

**SAP Manufacturing Execution  
How-To Guide**



# **How To Set Up and Use the SAP ME Shop Workbench Feature**

**Applicable Release: ME 6.0**

**Version 1.0**

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# SAP ME How-To-Guide for Shop Workbench

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## Document History

| Document Version | Description     | Author         |
|------------------|-----------------|----------------|
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## 1 Introduction

### 1.1 Purpose

The SAP ME How-To-Guide for Shop Workbench is intended to provide sufficient information to enable the Shop Workbench feature to be easily configured and readily utilized to meet business needs, making use of available best practices.

### 1.2 Scope

This document covers all aspects of the Shop Workbench feature and its use in a Production Operator Dashboard (POD). It does not cover the POD feature itself.

### 1.3 Glossary

|      |   |
|------|---|
| Tree | A hierarchical arrangement of items. The item at the top level of the structure is called the root. The subordinate items are called nodes. |
| Node | A subordinate item to the top level of a tree   |

## 2 Shop Workbench Overview

### 2.1 Description and Applicability

Use the Shop Workbench POD plug-in to view data for an entire SFC displayed in a tree structure. The Shop Workbench provides the capability to expand and collapse the whole tree or parts of the tree per the user's preference. The user may view the operations, buyoffs, components, data collections, tools and work instructions for the operations of the selected SFC. The user may also select a node and transact upon that node.

The Shop Workbench POD plug-in can be used in place of the operation list in a POD. It displays all operations for the selected SFC. This gives an all-in-one view of the SFC. This is very useful for users that want to see the data and status of the entire SFC. This is also very useful for manufacturing areas that perform multiple tasks and/or operations on an SFC. The SFC can be displayed in the POD and multiple operations can be transacted upon without changing the POD selection. In order to perform a transaction from the Shop Workbench tree, the user selects a node from the tree in place of selecting an operation from the Operation List and selects a function from a pushbutton. For example, the user may select an operation node and submit the Start pushbutton.

In order to display an SFC in Shop Workbench, Shop Workbench must be defined in POD Maintenance as a plug-in. The system is configured with a pre-defined POD that includes the Shop Workbench plug-in. The Work Center POD named SHOP\_WORKBENCH\_DEF is configured with a Layout Type of *3 Panel Vertical Layout (with Popover)* with the Shop Workbench set as the Panel A Fixed plug-in.

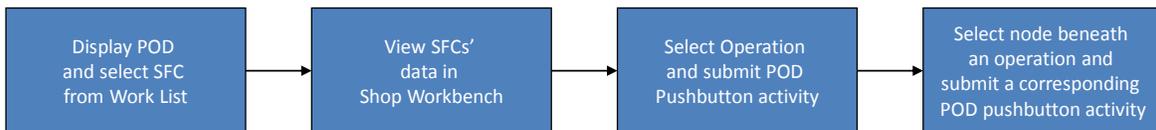
When the Shop Workbench is used in a POD to choose an operation, a user may select the operation node and perform the usual POD button activities such as Start and Complete. The user may also select a node underneath the operation and submit an activity for it. For example, the user may select a Tool Group and select the Log Tool activity to display the Log Tool Entry plug-in to record information about the selected tool group.

## 2.2 Business Purposes / Functions

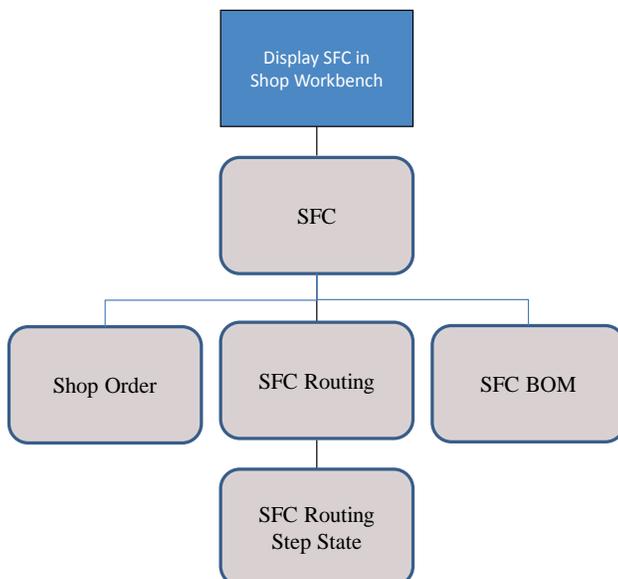
The Shop Workbench plug-in displays an SFC number's master data in a multilevel tree like structure. Each level of the tree displays nodes that represent a part of the SFC. The production operator can select an SFC from the POD Work list and the SFC number's data will display in the Shop Workbench (see *Display an SFC in the Shop Workbench*).

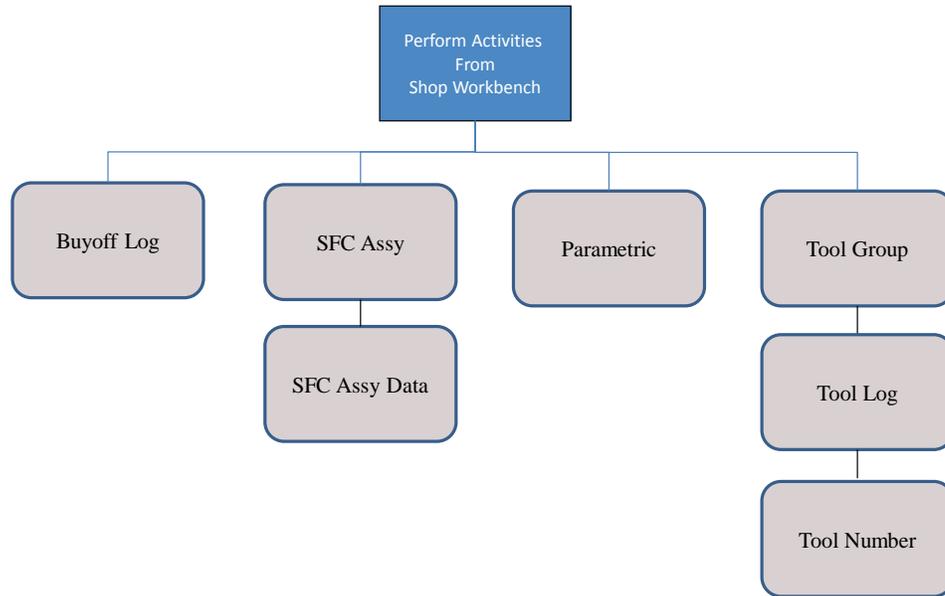
The Shop Workbench tree can also be used to select operations and other detailed information about the SFC represented by the tree nodes listed underneath its corresponding operation. For example, the production operator may select an operation and submit the Complete activity. Or the production operator may select a Data Collection Group underneath the Data Collections node and submit the DC Collect activity (see *Perform Activities from the Shop Workbench*).

## 2.3 High-Level Process Flows



## 2.4 High Level Data Model





## 3 Functions

The following is a list of constraints that apply to the Shop Workbench plug-in:

- The icons shown next to the operation node of the tree like structure are view only
- There will be no transaction capabilities on the Nodes through double click
- Configuration of both Shop Workbench and Operation List in the same POD is not supported.
- Multiple select operations are not permitted from the tree

### 3.1 Display an SFC in the Shop Workbench

#### 3.1.1 Description and Applicability

Use the Shop Workbench as a POD plug-in that displays the data for an SFC in a tree like structure. It can be used by production operators to view information for the entire SFC. It can be used by production supervision to monitor the status and progress of the SFC. It can be used by various production support organizations, such as manufacturing engineer, to analyze production data by displaying the information and viewing the collected data for the SFC.

#### 3.1.2 Purpose / Effects

When an operator selects an SFC from the Default Shop Workbench POD, the data for the SFC is displayed in the Shop Workbench. The data gets displayed in a tree like structure. The tree has multiple levels that represent the various parts of an SFC. Here is a summary of the levels represented in the tree:

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Level one: The SFC Current Information including the SFC's Material, Routing, BOM and Shop Order. If the SFC has any work instructions with a change alert set, a change alert icon will display next to the SFC Current Information title.

Level two: The SFC's Operation(s) along with its' status, description and Work Center. Icons that represent Buyoffs, Components, Data Collections, Tool and Work Instructions are displayed next to the operation name if the element is attached to the operation. The Buyoff, Component and Data Collection icons are grayed out if all of the applicable data has been collected.

Level three: Operation detail nodes namely Buyoffs, Components, Data Collections, Tools and Work Instructions. If an operation does not have data attached to a detail node, then that node will not be displayed under that operation. For example, if an operation does not have any tool groups attached, then the Tools node will not appear under that operation and the tool icon will not be displayed next to the operation name. If a work instruction has a change alert set, then a change alert icon will appear next to the operation name.

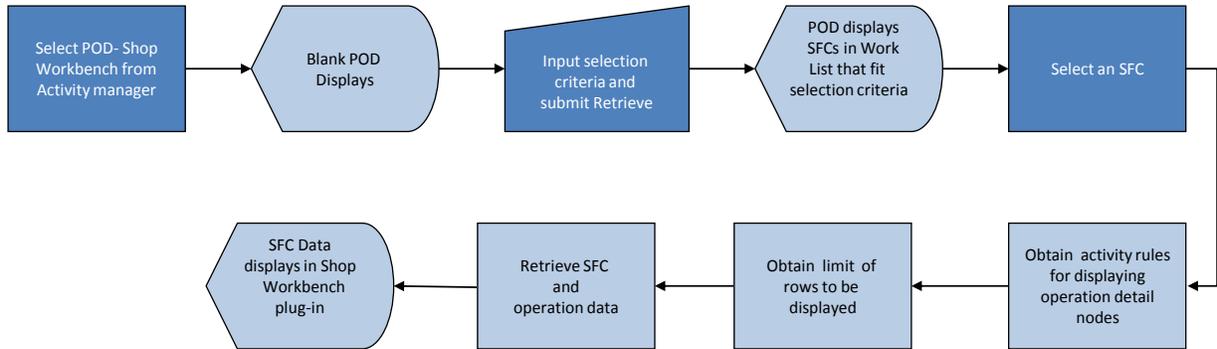
There are activity rules for each of the detail icons which controls whether or not that node displays (default is YES). Additionally, there are activity rules for how many rows of data can display for each icon (default=100). For example, if the DC\_ROW\_LIMIT is set to 25 and there are 30 DC groups to collect, only 25 would display and a yellow triangle icon would display signifying that the row limit had been reached with the icon's tool tip displaying the message about the number of records exceeding the limit.

With this multilevel tree, the user can see an overall view of an SFC, its operations and operation details. When an SFC initially displays in the Shop Workbench, the SFC Current Information (level 1) and the Operation (level 2) nodes are expanded and the operation detail nodes are collapsed. The user has the option to collapse or expand any node on the tree by selected the arrowhead next to the folder node symbol. There are also buttons at the bottom of the plug-in that will *Expand All* and *Collapse All* which will act upon all nodes in the tree.

If a user wants to view a different SFC, the user can select a new SFC from the Work list. Once selected, the Shop Workbench will refresh with the new SFC's data.

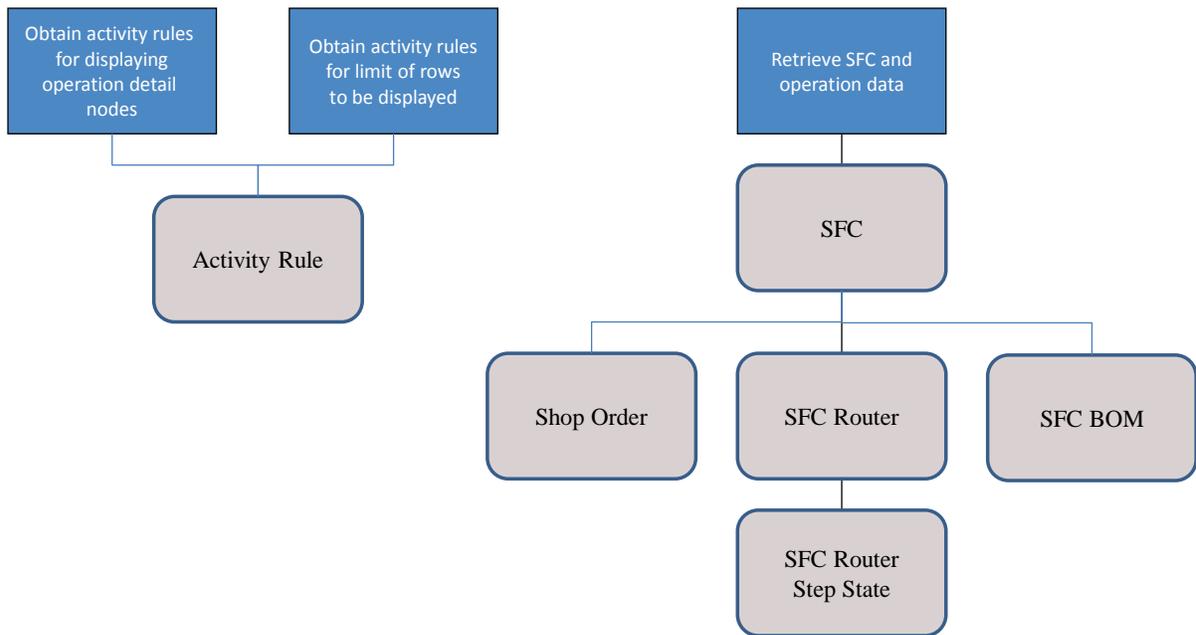
## 3.1.3 Process Flow

This figure illustrates the primary flow of the user and system actions to display an SFC in the Shop Workbench.



## 3.1.4 Data Model

The following figure shows the relationship between some of the Display an SFC in the Shop Workbench functions and ME database tables.



## 3.1.5 Function Specific Setup

In order to use the Shop Workbench, a POD has to be defined with the Shop Workbench plug-in, such as the Default Shop Workbench POD. The Shop Workbench plug-in may be

defined as a fixed panel or pop-over in the POD. Operation List and the Shop Workbench plug-in cannot be configured in the same POD.

## 3.1.6 Best Practices

We recommend that you define the Shop Workbench plug-in in the Work Center POD Layout Type of *3 Panel Vertical Layout (with Popover)* defined as the Panel A Default Plug-in.

## 3.2 Perform Activities from the Shop Workbench

### 3.2.1 Description and Applicability

From the Default Shop Workbench POD, a production operator can select an SFC from the Work list and the data for that SFC is then displayed in the Shop Workbench in a tree like structure. The production operator can use the operation nodes of the tree or a node underneath the operation and submit an activity.

### 3.2.2 Purpose / Effects

The Shop Workbench can be used as an alternative to the Operation list. Once an SFC is displayed in the Shop Workbench, a production operator can select an operation node and perform a transaction upon it. When the operator selects an operation (level two of the tree) it highlights to represent that selection. The operator may then select any appropriate POD pushbutton activity. For example, the operator may select an operation node with the status of *In Queue* and then submit the Start pushbutton. The system processes the Start activity, the Shop Workbench plug-in refreshes and changes the operation status to *Active*.

The Shop Workbench can also be used as an alternative to certain POD plug-in lists. When the production operator selects a node beneath the operation detail node (level three of the tree) the system highlights it to represent its selection. The operator can then select the appropriate data entry POD plug-in pushbutton activity. For example, from the Default Shop Workbench POD the operator may select one of the sequences beneath the Components nodes which represent a component that is defined to be installed at that operation.

The operator then submits the Assembly pushbutton. The system displays the Assemble Component data entry plug-in in a pop over panel with the selected component's information. The user inputs the relevant data and submits the *Add* pushbutton. The system displays a message indicating that the component has been added, displays the next component (if one exists) and refreshes the component row in the Shop Workbench to reflect the quantity assembled.

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The following chart shows the Shop Workbench detail node with its corresponding plug-in activity:

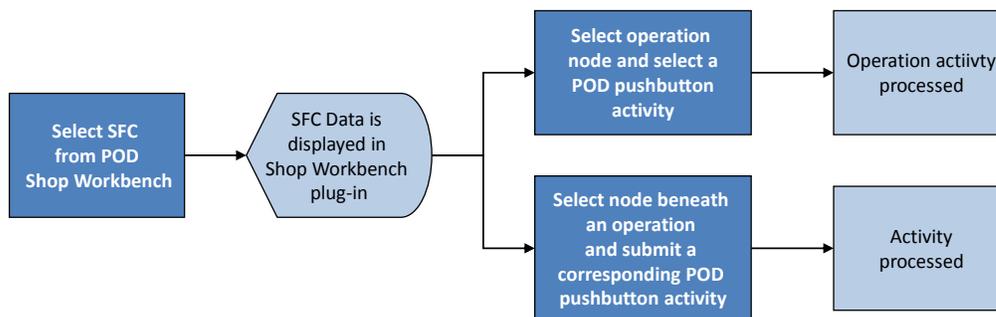
| Shop Workbench Node | Corresponding activity  | Action   |
|---------------------|-------------------------|--|
| Buyoffs             | Buyoff Accept           | Process the selected buyoff  |
| Components          | Assembly Point          | Displays the assembly point plug-in to collect component information             |
| Data Collections    | Data Collection         | Displays the Data Collection Entry plug-in to enter the DC parameter data        |
| Tools               | Log Tool Data Entry     | Displays the Log Tool Entry plug-in to enter tool data                           |
| Work Instructions   | Work Instruction Viewer | Displays the Work Instructions Viewer and displays the selected work instruction |

The operator may also select the SFC or an operation node on the Shop Workbench tree, submit the Reports pushbutton and select the desired report from the Reports list. For example, with an SFC displayed in the Shop Workbench, the user could submit the Reports pushbutton, select the Activity Log Report from the list and submit the OK pushbutton. The system will display the Activity Log Report with the data for the selected SFC.

The same is true for most activities including those assigned to the Activities pushbutton. For example, if the user selects an operation node and selects the Earned Standards pushbutton, the Earned Standards plug-in will display with the SFC or operation's standards displayed.

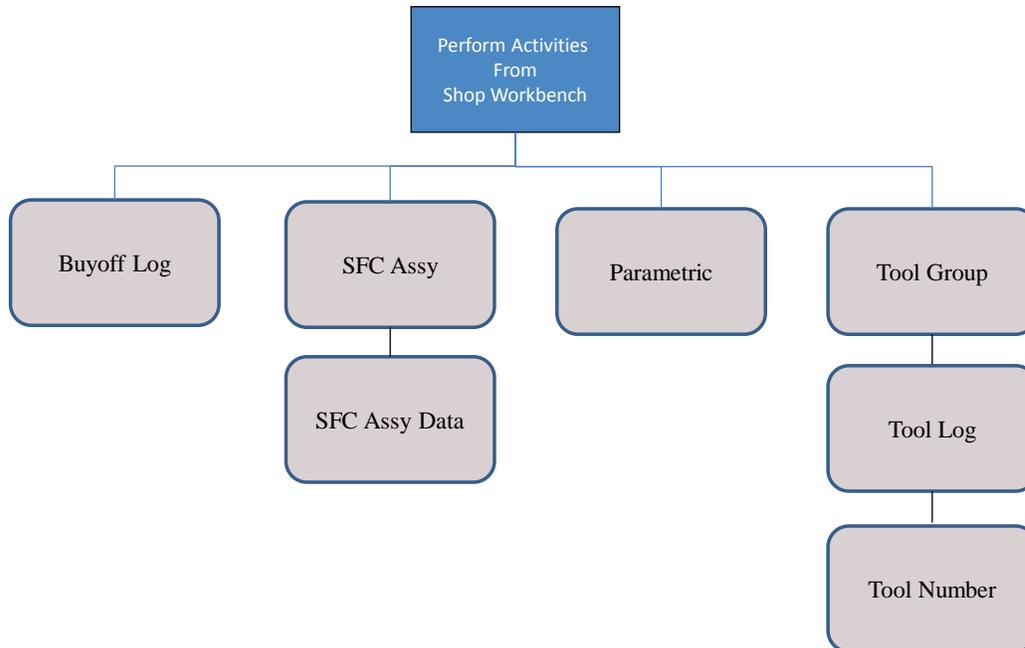
### 3.2.3 Process Flow

This figure illustrates the primary flow of the user and system actions to perform activities from the Shop Workbench.



## 3.2.4 Data Model

The following figure shows the relationship between performing activities from the Shop Workbench functions and ME database tables.



## 4 Integration

Not applicable.

## 5 Shop Workbench Setup

### 5.1 Maintenance Activities

#### 5.1.1 System Rules

##### 5.1.1.1 Display End Unit Number

###### 5.1.1.1.1 Purpose/Effect

Controls whether or not the End Unit Number field is displayed on various activities for which it applies

## 5.1.1.1.2 Settings/Examples

If this system rule is set to TRUE, then the End Unit Number field will display in the SFC Current Information section of the Shop Workbench plug-in. If this system rule is set to FALSE (default), then the End Unit Number field will not display in the SFC Current Information section of the Shop Workbench plug-in.

## 5.1.2 Activity Rules

### 5.1.2.1 Purpose/Effect

Controls whether or not any nodes/folders display underneath the operation node and how many rows can be displayed

### 5.1.2.2 Settings/Examples

Shop Workbench Plug-in Activity Rules:

Display rules:

BUYOFF\_DISPLAY (YES/NO) default=YES

COMPONENT\_DISPLAY (YES/NO) default=YES

DC\_DISPLAY (YES/NO) default=YES

TOOL\_DISPLAY (YES/NO) default=YES

WI\_DISPLAY (YES/NO) default=YES

The display rules control whether or not the node is displayed on the Shop Workbench tree. If the display rule is set to YES, then the node displays in the Shop Workbench tree. If the display is set to NO, then the node does not display in the Shop Workbench tree.

If the Tool\_Display rule is set to Yes, then the Tool node will display on the Shop Workbench tree underneath any operation for which a tool has been attached.

Row limit Rules

BUYOFF\_ROW\_LIMIT (default 100)

COMPONENT\_ROW\_LIMIT (default 100)

DC\_ROW\_LIMIT (default 100)

TOOL\_ROW\_LIMIT (default 100)

WI\_ROW\_LIMIT (default 100)

The row limit rules sets the row limit for each node when displayed under the operation node

If the DC\_ROW\_LIMIT is set to 10, then 10 Data Collection Group rows will appear under the Data Collection folder under the operation node. If there are 12 data collection groups, the system will display the first 10 sequences of

data collection groups and a yellow triangle icon will display next to the Data Collections folder indicating that the row limit has been reached. The tool tip on the icon reads “Not all records are displayed; the number of records found exceeds the limit”.

## 5.1.3 System Configuration

### 5.1.3.1 POD Maintenance

#### 5.1.3.1.1 Purpose/Effect

Used to set up a POD that includes the Shop Workbench plug-in.

#### 5.1.3.1.2 Settings/Examples

A default Shop Workbench POD is predefined in ME. It uses the POD Layout type of 3 panel Vertical Layout (with Popover). See *POD Maintenance* in ME Help. The Shop Workbench plug-in may be configured in a POD as a fixed panel or pop-over in the POD.

#### 5.1.3.1.3 Best Practice

We recommend that a work center POD Layout type of 3 panel Vertical Layout (with Popover) be used with the Shop Workbench plug-in defined as the Panel A default Plug-in.

## 6 Usage Scenario Examples

### 6.1 Display SFC and perform activities from Shop Workbench

#### 6.1.1 Purpose / Goal

This scenario provides an example of an operator displaying the Default Shop Workbench POD, selecting an SFC, viewing the data for that SFC and performing a transaction on that SFC.

#### 6.1.2 Scenario Specific Settings

The following are the specific settings for this scenario.

- The predefined Default Shop Workbench is configured as delivered
- The Shop Workbench activity (SHOP\_WB\_PLUGIN) activity rules are set as delivered
- SFC “ASSEMBLY123” that has buyoffs, components, data collections, tools and work instructions attached and has an SFC status of *New*

- User has permission to perform the start, buyoff, complete, assembly, data collection and log tool activities
- User belongs to the User Group assigned to the buyoffs attached to “Assembly123”

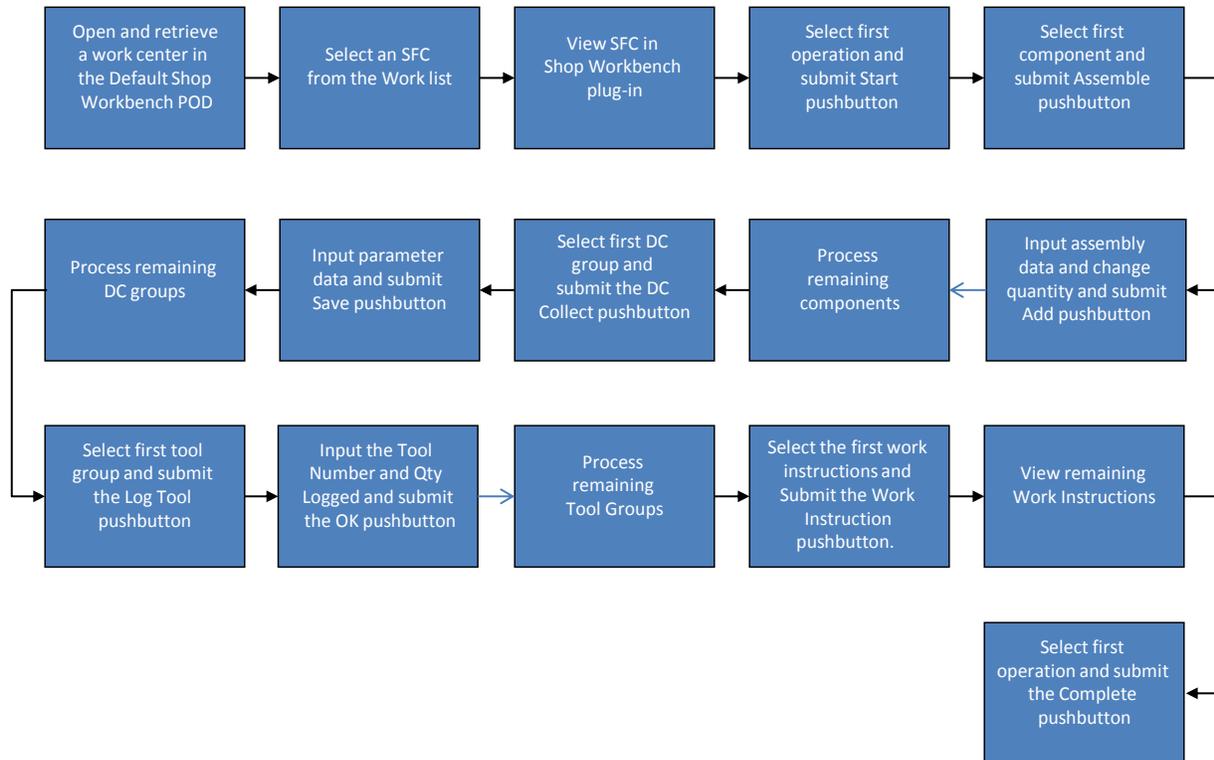
## 6.1.3 Scenario Steps

The following are examples of the steps that a user might perform in SAP ME in order to accomplish this scenario

1. Open the Default Shop Workbench POD
2. Input the Work Center or select the Work Center browse and select the work center from the list.
3. Submit the *Retrieve* pushbutton
4. Select SFC “ASSEMBLY123” from the work list
5. Submit the *Expand All* button to view all tree nodes
6. View the SFC Current Information and other data presented in the tree like structure
7. Select first operation whose status is *New*
8. Submit the Start pushbutton
9. Observe that the status of the operation is now *Active*
10. Select the first sequence listed under the Components tree folder
11. Submit the Assembly pushbutton
12. Input any applicable assembly data and change to quantity in the Assemble Components plug-in
13. Submit the Add pushbutton
14. Continue processing all components in the same manner.
15. Upon completion of the Assemble Component activity, observe that component icon next to operation is now grayed out and the tool tip says “Comp Assembly Done”
16. Select the first sequence listed under the Data Collections tree folder
17. Submit the DC Collect pushbutton
18. Input any applicable parameter data into the Data Collection Entry plug-in
19. Submit the *Save* pushbutton
20. Continue processing all data collection groups.
21. Upon completion of the Data Collection activity, observe that data collection icon next to operation is now grayed out and the tool tip says “Data Collection Done”
22. Select the first sequence under the Tools tree folder
23. Submit the Log Tool pushbutton
24. Select the browse for Tool Number.
25. Select the appropriate tool from the Tool Number browse and submit the OK pushbutton.
26. Input the *Qty Logged* number and any Comments and submit the *Save* pushbutton
27. Continue to process all tool groups until completed.
28. Select the first sequence under the Work Instructions tree folder
29. Submit the Work Instructions pushbutton
30. View the work instruction displayed in the Work Instruction Viewer.
31. Continue to select sequences under the Work Instructions folder.
32. Once viewing of Work Instructions are finished, submit the *Close* pushbutton
33. Select the first operation and submit the Complete pushbutton
34. Observe that the sequences underneath the Buyoffs tree folders have the status of *Closed* and that Buyoff icon next to operation folder is now grayed out and icon tool tip says “Buyoffs Done”
35. Observe that the status of the operation is now *Completed*

## 6.1.4 Scenario Flow

The following figure provides a high level flow of the display an SFC and performs activities from the Shop Workbench scenario.



## 7 Links to Additional Information

## 8 Other Reference Material

## 9 Overview of Changes

Shop Workbench is a new feature in SAP ME 6.0.