



# Lean Enterprise Extensions

Enhanced capability leveraging Microsoft Dynamics AX 2012

## **Solution Overview**

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# LEAN ENTERPRISE EXTENSIONS

eBECS Lean Enterprise Extensions enhance the ability of companies to manage tightly coupled supply chains. In many industry sectors, end-to-end supply chain visibility is required from raw material suppliers, through components, finished goods and on to distributors and retailers or installers. These extensions deliver that visibility and integrated communication that supports those efforts.

Lean Enterprise Extensions provide this ability through enhancement of the already comprehensive Lean functions supplied with Microsoft Dynamics AX 2012.

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## MRP ENHANCEMENTS

### IGNORE SAFETY STOCK

Another addition to the coverage group is a flag to ignore safety stock. When this flag is set to yes on the coverage group, the safety stock of that item is ignored. This function provides flexibility for the user to control whether they would like to dip into the safety stock for consumption and not have recurring futures or actions messages. This is used with the CTP functionality so that dates are not pushed out to customer's based on safety stock requirements.

The screenshot shows the 'Coverage groups (1 - ceu)' window. On the left, a list of coverage groups is displayed with group 10 selected. The right pane shows the configuration for group 10, 'Requirement coverage group'. The 'General' section includes fields for 'Coverage code' (Requirement), 'Coverage period' (0), 'Coverage time fence' (100), 'Negative days' (2), 'Positive days' (100), and 'Date Type' (Standard). The 'Ignore Safety Stock' checkbox is located below these fields and is highlighted with a red box. The 'Other' section includes checkboxes for 'BOM or formula version re...' and 'Route version requirement', both of which are checked, and a 'Period template' dropdown set to 'STD period'. At the bottom, there are tabs for 'Planned order' and 'Forecast plan'.

### LONG TERM CAPACITY PLANNING

Lean in AX2012 does not allow long term capacity planning with activities. When an item is under Kanban control in AX2012, there is no longer the use of a route with operations and work centers for planning or execution. Thus, MRP does not load these requirements against a work center for capacity planning. Kanbans are loaded instead against a work cell that has a short term planning period based on throughput/hours capacity and the activities that the

Kanban goes through as part of the production flow.

This enhancement provides a view of infinite capacity loading by activity, in daily, weekly, or monthly periods. The long-term capacity planning simulation process runs the desired forecast plan, identifies activity constraints, and allows action to be made by changing the forecast/build plan to accommodate or by looking to add capacity where required (no true what-if simulations).

After running master planning, the user will generate the long-term forecast by inputting capacity period, plan, and resource group if needed.

Microsoft Dynamics AX (1)

### Long term forecast generate

General Batch

**Parameters**

Capacity period: Week  
 Plan: 20  
 From date: 28/06/2012  
 To date: 01/08/2012

**Resource groups**

Resource group: 0001  
 Work cell: Yes

Select

OK Cancel

Define the period that is related to the throughput

Then a long-term forecast can show the efficiency, effective capacity, load, and ratio of load versus capacity. Constraints are identified with a red color.

Long term forecast (1 - ceu) - Run ID: 6, 0001, Run ID: 6

File Long term forecast

Delete Delete Run Export to Microsoft Excel

Maintain List

Run ID: 6 Resource:

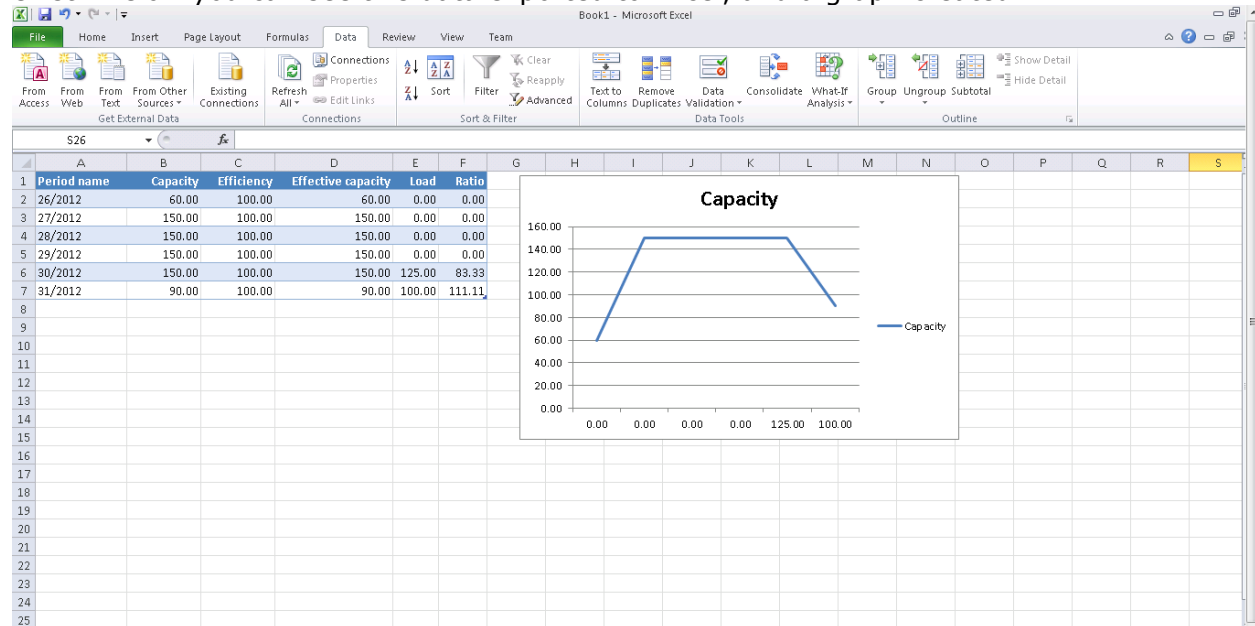
Overview Detail Planned order

Apply Efficiency: ☒ Override efficiency:

Period name	Capacity	Efficiency	Effective capacity	Load	Ratio
26/2012	60.00	100.00	60.00	0.00	0.00
27/2012	150.00	100.00	150.00	0.00	0.00
28/2012	150.00	100.00	150.00	0.00	0.00
29/2012	150.00	100.00	150.00	0.00	0.00
30/2012	150.00	100.00	150.00	125.00	83.33
31/2012	90.00	100.00	90.00	100.00	111.11

Apply work cell efficiency to calculat... (0) USD ceu Close

Functionalities like exporting to excel and creating a Load vs. Capacity graph with this data exist. Below you can see this data exported to Excel, and a graph created.



# LEAN KANBAN ENHANCEMENTS

## LEAN NAVIGATION

Navigating between boards and pegging tree overview can waste time. This enhancement allows for ease of navigation between the different Kanban boards directly from the pegging tree that can be accessed from a number of places. It is also extended on the Kanban to navigate further if there are multiple activities or if the Kanban was viewed from the rule.

The screenshot shows the 'Kanban 000422\_1018 (1 - ceu)' window. The 'General' section includes fields for Source requirement (Event type: Kanban, Sales order, Sales order line, Kanban: 000422\_1018) and Issue (Transaction time: 01/12/2013 00:00:00, Quantity: 11.00, Unit: Pcs, Status: Assigned). The 'Item' section includes fields for Item number (000134\_202), Configuration, Size, Color, and Style. The 'Kanban jobs' section is highlighted with a red box and contains a table with the following data:

Work cell	Job status	Type	Name	Scheduled period date	Good quantity	Error quantity
SP1	Completed	Process	SP1	12/12/2013	11.00	0.00
COAT	Completed	Process	COAT	10/02/2014	11.00	0.00
STER	Planned	Process	STERILIZATION	06/12/2013	0.00	0.00

## ENHANCED PICKLIST

A modified pick list report has added information useful to users: sales order information, worker, parent Kanban information, and a section for comments.

The screenshot shows the 'Print picking list (1)' window. The 'Pick list' section includes a barcode and the following information:

Sales order: Lot ID: Kanban: 000407\_1018 Card number: PSCRRD05 Work cell: SCPS\_Cover Parent kanban: Parent item ID Worker: Darren Hogg Item number: SCPS\_PSCR

Item number	Item description.	Qty	Unit	From warehouse	From location	Position	Batch number	From kanban	Comments
SCPS_UPSCR	Un Painted Speaker covers Right	5.00	Pcs	UnPaCovers	Output				

## DOCUMENT HANDLING FOR PRODUCTION INSTRUCTIONS

This enhancement adds functionality to allow the user to attach production instructions per item, group, or all via the work cell. A new parameter on the work cell must be set to yes to allow this. A new button for production instructions has been added to the action pane where the user will attach the instructions.

The screenshot shows the 'Resource groups (1 - ceu)' window. The 'Resource group' list on the left includes 'CSS\_EA' (EA - Electrical Assembly). The 'Work cell' section is expanded, and the 'Production instructions per work cell' checkbox is checked and highlighted with a red box. Other settings visible include 'Production unit' (dropdown), 'Operations scheduling percentage' (100.00), 'Finite capacity' (checkbox), 'Bottleneck resource' (dropdown), 'Sequence group ID' (dropdown), 'Capacity unit' (dropdown), 'Capacity' (0.00), 'Batch capacity' (0.00), 'Use box as service rate' (checkbox), 'Allow grouping of subcontractor kanbans' (checkbox), 'Require subprocess activity timings' (checkbox), 'Require Activity timings' (checkbox), 'Batch Expiration Designator' (checkbox), and 'Subcontract certificate document type' (checkbox).

This parameter then allows the user to enter the attachment. The item code can be setup to show the attachment per item, per item group or for all items in that work cell.

The screenshot shows the 'Production instructions per work cell (1)' dialog box. The 'General' tab is active, displaying a table with the following data:

Item code	Item relation	Created date and time	Type	Description	Restriction	Attac
Table	10004	00:00:00	CertOfAna	Attachment	instru	

The 'Restriction' column shows 'instru' for the attachment. The dialog also includes a 'Delete' button, 'Select' dropdown (set to 'All'), 'Show references only' checkbox, and 'Show file' checkbox. The bottom status bar indicates 'Specify which restriction the document is to have' and shows '(0)' items.

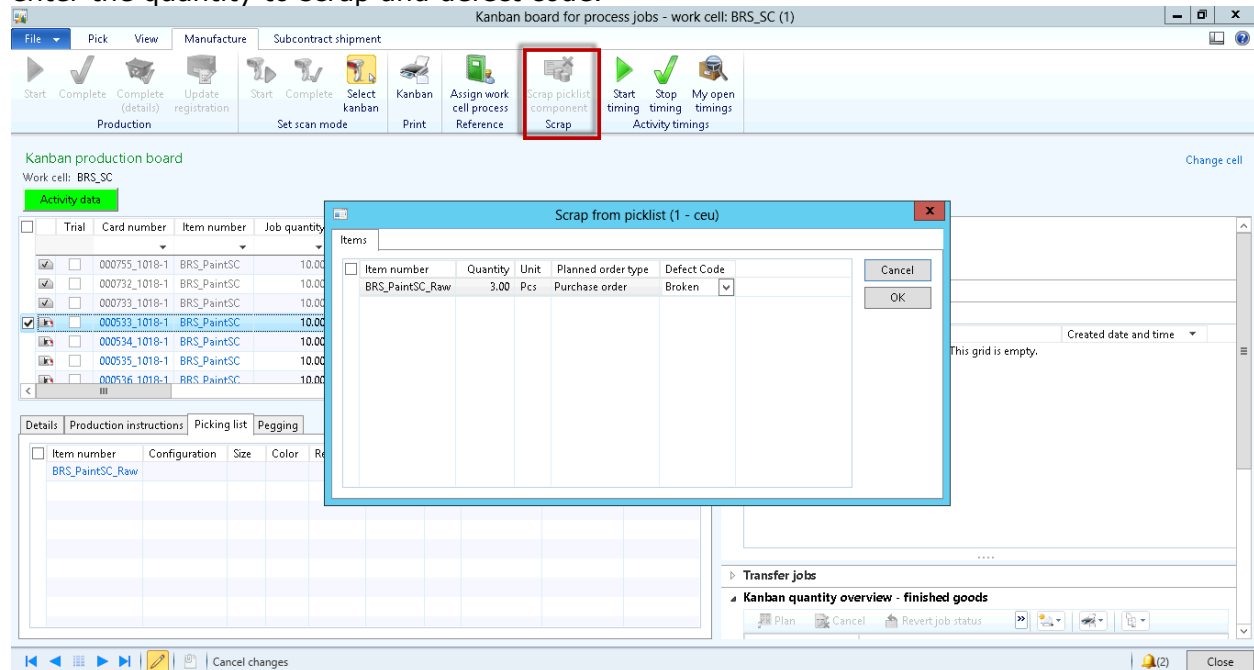


## KANBAN DOCUMENT HANDLING

This enhancement is a parameter on the Engineer Fast Tab of each item details form that, when checked, enables Kanban documents to be enabled and accessible from the Kanban board for process jobs and from the Kanban details form.

## SCRAP COMPONENT

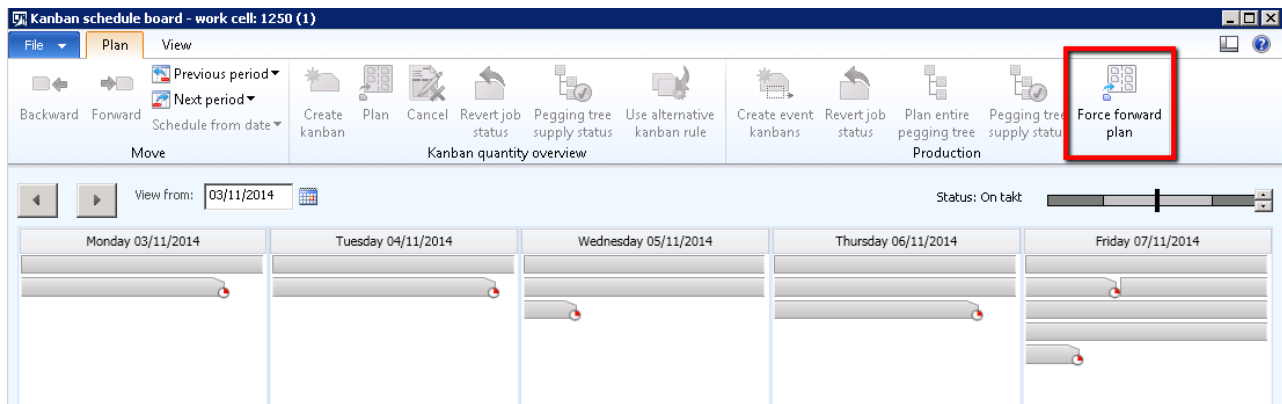
Standard AX does not allow the scrapping of both purchase and Kanban type components. This extension adds a button on the Kanban board for process jobs that will allow the user to enter the quantity to scrap and defect code.



Upon scrapping any item with planned order type of purchase order, a pick list is generated to compensate for the scrapped quantity. This would change the print status of the Kanban to "Printed with scrap"

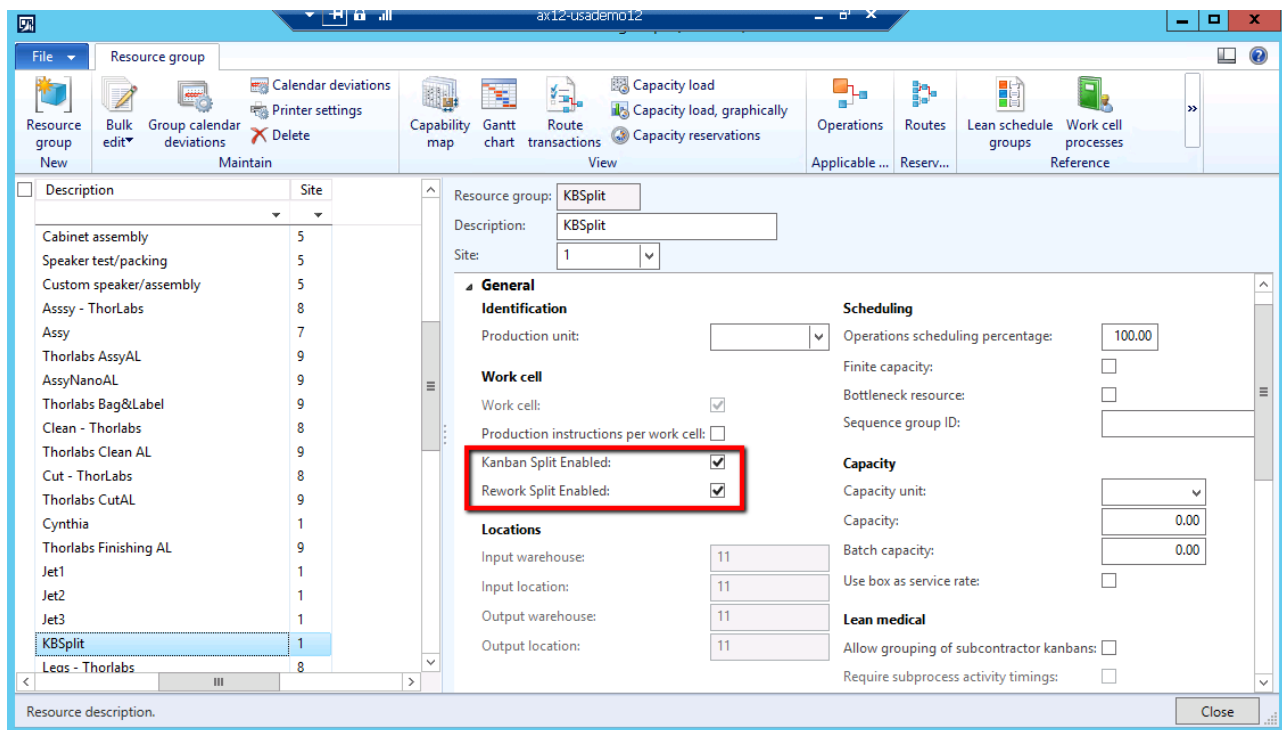
## FORCE FORWARD PLAN

Standard AX plan pegging tree allows a Kanban to be planned backwards from that activity, which can be limiting if the bottleneck is in the middle of the process. The forward planning functionality allows for Kanbans to be scheduled forward from the Kanban schedule board. This plans the activities of a production flow forward starting from whichever activity or work cell this button is used from. This functionality takes into account the production flow model of subsequent activities, activity queue times, and activity relation constraints.



## KANBAN SPLIT

This enhancement allows Kanbans to be split via batch sequence numbers. One new parameter on the work cell will determine if split is allowed.



When this parameters are set to yes, one new buttons are enabled from the completed (details) button on the Kanban board for process jobs. Kanban split is only active if error quantity is zero. When Kanban split is selected, the user will be prompted to enter the quantity to split and the Kanban rule to follow for the split quantity.

**Complete job and enter details (1)**

Report good and error quantities for the kanban jobs:

Overview							
Kanban	Item number	Job quantity	Error quantity	Good quantity	First time through	Transaction time	
<input checked="" type="checkbox"/>	000962	SEQ TEST	10.00	0.00	10.00	<input checked="" type="checkbox"/>	23/01/2015 21:23:10

Buttons: **Kanban split** (highlighted), Rework Split, OK, Cancel

A new field on the form will indicate which batch sequence to split. This will mean there will be two Kanban references for the same sequence. The Kanban will generate using the new Kanban rule selected.

**Error codes (1 - usmf) - Kanban: 000962, SEQ TEST, Kanbans: 000962**

Mark	Sequence Number
<input checked="" type="checkbox"/>	1
<input type="checkbox"/>	10
<input checked="" type="checkbox"/>	2
<input type="checkbox"/>	3
<input checked="" type="checkbox"/>	4
<input checked="" type="checkbox"/>	5
<input type="checkbox"/>	6
<input type="checkbox"/>	7
<input type="checkbox"/>	8
<input type="checkbox"/>	9

Indicates if the batch sequence is marked.

Close

When viewing the batch details in the Update registration, the split sequence numbers will be displayed.

Sequences (1 - usmf) - Batch number: 000061, SEQ TEST, Item number: ...

File New Delete

Sequence Number	Status	Error Code	Work cell
1	Split		KBSplit
10	Created		KBSplit
2	Split		KBSplit
3	Created		KBSplit
4	Split		KBSplit
5	Split		KBSplit
6	Created		KBSplit
7	Created		KBSplit
8	Created		KBSplit
9	Created		KBSplit

Batch Sequence Number

Close

## ACTIVATE PRODUCTION FLOW MODIFICATION

This Lean extension allows the user to edit active production flows in ways that were previously blocked while the flow is active. Now users can add and delete process activities without having to deactivate and reactivate the production flow.

Create new plan activity (1 - ecoh)

New activity

Select name and activity type

Name:

Activity type:

Feeds to downstream flow:

Process quantity:

Unit:

Operating unit:

AC

< Back Next > Cancel

AC #2 WINDING ACWA06 WIP Legal entity: ECOH

Option: AC #2 WINDING ACWA06 WIP Value stream: AC

Production group: DEFAULT

Financial dimensions

Active version

versions

+ Add - Remove Details Validate Activation Recalculate Activities

Version	Effective date	Expiration date	Plan status
1	5/2/2012	04:00:00 am 1/16/2013 09:00:00 pm	Active

Activity: 002187

Activity name: MAKE TO PRINT (ST) ACWA06

Activity type: Process

Predecessors

+ Add predecessor - Remove

Activity	Name	Activity type	Ratio	Constraint value	Unit
This grid is empty.					

## KANBAN ON KANBAN CARD NUMBER

This functionality allows the number sequence on the Kanban card number to have the Kanban id as a prefix. The only exception is when the card is set as a circulating, the number would differ.

**Kanban : 000522\_1018**

Card number: **000522\_1018-1**

## BATCH SEQUENCE NUMBERS

When information regarding specific units must be tracked, but serialization is not ideal, batch sequence is a good alternative. This enhancement allows for the creation of sequence numbers behind the batch table. These sequence numbers are created based on Kanban quantity with an auto-generated sequential number setup in your Lean enterprise parameters.

Lean parameters (1 - ceu)

File

Purchase schedule

• General

Kanban

Sub Contracting

Number sequences

**General**

Enable reason codes for date changes on sales lines: ☐

Customer copy document type ID:

Print picklist status using Picklist Print? ☐

CTP pre check: ☒

**VMI**

Enable VMI: ☐

VMI journal name:

Auto invoice VMI purchase orders: ☐

**Lean medical**

EnableSequenceControl: ☒

Number of Sequence Digits:

Enable activity data collection: ☐

Number of Sequence Digits

Close

This dimension is also added to the tracking dimension group.

Name	Active	Primary stocking	Blank receipt allowed	Blank issue allowed	Physical inventory	Financial inventory	Sequence Controlled
Inventory profile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Owner	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Batch number	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Serial number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GTD number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A link to the sequences has been added to the batch table. This sequence table will track the status, reason code if scrapped, and work cell per sequence number within the batch.

Batch number	Item number	Manufacturing date	Expiration date	Split	Quality order status	Shelf advice date	Best before date	Batch disposition code	Batch disposition status
000598	BRS_Split	16/12/2013	16/12/2013	<input type="checkbox"/>					
000599	BRS_Split	16/12/2013	16/12/2013	<input checked="" type="checkbox"/>					
000600	BRS_Split	17/12/2013	17/12/2013	<input type="checkbox"/>					
000601	BRS_Split	31/12/2013	31/12/2013	<input type="checkbox"/>					
000643	BRS_Split	07/01/2014	07/01/2014	<input type="checkbox"/>					
000644	BRS_Split	07/01/2014	07/01/2014	<input type="checkbox"/>					
000645	BRS_Split	07/01/2014	07/01/2014	<input type="checkbox"/>					
000952	BRS_Split	24/04/2014	24/04/2014	<input type="checkbox"/>					

SequenceNumber	Status	Error code	Work Cell
001	Created		
002	Created		
003	Created		
004	Created		
005	Created		

The aforementioned error codes are setup on the work cell.

Resource group	Description
001	Speaker Assembly Work Center
002	Inspection Work Center
003	Packing Work Center
004	Enclosure Assembly Work Center
005	Cutting Work Center
006	Drilling Work Center
007	Sanding Work Center

Error code	Default comment
WS	Wrong Size
WC	Wrong Color
CE	Cracked Edge

When scrapping a unit via complete (details) on the Kanban board for process jobs, the user will be prompted to choose the sequence and the error code.

Complete job and enter details (1)

Report good and error quantities for the kanban jobs:

Overview General Batch

Kanban	Item number	Job quantity	Error quantity	Good quantity	First time through	Transaction time
000561_1018	BRS_Split	2.00	1	2.00	<input checked="" type="checkbox"/>	24/04/2014 07:17:58

Error codes (1 - ceu) - Kanban: 000561\_1018, BRS\_Split, Kanbans: 00056...

SequenceNumber	Error code
001	WS
002	

Close

The batch sequence table is updated with that information.

Batches (1 - ceu) - Batch number: 000599, BRS\_Split

File New Delete On-hand Transactions Item tracing Trace Inquiries Inventory batch attributes Batch restriction Sequences Reset shelf life date

Overview General Description

Batch number	Item number	Manufacturing date	Expiration date	Split	Quality order status	Shelf advice date	Best before date	Batch disposition code	Batch disposition
000598	BRS_Split	16/12/2013	16/12/2013	<input type="checkbox"/>					
000599	BRS_Split	16/12/2013	16/12/2013	<input checked="" type="checkbox"/>					
000600	BRS_Split	17/12/2013	17/12/2013	<input type="checkbox"/>					
000601	BRS_Split	31/12/2013	31/12/2013	<input type="checkbox"/>					
000643	BRS_Split	07/01/2014	07/01/2014	<input type="checkbox"/>					
000644	BRS_Split	07/01/2014	07/01/2014	<input type="checkbox"/>					
000645	BRS_Split	07/01/2014	07/01/2014	<input type="checkbox"/>					
000952	BRS_Split	24/04/2014	24/04/2014	<input type="checkbox"/>					

Sequences (1 - ceu) - Batch number: 000599, BRS\_Split

SequenceNumber	Status	Error code	Work Cell
001	Scrapped	WS	COAT
002	Created		COAT

Close

## PROCESS ID

In some work cells, different sub processes are performed to achieve one manufacturing process activity. In this lean extension, these sub processes can be specified per each work cell. In addition, these sub processes can be integrated with activity timings to provide a more granular view of the manufacturing process.

To activate the work cell processes button, the resource group must be a Lean work cell. From this new window, process ids and descriptions can be entered for the work cell. The integration with activity timings is discussed in the next section.

Resource groups (1 - ceu)

File | Resource group

Resource group: CSS\_EA  
Description: EA - Electrical Assembly  
Site: 2

**General**

**Identification**

Production unit: [dropdown]

**Work cell**

Work cell: ☒  
Production instructions per work cell: ☒  
Kanban Split Enabled: ☐  
Rework Split Enabled: ☐

**Locations**

Input warehouse: SpProd  
Input location: Input  
Output warehouse: SpProd

**Scheduling**

Operations scheduling percentage: 100.00  
Finite capacity: ☐  
Bottleneck resource: ☐  
Sequence group ID: [dropdown]

**Capacity**

Capacity unit: [dropdown]  
Capacity: 0.00  
Batch capacity: 0.00  
Use box as service rate: ☐

**Lean Medical Device**

Lean Medical Device: ☒

Does the resource operate with limited capacity? ☐

Close

Work cell processes (1 - ceu) - Resource group: CSS\_EA, 2, Resource gr...

File | New | Delete

Process ID	Description	Resource group
00001	Coating	CSS_EA

Description of work cell process ID

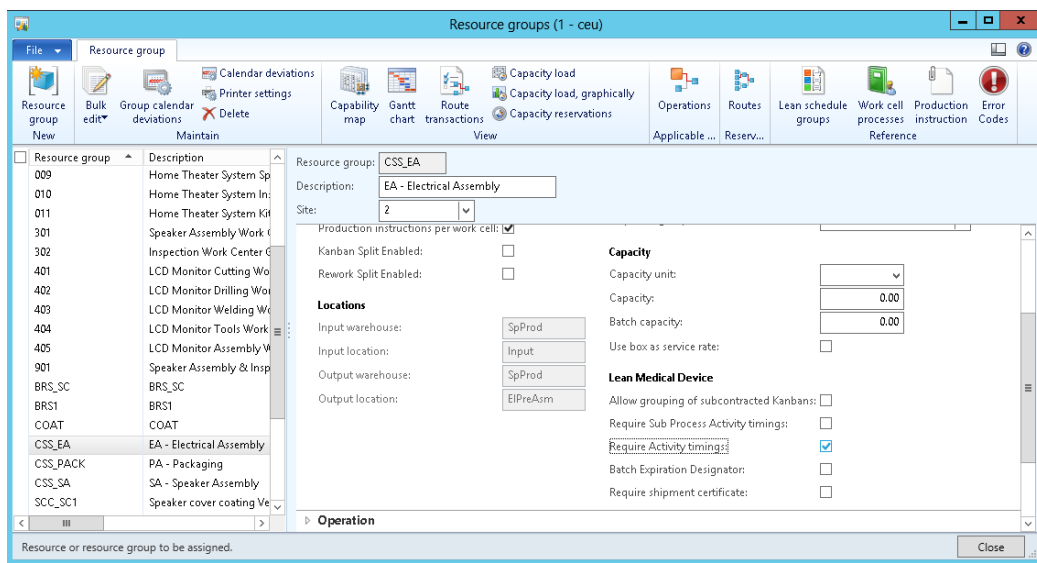
Close

## ACTIVITY TIMINGS

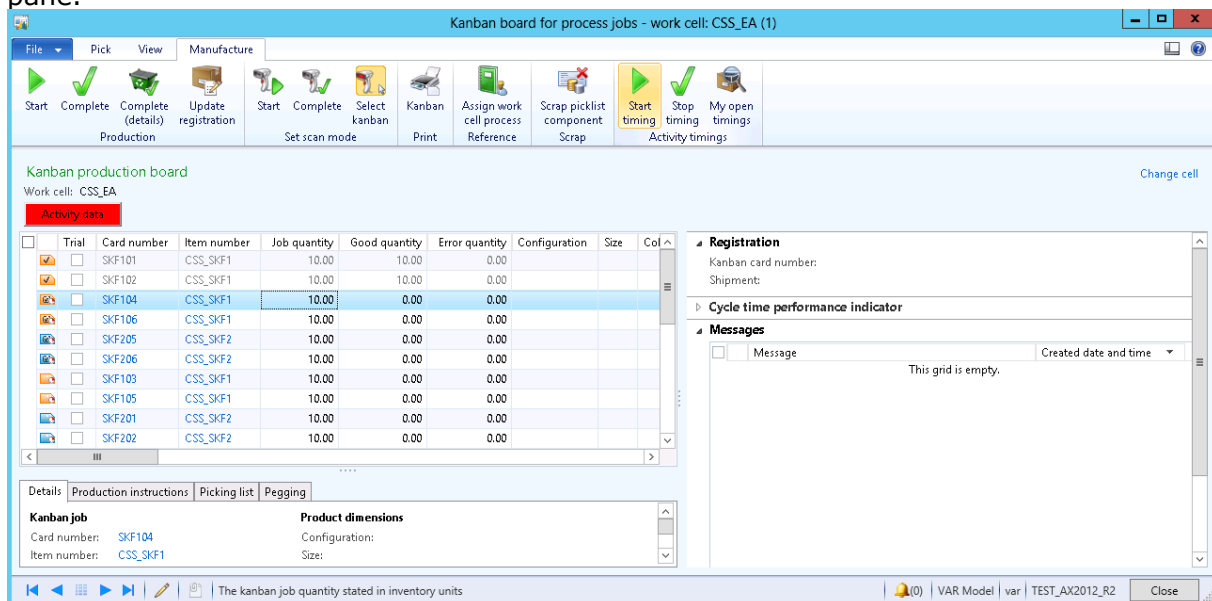
Shop floor control is essential for manufacturing as it gives companies a more precise and responsible overview of their production process. Activity timings for Kanban jobs allow users to record Start/clock in and Stop/clock out for each Kanban job.

Under Lean Medical Device section, check Require Activity timings and Require Sub Process Activity timings if needed. Note that Require Sub Process Activity timings checkbox is greyed out unless Require activity timings is checked. Require Sub Process Activity timings allows user to record timings for sub processes and blocks completion of Kanban until the timing has been started and stopped.

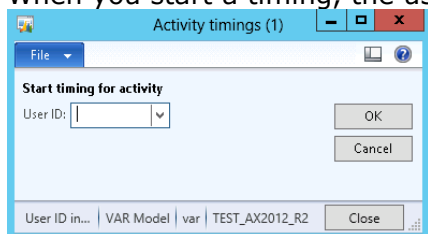




To start and stop timing, there are two new buttons on the Manufacture tab of the action pane.



When you start a timing, the user will be prompted to enter their user ID.



When you stop a timing, again user ID is entered, as well as the quantity completed. This quantity will be tracked as part of the timing history, but is not used to transact the Kanban.

Activity timings (1)

File

Stop timing for activity

User ID:  OK

Completed quantity:  Cancel

User l... VAR Model var TEST\_AX2012\_R2 Close

Open timings can be viewed by clicking My open timings button under Activity timings in the action pane.

Activity timings (1 - ceu)

File End shift

Overview

Item number	Product name	Kanban	Card number	Activity	Work cell	Process ID	Batch number	Quantity	User ID	Start date/time	End date/time	Hours	Minutes
000134_202	JRI REV	000414_1018	000414_1018-1	000072A	COAT				dhogg	10/02/2014 12:48:04	00:00:00	0	0
000134_202	JRI REV	000422_1018	000422_1018-1	000072A	COAT				dhogg	10/02/2014 12:52:24	00:00:00	0	0
000134_202	JRI REV	000423_1018	000423_1018-1	000072A	COAT				dhogg	10/02/2014 12:54:45	00:00:00	0	0

Identify item.

USD | VAR Model | var | ceu | TEST\_AX2012\_R2 Close

## ACTIVITY DATA COLLECTION

A new parameter in the Lean enterprise module will allow the use of data collection per activity on the Kanban board for process jobs.

**Lean parameters (1 - ceu)**

File

Purchase schedule

• **General**

Kanban

Sub Contracting

Number sequences

**General**

Enable reason codes for date changes on sales lines: ☐

Customer copy document type ID:  ▼

Print picklist status using Picklist Print? ☐

CTP pre check: ☒

**VMI**

Enable VMI: ☐

VMI journal name:  ▼

Auto invoice VMI purchase orders: ☐

**Lean medical**

EnableSequenceControl: ☐

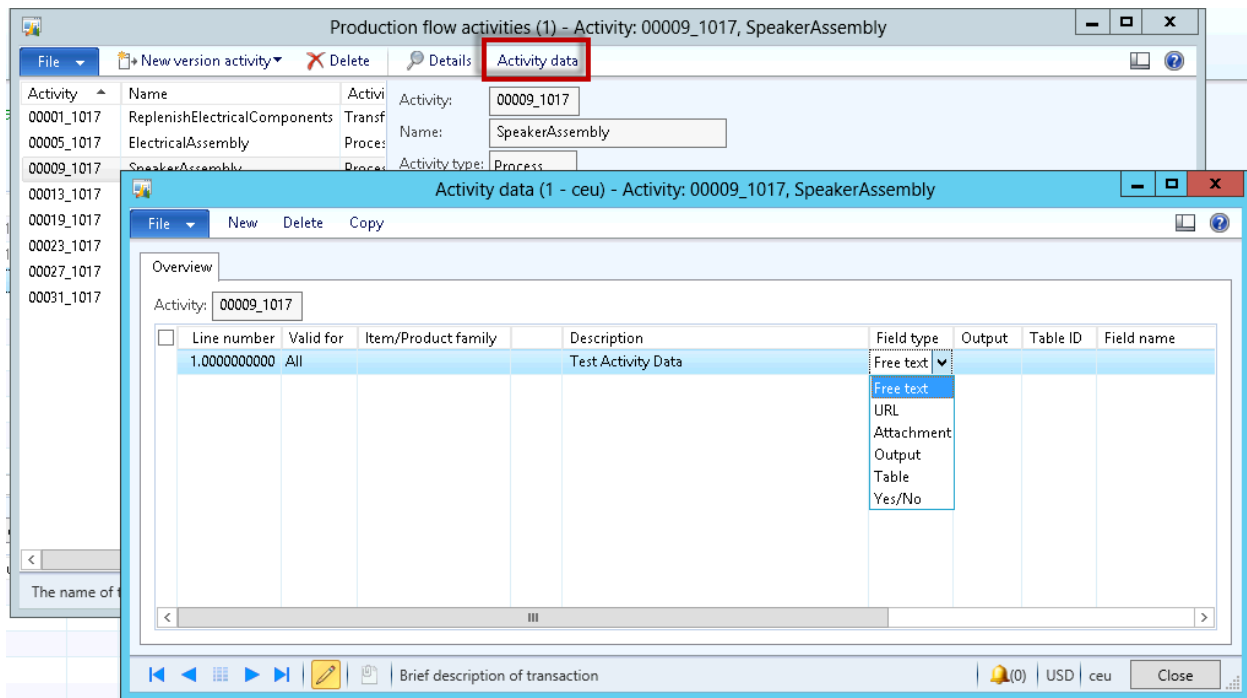
Number of Sequence Digits:  ▼

Enable activity data collection: ☒

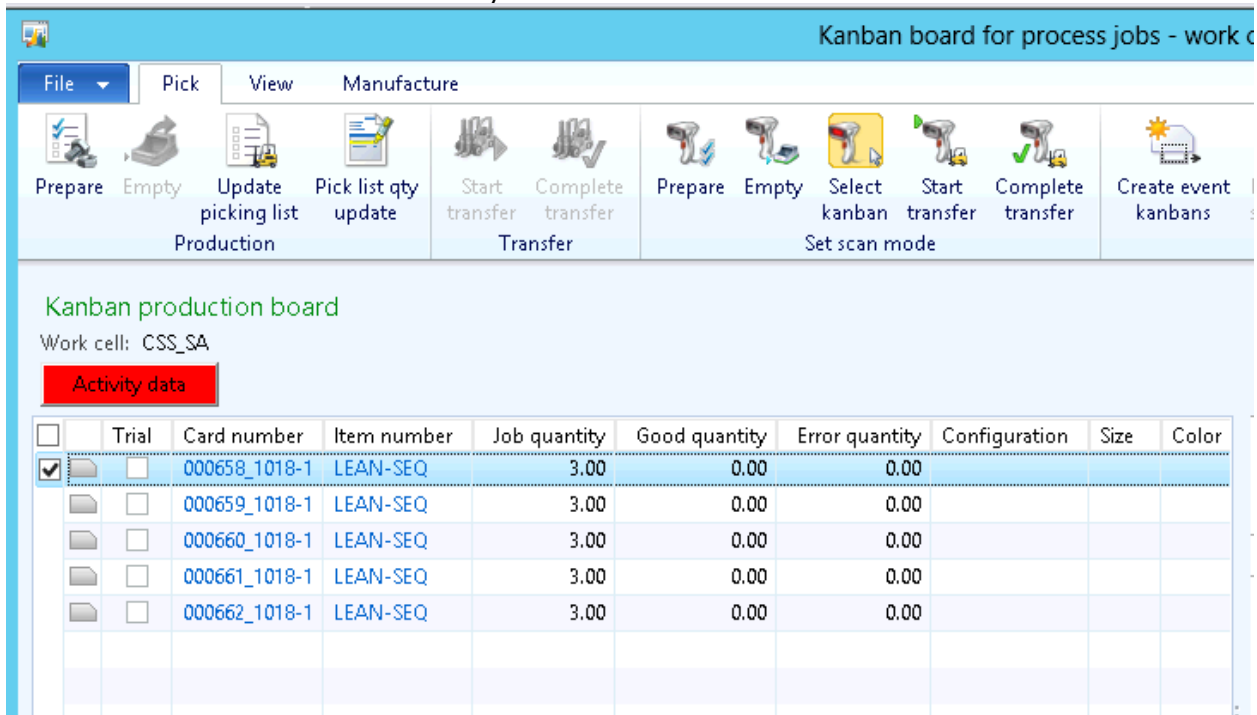
Number of Sequence Digits

Close

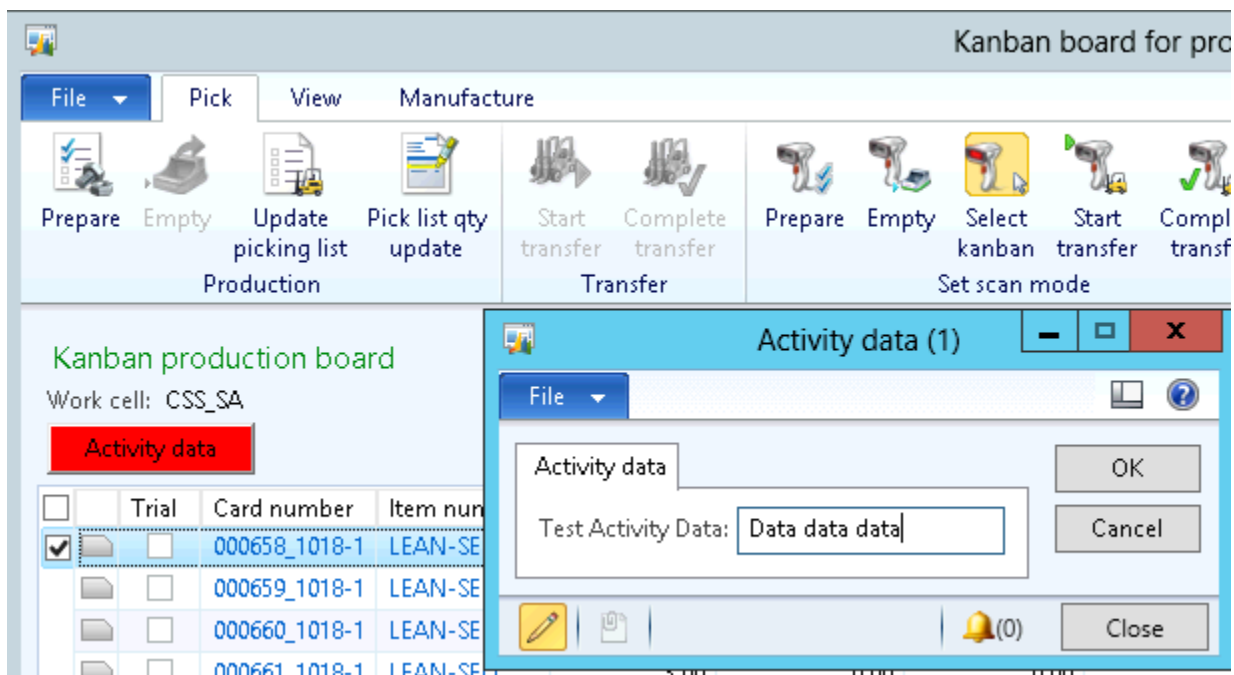
After the parameter is set to yes, the activity's data collection requirements are setup on the activity within the production flow. These requirements can be setup for all items, a specific item, or a product family. The types of data that can be collected are shown below. There is a mandatory flag to ensure the activity cannot be completed without the activity data collected.



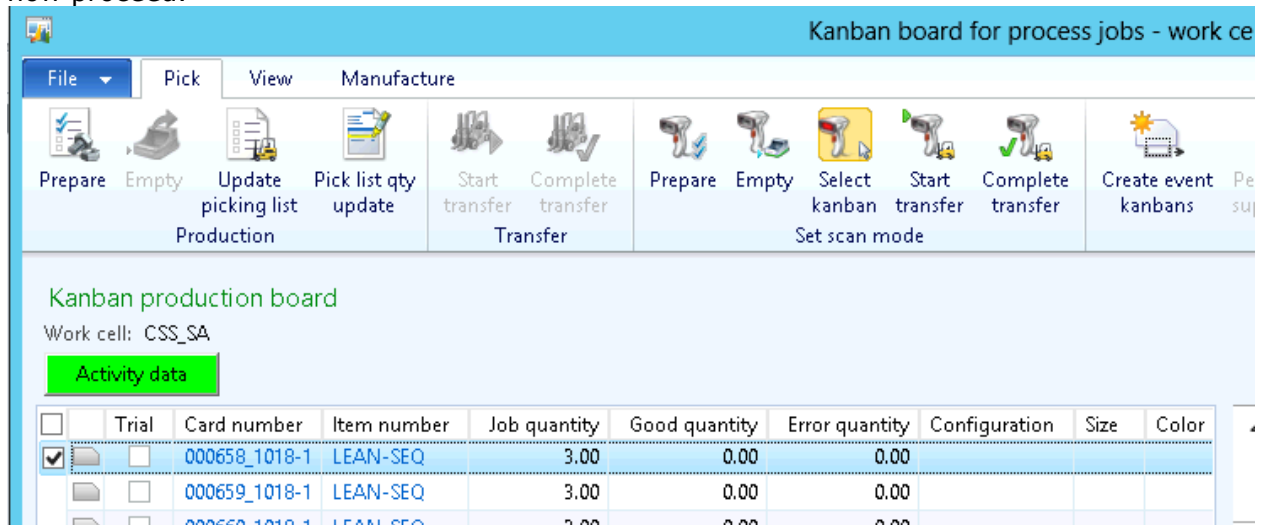
The data is collected on the Kanban board for process jobs. A red activity data button indicates no data has been entered yet.



Upon selecting the activity data button, the user will be prompted to enter the data in a new window.



The color of the button will then change to green to indicate to the user that he or she can now proceed.



All of this data will be stored against the Kanban job and accessible from there.

Kanban (1) - Kanban: 000658\_1018, LEAN-SEQ, Legal entity: ceuKanbans: 000658\_1018

File Setup

Duplicate kanban Create event kanbans New Empty kanban Reverse empty handling unit Prioritize Manage BOM version Use alternative

Kanban : 000658\_1018

Card number: 000658\_1018-1 Handling unit status: Not assigned

Details

Item relation

Item number: LEAN-SEQ

Configuration:

Size:

Color:

Style:

Order quantities

Product quantity: 3.00

Due date/time: 22/04/2014

Priority:

Single use:

Engineering Trial:

References

Jobs

Cancel job Kanban schedule board Kanban board for process... Activity data

Job type	Status	Activity	Destination	Schedule period date	Due date/time	Conforming quantity	Error quantity	Purchase order	Status	Product receipt	Item number	Carrier ID
Process	Planned	SpeakerAssembly	SpAasm	22/04/2014	22/04/2014 22:00:00							

Identify item.

Close

## SHORTCUT TO ACTIVITIES

A new button on the Kanban board for process jobs will serve as a shortcut to any open action activities assigned to that user.

Kanban board for process jobs - work cell: CSS\_EA (1)

File Pick View Manufacture

Refresh Refresh cycle Job details View Process Picking list and pegging Transfer job list Quality Create quality order My open activities Activities

Kanban production board

Work cell: CSS\_EA

Activity data

	Trial	Card number	Item number	Job quantity	Good quantity	Error quantity	Configuration	Size	Col
<input type="checkbox"/>	<input type="checkbox"/>	000652_1018-1	LEAN-SEQ	5.00	5.00	0.00			
<input type="checkbox"/>	<input type="checkbox"/>	000653_1018-1	LEAN-SEQ	5.00	5.00	0.00			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	SKF101	CSS_SKF1	10.00	0.00	0.00			
<input type="checkbox"/>	<input type="checkbox"/>	SKF102	CSS_SKF1	10.00	0.00	0.00			
<input type="checkbox"/>	<input type="checkbox"/>	SKF103	CSS_SKF1	10.00	0.00	0.00			
<input type="checkbox"/>	<input type="checkbox"/>	SKF104	CSS_SKF1	10.00	0.00	0.00			
<input type="checkbox"/>	<input type="checkbox"/>	SKF105	CSS_SKF1	10.00	0.00	0.00			
<input type="checkbox"/>	<input type="checkbox"/>	SKF106	CSS_SKF1	10.00	0.00	0.00			
<input type="checkbox"/>	<input type="checkbox"/>	SKF201	CSS_SKF2	10.00	0.00	0.00			
<input type="checkbox"/>	<input type="checkbox"/>	SKF202	CSS_SKF2	10.00	0.00	0.00			

Registration

Kanban card number:

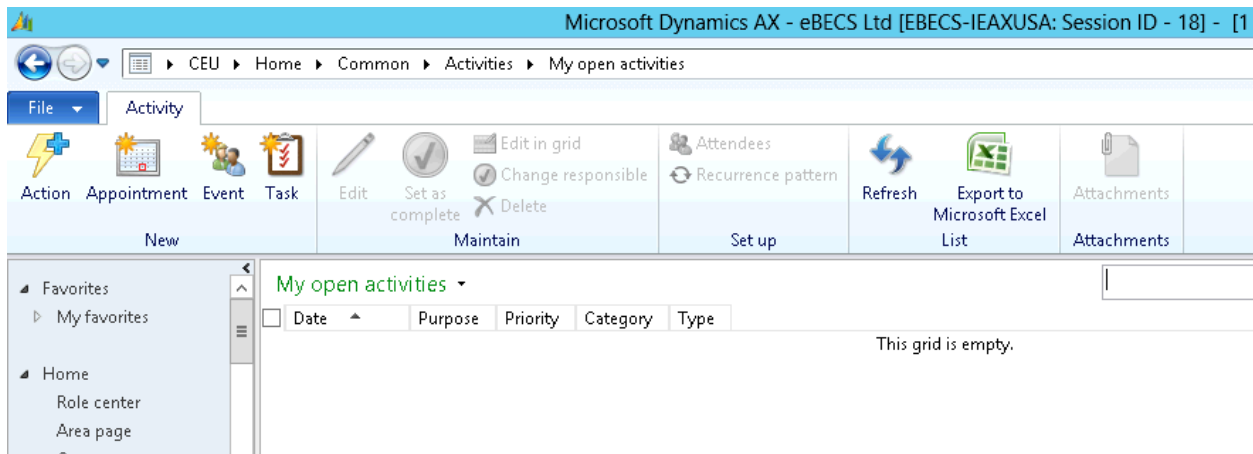
Shipment:

Cycle time performance indicators

Messages

Message

Function LeanDocumentA incorrectly called.



## ALL KANBANS REPORT

A new inquiry screen provides all the Kanbans and the jobs in the system with their statuses.

Job status	Actual end date/time	Due date/time	Type	Print status	Replenishment strategy	Trial	Card number	Kanban	Status	Item number	Job quantity	Activity name
Planned	00:00:00	15/01/2011 02:00:00	Manufacturing	New	Fixed		PSCLRD10	000402_1018	Not assigned	SCPS_PSCS	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD01	000403_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD02	000404_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD03	000405_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD04	000406_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD05	000407_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD06	000408_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD07	000409_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD08	000410_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD09	000411_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Planned	00:00:00	07/01/2011 17:00:00	Manufacturing	New	Fixed		PSCRRD10	000412_1018	Not assigned	SCPS_PSCR	5.00	PaintSpeakerCovers
Completed	01/05/2013 23:06:32	01/05/2013 22:20:37	Purchase	New	Fixed		000433_1018-1	000433_1018	Emptied	BRSPK	10.00	BUY
Completed	02/05/2013 17:20:08	02/05/2013 17:03:10	Purchase	New	Fixed		000438_1018-1	000438_1018	Emptied	BRSPK	10.00	BUY
Completed	02/05/2013 20:16:28	13/05/2013 19:00:00	Manufacturing	New	Event		000448_1018-1	000448_1018	Emptied	BRS-VMI-KB	1.00	TESTVMIKBICKL...

## ENGINEERING TRIAL KANBAN

Standard AX 2012 does not support engineering trials visualizations for execution or planning. Engineering trials need to be properly managed from a planning and manufacturing point of view. Engineering trials need to be seen differently while planning on the Kanban schedule board and while manufacturing on the Kanban board for process jobs. This extension also allows the user to view historical information, including when the trials were completed and how many trials were needed to qualify the product. This extension allows the attachment of documents to unique Kanbans to provide the correct manufacturing instructions, attainable from the Kanban board for process jobs. Finally, this extension will allow the exclusion of engineering trial Kanbans from the subcontracting payment process.

Engineering trials are defined on the Kanban rule:

Kanban rules (1 - ceu) - Legal entity: ceu, New Record

File Setup Kanban rule Duplicate kanban rule Replace kanban rule Delete Recalculate lead time Auto-planning Planning Choose kanban flow View kanban flow View source View destination Filter

New Modify Kanban flow Production flows View

Type: Manufacturing Replenishment strategy: Fixed First plan activity: ElectricalAssembly Product selection: 003PGC4

Kanban rule: 000096\_101! Multiple activities: ☐ Last plan activity:

Default kanban rule: ☐

**Details**

Product selection

Product selection: Product

Product: 003PGC4

Product family:

☒ Engineering trial

**Valid**

Effective date: 22/04/2014 19:11

Expiration date: 31/12/2100 01:00

Replaced rule:

**Processing**

Create PO on receipt: ☐

**Replenishment (plan)**

Lead time: 0.00

Unit of measure: sec

**EPE cycle**

EPE Cycle in days: 0

Product: 003PGC4

Indicates if the kanban is an engineering trial

Close

## LEAN SUPPLY CHAIN ENHANCEMENTS

### VENDOR MANAGED INVENTORY

The entire solution for VMI through Kanbans is captured through this functionality. It also supports the enterprise portal where the vendors can update their current level of stock. The solution offers two modes, Invoice PO on receiving or bulk invoicing where when you receive it just posts into a journal.

VMI payment (1 - ceu)

File Purchase Filter

Filter Show processed Filter

Overview

Kanban	Production	Vendor account	Purchase agreement ID	Item number	Warehouse	Transaction time	Qty consumed	Pay	Processed
000595...		1001	000010_1010	BRS-VMI-AUTOPAY-STK	VMIW	25/06/2013 21:49:54	10.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
000596...		1001	000010_1010	BRS-VMI-AUTOPAY-STK	VMIW	25/06/2013 21:49:59	10.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Identification of the kanban

VMI profile (1 - ceu)

File Overview General

Add Remove

VMI profile Id	VMI payment type	Vendor account	Item number	Warehouse	Purchase agreement ID	Agreement item	AutoApprove
001	Purchase order	1001	BRS-VMI-PO	VMIW	000010_1010	BRS-VMI-PO	<input type="checkbox"/>
002	AutoPay	1001	BRS-VMI-AUTOPAY-STK	VMIW	000010_1010	BRS-VMI-AUTOPAY	<input checked="" type="checkbox"/>
003	Purchase order	1002	BRS-VMI-KBPICKLST	BRSVMI	000015_1010	BRS-VMI-KBPICKLST	<input type="checkbox"/>

VMI stock profile (1 - ceu)

File Overview

Add Remove

VMI profile Id	Warehouse	Quantity	Item number
003	BRSVMI	794.00	BRS-VMI-KBPICKLST
002	VMIW	430.00	BRS-VMI-AUTOPAY-STK
001	VMIW	460.00	BRS-VMI-PO



Purchase Kanban are based upon a trade agreement between the customer and their supplier for the delivery of a specific part or material. The units, prices, destination etc. are noted in the agreement and future management of the deliveries is undertaken by the rules associated with the Kanban.

[illegible]

Thereafter, Purchase Kanbans are managed through the Kanban Board for Purchase Jobs.

**Kanban Purchase Board**  
Vendor: SUP2

Trial	Card number	Item number	Job quantity	Pallet ID	Activity name	Destination	Job status	Planned period
<input type="checkbox"/>	000234C	SUP1	10.00		Activity-SUP2	Out_01	Completed	5/22/2012
<input type="checkbox"/>	000476C	310724200	3.00		Activity-SUP2	Out_01	Completed	5/29/2012
<input type="checkbox"/>	000477C	310724200	3.00		Activity-SUP2	Out_01	Completed	5/29/2012
<input type="checkbox"/>	000235C	SUP1	10.00		Activity-SUP2	Out_01	Planned	5/22/2012
<input type="checkbox"/>	000236C	SUP1	10.00		Activity-SUP2	Out_01	Planned	5/22/2012
<input type="checkbox"/>	000478C	310724200	3.00		Activity-SUP2	Out_01	Planned	5/29/2012
<input type="checkbox"/>	000479C	310724200	3.00		Activity-SUP2	Out_01	Planned	5/29/2012
<input type="checkbox"/>	000480C	310724200	3.00		Activity-SUP2	Out_01	Planned	5/29/2012
<input type="checkbox"/>	000481C	310724200	3.00		Activity-SUP2	Out_01	Planned	5/29/2012
<input type="checkbox"/>	000482C	310724200	3.00		Activity-SUP2	Out_01	Planned	5/29/2012

**Registration**  
Kanban card number:

**Cycle time performance indicator**  
Status: Speed up

**Messages**

**Transfer jobs**

**Kanban quantity overview - finished goods**

**Kanban quantity overview - material**

**Job icon legend**  
☐ Job not planned  
☐ Job planned  
☒ Job prepared  
☐ Job in progress  
☒ Handling unit received  
☒ Job completed  
☐ Overdue  
☐ Priority

**Kanban job**  
 Card number: 000478C  
 Item number: 310724200  
 Product name: SOFTWARE CD,ME  
 Job quantity: 3.00  
 Job status: Planned  
 Schedule group:  
 Due date/time: 5/29/2012 10:40:09 am  
 Activity name: Activity-SUP2  
 Warehouse: 21  
 Destination: Out\_01

**Product dimensions**  
 Configuration:  
 Size:  
 Color:  
 Revision:  
 Style:

The kanban job quantity stated in inventory units

## PURCHASE KANBAN SUPPLIER PORTAL

The Lean Extensions add Purchase Kanban (and Purchase Schedules) to the Suppliers access portal, allowing suppliers to confirm deliveries and dates online, and to print the Kanban Card for attachment to the consignment for easy goods receipt.

http://dynamicsax.contoso.com/VendorPortal/Enterprise%20Portal/EBC... Waiting Kanbans

Home Procurement Sales Compliance Project management Service management Vendor portal Customer self-service All Sites Go to Top Link Bar

Retail

Site Actions Browse Page Home System Account Company:CEU

Confirm Edit Decline Export to Microsoft Excel List

**Vendor portal**

**Waiting Kanbans** Type to filter Card number

Card number	Warehouse	Location	Purchase kanban status	Purchase qty.	Requested Date Time
<input checked="" type="checkbox"/> 000235C	21	Out_01	Planned	10.00	5/21/2012 5:00:01 PM
<input type="checkbox"/> 000236C	21	Out_01	Planned	10.00	5/21/2012 5:00:01 PM
<input type="checkbox"/> 000478C	21	Out_01	Planned	3.00	5/29/2012 10:40:09 AM
<input type="checkbox"/> 000479C	21	Out_01	Planned	3.00	5/29/2012 10:40:09 AM
<input type="checkbox"/> 000480C	21	Out_01	Planned	3.00	5/29/2012 10:40:09 AM
<input type="checkbox"/> 000481C	21	Out_01	Planned	3.00	5/29/2012 10:40:09 AM
<input type="checkbox"/> 000482C	21	Out_01	Planned	3.00	5/29/2012 10:40:09 AM
<input type="checkbox"/> 000484C	21	Out_01	Planned	3.00	5/29/2012 10:40:09 AM
<input type="checkbox"/> 000615C	E4CS1	Out_01	Planned	10.00	6/1/2012 1:36:09 AM
<input type="checkbox"/> 000616C	E4CS1	Out_01	Planned	10.00	6/1/2012 1:36:09 AM

1 2

General	Confirmation
Card number: 000235C	Confirmed qty:
Item number: SUP1	Confirmed date:
Warehouse: 21	Packing slip Id:
Location: Out_01	
Purchase kanban status: Planned	
Purchase qty: 10.00	
Requested Date Time: 5/21/2012 5:00:01 PM	

**Common**

- Profile
- Contacts
- Catalogs
- User requests
- Supplied products
- Category requests
- Questionnaires
- Notifications

**Orders**

- Requests for quotations
- Invoiced purchase orders
- Product receipts
- Vendor invoices
- Purchase order confirmations

**Reports**

- Vendor reports

**Purchase schedules**

- Schedules to confirm
- ASN
- Schedules history

**Purchase Kanbans**

- Waiting Kanbans
- Confirmed Kanbans
- Despatched Kanbans

## PURCHASE SCHEDULES

The Purchase Schedule enhancement is a component of the eBECS Lean Enterprise for Microsoft Dynamics AX, and has been designed to remove waste from procurement activities by web enabling the process used by enterprises to communicate with their suppliers. The Purchase Schedules module collates requirement into a time-phased schedule, which is presented to the buyer in a single view. The buyer has full control over the schedule, allowing detailed changes to be made and is then released electronically to the supplier as a series of alerts. Electronic demands are transmitted to suppliers as a schedule of dates and quantities via the web using email, EDI, XML or simple files with full support for international recognized standards e.g. Odette, VDA and X12. Using powerful two-way assured communication processes,

Suppliers have the capability to review and accept or modify demand within the overall schedule. This includes functionality giving the supplier the ability to flag their ability to supply parts of an order. Upon receipt of a supplier update, the module provides automatic notification to buyer and supply chain manager, confirming acceptance or providing notification of exception conditions which will require intervention. The Purchase Schedules module integrates with front-end customer scheduling, Kanban or flow manufacturing and internal replenishment.

Purchase schedule Id	Revise	Number of periods	Period types	Start date	Start time	Days in period	Requirement	Schedule	Confirmed	Transit Qty
PS000002	2	1	Overdue	4/24/2012	12:00:00 am	-28				
PS000002	2	2	Fixed	5/22/2012	12:00:00 am	7	20.00	10.00	10.00	
PS000002	2	3	Fixed	5/29/2012	12:00:00 am	7		10.00	10.00	
PS000002	2	4	Firm	6/5/2012	12:00:00 am	7				
PS000002	2	5	Firm	6/12/2012	12:00:00 am	7				
PS000002	2	6	Plan	6/19/2012	12:00:00 am	14				
PS000002	2	7	Plan	7/3/2012	12:00:00 am	14				
PS000002	2	8	Plan	7/17/2012	12:00:00 am	14				
PS000002	2	9	Plan	7/31/2012	12:00:00 am	14				
PS000002	2	10	Forecast	8/14/2012	12:00:00 am	28				
PS000002	2	11	Forecast	9/11/2012	12:00:00 am	28				
PS000002	2	12	Forecast	10/9/2012	12:00:00 am	28				
PS000002	2	13	Forecast	11/6/2012	12:00:00 am	28				
PS000002	2	14	Forecast	12/4/2012	12:00:00 am	28				
PS000002	2	15	Forecast	1/1/2013	12:00:00 am	28				
PS000002	2	16	Forecast	1/29/2013	12:00:00 am	28				
PS000002	2	17	Forecast	2/26/2013	12:00:00 am	28				

In addition, eBECS Purchase Schedules supports full Skip Lot inspection processes. In such an environment inspections will be skipped for a predetermined number of receipts provided a series of qualifying receipts have passed inspection without error.

- Transmit requirements to suppliers electronically as a schedule of dates and quantities using email, EDI, XML or simple files with support for internationally recognized standards e.g. Odette, VDA and X12.
- Control schedule receipts to automotive standards; manage the schedule and goods in transit by "last 3 deliveries" or cumulative quantities comparing incoming against current schedule.
- Collate total demand against suppliers into a demand schedule, with full control by the buyer based on planned orders, placed in firm, tentative and forecast periods.
- Automate supplier confirmation and or modification to establish capability to supply.
- Action schedule receipts electronically and process against the schedule, with exception visibility.

- Skip lot inspection capability, automating the inspection process based upon predefined sampling rules.

## REASON CODE FOR SALES ORDER DATE CHANGES

Once a confirmation is generated through a journal, any changes to any of the dates on the sales line requires a reason code for making the change. This will allow tracking and Pareto analysis of the number of times a date was missed from the initial confirmation.

**Microsoft Dynamics AX - Modify promise date**

Please enter a reason code:

Reason code: ADJ

Reason code	Default comment
ADJ	ADJUSTMENT
DUP	DUPLICATE ENTRY
FIX	FIX A MISTAKE
LOST	LOST CHECK, NEED TO REISSUE
NSF	NOT SUFFICIENT FUNDS
RESCH	CUSTOMER RESCHEDULE
WO	WRITE OFF DUE TO SHORT PAYMENT
WP	WRONG PERIOD, NEED TO REISSUE

**Line details**

**Delivery date**

Requested ship date: 8/5/2013  
 Requested receipt date: 8/5/2013  
 Confirmed ship date: 8/5/2013  
 Confirmed receipt date: 8/5/2013  
 Delivery date control: None  
 Promise Date: 9/6/2013

**Misc. delivery info**

Overdelivery:   
 Underdelivery:   
 Mode of delivery:   
 Delivery type:   
 Delivery date control: None

## SUBCONTRACTING SIMPLIFICATION I

There are four main additions in this Subcontracting simplification extensions:

1. **Subcontracting Document:** The subcontracting process in AX2012 does not combine the different pieces of paperwork needed for shipping a product to a subcontractor; instead it has separate documents that do not reference each other. These documents are the Kanban ticket, Pick list (for components), and purchase order (for payment). These are now combined into one sheet of paper in order to send the needed information to the vendor quickly. This document can be configured to be generated automatically, or created manually. There is a link to the subcontracting document on the Kanban board for process jobs:

**Kanban board for process jobs - work cell: SCC\_SC1 (1)**

File View Manufacture

Prepare Empty Update picking list Production  
 Start Complete Transfer transfer  
 Prepare Empty Select Start Complete Create event Pegging tree Pegging tree Pick list Kanban Subcontract Order Print  
 Set scan mode transfer transfer status overview Print

**Kanban production board**  
 Work cell: SCC\_SC1

Trial	Card number	Item number	Job quantity	Good quantity	Error quantity	Configuration	Size	Color
<input type="checkbox"/>	000650_1018-1	SCPS_CSCR	10.00	10.00	0.00			
<input type="checkbox"/>	000649_1018-1	SCPS_CSCR	10.00	0.00	0.00			
<input type="checkbox"/>	000651_1018-1	SCPS_CSCR	10.00	0.00	0.00			

**Registration**  
 Kanban card number:   
 Shipment:   
 Cycle time performance indicator  
 Messages

2. **Setups for Subcontracting Document:** In order to reduce transactions and streamline the subcontracting process in AX2012, the Prepare, Start and Complete buttons on the Kanban board for process jobs are tied to the stored setups for each status such that the Kanbans highlighted automatically go through the 'Subcontracting document' form process. This also now automatically prints the subcontracting document depending on these parameter setups.

**Subcontracting Document Parameters (1 - ...)**

File

**Prepared**

Activate Subcontracting Documentation (Prepared): ☐

Release purchase orders: ☐

Aggregate purchase lines by: None

Exclude Engineering Trials: ☐

Print Subcontract Document: ☐

**In progress**

Active Subcontracting Documentation (In Progress): ☒

Release purchase orders: ☒

Aggregate purchase lines by: None

Exclude Engineering Trials: ☒

Print Subcontract Document: ☒

**Completed**

Active Subcontracting Documentation (Completed): ☒

Release purchase orders: ☐

Aggregate purchase lines by: None

Receipt advices: ☒

Exclude Engineering Trials: ☒

Print Subcontract Document: ☐

Ex... (0) USD ceu Close


3. **Picking List:** The Subcontracting paperwork pulls the materials from the picking list behind a Kanban job that are being sent to the subcontractor. This picking list shows the original quantity of material required from the upper level subcontracting Kanban. The warehouse may replenish withdrawal Kanbans for material quantities that are over or under the original requirements and these needs to be represented on the subcontract order paperwork as these is what gets shipped to the subcontractor. The purpose of this enhancement is to display the actual quantities of materials sent to the subcontractor on the subcontract order paperwork.

Print subcontract order (1)

File

1 of 1 100% Find Next

ELECTROCRRAFT OHIO  
250 MCCORMICK ROAD  
GALLIPOLIS, OH 45631  
USA  
Tel.: 740-441-6200  
Fax: 740-441-6309



**Subcontract Order**  
106474

<b>Vendor account</b>	14200091	<b>Buyer group</b>	
<b>Vendor name</b>	BODYCOTE WORCESTER	<b>Delivery mode</b>	
<b>Address</b>	284 GROVE STREET WORCESTER, MA 01605 USA		
<b>Contact person</b>			
<b>E-mail</b>	Vincent.Schwartz@bodycote.com		

Card number	Purchase Order	Item number	Revision	Description	Service	Description	Requested delivery date	Qty
106474-1	P14009774	15861001		RoHS Unknown	HEAT TREAT		4/24/2014	1.00

Items being sent are:

Item number	Description	Revision	Quantity	Unit
0002-0332-008	RoHS Unknown		10.0000	FT

Close

## SUBCONTRACTING SIMPLIFICATION II

This modification allows for the grouping of Kanbans into a shipment that can then be transacted to prepare, start and complete Kanbans on a subcontracting work cell. It will also provide for the ability to calculate the cost per boxes instead of pieces.

A new parameter on the work cell allows for grouping of Kanbans. Although this is an option for every work cell, it should only be used for subcontracted work cells.

Resource groups (1 - ceu)

File Resource group

Resource group New Bulk edit\* Group calendar deviations Delete Calendar deviations Capacity load Capacity load, graphically Capacity reservations Operations Routes Lean schedule groups Work cell processes Production instruction Error Codes

Resource group Description

008 Finishing Work Center Gr  
009 Home Theater System Sp  
010 Home Theater System In  
011 Home Theater System Kit  
301 Speaker Assembly Work C  
302 Inspection Work Center C  
401 LCD Monitor Cutting Wo  
402 LCD Monitor Drilling Wo  
403 LCD Monitor Welding Wo  
404 LCD Monitor Tools Work  
405 LCD Monitor Assembly W  
901 Speaker Assembly & Insp  
BRS\_SC BRS\_SC  
BRS1 BRS1  
COAT COAT  
CSS\_EA EA - Electrical Assembly  
CSS\_PACK PA - Packaging  
CSS\_SA SA - Speaker Assembly  
SCC\_SC1 Speaker cover coating Ve  
SCC\_SC2 Speaker cover coating Ve  
SCPS\_Cover SCP - Speaker covers Pair  
SP1 Spigot  
SP2 SP2  
STFR STERILIZATION

Resource group: BRS\_SC  
Description: BRS\_SC  
Site: 1

General

Identification

Production unit:

Work cell

Work cell: ☐  
Production instructions per work cell: ☒  
Kanban Split Enabled: ☐  
Rework Split Enabled: ☐

Locations

Input warehouse: 11  
Input location: In\_01  
Output warehouse: 11  
Output location: OUT\_01

Scheduling

Operations scheduling percentage: 100.00  
Finite capacity: ☐  
Bottleneck resource: ☐  
Sequence group ID:

Capacity

Capacity unit:   
Capacity: 0.00  
Batch capacity: 0.00  
Use box as service rate: ☒

Lean Medical Device

Allow grouping of subcontracted Kanbans: ☒  
Require Sub Process Activity timings: ☐  
Require Activity timings: ☐  
Batch Expiration Designator: ☒  
Require shipment certificate: ☒

Resource or resource group to be assigned.

Close

The resource also has new parameters that become available for resources of type vendor. When the user decides to use box as service rate, the box prices are to be used instead of the pcs equation on the service term. The user will then enter the full box service rate and the half box service rate.

Resources (1 - ceu) - Resource: SUBCONT, SUBCONT

File Resource

Resource Copy resource Bulk edit Add capability Add to resource group Delete Calendar deviations Dispatching Gantt chart Route transactions Capacity load Capacity load, graphically Capacity reservations Operations Jobs Planned jobs

Resource Description

30101 Speaker Assembly Team 1  
30102 Speaker Assembly Team 2  
30103 Speaker Assembly Team 3  
30201 Inspection Team 1  
40101 LCD Monitor Cutting  
40201 LCD Monitor Drilling  
40202 LCD Monitor Drilling  
40203 LCD Monitor Drilling  
40301 LCD Monitor  
40302 LCD Monitor  
40401 Tools  
40501 LCD Monitor Assembly  
40502 LCD Monitor Assembly  
90101 Speaker Assembly & Inspection  
98000 Vendor coating  
98002 Vendor coating  
SUBCONT SUBCONT

Resource: SUBCONT  
Description: SUBCONT  
Type: Vendor

General

Resource

Vendor: 1001  
Worker:   
Worker name:

Capacity

Capacity unit:   
Capacity: 0.00  
Batch capacity: 0.00  
Use box as service rate: ☒

Scheduling

Efficiency percentage: 100.00  
Operations scheduling percentage: 100.00  
Finite capacity: ☐  
Finite property: ☐  
Exclusive: ☐  
Bottleneck resource: ☐  
Sequence group ID:

Full box service rate: 150.00  
Half box service rate: 100.00

Operation

Ledger

Identify the resource.

These costs will be used for calculating per piece price used on the Purchase order generated for the subcontracting service. There is a validation that the service unit is set to Pcs.



## Service terms

BRS-SERV-SC1

### Service

Item number: BRS-SERV-SC1

### Product dimensions

Configuration:  Use output product configuration: ☐  
 Size:  Use output product size: ☐  
 Color:  Use output product color: ☐  
 Style:  Use output product style: ☐

### Service quantity calculation

Service unit: Pcs  
 Service ratio: 1.00  
 Service quantity base: Product quantity conforming  
 Formula: Service delivery quantity(Pcs) = Output item quantity (good) \* Service ratio (1.00)

The parameter on the work cell then will enable a new Shipment ribbon on the Kanban board for process jobs. From here, the user will create shipment. A shipment ID will be generated, and the user will enter the number of full boxes and/or number of half boxes. The status of the shipment will be updated based on the status of the Kanbans. From here all Kanbans in the shipment can be prepared (required), started, and completed. A new label for shipments has been created and can be printed from this window.

Kanban board for process jobs - work cell: BRS\_SC (1)

File Pick View Manufacture Subcontract shipment

Create Prepare Start Complete Print shipment Prepare Start transfer Complete transfer

Production

Kanban production board

Work cell: BRS\_SC

Activity data

Item number	Configuration
000708_1018-1	BRS_PaintSC_Raw
000712_1018-1	BRS_PaintSC_Raw
000815_1018-1	BRS_PaintSC_Raw
000816_1018-1	BRS_PaintSC_Raw
000921_1018-1	BRS_PaintSC_Raw
000922_1018-1	BRS_PaintSC_Raw

Details Production instructions Pick

Item number Configuration

BRS\_PaintSC\_Raw

BRS\_PaintSC\_Raw

Subcontract Shipment (1 - ceu)

File New Delete Attachments Print shipment

Shipment Id	Attachment	Half boxes	Full boxes	Shipment status
SH_0000000048	<input checked="" type="checkbox"/>	1.00	0.00	Sent for subcontracting
SH_0000000051	<input type="checkbox"/>	2.00	1.00	Sent for subcontracting
SH_0000000052	<input type="checkbox"/>	5.00	1.00	Sent for subcontracting
SH_0000000053	<input type="checkbox"/>	12.00	12.00	Received from subcontracting
SH_0000000054	<input type="checkbox"/>	5.00	6.00	Received from subcontracting
SH_0000000055	<input type="checkbox"/>	2.00	2.00	Received from subcontracting
SH_0000000056	<input type="checkbox"/>	4.00	10.00	Received from subcontracting
SH_0000000057	<input type="checkbox"/>	3.00	3.00	Sent for subcontracting
SH_0000000058	<input type="checkbox"/>	5.00	5.00	Initial shipment
SH_0000000059	<input checked="" type="checkbox"/>	5.00	5.00	Initial shipment
SH_0000000061	<input type="checkbox"/>	2.00	1.00	Initial shipment
SH_0000000062	<input checked="" type="checkbox"/>	10.00	1.00	Created
SH_0000000063	<input type="checkbox"/>	10.00	1.00	Received from subcontracting
SH_0000000064	<input type="checkbox"/>	10.00	10.00	Initial shipment
SH_0000000065	<input type="checkbox"/>	10.00	10.00	Received from subcontracting
SH_0000000066	<input type="checkbox"/>	5.00	5.00	Received from subcontracting
SH_0000000067	<input type="checkbox"/>	5.00	5.00	Initial shipment

Number.

Close

Change cell

Number

Close

# LEAN COSTING REPORTS

## WIP REPORT

Standard AX2012 does not have a Lean WIP report, only WIP report for production orders. This enhancement will allow the user to compare WIP in and WIP out on a specific production flow.

Production flow	WIP in	WIP out	WIP balance
AC #2 WINDING ACWA06 INV	348.28	0.00	348.28
AC #2 WINDING ACWA06 WIP	1,818.54	0.00	1,818.54
AC BANDSAW ACB01 WIP	2,122.08	0.00	2,122.08
AC BLANKING PRESS TO INV ACB01	35.78	0.00	35.78
AC BLANKING PRESS TO WIP ACB01	727.99	220.94	507.05
AC BLANKING SAW TO INV ACB01	838.95	0.00	838.95
AC BLANKING SAW TO WIP ACB01	467.19	0.00	467.19
AC BLOWER HOUSING ASSY ACB01 WIP	480.32	0.00	480.32
AC END CAP CELL ACEC01 TO INV	232.76	230.73	2.03
AC END CAP CELL ACEC02 TO INV	2,371.58	1,837.35	534.23
AC END CAP CELL TO WIP ACEC03	291.87	54.53	237.33
AC FINAL ASSM & TEST ACFL01	17,267.98	5,578.41	10,689.57
AC OVEN ACB01 STRESS RELIEVE WIP	33.39	0.00	33.39
AC PAINT BOOTH WIP ACPB03	926.47	0.00	926.47
AC ROTOR DIE CAST INV ACRD01	5,776.40	872.03	4,904.37
AC SHAFT ACSC01 TO INV	1,358.30	49.37	1,308.93
AC SHAFT ACSC02 TO INV	961.48	629.35	332.13
AC SHAFT ACSC02 WIP OPTIONS	1,110.58	13.87	1,096.91
AC STATOR BUILD ACB01	2,978.26	1,183.48	1,794.79
AC WASH CELL ACWC01	1,174.90	0.00	1,174.90
AC WASH CELL VALUE ADD/INV ACWC01	257.46	257.44	0.02
AC WASHER CELL ACWC01	2,384.80	0.00	2,384.80
AC WASHER CELL ACWC01	2,384.80	0.00	2,384.80

## LABOR COST REPORT

It is often cumbersome to find the labor timings for an item as multiple sources must be used to find the end result. This enhancement allows the users to see the labor time on each item so that it can be easily validated. There is an added select criteria to filter by the item number. An example of the report is shown below.

Labor cost report (1)

File Options

Page 1 of 2  
4/23/2014  
9:34 PM

### Lean production labor time

Contoso Entertainment Systems (West)

Item number	Kanban rule	Default kanban rule	Production flow name	Activity name	Resource group	Throughput ratio	Time	Total time
CSS_SKF1	000007_1015	No	ElectricalAssembly	Car speaker PF	CSS_EA	1.00	5.00	5
CSS_SKF2	000008_1015	No	ElectricalAssembly	Car speaker PF	CSS_EA	1.00	5.00	5
CSS_SKR1	000009_1015	No	ElectricalAssembly	Car speaker PF	CSS_EA	1.00	5.00	5
CSS_SKR2	000010_1015	No	ElectricalAssembly	Car speaker PF	CSS_EA	1.00	5.00	5
CSS_SKF1LB	000018_1015	No	SpeakerAssembly	Car speaker PF	CSS_SA	1.00	8.00	8
CSS_SKF2LB	000019_1015	No	SpeakerAssembly	Car speaker PF	CSS_SA	1.00	8.00	8
CSS_SKF1RB	000020_1015	No	SpeakerAssembly	Car speaker PF	CSS_SA	1.00	8.00	8
CSS_SKF2RB	000021_1015	No	SpeakerAssembly	Car speaker PF	CSS_SA	1.00	8.00	8
CSS_SKR1RB	000022_1015	No	SpeakerAssembly	Car speaker PF	CSS_SA	1.00	8.00	8
CSS_SKR2RB	000023_1015	No	SpeakerAssembly	Car speaker PF	CSS_SA	1.00	8.00	8
CSS_SKR1LB	000024_1015	No	SpeakerAssembly	Car speaker PF	CSS_SA	1.00	8.00	8
CSS_SKR2LB	000025_1015	No	SpeakerAssembly	Car speaker PF	CSS_SA	1.00	8.00	8
CSS_SS1B	000026_1015	No	Packaging	Car speaker PF	CSS_PACK	1.00	0.80	0.8
CSS_SS2B	000027_1015	No	Packaging	Car speaker PF	CSS_PACK	1.00	0.80	0.8
CSS_OSSKR1LB	000028_1015	No	Packaging	Car speaker PF	CSS_PACK	1.00	0.80	0.8
CSS_OSSKR2LB	000029_1015	No	Packaging	Car speaker PF	CSS_PACK	1.00	0.80	0.8
SCPS_PSCR	000030_1015	No	PaintSpeakerCovers	Speaker covers Paintshop PF	SCPS_Cover	2.50	12.00	30
SCPS_PSC1	000031_1015	No	PaintSpeakerCovers	Speaker covers Paintshop PF	SCPS_Cover	2.50	12.00	30
SCPS_PSC2	000032_1015	No	PaintSpeakerCovers	Speaker covers Paintshop PF	SCPS_Cover	2.50	12.00	30
SCPS_PSC3	000033_1015	No	PaintSpeakerCovers	Speaker covers Paintshop PF	SCPS_Cover	2.50	12.00	30
SCPS_PSC4	000034_1015	No	PaintSpeakerCovers	Speaker covers Paintshop PF	SCPS_Cover	2.50	12.00	30
SCPS_PSC5	000035_1015	No	PaintSpeakerCovers	Speaker covers Paintshop PF	SCPS_Cover	2.50	12.00	30
SCPS_PSC6	000036_1015	No	PaintSpeakerCovers	Speaker covers Paintshop PF	SCPS_Cover	1.00	12.00	12
SCPS_PSC7	000037_1015	No	PaintSpeakerCovers	Speaker covers Paintshop PF	SCPS_Cover	1.00	12.00	12
SCPS_PSC8	000038_1015	No	PaintSpeakerCovers	Speaker covers Paintshop PF	SCPS_Cover	1.00	12.00	12
SCPS_CSC1	000039_1015	No	Coating 4101	Speaker covers coating	SCC_SC1	1.00	80.00	80
SCPS_CSC2	000040_1015	Yes	Coating 4101	Speaker covers coating	SCC_SC1	1.00	80.00	80
SCPS_CSC3	000041_1015	No	Coating 4102	Speaker covers coating	SCC_SC2	1.00	60.00	60

Close

## QUALITY

### QUALITY INTEGRATION WITH KANBAN

While quality should be built into the process, where it is necessary to perform inspections and capture quality information, this lean extension provides the link of Kanbans to quality orders using the standard quality association structure in AX2012. For in process quality orders, the flexibility exists to trigger the quality order automatically based on the status change of the Kanban job as well as to restrict Kanbans from continuing on in the process before the quality order has been completed. This can be done per work cell or activity. For quality inspection at the end of production, the quality order can be generated automatically and block inventory before proceeding to the next process or hitting stock.

Quality associations (1 - ceu)

Site	Reference type	Item code	Item	Account code	Account selection	Resource code	Resource
1	Kanban	Table	093PGC4	All		All	

Reference type: Kanban  
Item code: Table  
Item: 093PGC4  
Account code: All  
Account selection:  
Resource code: All  
Resource:  
Workcell code: All  
Resource group:  
Activity code: All  
Production flow activity:

Quality order generation  
Document type: Kanban complete  
Execution: After  
Show info: ☒

Quality order process  
Specifications  
Test group: Enclosure  
Effective: 00:00:00  
Expiration: Never  
Item sampling: 1 pcs.  
Acceptable quality level: 100.00

The document that will be on hold while open quality orders exist

Close

## AD HOC QUALITY CREATION FROM KANBAN

During Kanban processing, ad hoc quality orders may be required to perform inspections and capture quality information. With this lean extension, creating and viewing quality orders linked to a specific Kanban job are readily accessible from the Kanban board for process jobs. From there, quality orders can be completed through standard AX2012 functionality.

A new button on the Kanban board for process jobs has been added for ad hoc quality orders on Kanbans. Another new button will show any quality orders that are linked to the selected Kanban.

Kanban board for process jobs - work cell: CSS\_EA (1)

Refresh View Refresh cycle Job details Settings Process job list Picking list and pegging Dimensions display Transfer job list Quality orders Create quality order Manage quality My open activities Activities

Kanban production board  
Work cell: CSS\_EA

Activity data

Trial	Card number	Item number	Job quantity	Good quantity	Error quantity	Configuration	Size
<input type="checkbox"/>	SKF101	CSS_SKF1	10.00	10.00	0.00		
<input type="checkbox"/>	SKF102	CSS_SKF1	10.00	0.00	0.00		
<input type="checkbox"/>	SKF104	CSS_SKF1	10.00	0.00	0.00		
<input type="checkbox"/>	SKF106	CSS_SKF1	10.00	0.00	0.00		
<input type="checkbox"/>	SKF205	CSS_SKF2	10.00	0.00	0.00		
<input type="checkbox"/>	SKF206	CSS_SKF2	10.00	0.00	0.00		
<input type="checkbox"/>	SKF109	CSS_SKF1	10.00	0.00	0.00		
<input type="checkbox"/>	SKF105	CSS_SKF1	10.00	0.00	0.00		
<input type="checkbox"/>	SKF201	CSS_SKF2	10.00	0.00	0.00		
<input type="checkbox"/>	SKF202	CSS_SKF2	10.00	0.00	0.00		

Details Production instructions Picking list Pegging

Kanban job  
Card number: SKF102  
Item number: CSS\_SKF1  
Product name: Speaker kit Front 1  
Job quantity: 10.00  
Job status: Prepared  
Schedule group: Speaker set  
Activity name: Electrical assembly

Product dimensions  
Configuration:  
Size:  
Color:  
Revision:  
Style:  
Inventory profile: Unretrieved

Registration  
Kanban card number:  
Shipment:

Cycle time performance indicator  
Messages  
Message: This grid is empty. Created date and time

Transfer jobs  
Kanban quantity overview - finished goods  
Kanban quantity overview - material

Kanban job icon representing the job status, lean schedule group color and overdue / express flags

VAR Model | var | TEST\_AX2012\_R2

Close

Pressing this button will open the create quality order form. Note the card number is the reference number on the quality order for traceability.

**Quality orders (1 - ceu) - New Record**

**References**

Reference type:  Oper. No.

Account selection:  Operation:

Reference number:  Resource:

Reference lot:  Route number:

**Identification**

Quality order:

Item number:

Product name:

Test group:

CW qty:

Quantity:

**Inventory dimensions**

Configuration:  Location:

Size:  Pallet ID:

Color:  Serial number:

Site:  Revision:

Warehouse:  Style:

Batch number:

Identify item.

## SKIP LOT

A customized quality assurance skip lot information table is required to enable skip lot inspection performed for all purchase orders. Skip lot functionality will determine if a quality order is generated. In cases where inspection is required, a quality order will be generated automatically. Parameters have been added to the inventory and warehouse management to enable this functionality, and to define skip lot information.

**Inventory and warehouse management parameters (1 - ecoh)**

File

- General
- Journals
- Bills of materials
- Locations
- Transport
- AIF
- RFID
- Quality management**
  - Inventory dimensions
  - Product compliance
  - Commodity pricing
  - Print management
  - Number sequences

Select to use quality management and set up an hourly rate

**Attribute management**

Update inventory batch attribute: ☐

**Quality management**

Use quality management: ☒

Hourly rate: 50.00

**Quality assurance skip lot defaults**

Number of receipts to be inspected on a first receipt: 2

Number of receipts to be inspected after a non conformance is created: 3

Skip lot frequency: 2

Report setup

When checked, the inventory batch attributes shall be updated with the test result values.

Close

A record is generated in the quality assurance skip lot information window. A user can then go to this window and edit the radial buttons. This will update the status from ON HOLD, CERTIFIED, and NON CONFORMING. The status of the skip lot is shown on the product receipt of a purchase order. This will indicate where the material handler needs to place the received units. Non-inspected items will have a status of STOCK and be placed directly in inventory.

Item number	Vendor account	Skip lot frequency	Certified	On hold	Non conformance
10003	1103	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Lot Certified

Close

After the user edits the radial fields, an inquiry provides historical data for skip lot.

Item number	Vendor account	No. of receipts until ne...	Req. initial inspections	Req. inspection post nonconform	Date of last receipt	Date of last non conformance	Total receipts	Receipts since last non conformance	Date Certif
10003	1103	5	1	2			0	0	

## QUARANTINE MANAGEMENT

Internal quarantine management is used for various processes throughout the production process, based on the disposition of these quarantine order different outcomes are required. This enhancement enables disposition codes for all quarantine orders and expands on the functionality of these disposition codes. Additionally, the functionality enables the user to enter a reason code on the quarantine order to represent the reason for opening/creating the order. Further, the functionality adds a field on the quarantine order for hours.

The chart below shows a list of disposition codes that have been added for this enhancement, and how AX responds to the selection of each disposition code.

Action	Desired outcome upon end
None	Complete order as normal
Scrap as Co-product	Create a P&L journal writing off the good product writing on the co-product to the same stillage etc. The default co-product
Scrap Internal	Scrap product using standard mechanism
Return to Vendor	End the Quarantine order and create a PO for vendor return
Split	End the Quarantine order, write off some quantity of product, write on remaining quantity of co-product

The user can enter up to three reason codes for the quarantine reason.

Quarantine orders (1 - usmf) - Quarantine number: 000014, Soundbar AcousticFoamPanel

File New Delete Start Report as finished End Functions Inquiries Inventory Open Cases

View ended: ☐

Overview General Financial dimension Inventory dimensions

Quarantine number	Item number	Quarantine reason 1	Quarantine reason 2	Quarantine reason 3	Site	Warehouse	Location	Quarantine warehouse	Quarantine location	CW quantity	Quantity
000006	1000	Quarantine			31			38			1.00
000007	Cow	Quarantine			11			18			1.00
000010	1000	Quarantine 2			13			18			100.00
000014	P0004	Quarantine 2			13	13		18	13		55.00

Certified: ☐

Show old quarantine orders? (0) USD usmf Close

For the hour field, the user has the ability to modify this quantity up until the quarantine order is ended. This is just a data field so that clients are able to run "cost of quality" reports off of quarantine reasons.

Quarantine orders (1 - usmf) - Quarantine number: 000551, Sovereign blank virgin

File New Delete Start Report as finished End Functions Inquiries Inventory

The Royal Mint M [TRM TEST]

View ended: ☐

Overview General Financial dimension Inventory dimensions

Quarantine number	Item number	Site	Warehouse	Batch number	Location	Stillage ID	Serial number	Quarantine warehouse	Status	Quarantine location	Quarantine Stillage ID	Hours
000021	004A	TRM	MRB	141030-015...	In_02			QA	Reported as finished	QUA		
000022	001A	TRM	MRB	141002-013...	PICK			QA	Reported as finished	QUA		
000377	lhblanks	CS	CS_IN	abc	CS_IN	000080		QA-CS	Reported as finished	QA-PICK	000080	
000386	lhblanks	CS	CS_IN	abc	CS-PICK	000082		QA-CS	Reported as finished	QA-PICK	000082	
000387	lhblanks	CS	CS_IN	ABC	CS-PICK	000078		QA-CS	Reported as finished	QA-PICK	000082	
000404	D000024/2	TRM	TRV			001	vd00001	QA	Created	QUA		
000544	001B	2	24	3221			876	28	Created			
000549	CB510A01-05	CIRC	AP&P_C	1235	RTP	000158		QA_C	Reported as finished	001	000277	
000550	CBC01308VA	COMM	DESP-COMM	023051-000...				QA-COMM	Started			
000551	CBC01308VA	COMM	DESP-COMM	023051-000...				QA-COMM	Created			



## QUALITY ORDER ENHANCEMENTS

Enhancements to the quality order form to improve test results entry includes modifications to the quarantine order parameters, test setup forms, quarantine order form, and quarantine order line results form. An added unit column to the quality order form that allows the user more visibility into the quarantine order line.

Quality orders (1 - ecol) - Quality order: QL14012785

File New Delete Validate Functions Inquiries Inventory

Overview General References Financial dimension Inventory dimensions

Item number	Site	Warehouse	Location	Serial number	Revision	Test group	Quantity	Units	Status	Reference type
0008-6831	14	MW	7H		06	General Pass Fail Inspection	1.00	pc	Pass	Quarantine
0008-6839	14	MW	REC		04	General Pass Fail Inspection	1.00	ea	Open	Quarantine
1007715131	14	MW	97G14		002	General Pass Fail Inspection	1.00	kg	Open	Quarantine
1007715119	14	MW	REC		006	General Pass Fail Inspection	1.00	kg	Open	Quarantine
1007715125	14	MW	94ZF3		003	General Pass Fail Inspection	1.00	g	Open	Quarantine
1007715122	14	MW	94ZF3		007	General Pass Fail Inspection	1.00	oz	Open	Quarantine
1007715127	14	MW	NH5		003	General Pass Fail Inspection	1.00	pack	Open	Quarantine
APPS1747A 100BA40X	14	Q-MW	REC		P01	RG General Evaluation	3.00	kg	Fail	Quarantine
APPS1747A 100CA40X	14	Q-MW	REC		P01	RG General Evaluation	2.00	ea	Fail	Quarantine
LD11EAM-3C1	14	Q-MW	REC		004	RG General Evaluation	1.00	lb	Open	Quarantine
APPS11M-7-0303L	14	Q-MW	REC		001	RG General Evaluation	1.00	ea	Fail	Quarantine
1007715130	14	MW	94ZF2		003	General Pass Fail Inspection	1.00	oz	Open	Quarantine
5553000750	14	FREESTOCK	94WF		05	General Pass Fail Inspection	1.00	lb	Pass	Quarantine
15329910HH	14	MW	SW2		002	General Pass Fail Inspection	1.00	g	Pass	Quarantine
0012-0300	14	MW	7LAM1		07	General Pass Fail Inspection	1.00	kg	Pass	Quarantine

Within the results of a quality order, it is often the case that the quality user could enter results per individual item. A new function has been created to explode the tests within a quality order to the number of results the user should record. In standard AX, results are also only stored per test. These have been changed to show all results per quality order within one screen to ease the transaction entry.

Overview | General | References | Financial dimension | Inventory dimensions

Quality order	Item number	Site	Warehouse	Location	Serial number	Revision	Test group	Quantity	Status	Reference type
QL14012769	0008-6831	14	MW	7H		06	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012770	0008-6839	14	MW	REC		04	General Pass Fail Inspection	1.00	Open	Quarantine
QL14012771	1007715131	14	MW	97G14		002	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012772	1007715119	14	MW	REC		006	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012773	1007715125	14	MW	94ZF3		003	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012774	1007715122	14	MW	94ZF3		007	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012775	1007715127	14	MW	NH5		003	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012776	APPS1747A...	14	Q-MW	REC		P01	RG General Evaluation	3.00	Fail	Quarantine
QL14012777	APPS1747A...	14	Q-MW	REC		P01	RG General Evaluation	2.00	Fail	Quarantine
QL14012778	LD11EAM-3C1	14	Q-MW	REC		004	RG General Evaluation	1.00	Fail	Quarantine
QL14012779	APPS11M-7...	14	Q-MW	REC		001	RG General Evaluation	1.00	Fail	Quarantine
QL14012781	1007715130	14	MW	94ZF2		003	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012782	5553000750	14	FREEST...	94WF		05	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012783	15329910HH	14	MW	SW2		002	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012784	0012-0300	14	MW	7LAM1		07	General Pass Fail Inspection	1.00	Pass	Quarantine
QL14012785	12-001549	14	MW	7BR		R	General Pass Fail Inspection	1.00	Open	Quarantine

Overview | General | Test

Sequence number	Test	Test result	Results e
10	Customer Problem Description (Use Note)		
20	Package Condition	✓	
30	Motor Condition	✓	
40	Performance Test	✓	
50	Warranty	✓	
60	Responsibilities (Write analysis as a NOTE)	✗	

Microsoft Dynamics ... Split Test Lines

Number of Lines: 3.00

OK Cancel

Quantity of test lines

When the user selects the Results button to view the line results or to enter test data, the test lines for all tests will be combined on one form and according the number of lines defined by the user.

Quality order line results (1 - ecoh) - Quality order: QL14012776, Package Condition, Sequence number: 20Quality ...

File New Delete Validate

Overview | General

Sequence Number	Test	Result quantity	Units	Outcome	Test result	Include in result	Test result
10	Hole Check	3.00	pcs			✓	✗
20	Diameter	1.00	pcs			✓	✗
20	Diameter	1.00	pcs			✓	✗
20	Diameter	1.00	pcs			✓	✗
30	Length	1.00	pcs			✓	✗
30	Length	1.00	pcs			✓	✗
30	Length	1.00	pcs			✓	✗

Used symbols

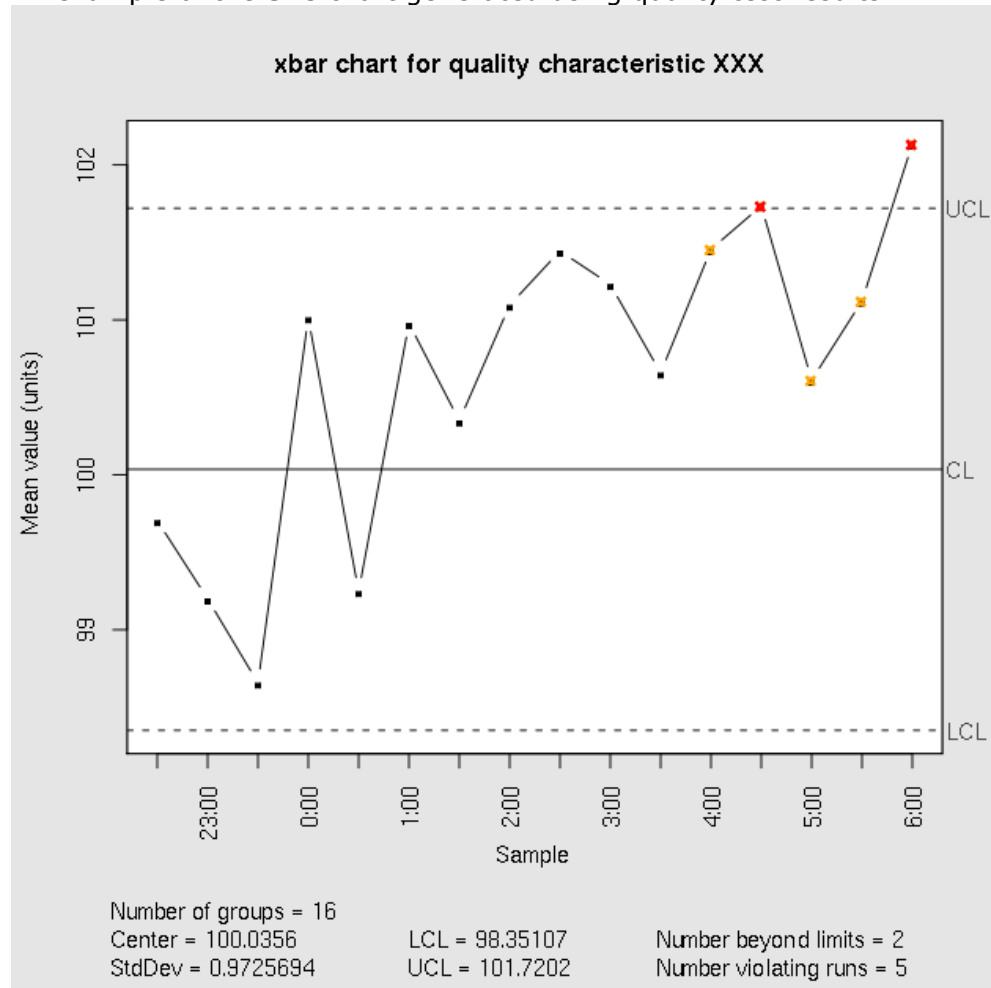
✗ Fail ✓ Pass

Quali... (0) USD usr ecoh initial \$BAE1 DAX2012\_TEST Close

## SPC CHART GENERATION

An SPC Chart or Statistical Process Control chart can be generated directly from AX. This is an added functionality to the quality order enhancements. The inputs for the SPC chart are the quality order results, and the output is a graphical chart that can be generated from AX, and can be printed out for review. The upper and lower limits control limits will be defined from the test results.

An example of the SPC chart generated using quality test results.



## CASE MANAGEMENT

Case management is integrated with production orders, Kanbans, quarantine orders, quality orders, resources and resource groups. This integration allows ad hoc creation of cases from the aforementioned functionalities, and the cases will be associated with the correct information accordingly. This enhancement is in the form of a new button labeled "Create Case" found on the view tab of the action pane of each of these forms, to the right of the Open cases button (if available). Depending on which form the case is created from, certain case categories will not be available. For example, if the case is created from a Kanban, only the Production and General case categories will be available.



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