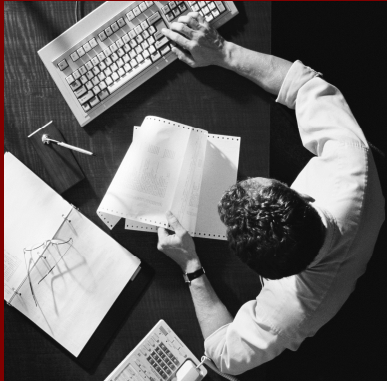




ODS Reporting Guide

SAP® Manufacturing Execution 15.1

Target Audience

- System administrators
- Technology consultants

Document Version 1.0 – October, 2015

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Typographic Conventions

Type Style	Represents
<i>Example Text</i>	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, titles of graphics and tables
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.
Example text	Screen output. This includes file and directory names and their paths, messages, names of variables and parameters, source code as well as names of installation, upgrade and database tools.
Example text	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.
EXAMPLE TEXT	Keys on the keyboard, for example, function keys (such as F2) or the ENTER key.

History of Changes

The following table provides an overview of the most important changes that were made in the latest versions.

Guide Version	Important Changes
1.0 (October 26, 2015)	First version

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1 Getting Started

1.1 About this Document

This guide contains an overview of Operation Data Store (ODS) and ODS summary tables definitions for SAP ME, including the ODS summary table names, the summary keys in each table, and the description of each summary table.

1.2 Related Information

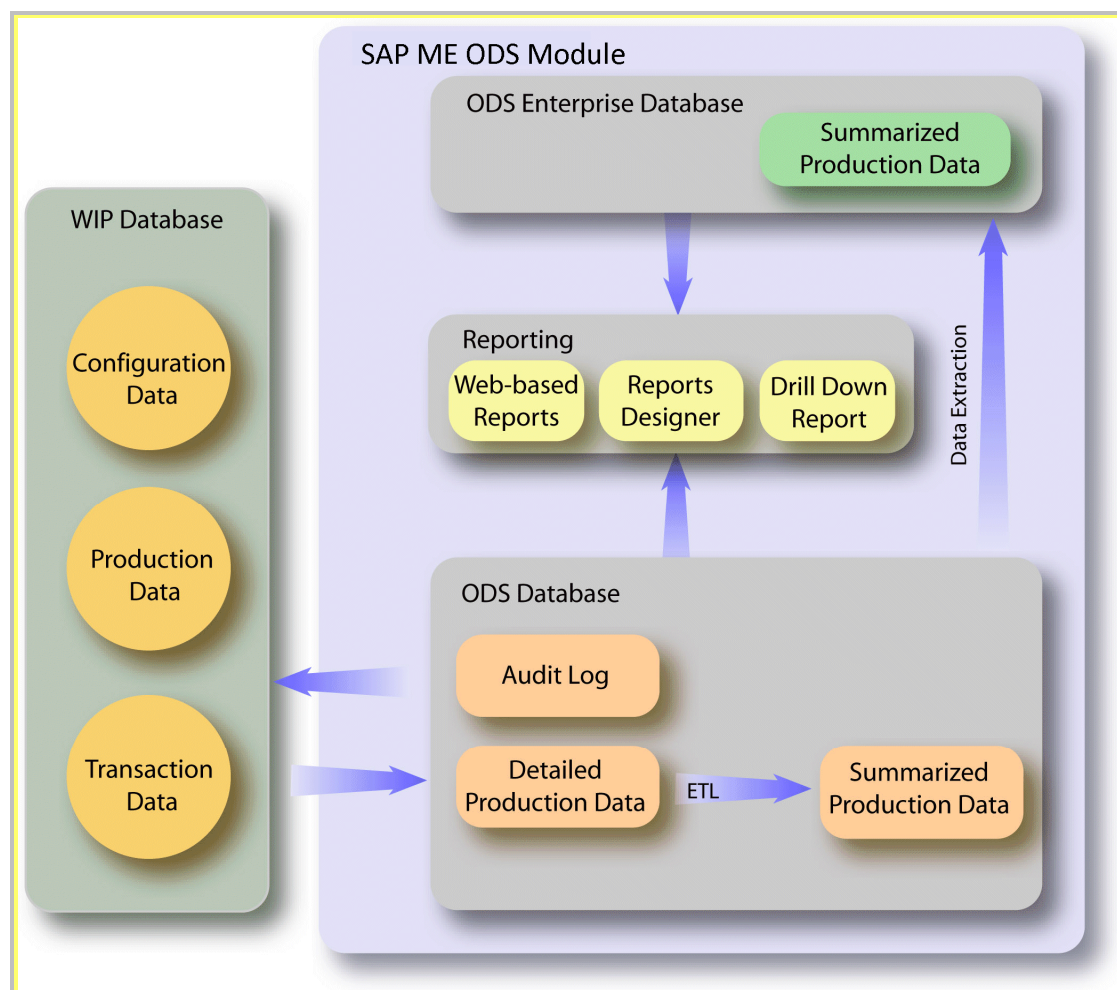
1.2.1 Useful Links

The following table lists further useful links:

Content	Where Fo Find
<i>SAP ME 15.1 Guides</i>	http://service.sap.com/instguides → SAP Business Suite Applications → SAP Manufacturing → SAP Manufacturing Execution 15.1
<i>SAP ME 15.1 Release Notes</i>	http://help.sap.com → Product Lifecycle Mgmt →SAP Manufacturing Execution → SAP Manufacturing Execution 15.1
<i>SAP ME 15.1 Application Help</i>	http://help.sap.com → Product Lifecycle Mgmt →SAP Manufacturing Execution → SAP Manufacturing Execution 15.1

2 ODS Overview

An operational data store (ODS) is a type of database often used as an interim area for a data warehouse. Unlike a data warehouse, which contains static data, the contents of the ODS are updated through the course of business operations. An ODS is designed to perform queries on current data that is perhaps an hour, day, or month old and is used to make operational related decisions. This contrasts a data warehouse, which contains primarily historical data that is used for long term data analysis.



Using SAP ME's ODS and its customizable reporting features, you can create reports that pertain directly to the needs of your business. The primary reporting tool being provided for use with SAP ME's ODS is SAP BusinessObjects. A number of easy-to-use predefined reports are available through SAP BusinessObjects. You can create your own reports by adapting the predefined reports to your own needs, or by creating new reports. While SAP BusinessObjects is the primary reporting tool provided and supported, other reporting tools may be used in conjunction with the ODS.

For more information about reports available with SAP BusinessObjects, see the *SAP Manufacturing Execution 15.1 BusinessObjects Reporting Guide*.

There are two components to SAP ME ODS: audit log and data transfer.

2.1 Audit Log

The Audit Log maintains a history of all modifications made to system setup data. When system setup data such as materials, operations, BOMs, and routings, are modified in the system WIP, each version of the record is captured and copied to the audit log, along with the date/time and user responsible for the change. ODS uses the Audit Log tables to link in configuration values that can be used for filtering, displaying, or calculating data.

The Audit Log also serves to keep track of the configuration settings in use at a specific time period in the past. By maintaining these historical records, reports can be generated which preserve the values or settings used at a particular time period. The *ALL* configuration setting must be selected for the object in order for these records to be maintained.



The Audit Log is part of base SAP ME. It is not necessary to have ODS installed to use the Audit Log feature.

2.1.1 Configuring the Audit Log

You can configure an object's audit log by selecting one of the following in the `EJBDefBundle.properties` file:

- *NO* – No changes are captured and copied to the audit log.
- *CURRENT* – The audit log will only capture and copy the most recent version.
- *ALL* – The audit log will capture and copy every change made.

For example, adding the following entry to `EJBDefBundle.properties` enables complete audit logging of changes to material definitions:

```
ITEM.al_state=ALL
```

2.2 Data Transfer

The ODS is a separate database from the system WIP database. At scheduled intervals data in the system WIP database is extracted and loaded into the ODS database.

The flow of data transfer from the system WIP database to the ODS is as follows:

1. *Extract* – Data from system WIP database is copied to the ODS. If data transfer to the ODS fails at this level, the entire transaction is rolled back. The key types of tables that are extracted are Production, Resource, Nonconformance, Shop Order, and Genealogy.
2. *Expand* – Records from ODS tables that mirror the system WIP records are copied into report detail tables. Handles are transformed into their component parts, and in some cases columns are added or rearranged.
3. *Summarize* – Detail records are aggregated into summary tables designed for groups of reports, such as production, yield, and cycle time. For more information about summary tables, see chapters below.
4. *Delete* – Detail data and summary data is deleted based upon the retention periods for all tables involved in the transfer, including the WIP tables.

5. *Copy to Global ODS* – Extract programs transfer data from the local ODS summary tables to the global ODS.

2.3 ODS vs. Archiving

SAP ME's ODS differs from archiving in the following ways:

The ODS does not contain WIP (work-in-process) data, such as SFC records or SFC routing data. The production data captured in the ODS is directly related to metrics and reporting.

It is possible for data to exist in both the system WIP database and the ODS. For example, production log data may remain in the system WIP database for some real-time reports even though the data may also be copied to the ODS.

Data in the ODS is summarized. Extraction and summarization programs convert tables containing detailed production data to other tables where metrics are more easily reported.

Handles are treated differently in ODS records. Handles are used in the system WIP database to compress keys into a single column. Expansion processes in the ODS break up handles into their key components and store them as individual columns in the ODS tables.

The ODS serves as an archive for certain log tables in WIP, such as component time log and resource time log. These tables are not SFC based, and not currently archived. You can configure extraction processes to copy this data to the ODS at specified intervals, and specify retention periods on how long records should be kept in the WIP database.

The ODS contains a copy of the setup data in the Audit Log.

3 ODS Configuration

Using *ODS Rule Maintenance*, you can configure ODS options to suit your needs, including the selection of summary keys, summary time buckets, and record retention periods. The *ODS Rule Maintenance* activity splits the ODS options into the following functional areas:

Genealogy

Allows you to define whether to copy time-based data to the ODS and/or convert the data to discrete. You can also define how long the time-based data is retained in the ODS and/or WIP database.

Nonconformance

Allows you to define the following:

- How long the nonconformance detail and summary data is retained in the ODS
- Whether the nonconformance data is copied to the global ODS
- Whether the nonconformance data is summarized at the hour, shift, or day level
- Whether the nonconformance data is summarized either by the closure of the NC code or incident number
- The key summary fields you want the ODS nonconformance reports to be summarized by
- How long the DPMO detail and summary data is retained in the ODS
- Whether to copy the DPMO data to the global ODS
- Whether the DPMO data is copied to the global ODS
- Whether the DPMO data is summarized at the hour, shift, or day level

Production

Allows you to define the following:

- How long the production detail, summary, and cycle time data is retained in the ODS and/or WIP database
- Whether the production summary and cycle time data is copied to the global ODS
- Whether the production summary and cycle time data is summarized at the hour, shift, or day level
- The key summary fields you want the ODS production reports to be summarized by

Resource Utilization

Allows you to define the following:

- How long the resource utilization detail and summary data is retained in the ODS and/or WIP database
- Whether the resource utilization summary data is copied to the global ODS
- Whether the resource utilization summary data is summarized at the hour, shift, or day level
- The key summary fields you want the ODS resource utilization reports to be summarized by

Shop Order

Allows you to define whether to copy the shop order data to the global ODS

Labor Tracking

Labor Tracking does not use *ODS Rule Maintenance*. Instead, it uses *Labor Rule Maintenance*. The *Labor Rule Maintenance* activity allows you to set parameters and rules. Labor Tracking uses to summarize SFC and user labor information when Labor Rollup runs.

These settings allow you to produce the information specific to your labor tracking needs. When Labor Rollup runs, it summarizes SFC and user labor records in the WIP database, storing the summarized information in labor-related ODS tables.

For more information, see the online help for *Labor Rule Maintenance*.

Miscellaneous

Allows you to define the following:

- When a record is eligible for ODS summarization
- What time zone is used by the system to roll up data



As of version 15.1, SAP ME supports SAP HANA database. Summarization functionality will not work with newly-created data if you use SAP HANA database. If you migrated old data from the previous releases to SAP HANA database, only migrated data can be stored in the tables with the ODS prefix.

4 ODS Tables

4.1 Production Summary Data Tables

ODS Production reports are based on the SAP ME PRODUCTION_LOG table. The production log is periodically copied into the ODS; an option is available to delete production log records from WIP as they are copied.

Production Log Detail records are kept in the ODS in a table which mirrors the WIP database. Retention period of detail records in this table is configurable by the user.

Production Log records in the ODS are rolled up into summary tables.

4.1.1 ODS_OPERATION_PRODUCTION Table

The purpose of the ODS_OPERATION_PRODUCTION table is to collect information regarding quantities of SFC numbers as they are processed through individual operations. These quantities are used primarily to track various production rates and yields at specific operations.

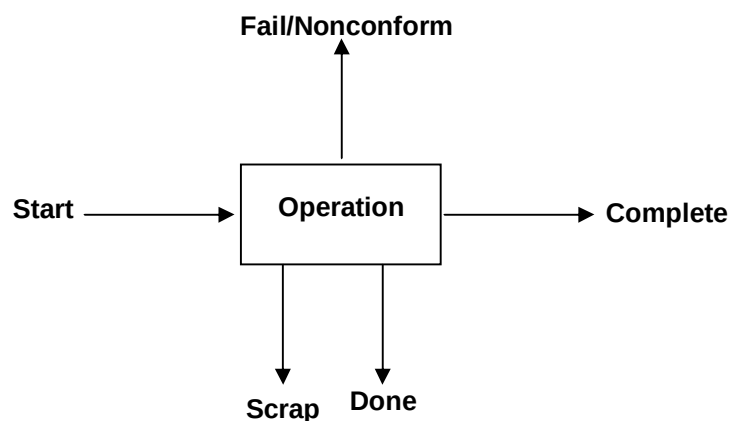
There are several primary types of quantities tracked:

- *STARTED* – Number of SFC numbers started
- *DONE* – Number of SFC numbers reaching a *DONE* step on its defined routing
- *COMPLETED* – Number of SFC numbers completed
- *NONCONFORMED* – Number of SFCs assigned one or more nonconformances
- *FAILED* – Number of SFC numbers assigned one or more primary nonconformances
- *SCRAPPED* – Number of SFC numbers scrapped

Each of these quantities is separated by the pass number of the SFC through the operation. The pass number is defined as the number of times an SFC has been through an operation.

The three different pass types are:

- *PASS1* – SFC numbers first time started at an operation.
- *PASS2* – SFC numbers second time started at an operation after a completion or nonconformance.
- *PASSPLUS* – All other subsequent times an SFC number is started at an operation after a completion or nonconformance.



Calculated Fields

Field	Description
PASS1_QTY_STARTED (Sum)	First pass quantity started at this operation [QTY]
PASS1_QTY_COMPLETED (Sum)	First pass quantity completed at this operation [QTY]
PASS1_QTY_DONE (Sum)	First pass quantity done as a result of completing this operation [QTY]
PASS1_QTY_SCRAPPED (Sum)	First pass quantity scrapped [QTY]
PASS1_QTY_NON_CONFORMED (Sum)	First pass SFC QTY nonconformed [QTY]
PASS1_QTY_FAILED (Sum)	First pass SFC QTY non-conformed if any Primary NCs logged [QTY]
PASS2_QTY_STARTED (Sum)	Second pass quantity started at this operation [QTY]
PASS2_QTY_COMPLETED (Sum)	Second pass quantity completed at this operation [QTY]
PASS2_QTY_DONE (Sum)	Second pass quantity done as a result of completing this operation [QTY]
PASS2_QTY_SCRAPPED (Sum)	Second pass quantity scrapped [QTY]
PASS2_QTY_NON_CONFORMED (Sum)	Second pass SFC QTY nonconformed if any NCs logged [QTY]
PASS2_QTY_FAILED (Sum)	Second pass SFC QTY nonconformed if any Primary NCs logged [QTY]
PASS2PLUS_QTY_STARTED	2+ pass quantity started at this operation [QTY]

Field	Description
(Sum)	
PASS2PLUS_QTY_COMPLETED (Sum)	2+ pass quantity completed at this operation [QTY]
PASS2PLUS_QTY_DONE (Sum)	2+ pass quantity done as a result of completing this operation [QTY]
PASS2PLUS_QTY_SCRAPPED (Sum)	2+ pass quantity scrapped [QTY]
PASS2PLUS_QTY_NON_CONFORMED (Sum)	2+ pass SFC QTY nonconformed if any NCs logged [QTY]
PASS2PLUS_QTY_FAILED (Sum)	2+ pass SFC QTY nonconformed if any Primary NCs logged [QTY]

Summary Key Description

Summary Key	Description
SITE (Required)	The site where the production occurred [String (6)]
ITEM (Required)	The material for this summary record [String (128)]
ITEM_REVISION (Required)	The material version for this summary record [String (20)]
OPERATION (Required)	The operation at which this production activity took place [String (36)]
OPERATION_REVISION (Required)	The version of the operation [String (20)]
OPERATION_TYPE (Optional)	Normal (N) – Used on routings and has no special capabilities Special (S) – Special capabilities to remove SFC numbers from work and disposition SFC numbers upon completion

Summary Key	Description
	Test (T) – Used as a Test step on the routing [String (1)]
TIME_DIM_ID (Required)	The ODS_TIME_DIM identifier for this summary record [String (412)]
PRODUCTION_DATE (Optional)	The production date for this summary record [DATE]
DAY_CLASS (Optional)	The production day class for the PRODUCTION_DATE [String (20)]
PRODUCTION_SHIFT (Optional)	The production shift for this summary record [String (20)]
PRODUCTION_HOUR (Optional)	The production date/time (hour) for this summary record [DATE]
SHOP_ORDER (Optional)	The shop order for this summary record [String (36)]
ORDER_TYPE (Optional)	The order type for the shop order [String (36)]
CUSTOMER (Optional)	The customer for this summary record [String (40)]
CUSTOMER_ORDER (Optional)	The customer order for this summary record [String (40)]
LABOR_CHARGE_CODE (Optional)	The labor charge code assigned to the shop order [String (128)]
ROUTER (Optional)	The routing for this summary record [String (128)]
ROUTER_REVISION (Optional)	The routing version for this summary record [String (20)]
ROUTER_TYPE (Optional)	The routing type for this summary record [String (1)]

Summary Key	Description
STEP_ID (Optional)	The routing step identifier for this summary record [String (6)]
RESRCE (Optional)	The resource for this summary record [String (36)]
RESOURCE_TYPE (Optional)	The resource type for this summary record [String (16)]
WORK_CENTER (Optional)	The primary work center for this summary record [String (36)]
REPORTING_CENTER (Optional)	The reporting center for this summary record [String (36)]
USER_ID (Optional)	The user identification for this summary record [String (30)]
COST_CENTER (Optional)	The cost center for this user [String (128)]
ROLLUP_COST_CENTER (Optional)	The rollup cost center [String (128)]

4.1.2 ODS_WORKCENTER_PRODUCTION Table

As SFC numbers are processed through their assigned routings they can enter and exit from different work centers. These work center changes are dependent on how the work centers have been configured within the system. Work center quantities related to a single SFC are updated after the SFC number is set to *Done* state.

There are several primary types of quantities tracked. They are the same quantities tracked in ODS_OPERATION_PRODUCTION except they only increment in the case of a work center change. These are:

- *ENTER_QTY* – Number of SFC numbers entering a work center. Triggered when SFC numbers are started at an operation
- *EXIT_COMPLETE_QTY* – Number of SFC numbers completed. Triggered when SFC numbers are completed at an operation
- *EXIT_NC_QTY* – Number of SFC numbers assigned one or more nonconformances
- *EXIT_FAIL_QTY* – Number of SFC numbers assigned one or more primary nonconformances
- *EXIT_SCRAP_QTY* – Number of SFC numbers scrapped

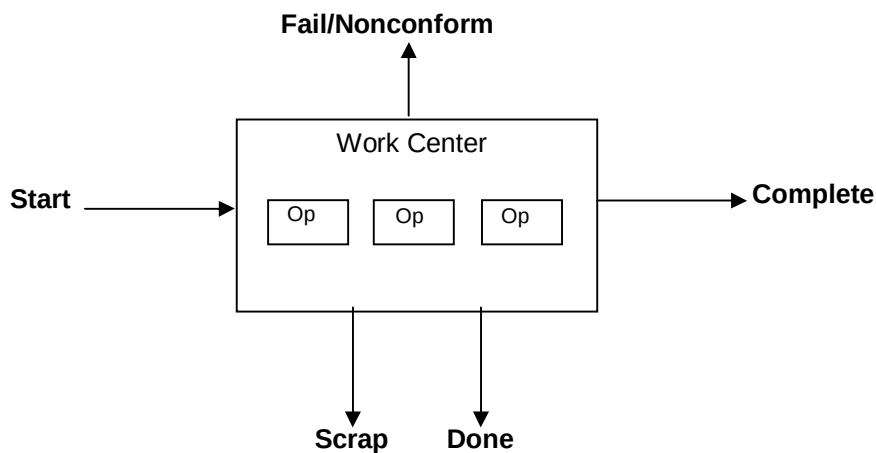
- *EXIT_DONE_QTY* – Number of SFC numbers reaching a DONE step on s defined routing

Each of these quantities is segregated into two different types. These two types are:

- *PASS1* – SFC numbers first time started at a work center
- *REWORK* – All other subsequent times an SFC is worked in a work center



SFC numbers can be serialized (QTY = 1) or non-serialized (QTY > 1). Nonserialized SFC numbers can be partially processed in the system and the quantities reflected in the ODS are based upon these partially processed quantities.



Calculated Fields

Field	Description
PASS1_ENTER_QTY (Sum)	First Pass quantity to enter the hierarchy [QTY]
PASS1_EXIT_COMPLETE_QTY (Sum)	First Pass quantity to exit the hierarchy via a normal complete [QTY]
PASS1_EXIT_NC_QTY (Sum)	First pass SFC QTY to exit hierarchy via nonconformance [QTY]
PASS1_EXIT_FAIL_QTY (Sum)	First Pass quantity to exit the hierarchy via primary (Failure) NC [QTY]
PASS1_EXIT_SCRAP_QTY (Sum)	First Pass quantity to exit the hierarchy because it was scrapped [QTY]
PASS1_EXIT_DONE_QTY	First Pass quantity to exit the hierarchy as <i>Done</i> [QTY]

Field	Description
(Sum)	
REWORK_ENTER_QTY (Sum)	Rework quantity to enter the hierarchy [QTY]
REWORK_EXIT_COMPLETE_QTY (Sum)	Rework quantity to exit the hierarchy via a normal complete [QTY]
REWORK_EXIT_NC_QTY (Sum)	Rework SFC QTY to exit hierarchy via nonconformance [QTY]
REWORK_EXIT_FAIL_QTY (Sum)	Rework SFC QTY to exit the hierarchy via primary (Failure) NC [QTY]
REWORK_EXIT_SCRAP_QTY (Sum)	Rework quantity to exit the hierarchy because it was scrapped [QTY]
REWORK_EXIT_DONE_QTY (Sum)	Rework quantity to exit the hierarchy as <i>Done</i> [QTY]

Summary Key Description

Summary Key	Description
SITE (Required)	The site where the production occurred [String (6)]
WORK_CENTER (Required)	The primary work center for this summary record [String (36)]
WC_CATEGORY (Required)	The work center category for this summary record [String (20)]
TIME_DIM_ID (Required)	The ODS_TIME_DIM identifier for this summary record [String (412)]
PRODUCTION_DATE (Optional)	The production date for this summary record [DATE]
DAY_CLASS (Optional)	The production day class for the PRODUCTION_DATE [String (20)]

Summary Key	Description
PRODUCTION_SHIFT (Optional)	The production shift for this summary record [String (20)]
PRODUCTION_HOUR (Optional)	The production date/time (hour) for this summary record [DATE]
SHOP_ORDER (Optional)	The shop order for this summary record [String (36)]
ORDER_TYPE (Optional)	The order type for this shop order [String (36)]
CUSTOMER (Optional)	The customer for this summary record [String (40)]
CUSTOMER_ORDER (Optional)	The customer order for this summary record [String (40)]
ITEM (Optional)	The material for this summary record [String (128)]
ITEM_REVISION (Optional)	The material version for this summary record [String (20)]
LEVEL1_WORK_CENTER (Optional)	Lowest level work center defined in work center maintenance [String (36)]
LEVEL2_WORK_CENTER (Optional)	Second lowest level work center defined in <i>Work Center Maintenance</i> [String (36)]
LEVEL3_WORK_CENTER (Optional)	Mid-level work center defined in <i>Work Center Maintenance</i> [String (36)]
LEVEL4_WORK_CENTER (Optional)	Second highest level work center defined in <i>Work Center Maintenance</i> [String (36)]
LEVEL5_WORK_CENTER (Optional)	Highest level work center defined in <i>Work Center Maintenance</i> [String (36)]

4.1.3 ODS_OPERATION_CYCLE_TIME Table

The purpose of the ODS_OPERATION_CYCLE_TIME summary table is to track the time duration of SFC numbers processed at specific operations. Time durations are separated into two types described below:

- **QUEUE_TIME** – Duration of time from when an SFC is put in queue at an operation to the start of that operation. SFC numbers are put in queue at an operation primarily when they are completed from the previous operation. There are a number of other system actions that modify an SFC's location and cause it to be placed in queue at an operation.
- **PROCESS_TIME** – Duration of time from when an SFC is started at an operation to the completion of that operation. Completion is primarily caused by the Complete activity, but can also be caused by a number of other actions such as nonconformance, scrap, SFC merge, etc.

The QTY_PROCESSED quantity value is the total number of units associated with the time durations. SFC numbers can have a quantity greater than 1 and therefore this quantity is not directly related to the number of SFC numbers processed unless they are all serialized (QTY = 1).

Each of these durations and the associated quantity are tracked by the pass number of the SFC through the operation. The pass number is defined as the number of times an SFC has been through an operation.

The three different pass types are:

PASS1 – SFC numbers first time started at an operation.

PASS2 – SFC numbers second time started at an operation after a completion or nonconformance.

PASSPLUS – All other subsequent times an SFC is started at an operation after a completion or nonconformance.

Calculated Fields

Field	Description
PASS1_QTY_PROCESSED (Sum)	First Pass quantity processed [QTY]
PASS1_QUEUE_TIME (Sum)	Actual queue time for first pass quantity [ELAPSED_TIME]
PASS1_PROCESS_TIME (Sum)	Actual processing time for first pass quantity [ELAPSED_TIME]
PASS1_STD_QUEUE_TIME (Sum)	Standard queue time for first pass quantity [ELAPSED_TIME]
PASS1_STD_PROCESS_TIME (Sum)	Standard processing time for first pass quantity [ELAPSED_TIME]

Field	Description
PASS1_WORK_QTY (Sum)	QTY completed + quantity nonconformed [QTY]
PASS2_QTY_PROCESSED (Sum)	Second Pass quantity processed [QTY]
PASS2_QUEUE_TIME (Sum)	Actual queue time for second pass quantity [ELAPSED_TIME]
PASS2_PROCESS_TIME (Sum)	Actual processing time for second pass quantity [ELAPSED_TIME]
PASS2_STD_QUEUE_TIME (Sum)	Standard queue time for second pass quantity [ELAPSED_TIME]
PASS2_STD_PROCESS_TIME (Sum)	Standard processing time for second pass quantity [ELAPSED_TIME]
PASS2PLUS_QTY_PROCESSED (Sum)	Quantity processed on passes greater than 2 [QTY]
PASS2PLUS_QUEUE_TIME (Sum)	Actual queue time for 2+ pass quantity [QTY]
PASS2_WORK_QTY (Sum)	Quantity completed + quantity nonconformed [QTY]
PASS2PLUS_QTY_PROCESSED (Sum)	Quantity processed on passes greater than 2 [QTY]
PASS2PLUS_QUEUE_TIME (Sum)	Actual queue time for 2+ pass quantity [QTY]
PASS2PLUS_PROCESS_TIME (Sum)	Actual processing time for 2+ pass quantity [ELAPSED_TIME]
PASS2PLUS_STD_QUEUE_TIME (Sum)	Standard queue time for 2+ pass quantity [ELAPSED_TIME]
PASS2PLUS_STD_PROCESS_TIME (Sum)	Standard processing time for 2+ pass quantity [ELAPSED_TIME]
PASS2PLUS_WORK_QTY	Quantity completed + quantity nonconformed

Field	Description
(Sum)	[QTY]
PASS2PLUS_QTY_PROCESSED (Sum)	Quantity processed on passes greater than 2. [QTY]

Summary Key Description

Summary Key	Description
SITE (Required)	The site where the production occurred [String (6)]
ITEM (Required)	The material for this summary record [String (128)]
ITEM_REVISION (Required)	The material version for this summary record [String (20)]
OPERATION (Required)	The operation at which this production activity took place [String (36)]
OPERATION_REVISION (Required)	The version of the operation [String (20)]
OPERATION_TYPE (Optional)	<i>Normal</i> (N) – Used on routings and has no special capabilities <i>Special</i> (S) – Special capabilities to remove SFC numbers from work and disposition SFC numbers upon completion <i>Test</i> (T) – Used as a Test step on the routing [String (1)]
TIME_DIM_ID (Required)	The ODS_TIME_DIM identifier for this summary record [String (412)]
PRODUCTION_DAY (Optional)	The production date for this summary record [DATE]
DAY_CLASS (Optional)	The production day class for the PRODUCTION_DATE [String (20)]

Summary Key	Description
PRODUCTION_SHIFT (Optional)	The production shift for this summary record [String (20)]
PRODUCTION_HOUR (Optional)	The production date/time (hour) for this summary record [DATE]
CUSTOMER (Optional)	The customer for this summary record [String (40)]
CUSTOMER_ORDER (Optional)	The customer order for this summary record [String (40)]
SHOP_ORDER (Optional)	The shop order for this summary record [String (36)]
LABOR_CHARGE_CODE (Optional)	The labor charge code assigned to the shop order [String (128)]
ROUTER (Optional)	The routing for this summary record [String (128)]
ROUTER_REVISION (Optional)	The routing version for this summary record [String (20)]
ROUTER_TYPE (Optional)	The routing type for this summary record [String (1)]
RESOURCE (Optional)	The resource for this summary record [String (36)]
RESOURCE_TYPE (Optional)	The resource type for this summary record [String (16)]
REPORTING_CENTER (Optional)	The reporting center for this summary record [String (36)]
USER_ID (Optional)	The user identification for this summary record [String (30)]
COST_CENTER (Optional)	The cost center for this user [String (128)]

Summary Key	Description
ROLLUP_COST_CENTER (Optional)	The rollup cost center [String (128)]

4.2 Genealogy Data Tables

ODS Genealogy tables serve to provide the assembly details of individual SFC numbers that were processed in the system. The information includes the current configuration data as well as any modifications made to the SFC configuration such as removed or replaced components. These tables are not summary tables since they contain discrete assembly information for specific SFC numbers.

The two types of genealogy data in the ODS are time-based assembly data and discrete assembly data. Discrete assembly data (manually assembled) is transferred directly into the ODS_ASSEMBLY_HISTORY table. Time-based assembly data is configured to be converted to discrete assembly data during the data extracts, or left in the time-based assembly data format. These tables are populated based upon the setup of the extracts.

4.2.1 ODS_ASSEMBLY_HISTORY Table

The purpose of the ODS_ASSEMBLY_HISTORY table is to record the assembly history of SFC numbers processed in the system. The data is directly associated with an SFC number. This table reflects the combination of the planned bill of materials for an SFC with the actual components assembled and their associated assembly data.

Each record in the ODS_ASSEMBLY_HISTORY table contains information pertaining to specific component assembled onto an SFC. These components may or may not be active on the assembly; this is indicated by the STATUS column of the table.

The USER_DEFINED columns of the ODS_ASSEMBLY_HISTORY record customer defined assembly data. The extract process dynamically creates these columns when a non-standard assembly data type has been recorded. Standard assembly data types are the EXTERNAL_LOT, EXTERNAL_SERIAL, VENDOR, VENDOR_LOT, VENDOR_DATE_CODE, and INVENTORY_ID columns.

Data Transformation

There are no data transformations associated with the ODS_ASSEMBLY_HISTORY table.

Summary Key Description

There are no summary keys associated with ODS_ASSEMBLY_HISTORY table.

4.2.2 BOM Configuration Data Tables

ODS BOM tables are required to resolve which components stored in the time-based data have actually been assembled onto an SFC. These tables reflect their production database counterparts and are joined together in the same manner. The following is a list of the ODS BOM tables:

- ODS_BOM
- ODS_BOM_COMPONENT
- ODS_BOM_OPERATION
- ODS_BOM_REF_DES

Data Transformation

There are no data transformations associated with the ODS BOM tables. However the individual components of the handles are expanded.

Summary Key Description

There are no summary keys associated with the ODS BOM tables.

4.2.3 Time-Based Assembly Data Tables

These ODS tables hold time-based assembly data. They are only populated if the *Convert to Discrete ODS* system rule is set to *false* directing the extracts not to convert time-based assembly data to discrete data.

Data Transformation

There are no data transformations associated with the ODS_COMP_TIME_LOG table.

Summary Key Description

There are no summary keys associated with ODS_COMP_TIME_LOG table.

4.3 Resource Utilization Data Tables

4.3.1 ODS_RESOURCE_UTILIZATION Table

The purpose of the ODS_RESOURCE_UTILIZATION table is to track the time spent in specific states during a given time period. The time periods can be configured to be by hour, shift, or day.

Calculated Fields

Field	Description
ENABLE_TIME (Sum)	Number of seconds in this state [Number]
UNKNOWN_TIME	Number of seconds in this state

Field	Description
(Sum)	[Number]
PRODUCTIVE_TIME (Sum)	Number of seconds in this state [Number]
DISABLED_TIME (Sum)	Number of seconds in this state [Number]
SCHEDULED_DOWN_TIME (Sum)	Number of seconds in this state [Number]
NON_SCHEDULED_DOWN_TIME (Sum)	Number of seconds in this state [Number]
UNSCHEDULED_DOWN_TIME (Sum)	Number of seconds in this state [Number]
HOLD_TIME (Sum)	Number of seconds in this state [Number]
STANDBY_TIME (Sum)	Number of seconds in this state [Number]
ENGINEERING_TIME (Sum)	Number of seconds in this state [Number]
UTILIZED_TIME (Sum)	Number of seconds in this state [Number]
TOTAL_AVALIABLE_TIME (Fixed Value)	The TOTAL_AVALIABLE_TIME is set to one of three values depending on the time granularity configured in <i>ODS Rule Maintenance</i> for Resource Utilization: <i>1 hour (Hourly)</i> <i>24 hours (Daily)</i> <i>Shift duration (Configurable by Production Shift)*</i> * If shift spans more than a single day it is divided appropriately into two records to enable daily reporting.

Summary Key Description

Summary Key	Description
SITE (Required)	The site where the production occurred [String (6)]
RESRCE (Required)	The resource at which this production activity took place [String (36)]
RESOURCE_TYPE (Optional)	The resource type for this summary record. The resource type may contain the UNKNOWN value that indicates the resource belongs in multiple resource types. The actual resource type could not be determined because the Time-Based Resource system rule was not set to true [String (16)]
TIME_DIM_ID (Required)	The ODS_TIME_DIM identifier for this summary record [String (412)]
PRODUCTION_DATE (Optional)	The production date for this summary record [DATE]
DAY_CLASS (Optional)	The production day class for the PRODUCTION_DATE [String (20)]
PRODUCTION_SHIFT (Optional)	The production shift for this summary record [String (20)]
PRODUCTION_HOUR (Optional)	The production date / time (hour) for this summary record [DATE]
WORK_CENTER (Optional)	The immediate work center for the resource [String (36)]

4.3 Nonconformance Data Tables

ODS NC Reporting is primarily based on the SAP ME NC_DATA table. NC data detail records are kept in the ODS in a table which mirrors the WIP database with the exception of combining all the NC custom data and related component data into a single record.

In addition to the ODS_NC_DATA table there is an ancillary table ODS_NC_DATA_REF_DES which holds reference designator information for its corresponding nonconformance.

These detail records are summarized into two additional tables called ODS_NC_DATA_SUMMARY and ODS_DEFECT_SUMMARY.

The ODS_NC_DATA_SUMMARY table summarizes defect information based upon the summary keys selected in ODS Rule Maintenance.

The ODS_DEFECT_SUMMARY table is another rollout that associates defects with production intervals, and tracks operations/resources that should be charged with yield hits. This table makes another yield report possible by joining related data in the production log. This makes it possible to report yield as a ratio of pieces started to defective pieces produced at the operation.

4.3.1 ODS_NC_DATA and ODS_NC_DATA_REF_DES Tables

These tables hold information about the individual nonconformances logged against SFC numbers. It is the data in these tables that gets summarized into the ODS_NC_DATA_SUMMARY table.

Data Transformation

There are no data transformations associated with the ODS_NC_DATA table. Some handles are expanded into separate columns however.

There are no data transformations associated with the ODS_NC_DATA_REF_DES table. Some handles are expanded into separate columns however.

Summary Key Description

There are no summary keys associated with ODS_NC_DATA table.

There are no summary keys associated with ODS_NC_DATA_REF_DES table.

4.3.2 ODS_NC_DATA_SUMMARY Table

The purpose of the ODS_NC_DATA_SUMMARY table is to allow defect data to be summarized by relevant keys to assist in providing analysis reports on quality information.

The NC_CUSTOM_DATA columns are dynamically created during the extract process and contain two types of customer specific information. All data for these columns comes from the NC Data Type table in the system. The first type of data is information collected during NC logging activities by configured NC data types.

The second type of data is assembly data copied in the NC Data Type tables that is related to the components being non-conformed. This data is only copied if the assembly data can be uniquely identified from the component and reference designator information supplied. The following rules are used to determine the assembly data copied:

- If a reference designator is entered during NC logging, the associated assembly data is copied
- If a component is entered and only one instance of the component is actively assembled onto the SFC, the associated assembly data is copied
- If a component is entered and multiple instances of the component are actively assembled onto the SFC, no assembly data is copied

- No time-based assembly data is copied during NC Logging

Calculated Fields

Field	Description
QTY (Sum)	The SFC quantity nonconformed [Number]
DEFECT_COUNT (Sum)	The quantity value entered into the <i>NC Data Type Defect Count</i> field. [Number]

Summary Key Description

Summary Key	Description
TIME_DIM_ID (Required)	The ODS_TIME_DIM identifier for this summary record [String (412)]
PRODUCTION_DATE (Optional)	The production date for this summary record. This is the production date that the SFC number was processed at the responsible operation [DATE]
DAY_CLASS (Optional)	The production day class for the PRODUCTION_DATE. The Day Class corresponds to when the SFC number was processed at the responsible operation [String (20)]
PRODUCTION_SHIFT (Optional)	The production shift for this summary record. The Production Shift corresponds to when the SFC number was processed at the responsible operation [String (20)]
PRODUCTION_HOUR (Optional)	The production date/time for this summary record. The Production Hour corresponds to when the SFC number was processed at the responsible operation [DATE]
NC_CODE (Required)	The NC code identifier [String (16)]
NC_GROUP (Optional)	The NC group for this NC code [String (16)]
PARENT_NC_CODE	The parent NC code identifier

Summary Key	Description
(Required)	[String (16)]
GRANDPARENT_NC_CODE (Optional)	The grandparent NC code identifier [String (16)]
INCIDENT_NC_CODE (Optional)	The incident NC code identifier [String (16)]
USER_ID (Optional)	The user identifier for this summary record [String (30)]
TIMES_PROCESSED (Optional)	The number of times the SFC number was processed at the step it was nonconformed [NUMBER]
NC_CATEGORY (Required)	Defines the category for this NC code. Usually FAILURE, DEFECT, or REPAIR, but can be customized in a resource bundle. Used only for reporting purposes When an NC data is created the NCCodeBO.NCCategory is copied to this. This allows reports to easily distinguish between the types of codes [String (20)]
COMPONENT (Optional)	The component for this summary record [String (128)]
COMPONENT_REVISION (Optional)	The component version for this summary record [String (20)]
INVENTORY_ID (Optional)	The component inventory id for this summary record [String (128)]
EXTERNAL_LOT (Optional)	The component external lot number for this summary record [String (1024)]
EXTERNAL_SERIAL (Optional)	The component external serial number for this summary record [String (1024)]
VENDOR (Optional)	The component vendor for this summary record [String (1024)]

Summary Key	Description
VENDOR_LOT (Optional)	The component vendor lot number for this summary record [String (1024)]
VENDOR_DATE_CODE (Optional)	The component vendor date code for this summary record [String (1024)]
NC_CUSTOM_DATA_1 (Optional)	Custom summary column, mapped from NC_CUSTOM_DATA [CONFIGURABLE COLUMN NAME - String (1024)]
NC_CUSTOM_DATA_2 (Optional)	Custom summary column, mapped from NC_CUSTOM_DATA [CONFIGURABLE COLUMN NAME - String (1024)]
NC_CUSTOM_DATA_N (Optional)	Custom summary column, mapped from NC_CUSTOM_DATA [CONFIGURABLE COLUMN NAME - String (1024)]
IDENTIFIER (Optional)	The Identifier for the component as entered by the user [String (40)]
REF_DES (Optional)	The reference designator for the component with which the NC is associated [String (36)]
FAILURE_ID (Optional)	The failure identifier returned for the NC. Normally returned from a tester [String (40)]
STEP_ID (Optional)	The step at which this SFC number was nonconformed [String (6)]
ROUTER (Optional)	The routing for this summary record [String (128)]
RESOURCE_TYPE (Optional)	The resource type for this summary record [String (16)]
ROUTER_REVISION (Optional)	The routing version for this summary record [String (20)]

Summary Key	Description
DISPOSITION_ROUTER (Optional)	Disposition routing for this summary record [String (128)]
DISPOSITION_ROUTER_REV (Optional)	The disposition routing version for this summary record. [String (20)]
OPERATION (Optional)	The operation for this summary record [String (36)]
OPERATION_REVISION (Optional)	The operation version for this summary record [String (20)]
OPERATION_TYPE (Optional)	<i>Normal</i> (N) – Used on routings and has no special capabilities <i>Special</i> (S) – Special capabilities to remove SFC numbers from work and disposition SFC numbers upon completion <i>Test</i> (T) – Used as a <i>Test</i> step on the routing [String (1)]
RESRCE (Optional)	The resource for this summary record. [String (36)]
WORK_CENTER (Optional)	The immediate work center for this summary record [String (36)]
ITEM (Optional)	The material for this summary record [String (128)]
ITEM_REVISION (Optional)	The material version for this summary record [String (20)]
ROOT_CAUSE_OPERATION (Optional)	The responsible operation for this summary record [String (36)]
ROOT_CAUSE_OPERATION_REV (Optional)	The responsible operation version for this summary record [String (20)]
LOCATION (Optional)	The NC location for this summary record [String (20)]

Summary Key	Description
SHOP_ORDER (Optional)	The shop order for the SFC number [String (36)]
CUSTOMER (Optional)	The customer this SFC number was produced for [String (40)]
CUSTOMER_ORDER (Optional)	The customer order this SFC number was produced against [String (40)]
REPORTING_CENTER (Optional)	The reporting center where the NC was logged [String (40)]

4.3.3 ODS_DEFECT_SUMMARY Table

The purpose of the ODS_DEFECT_SUMMARY table is to aggregate DPMO data records during nonconformance logging in the system.

Calculated Fields

Field	Description
DEFECT_OPPORTUNITY_COUNT (Sum)	Summation of the DPMO defect opportunities of each SFC nonconformed. This information is based upon the DPMO configuration setup on the material for the SFC numbers nonconformed. [QTY]
DEFECT_COUNT (Sum)	Summation of the number of defects recorded during nonconformance logging. For each SFC number nonconformed [QTY]
COMPLETE_QTY (Sum)	Number of pieces completed at the root cause operation [QTY]

Summary Key Description

Summary Key	Description
SITE (Required)	The site for this summary record [String (6)]

Summary Key	Description
TIME_DIM_ID (Required)	The ODS_TIME_DIM identifier for this summary record [String (412)]
PRODUCTION_DATE (Optional)	The production date for this summary record. This is the production date that the SFC number was processed at the responsible operation [DATE]
DAY_CLASS (Optional)	The production day class for the PRODUCTION_DATE. The Day Class corresponds to when the SFC number was processed at the responsible operation [String (20)]
PRODUCTION_SHIFT (Optional)	The production shift for this summary record. The Production Shift corresponds to when the SFC number was processed at the responsible operation [String (20)]
PRODUCTION_HOUR (Optional)	The production date/time for this summary record. The Production Hour corresponds to when the SFC number was processed at the responsible operation [DATE]
ITEM (Required)	The material for this summary record [String (128)]
ITEM_REVISION (Required)	The material version for this summary record [String (20)]
OPERATION (Optional)	The operation where the defect was logged. If the defect is logged at an inspection station, the inspection operation is stored in this column [String (36)]
OPERATION_REVISION (Optional)	The version of the logging operation [String (20)]
RESRCE (Optional)	The resource used at the logging operation [String (36)]
ROOT_CAUSE_OPERATION (Required)	The responsible operation for this summary record [String (36)]
ROOT_CAUSE_OPERATION_REV	The responsible operation version for this summary

Summary Key	Description
(Required)	record [String (20)]
DPMO_CATEGORY (Required)	The DPMO category for the NC code [String (30)]
NC_CODE (Optional)	The NC code for this summary record [String (16)]
SHOP_ORDER (Optional)	The shop order for this summary record [String (36)]
ORDER_TYPE (Optional)	The order type for this summary record [String (36)]
CUSTOMER (Optional)	The customer for this summary record [String (40)]
CUSTOMER_ORDER (Optional)	The customer order for this summary record [String (40)]
TIMES_PROCESSED (Optional)	The number of times processed for this summary record [NUMBER]

4.4 Shop Order Data Tables

4.4.1 ODS_SHOP_ORDER Table

The ODS_SHOP_ORDER table is periodically refreshed from the WIP shop order table. For finished orders, this table contains actual vs. planned times by shop order, as well as quantities completed and scrapped by shop order.

4.4.2 ODS_ORDER_CYCLE_TIME Table

The purpose of the ODS_ORDER_CYCLE_TIME table is to track the duration and production quantities of individual shop orders at specific routing steps. Each row in this table maps to a single step on the routing that was assigned when this shop order was released. Multiple records can exist in this table for each routing step. The values associated with each step are broken out by the TIMES_PROCESSED and the TIME_CATEGORY fields.

Two primary metrics are calculated as part of each record. The first is the time duration that a shop order spends at each step. This time is calculated as the time from the start of the first SFC number at the operation to the time of the last SFC number completing the operation. Each of the QTY fields is summed based upon the actions taken on individual SFC numbers

at specific steps. These fields are updated as the shop order SFC numbers are processed along the routing as the ODS extracts are periodically run.

Calculated Fields

Field	Description
START_TIMESTAMP (Fixed)	Start time for the interval. This is the time of the first SFC started at this operation. [DATE].
END_TIMESTAMP (Fixed)	End time for the interval. This is the time of the last SFC completed at this operation. [DATE].
ELAPSED_TIME (See Description)	Calculated elapsed time: END_TIMESTAMP minus START_TIMESTAMP.= [ELAPSED_TIME]
PLANNED_QTY (Fixed)	The shop order quantity planned to be produced at this operation [QTY]
QTY_STARTED (Sum)	The shop order quantity started at this operation [QTY]
QTY_COMPLETED (Sum)	The shop order quantity completed normally at this operation [QTY]
QTY_SCRAPPED (Sum)	The shop order quantity scrapped at this operation [QTY]
QTY_NON_CONFORMED (Sum)	The shop order quantity non-conformed at this operation [QTY]
QTY_FAILED (Sum)	The shop order quantity non-conformed at this operation with Primary NCs [QTY]
QTY_DONE (Sum)	The shop order quantity marked as <i>Done</i> at this operation [QTY]
STD_TIME_PLANNED_QTY (Fixed)	The standard time (either queue time or processing time) for the planned QTY. These fields are not populated. [ELAPSED_TIME]
STD_TIME_ACTUAL_QTY (Fixed)	The standard time (either queue time or processing time) for the actual QTY. These fields are not populated. [ELAPSED_TIME]

Summary Key Description

Summary Key	Description
SITE (Required)	The site this event is taking place in [String (6)]
SHOP_ORDER (Required)	The shop order for this production record [String (36)]
ORDER_TYPE (Optional)	The order type for this shop order [String (36)]
CUSTOMER (Optional)	The customer for this shop order [String (40)]
CUSTOMER_ORDER (Optional)	The customer order this shop order is being produced against [String (40)]
ITEM (Required)	The material for this summary record [String (128)]
ITEM_REVISION (Required)	The material version for this summary record [String (20)]
OPERATION (Required)	The operation at which this production activity took place [String (36)]
OPERATION_REVISION (Required)	The version of the operation [String (20)]
OPERATION_TYPE Optional)	<i>Normal</i> (N) – Used on routings and has no special capabilities <i>Special</i> (S) – Special capabilities to remove SFC numbers from work and disposition SFC numbers upon completion <i>Test</i> (T) – Used as a <i>Test</i> step on the routing [String (1)]
RESRCE (Optional)	The resource at which this production activity took place [String (36)]
RESOURCE_TYPE (Optional)	The resource type for this summary record [String (16)]

Summary Key	Description
ROUTER (Optional)	The routing for this summary record [String (128)]
ROUTER_REVISION (Optional)	The routing version for this summary record [String (20)]
ROUTER_TYPE (Optional)	The routing type for this summary record [String (1)]
USER_ID (Optional)	The user identifier of the user performing this operation [String (30)]
COST_CENTER (Optional)	The cost center for this user [String (128)]
ROLLUP_COST_CENTER (Optional)	The rollup cost center for this cost center [String (128)]
LABOR_CHARGE_CODE (Optional)	The labor charge code for this shop order [String (128)]
REPORTING_CENTER (Optional)	The reporting center for this summary record [String (36)]
PLANNED_OPERATION (Required)	Boolean value indicating whether or not this operation was planned. Possible values are TRUE and FALSE. [String (5)]
TIMES_PROCESSED (Required)	The pass number for this interval [NUMBER]
STEP_ID (Required)	The Step (on the routing) at which this production activity took place [String (6)]
TIME_CATEGORY (Required)	The time category for this time interval. Possible values are: <i>Queue Time (Q)</i> – The time interval for this record represents time in queue. <i>Processing Time (P)</i> - The time interval for this record represents processing time. [(String (1)]

4.4.3 ODS_ORDER_CYCLE_TIME_SUMMARY Table

The purpose of the ODS_ORDER_CYCLE_TIME_SUMMARY table is to summarize data from the ODS_ORDER_CYCLE_TIME table into a single record for every unique routing step on a shop order.

In the ODS_ORDER_CYCLE_TIME table each step has multiple records based upon TIMES_PROCESSED and TIME_CATEGORY.

In the summarization process the TIMES_PROCESSED data is broken out into three categories of fields: PASS1, PASS2, PASS2PLUS. Each of these categories contains duplicates of the same fields. The fields in these categories are updated based upon the TIMES_PROCESSED value being summarized.

Calculated Fields

Field	Description
PASS1_QTY_STARTED (Sum)	First pass quantity started [QTY]
PASS1_QTY_COMPLETED (Sum)	First pass quantity completed [QTY]
PASS1_QTY_DONE (Sum)	First pass quantity done as a result of completing this operation [QTY]
PASS1_QTY_SCRAPPED (Sum)	First pass quantity scrapped [QTY]
PASS1_QTY_NON_CONFORMED (Sum)	First quantity nonconformed [QTY]
PASS1_QTY_FAILED (Sum)	First pass quantity nonconformed with Primary NCs [QTY]
PASS1_QUEUE_TIME (Sum)	Total first pass queue time for this order [ELAPSED_TIME]
PASS1_QUEUE_START_TIME (Fixed)	Date/Time when first SFC number was put in queue at this operation [DATE]
PASS1_STD_QUEUE_TIME (Fixed)	First pass standard queue time [ELAPSED_TIME]
PASS1_PROCESSING_TIME	Total first pass processing time for this order [ELAPSED_TIME]

Field	Description
(Sum)	
PASS1_PROCESS_START_TIME (Fixed)	Date/Time when first SFC number was started at this operation [DATE]
PASS1_PROCESS_END_TIME (Fixed)	Date/Time when last SFC number was completed at this operation [DATE]
PASS1_STD_PROCESS_TIME (Fixed)	First pass standard processing time [ELAPSED_TIME]
PASS2_QTY_STARTED (Sum)	Second pass quantity started [QTY]
PASS2_QTY_COMPLETED (Sum)	Second pass quantity completed [QTY]
PASS2_QTY_DONE (Sum)	Second pass quantity done as a result of completing this operation [QTY]
PASS2_QTY_SCRAPPED (Sum)	Second pass quantity scrapped [QTY]
PASS2_QTY_NON_CONFORMED (Sum)	Second pass quantity nonconformed [QTY]
PASS2_QTY_FAILED (Sum)	Second pass quantity nonconformed with Primary NCs [QTY]
PASS2_QUEUE_TIME (Sum)	Total second pass queue time for this order [ELAPSED_TIME]
PASS2_QUEUE_START_TIME (Fixed)	Date/Time when second SFC number was put in queue at this operation [DATE]
PASS2_STD_QUEUE_TIME (Fixed)	Second pass standard queue time [ELAPSED_TIME]
PASS2_PROCESSING_TIME (Sum)	Total second pass processing time for this order [ELAPSED_TIME]

Field	Description
PASS2_PROCESS_START_TIME (Fixed)	Date/Time when second SFC number was started at this operation [DATE]
PASS2_PROCESS_END_TIME (Fixed)	Date/Time when last SFC number was completed at this operation [DATE]
PASS2_STD_PROCESS_TIME (Fixed)	Second pass standard processing time [ELAPSED_TIME]
PASS2PLUS_QTY_STARTED (Sum)	2+ pass quantity started [QTY]
PASS2PLUS_QTY_COMPLETED (Sum)	2+ pass quantity completed [QTY]
PASS2PLUS_QTY_DONE (Sum)	2+ pass quantity done as a result of completing this operation [QTY]
PASS2PLUS_QTY_SCRAPPED (Sum)	2+ pass quantity scrapped [QTY]
PASS2PLUS_QTY_NON_CONFORMED (Sum)	2+ pass quantity nonconformed [QTY]
PASS2PLUS_QTY_FAILED (Sum)	2+ pass quantity nonconformed with Primary NCs [QTY]
PASS2PLUS_QUEUE_TIME (Sum)	Total 2+ pass queue time for this order [ELAPSED_TIME]
PASS2PLUS_QUEUE_START_TIME (Fixed)	Date/Time when 2+ SFC number was put in queue at this operation [DATE]
PASS2PLUS_STD_QUEUE_TIME (Fixed)	2+ pass standard queue time [ELAPSED_TIME]
PASS2PLUS_PROCESSING_TIME (Sum)	Total 2+ pass processing time for this order [ELAPSED_TIME]
PASS2PLUS_PROCESS_START_TIME	Date/Time when 2+ SFC number was started at this operation

Field	Description
(Fixed)	[DATE]
PASS2PLUS_PROCESS_END_TIME (Fixed)	Date/Time when last SFC number was completed at this operation [DATE]
PASS2PLUS_STD_PROCESS_TIME (Fixed)	2+ pass standard processing time [ELAPSED_TIME]

Summary Key Description

Summary Key	Description
SITE (Required)	The site at which this shop order was produced [String (6)]
SHOP_ORDER (Required)	The name of the shop order [String (36)]
ORDER_TYPE (Optional)	The order type for this shop order [String (36)]
CUSTOMER (Optional)	The customer for this shop order [String (40)]
CUSTOMER ORDER (Optional)	The customer order this shop order is being produced against [String (40)]
ITEM (Required)	The material for this summary record [String (128)]
ITEM_REVISION (Required)	The material version for this summary record [String (20)]
ROUTER (Optional)	The routing for this summary record [String (128)]
ROUTER_REVISION (Optional)	The routing version for this summary record [String (20)]
ROUTER_TYPE (Optional)	The routing type for this summary record [String (1)]

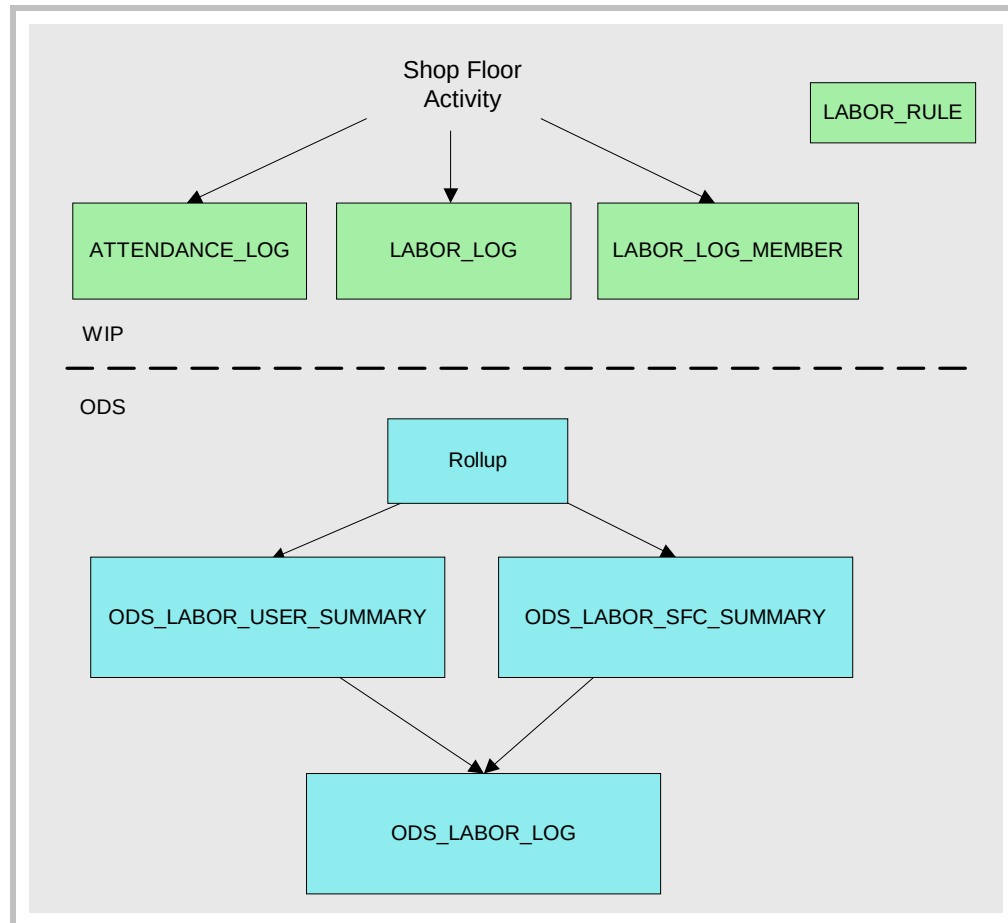
Summary Key	Description
OPERATION (Optional)	The operation at which this production activity took place [String (36)]
OPERATION REVISION (Optional)	The version of the operation [String (20)]
OPERATION TYPE (Optional)	<i>Normal</i> (N) – Used on routings and has no special capabilities <i>Special</i> (S) – Special capabilities to remove SFC numbers from work and disposition SFC numbers upon completion <i>Test</i> (T) – Used as a Test step on the routing [String (1)]
RESRCE (Optional)	The resource at which this production activity took place [String (36)]
RESOURCE_TYPE (Optional)	The resource type for this summary record [String (16)]
USER_ID (Optional)	The user identifier of the user performing this operation [String (30)]
COST_CENTER (Optional)	The cost center for this user [String (128)]
ROLLUP_COST_CENTER (Optional)	The rollup cost center for this cost center [String (128)]
LABOR_CHARGE_CODE (Optional)	The labor charge code for this shop order [String (128)]
REPORTING_CENTER (Optional)	The reporting center for this summary record [String (36)]

4.5 Labor Tracking Tables

Labor Tracking in SAP ME is used to track time spent by shop floor users. This time information is collected during production activities such as *Clock In/Out*, *Start*, *Complete* and others. The time is summarized by the labor rollup process in a form suitable for export to

external systems. The actual tables involved are documented in the *Object and Database Guide*. The rollup process is controlled by the settings in *Labor Rule Maintenance*.

The basic flow of data is shown below:



During production processing, the raw labor time information is stored in the WIP Tables: ATTENDANCE_LOG, LABOR_LOG and LABOR_LOG_MEMBER. The labor rollup process then summarizes the data into the ODS_LABOR_USER_SUMMARY and ODS_LABOR_SFC_SUMMARY. The detailed records associated with these summary records are written to the ODS_LABOR_LOG records. These are useful for 'drill-down' types of reports. There is an optional supervisor time edit and approval step that gives the supervisor a chance to approve and edit the users' labor.

The rollup process is controlled by the Labor Rules as defined in *Labor Rule Maintenance*. The Labor Rules control the summarization process, the record retention and whether or not User and SFC data is summarized. It is also possible to summarize on custom attributes for several other SAP ME objects (Cost Center, User, Material, and Labor Charge Code). These columns are automatically created in the summary tables as needed.

4.5.1 ODS_LABOR_USER_SUMMARY and ODS_LABOR_SFC_SUMMARY

See the online help for *Labor Rule Maintenance* for the list of summarization columns.

The values that are calculated are ELASPED_TIME (milliseconds), ELAPSED_TIME_MIN (minutes), QTY (SFC QTY Processed), QTY_COMPLETED (SFC QTY actually completed), and SFC_COUNT.

Field	Description
ELASPED_TIME (Sum)	Elapsed time (milliseconds). [LONG]
ELASPED_TIME_MIN (Sum)	Elapsed time (minutes). [LONG]
QTY (Sum)	The total number of SFC pieces processed during the summarization period/keys. [FLOAT]
QTY_COMPLETED (Sum)	The total number of SFC pieces successfully completed during the summarization period/keys. [FLOAT]
SFC_COUNT (Sum)	The total number of SFC numbers processed during the summarization period/keys. [LONG]

4.5.2 ODS_LABOR_LOG

The ODS_LABOR_LOG table contains the detailed records that were summarized into the two other summary tables. This detail table contains two special columns: ODS_LABOR_USER_SUMMARY_BO and ODS_LABOR_SFC_SUMMARY_BO. These two columns point to the HANDLE in the summary tables that the detailed record was summarized into. This is useful for drill-down purposes.

4.6 ODS_TIME_DIM Table

The ODS_TIME_DIM table is used to store the time granularity information for the production detail and summary records. The time granularity information includes the following parameters:

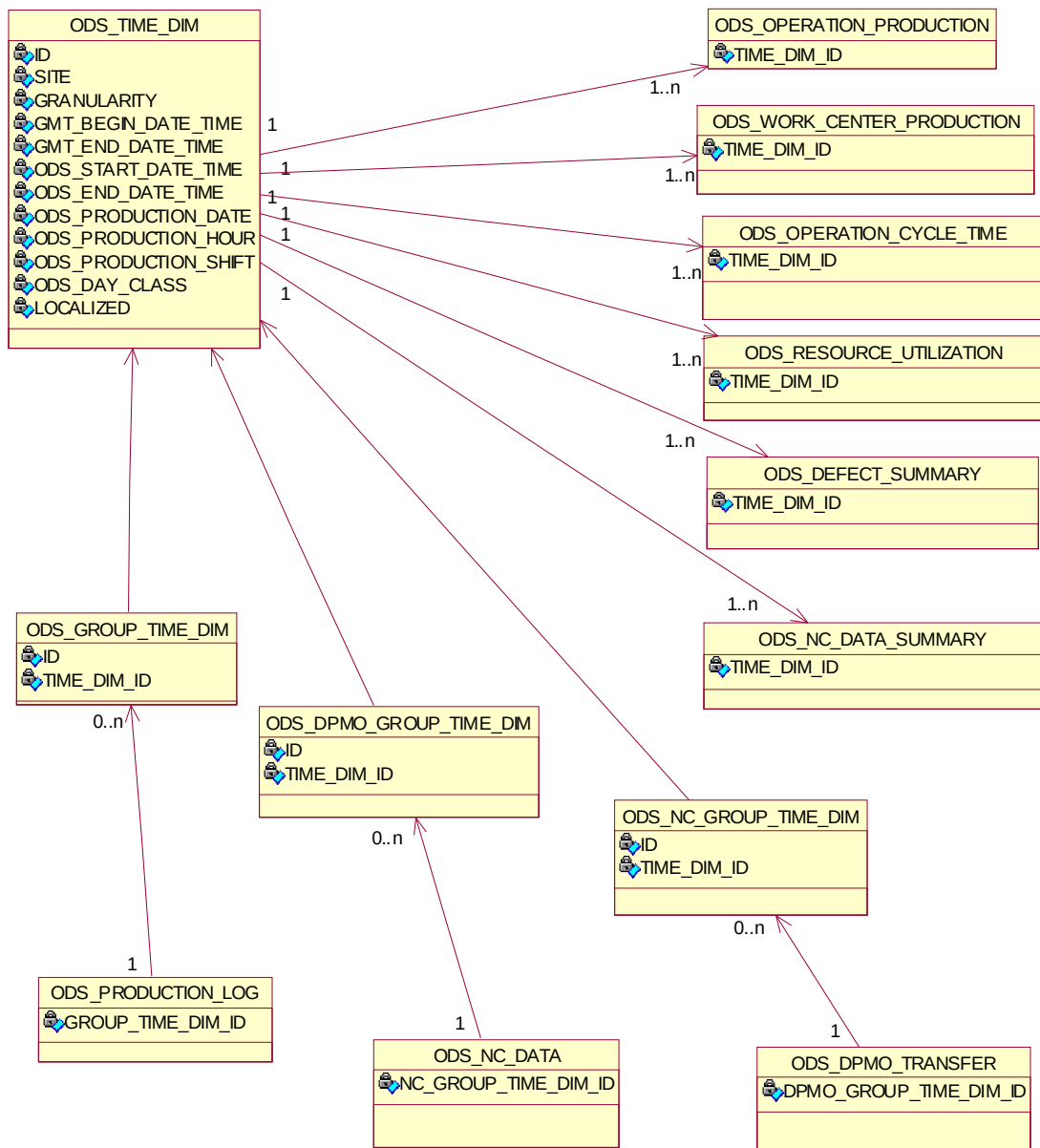


Diagram: ODS_TIME_DIM Relations

The detail (expansion table) uses ODS_TIME_DIM for storing the time granularity information. During the expansion process, the time granularity is determined by the time granularity ODS Rule and used during the summarization. The TIME_DIM_ID for each granularity is not stored directly in the detail tables. Instead, a mapping table (ODS_*_GROUP_TIME_DIM table) is used to store various TIME_DIM_IDs for each detail records. ODS_PRODUCTION_LOG uses the mapping table "ODS_GROUP_TIME_DIM". ODS_DPMO_TRANSFER uses the mapping table "ODS_DPMO_GROUP_TIME_DIM". ODS_NC_DATA_DATA uses the mapping table "ODS_NC_GROUP_TIME_DIM".

The following examples illustrate the ODS_TIME_DATA values for various System level time granularities. In each case, assume the associated detail record as a date time of 08.12.2004 7:51:12.

- *Time Granularity – Hour*
Because the granularity is by hour, the GMT_BEGIN_DATE_TIME will be 08.12.2004 7:00:00 and GMT_END_DATE_TIME will be 08.12.2004 8:00:00.
- *Time Granularity – Day*
Because the granularity is by day, the GMT_BEGIN_DATE_TIME will be 08.12.2004 00:00:00 and GMT_END_DATE_TIME will be 08.12.2004 23:59:59.
- *Time Granularity – Shift*
Because the granularity is by shift, the shift start and end time will be looked up and stored in GMT_BEGIN_DATE_TIME and GMT_END_DATE_TIME.

While performing the time summary, ODS_BEGIN_DATE_TIME and ODS_END_DATE_TIME will be used to group the data.

Summary Key Description

Summary Key	Description
ID (Required)	The handle for this object. This is a unique value made up of site, granularity, and a unique number, for example MYSITE.H.597578.1. Here MYSITE is the site name, H is Summary by hour, and 597578.1 is the unique random number. [String (412)]
SITE (Required)	The site where the production occurred [String (6)]
GRANULARITY (Required)	The possible System level time granularity values: <i>HOURLY</i> – Summary by Hour <i>DAILY</i> – Summary by Day <i>SHIFT</i> – Summary by Shift It can also accept any custom level Time Granularity values defined by the user. [String (36)]
GMT_BEGIN_DATE_TIME (Required)	GMT start date time for this record [DATE/TIME]
GMT_END_DATE_TIME (Required)	GMT end date time for this record [DATE/TIME]
ODS_BEGIN_DATE_TIME (Required)	Local start date time for this record, if ODS Rule is set to <i>Summarize by local time zone</i> , otherwise GMT time. [DATE/TIME]
ODS_END_DATE_TIME	Local end date time for this record, if ODS Rule is set to

Summary Key	Description
(Required)	<i>Summarize by local time zone</i> , otherwise GMT time. [DATE/TIME]
ODS_PRODUCTION_DATE (Optional)	The production date for this record. This date is localized if ODS Rule is set to <i>Summarize by local time zone</i> , other GMT time. [DATE/TIME]
ODS_DAY_CLASS (Optional)	The production day class for the ODS_PRODUCTION_DATE. This date is localized if ODS Rule is set to <i>Summarize by local time zone</i> , other GMT time. [DATE/TIME]
ODS_PRODUCTION_SHIFT (Optional)	The production shift for this record [String (20)]
ODS_PRODUCTION_HOUR (Optional)	The production date/time (hour) for this record [DATE/TIME]
LOCALIZED (Required)	True or false. If ODS Rule is set to <i>Summarize by local time zone</i> , this value will be true, otherwise it will be false. [String (5)]

5 Deleting Old Records from ODS and WIP

There are two scripts that are used to delete old records from ODS and WIP.

ODSAging.bat deletes old ODS records based on settings of the ODS Retention Period rules defined in *ODS Rule Maintenance*.

ODSWIPaging.bat deletes old WIP records based on settings of the WIP Retention Period rules defined in *ODS Rule Maintenance*.

For more information about these ODS rules, see the online help for *ODS Rule Maintenance*.



As of version 15.1, SAP ME supports SAP HANA database. The SAPMESCRIPTS component is not applicable if you use SAP HANA database. Actions by ODSAging.bat and ODSWIPaging.bat cannot be executed.