2.3. Quality Controlling

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Quality Controlling is a manufacturing shop-floor quality control/assurance data collection function of Produmex Manufacturing. It supports two major processes:

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- QC for production order operations
- QA for outsourcing deliveries

When a worker reports the (partial) completion of an operation with the PDC system (either via the mobile client or shop floor PDC wizard), a QC officer can report QA data for that operation. The QC officer can qualify an operation as rejected (repairable or un-repairable) or approved. The QA data are stored in a database (in the @BXPQAPARAMSJRNL table), and custom reports can be created by the customers or the partner. Saving QA data to that table is the only result of the quality controlling terminal; any additional steps that should be taken after the quality control process (workflow, repairing job, etc.) should be implemented separately as an addition to the quality controlling terminal.

When a delivery (Goods Receipt PO) document is created for an outsourced operation, a QC officer can enter QA data for that delivery. Based on the guality gualifications, the outsourced operation may be rejected.

2.3.1. Set up quality controlling

In order to set up quality control parameters for an operation, enable the 'Production Operation Parameters' option on the PDC tab of Produmex Manufacturing Settings. Next open the Operation Parameter Types form from: Tools > User-Defined Windows.

Here company specific reporting parameter types (dimensions) can be specified. Each operation can have multiple parameter types associated with it.

Typically in QA these parameters are some metric of the component worked on or the result of some QC tests. In the following example four parameter types were added, that will cover all the relevant features.

Last update: 2017/06/09 implementation:manufacturing:pdc_qc https://wiki.produmex.name/doku.php?id=implementation:manufacturing:pdc_qc&rev=1497019153 14:39

Q Quantity No Float Flo	No T Date Date No T Float Float T No T Y:OK N:Defective Valid Value Valid Value
Q Quantity No No Float Float<	No Float No Integer No Y:OK N:Defective
QUAL Quality No Integer Integer Y/N Approval No Y Y/N Y/NN Y/NN Y/N	No Integer No Y:OK N:Defective Value Value
Y/N Approval No Y:OK N:Defective Valid Value Valid Value	No V:OK N:Defective Valid Value Valid Value
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Based on the value type

- String: Text can be specified freely. Here it is used for a comment parameter type.
- Float, Integer, Boolean: Numeric fields can be used for measurement.
- Valid Values: This type can be used to create a 'choose from list' parameter. With a taglanguage, the entries in the list can be specified. The syntax is the following: 'Value in database':'Description'|'Value in database':'Description'|... For example in this case Y: OK|N: Defective was specified.
- Date, Time: Date and time is best stored in these types.

Please note: It is not necessary to add timestamp to every operation, as this is automatically collected.

Next open the Production > Manufacturing Operations form. Here, under the Parameters tab, the used parameters can be specified for each kind of operation.

In the Type column, the previously defined parameter types can be chosen.

To use the parameters for the mobile QC terminal the value at the Quality Assurance column has to be set to true. In this example four parameters were specified.

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2.3.2. Logging in to QC

Only employees appointed quality inspectors can log into Quality Control.

In the next screen the employee can choose between the two mentioned functions: the in-house QC and the outsourced QC.

Select the type of the operation on the next screen. Press the 'In-house' button to inspect in-house operations, or press the 'Outsource' button to inspect the quality of outsourced products. Press the 'Cancel' button to go back to the previous screen.

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	Mobile PDC	TEST_WMSMF (PMX_BUDTOSH2) - John Doe	06/09/17 12:54	X PM
Server: 17.0 Client: 17.0	5.31007.18920	Operation Type Selection (00:29)	*	(
	In-House	^R Outsourced ^R Cancel ^{Esc}		
E				

2.3.3. In-House QC

On the 'In-House Operation Selection' screen enter an operation ID. Choose a work center and the employee who performed the operation. Only operations with at least one PDC booking can be selected.

Mobile PDC	😵 TEST_WMSMF (PMX_BUDTOSH2) - John Doe		
Server: 17.05.31007.18920 Client: 17.05.31007	In-House Operation Selection (00:30)	06/09/17 1 %	()
Operation	12-10 (oPBI - Bell Installation - 511)		F12
Work Center	wAS (Assembler Team)	F11	F12
Employee	2 (Fred Morrison)	F11	F12
OK	¹² Cancel Esc		
Ē			

The system will proceed to the 'Check Results' screen. On this screen the quality of the operation can be reported with the previously defined parameters. Add the number of the tested instances to the

'Checked Quantity' field.

Mobile Starts	VMSMF (PMX_BUDT	OSH2) - John Doe			06/09/17 12:	X :54 PN
erver: 17.05.31007.18920 Went: 17.05.31007		Check Results	(00:30)		*	(j)
Operation	12-10 (oPB	I - Bell Installatior	า - 511)			
Work Center	wAS (Asser	nbler Team)				
Employee	2 (Fred Mo	rrison)				
Quantity	0/0/0					
0 IsApproved		Y (OK)				
0 WeldThickness	6	40				
0 SurfaceQuality	,	5				**
0 ApprovalComn	nent	Approved				
Checked Quantity		1				
Set Value	Good	Rejected [₽]	Repairable [⊧]	Cancel		
1						

To specify parameters, select the parameter from the list and press the 'Set Value' button. This will prompt the 'Set Value' form.

The method for entering the value varies according to the value type of the parameter:

- String: Enter the text to the textbox.
- Float, Integer, Boolean, Date -Time: Add the value to the textbox.
- Valid Values: Select a value from the list.

To approve the operation quality, press the 'Good' button.

To reject the operation, press the 'Rejected' button.

To register the operation as repairable, press the 'Repairable' button.

2.3.4. Outsourced QC

For more information about outsourced operations please see: Outsourced Manufacturing.

The Quality Control of an outsourced operation can be handled by selecting 'Outsourced' on the Operation Type Selection form. The procedure is the same as an in house operation with the one exception of the selection form.

In the Outsourced Operation Selection window the operation can be specified and then the supplier and the instance of the delivery can be selected.

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Mobile PDC	TEST_WMSMF (PMX_BUDTOSH2) - John Doe	_ 🗆 🗙
Server: 17.05.31007.18920 Client: 17.05.31007	Outsourced Operation Selection (00:29)	* ①
Operation	5-3 (oPAS - Bike Assembly - 504)	F12
Supplier	bGU (Bike Gurus)	F11 F12
Delivery	500 (Quantity: 1.000000 Due date: 12/21/2016 12:00:00 AM)	F11 F12
OK	^{FI} Cancel Esc	
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After this the procedure is the same as introduced in the in-house case.

Quality Assurance entries can be seen on: Tools > User Defined Windows > QualityAssuranceJournal

