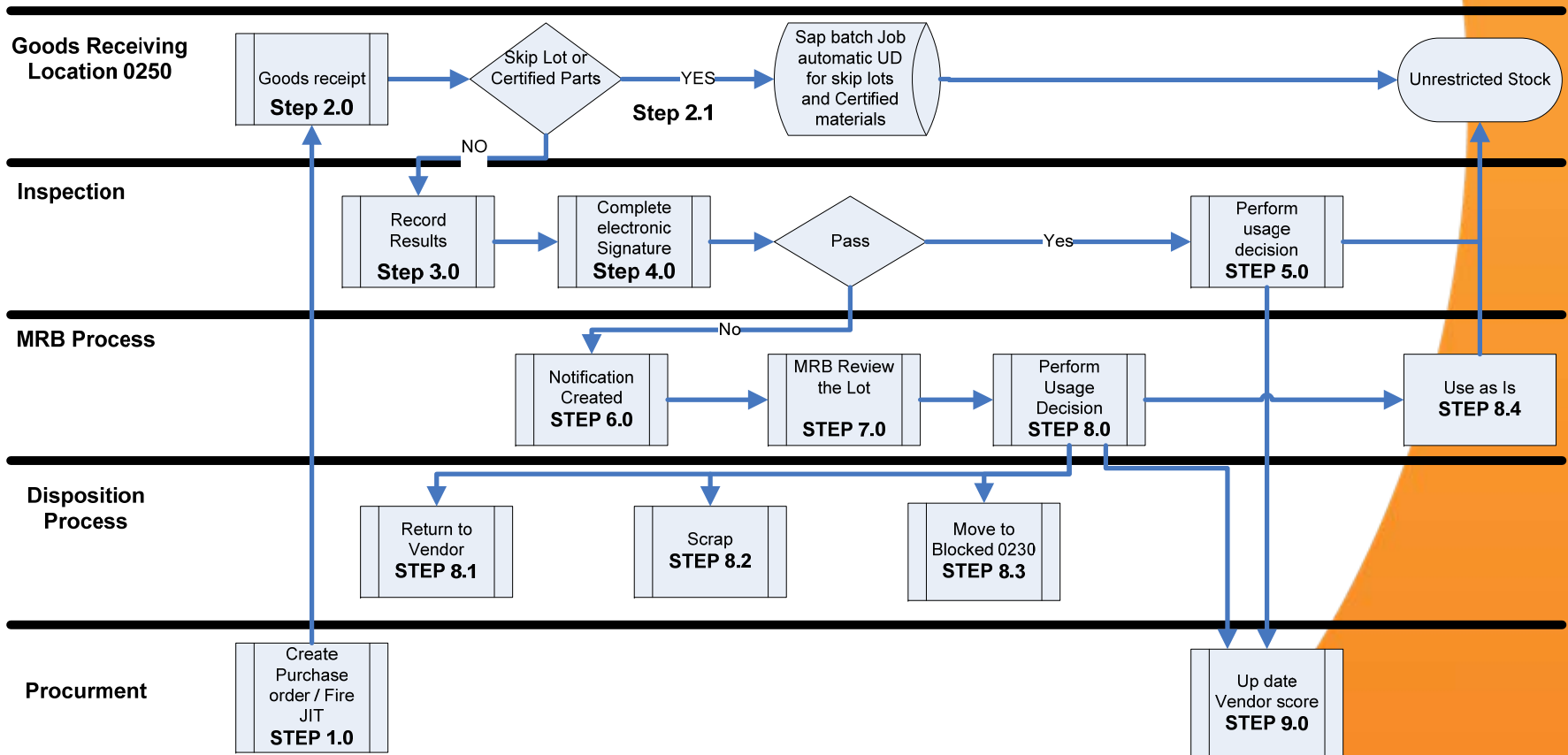
Appl	Application	Storage Cat	File Name
PDF	Acrobat Reader		1000ME01440_01

Allit Padevalli 24/08/2007



Process Flow

Incoming Goods Inspection Process



Goods Receipt Slip – Insp. Lot & Quality Level

GOODS RECEIPT SLIP 5000461558/0003

Goods receipt date : 03.03.2008
Current date : 03.03.2008

Plant : 0787
Description : Cardinal Health Switz 317 Sarl

Vendor : 0000010319 Delivery note: 0800526
Name :
PO : 5500000412/00560
Pur. group : 004 Telephone :

Material : 1000ME01443 ASENSA GW, ASSY, MAINS INLET RETAINER
Batch : Rev Level: 02 Inspection Lot
Quality Lvl : 0100


10000017104

Quantity : 500 EA Quality inspection

WAREHOUSE INFORMATION

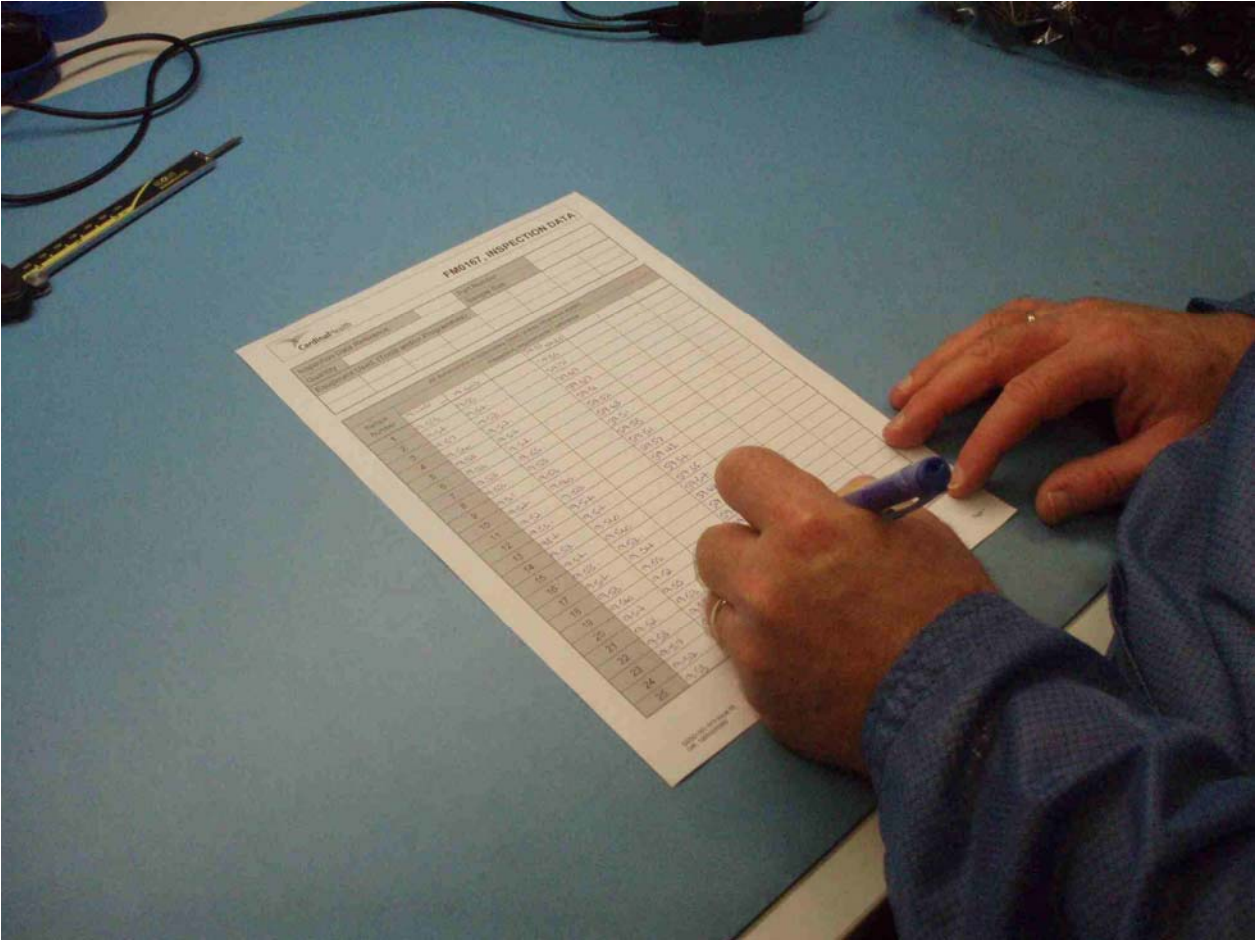
Storage loc.: 0250
Storage bin : ST-28A-02A

Additional Info :

Issued by : PTHOMPSO SIGNATURE



Before – Record Paper Results



After – Electronic Results Recording in SAP

Inspector CDUNLAP Insp. start time 00:00/0000 00:00:00

Char. filter
100000000305 - 1000ME01440 - 2008030179 - C80

0010 Incoming inspection

- 0010 Check for Certificate
- 0040 Dimension A
- 0050 Dimension B
- 0060 Dimension C
- 0070 Dimension D
- 0080 Ensure accordance with 4.4.2 of IP
- 0090 Ensure accordance with 4.4.3 of IP
- 0100 Ensure accordance with 4.4.4 of IP
- 0110 Ensure accordance with 4.4.5 of IP

Material 1800ME01440 Plate Mounting P/Clamp D. Batch 2008030179

Insp. Lot 18000000305

Oper./Act. 0010 Incoming Inspection P1nt BP01

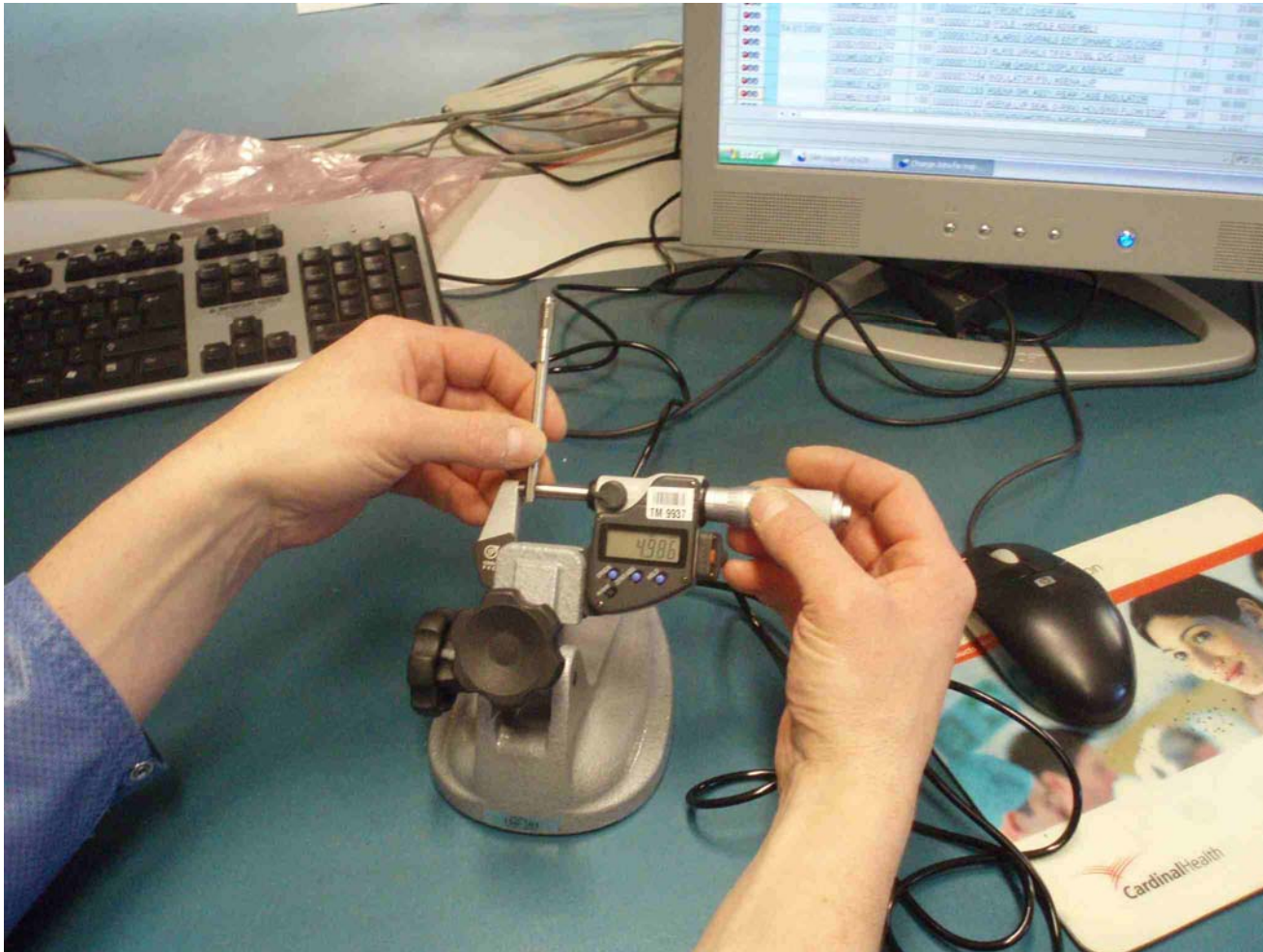
General Summarized Unit to be inspected Indicators

A..	R..	S..	Short text for the inspection charac.	Specifications	Inspect	Inspected	St...	Result
<input type="checkbox"/>	<input type="checkbox"/>	1	Check for Certificate	Certificate?	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Dimension A	134.0000 .. 136.0000 mm	3	0		
<input type="checkbox"/>	<input type="checkbox"/>	1	Dimension B	124.7500 .. 125.2500 mm	3	0		
<input type="checkbox"/>	<input type="checkbox"/>	1	Dimension C	9.7500 .. 10.2500 mm	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Dimension D	50.3000 .. 50.8000 mm	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Ensure accordance with 4.4.2 of IP	Functional, Visual	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Ensure accordance with 4.4.3 of IP	Functional, Visual	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Ensure accordance with 4.4.4 of IP	Functional, Visual	1			
<input type="checkbox"/>	<input type="checkbox"/>	1	Ensure accordance with 4.4.5 of IP	Functional, Visual	1			

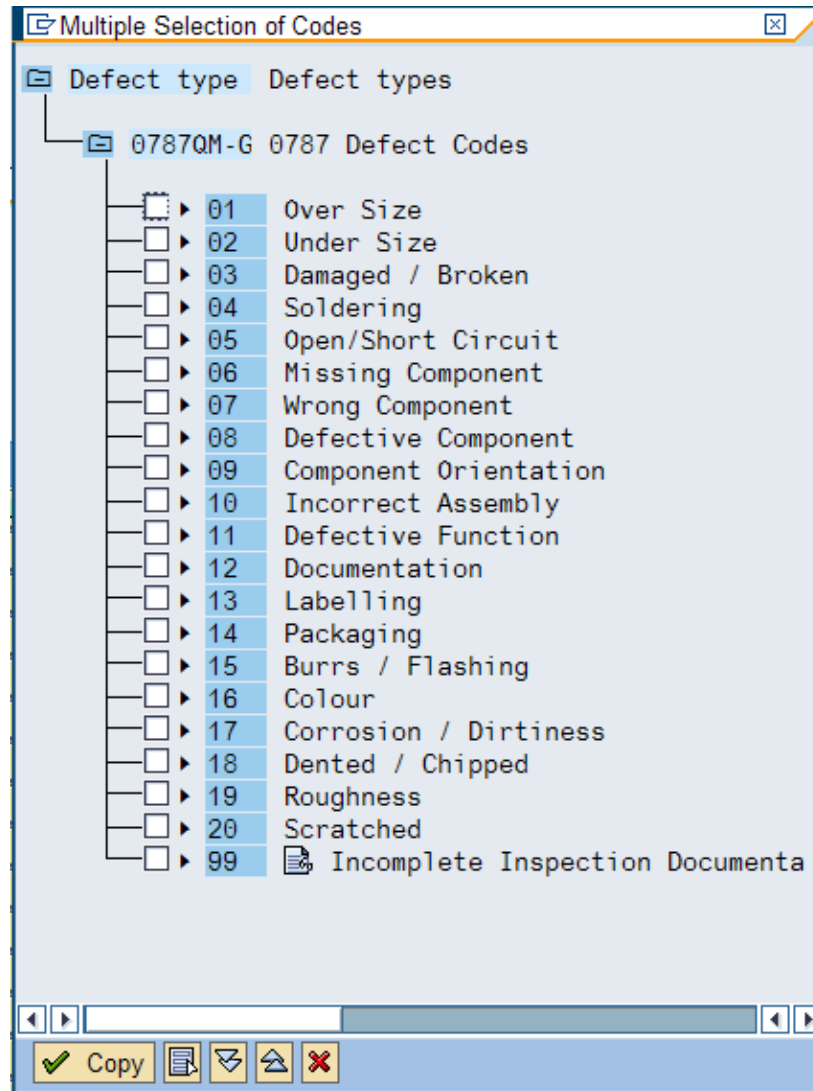
Qualitative Results – Scan Attribute codes



Quantitative Results - USB Wedge, Foot Pedal



Simplified Defect Codes



[QGA3 - Printout

13.03.2008 16:20

Page 01 from 04

Inspection report

Inspection Lot:



Notification Number:



Material 1000SP00449 SWITCH ASSY DS POWER
 Vendor 10115 EC Electronics Ltd.
 Status **No usage decision made/Defects Found**
 Origin 01 Goods receipt
 Inspection type 01 Incoming insp. for GR for purchase order
 Task list Inspection Plan Issue 02
 Inspection period 29.02.2008 - 29.02.2008
 Lot size 50 EA
 Sample size 8 EA
 Quality Level 0100

Inspection operation 0010Incoming Goods Inspection

Characteristic	0010	Check Certificate Of Conformance			
Status	Processing is completed				
To be inspected	1 * 1.00 EA	Inspected	1	Nonconforming	0
Attribute	Result is valid (default)				
Code	P	Pass			
Valuation	Accepted				

QGA3 - Printout


Inspection report

Inspection lot 010000016926
 Material 1000SP00449 SWITCH ASSY DS POWER
 Vendor 10115 EC Electronics Ltd.
 Status **No usage decision made/Defects Found**

Characteristic 0020 Dimension A
 Status Processing is completed
 To be inspected 8 * 1.00 EA Inspected 8 Nonconforming 1
 Attribute Result is valid (default)

Defect overview for characteristic

Code group	CodeNo.	of defects	Short text/Note
0787QM-G	02	1	Under Size 1 piece was under lower tolerance



Details
 Mean of valid measured values 137.6250 mm
 Standard deviation of valid measured values 5.5533mm
 MaxVal of valid measured vals. 145.0000 mm
 MinVal of valid measured vals. 129.0000 mm

Inspection description T1255
 Valuation Rejected

Single values

Unit to be inspected 0001
 Attribute: Result is valid (default)
 Recorded measured values: 140.0000 mm
 Valuation: Accepted
Unit to be inspected 0002
 Attribute: Result is valid (default)
 Recorded measured values: 141.0000 mm
 Valuation: Accepted
Unit to be inspected 0003

Digital Signature

The screenshot displays a software interface for recording inspection results. A 'Digital Signature' dialog box is open, allowing the user to sign the record. The dialog box includes the following fields:

- Comment:** A text area with a toolbar and a scroll bar. The text 'Ln 1, Co 1' is visible at the bottom of the scroll bar.
- Reason for signature:** A dropdown menu with 'Inspection Lot: Results Recording' selected.
- Remarks:** A text field containing 'Insp. results recorded for inspection lot 010000000305, operation 0010'.
- Signatory:** A text field containing 'CDUNLAP'.
- Password:** A text field filled with asterisks.

The background window, titled 'Record Results: Characteristic Overview', shows a table of inspection results. The table has columns for 'Inspect', 'Inspected', 'St...', and 'Result'. The data is as follows:

	Inspect	Inspected	St...	Result
	1	1		P PASS
00 MM	3	3		∅ 135.13333
00 MM	3	3		∅ 125.30000
IM	1	1		= 10.10000
MM	1	1		= 50.40000
AL	1	1		P PASS
AL	1	1		P PASS
	1	1		P PASS
	1	1		P PASS

Email – Worklist to Quality Engineers




Display list of items: List of Notifications

Typ	Inspection lot	Material	RevLev	Material description	List name	Problem code text	Item text	Vendor
F2	10000013831	192		FLOW SENSOR	Vishay GmbH	Incomplete Inspection Documentation		15635
F2	10000013948	141162	0E	ASSY,HSG,REAR,597/8/9 FSO	Southwest Mold Inc.	Incomplete Inspection Documentation		14086
F2	10000016480	141004	00	"ASSY,LED MODULE,7X0X (BOM)"	Vishay GmbH	Documentation	No Issue Level On Supplier COC	15635
F2			00	"ASSY,LED MODULE,7X0X (BOM)"	Vishay GmbH	Documentation	No place of manufacturing on part	15635
F2			00	"ASSY,LED MODULE,7X0X (BOM)"	Vishay GmbH	Over Size	Oversize Upto 0.037	15635

Usage Decision by QE (Security / Follow Up Action)

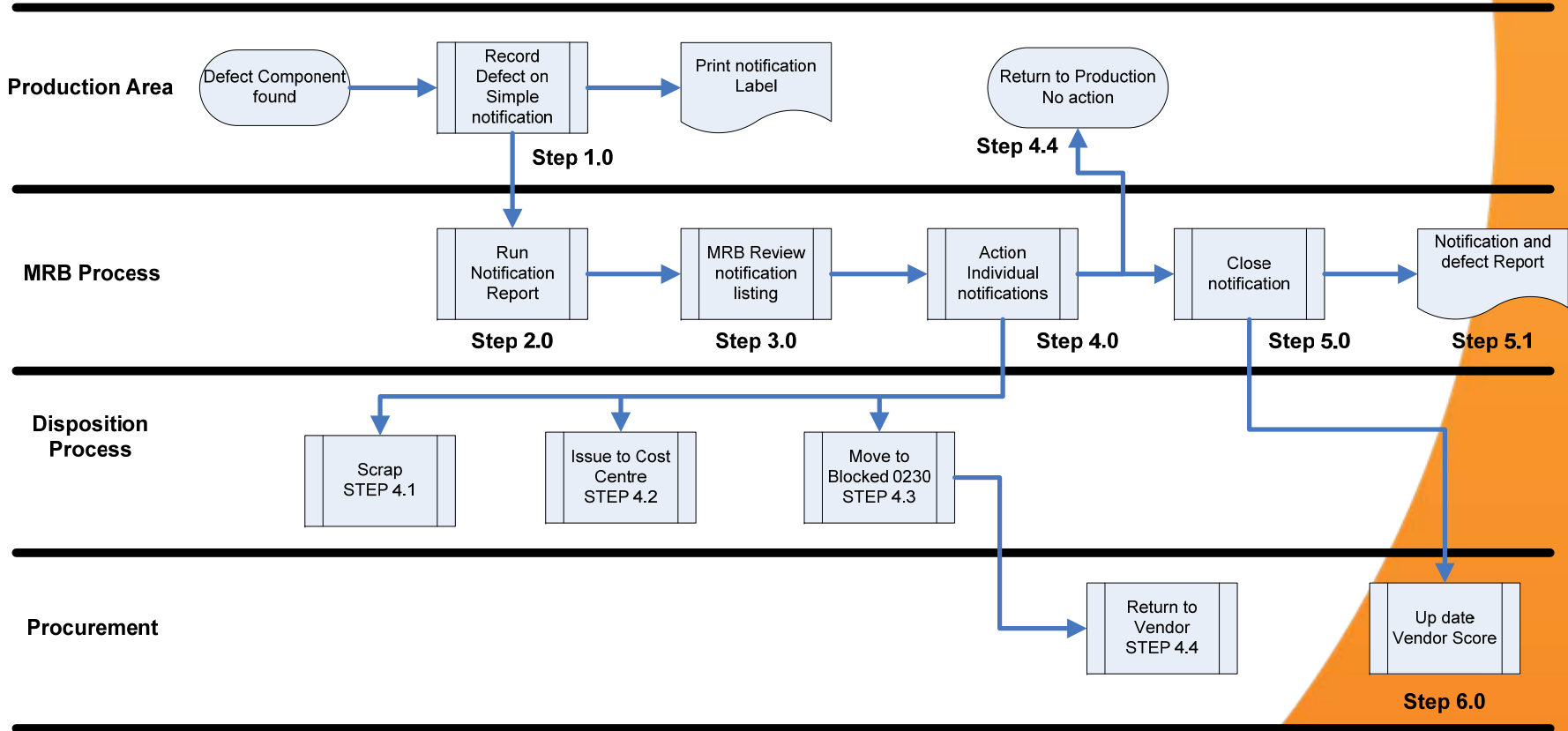
Usage Decision for Inspection Lot

- Decision Usage decisions
 - UD-0787 Usage Decision for Plant 0787
 - A0** Accept (Automatic Stock Posting)
 - ACC Conditional Acceptance (Cardinal Resp)
 - ACV Conditional Acceptance (Vendor Resp)
 - AFAI Accept (First Article Inspection)
 - AMRB Accept Return from Vendors MRB Process
 - R01 Rejected (Vendor Responsibility)
 - R02 Rejected (Cardinal Responsibility)
 - R03 Rejected (Shared Responsibility)
 - RFAI Reject (First Article Inspection)
 - RMRB Rejected Return from Vendors MRB Process

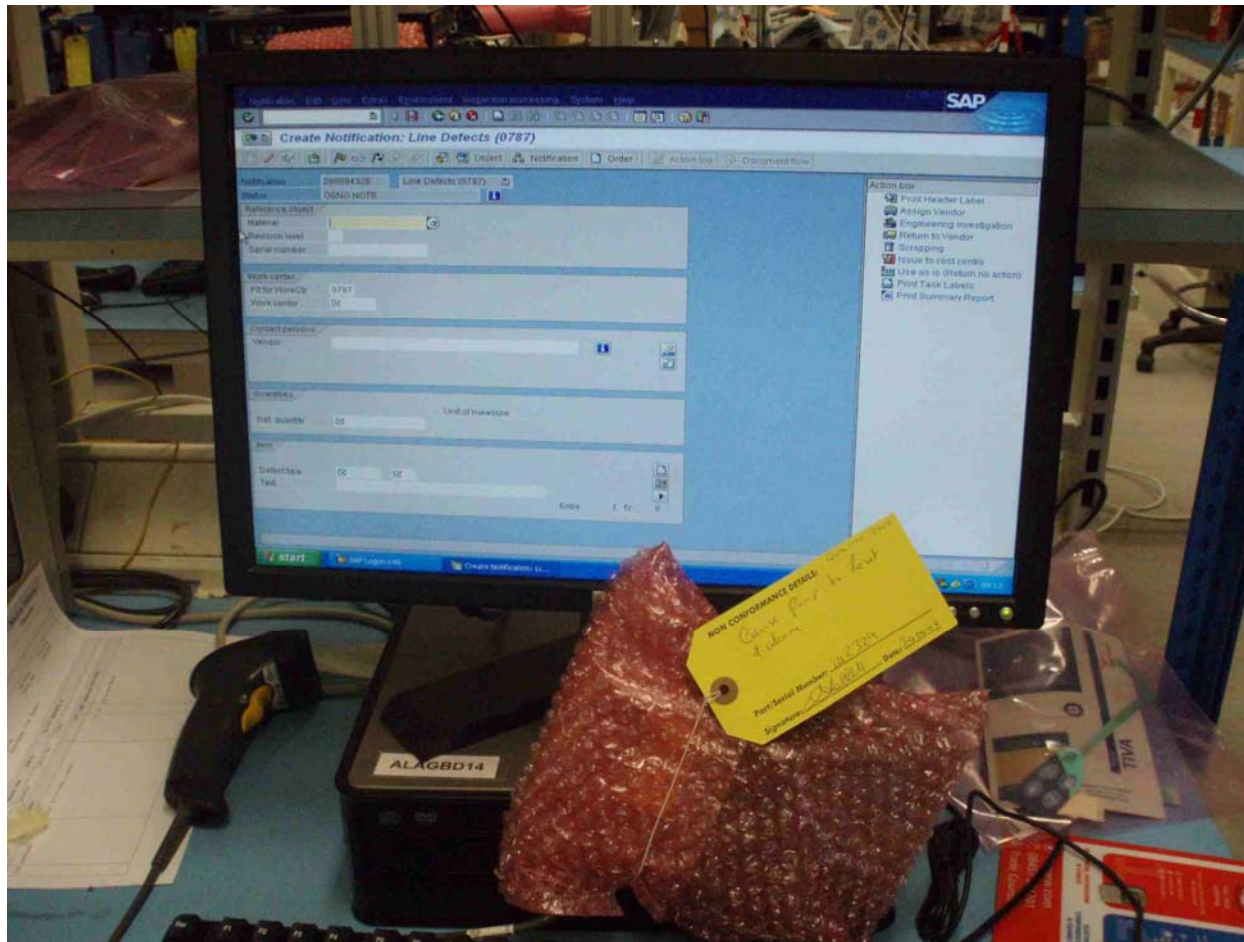
Usage decision	
Code valuation	A Accepte... 
UD code	A0  0787UDA Accept (Automatic Stock Posting)
Quality score	100 Quality score from usage decision code
FollowUpActn	Z_QM001  Only allow if no defects or failed chara

Process Flow

Defect Recording from Production



Simple Notification Creation (IQS21)



Simple Notification Creation (IQS21)

Create Notification: Line Defects (0787)

Notification: 200004129 Z3 Line Defects (078...)

Status: OSNO NOTE

Reference object

Material: 1000EL00974

Revision level:

Serial number:

Work center

Plt for WorkCtr: 0787

Work center: ASENAGP

Contact persons

Vendor:

Quantities

Ref. quantity: 1 Unit of measure:

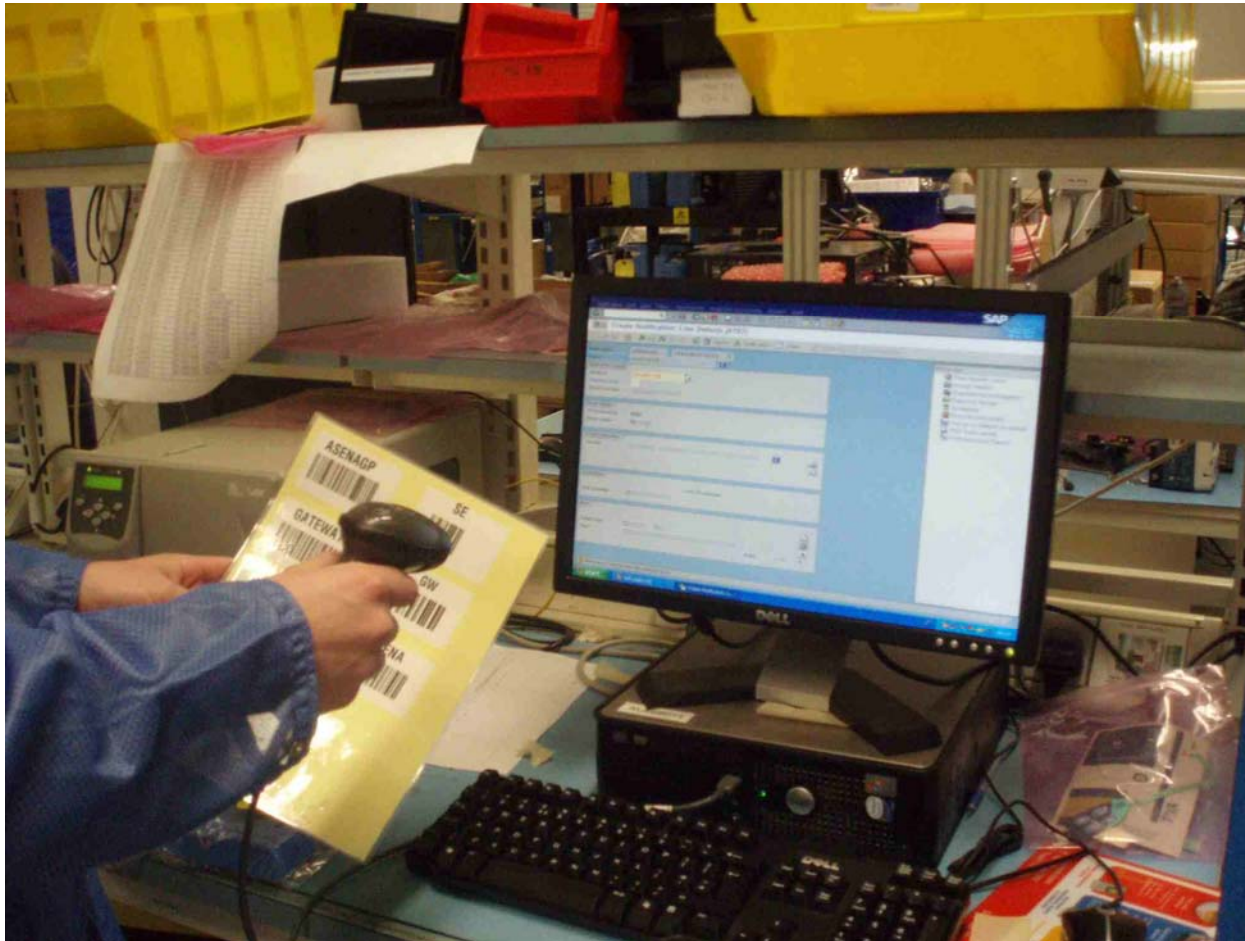
Item

Defect type: 0787QM-G 11 Defective Function

Text: Mains LED pulsing with battery LED

Entry: 1 fr.: 0

Simple Notification Creation (IQS21)



[Bar Code labels printed



Worklist to Quality Engineers

Display list of items: List of Notifications

Typ	Notification	Material	No.	Code group	Prob	Problem code text	Item text
Z3	200003664	1000SP00627	1	0787QM-G	18	Dented / Chipped	Options label dented front case
Z3	200003923	142475	1	0787QM-G	11	Defective Function	intermittant pixels aux lcd
Z3	200003922	143254-001	1	0787QM-G	20	Scratched	Scratched / marked on window
Z3	200003888	8000EL00019	1	0787QM-G	03	Damaged / Broken	flexi damaged at end
Z3	200003996	1000LB00626	1	0787QM-G	03	Damaged / Broken	Destroyed on line
Z3	200003971	10565254	1	0787QM-G	11	Defective Function	Backup speaker error
Z3	200003976	10565254	1	0787QM-G	11	Defective Function	Motor behind error
Z3	200003978	141498-100	1	0787QM-G	06	Missing Component	Front case thread insert missing
Z3	200003977	143254-001	1	0787QM-G	03	Damaged / Broken	Keypad backing left on when fitting caus
Z3	200003979	143254-001	1	0787QM-G	06	Missing Component	Attached to 141498-100. Missing insert
Z3	200003980	143518	1	0787QM-G	06	Missing Component	Attached to 141498-100. Missing insert

Quality Notification – Action Box



Action box	
	Print Header Label
	Assign Vendor
	Engineering Investigation
	Return to Vendor
	Scrapping
	Issue to cost centre
	Use as is (Return no action)
	Print Task Labels
	Print Summary Report

[Return on Investment

- Utilize your existing investment in SAP ERP Software
 - No need to purchase an outside Quality Package
- Implementation resulted in efficiency gains after initial change period
 - 25% reduction in resource requirements

[Before

- Very Subjective
- Cabinets full of paper copies (overflowing)
- Paper hard to track and control
 - Administration/Transcription errors
- No way to analyze data
- Lack of organization
- Lots of data – but no easy way to retrieve/report
 - No way to Quantify
 - “If you can’t measure it – you can’t manage it
- Limited visibility for Management & Suppliers
 - Hard to calculate metrics (i.e. first pass yield)

After

- Improved Visibility for Management/Suppliers
 - Measure & Quantify (calculate metrics)
 - First Pass Yield
 - Top Defects per Product Family
 - Support for CAPA process
- What is on the Shelves
 - Can see in SAP
- Improved Accuracy & Discipline
- Ability to focus on Important Issues
- Focus on Key Vendors & Materials (80/20)
- Quality Engineers can focus on Value Add
- Continuous Improvement – Next Stage
 - Instrument Results Recording

[Key Learnings

- K.I.S.S.
 - Keep it Simple
- Involve End Users early & often
 - Grass Roots Campaign
 - End Users “SAP is very user friendly”
- Expect the first few weeks to expose issues
 - Work load may shift
 - Issues exposed due to old paper system
 - Culture change
- A falling tide exposes the rocks

“After all, you only find out who is swimming naked when the tide goes out” – Warren Buffett

 - Recording Quality Data in SAP will expose issues

[Thank you to Receiving Inspection

- Ray Bailey
- Andrew Huggins
- Dean Phillips
- Dave Ryan

Thank you for participating.

Please remember to complete and return your evaluation form following this session.

For ongoing education on this area of focus, visit the Year-Round Community page at www.asug.com/ycr

For Follow Up Questions:
cdunlap@cohesion.biz

SESSION CODE:
3405