



Opcenter Intelligence 2401.0001

Reference Manual

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Guidelines

This manual contains notes of varying importance that should be read with care; i.e.:

Important:

Highlights key information on handling the product, the product itself or to a particular part of the documentation.

Note: Provides supplementary information regarding handling the product, the product itself or a specific part of the documentation.

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1 Concepts you need to know about

The following concepts are considered prerequisites to understanding how to work with a manufacturing data warehouse:

- [Data Warehouse Schemas](#)

1.1 Data Warehouse Schemas

A schema in a data warehouse refers to the organization of data as a representation of how the database is constructed. Each schema can contain one or more tables and views. The manufacturing data warehouse contains the following schemas:

- bm20
- bm20localized
- bm20load
- localizedbm20load
- deletedbm20load

The schemas to be taken into consideration to the purpose of creating reports or dashboards are bm20 and localizedBm20.

bm20 schema

Contains a table for each entity of the model. Each table has the same name as the entity. The tables contain the main data retrieved from the sources.

Main columns of the bm20 table

Each table of the data warehouse has a standard structure, which is made up of the following columns:

Column Name	Description
<entity name>Id	(e.g. EquipmentId) Surrogate key of the table (auto-increment integer defined by the system)
<entity name>SiteId	(e.g. EquipmentSiteId) Id of the site associated with the source that has generated data. The SiteId and Key pair forms the natural key of the row.
<entity name>Key	(e.g. EquipmentKey) Unique key of the row of the data on the source. The SiteId and Key pair forms the natural key of the row.
RowInserted	Date when the row has been inserted in the table.
RowUpdated	Date when the row has been updated in the table.

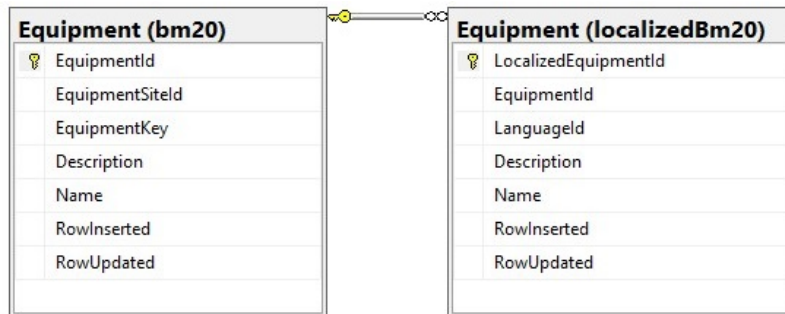
localizedBm20 schema

Some entities of the model can be localized. An entity can be localized when it contains a number of attributes that can be translated into a different language, for example the name or the description.

If the attributes of a specific data source have been localized, this schema will also show the attributes in the languages supported by that source.

In this schema, a table exists for each entity that can be localized. The table has the same name as the entity. The example below shows the localizedBm20 table for the Equipment entity.

Example of localizedBm20 schema



load schemas

The following schemas:

- bm20load
- localizedbm20load
- deletedbm20load

are not relevant to the purpose of creating reports or dashboards. For each entity of the model, they contain the reading contracts to move data from the source to the data warehouse. They are present on the data warehouse because it can also be the source of another data warehouse.

Schemas for internal use

The following schemas are for internal use and therefore should not be taken into consideration:

- configuration
- control
- deletedBm20
- failedBm20
- bm20archive

2 Data Sources Configuration

The data source configuration is based on functionalities, which are the functions that the user is configuring regardless of how they are implemented and which vary according to the selected source.

Opcenter Intelligence supports different sources, which can be divided into the following groups as shown in the pie menu.

- [Opcenter EX Sources](#)
- [Opcenter IN Sources](#)
- [Opcenter QL Sources](#)
- [Opcenter IPL Source](#)
- [SIMATIC IT UA Sources](#)
- [CEP Core Sources](#)
- [QMS Sources](#)
- [SIMATIC IT Sources](#)
- [Third-Party Sources](#)



3 Opcenter Execution Sources

The following products are included in Opcenter Execution sources:

- [Opcenter Execution Core SQL Server](#)
- [Opcenter Execution Core Oracle](#)
- [Opcenter Execution Discrete SQL Server](#)
- [Opcenter Execution Electronics SQL Server](#)
- [Opcenter Execution Pharma](#)
- [Opcenter Execution Process](#)
- [Opcenter Execution Foundation OEE](#)

3.1 Opcenter Execution Core SQL Server

In the following linked pages you can find the possible associations between functionalities and models for these Opcenter Execution Core SQL Server data sources:

- [Opcenter Execution Core 8.0 to 8.6 SQL Server Functionalities](#)
- [Opcenter Execution Core 8.7 or higher SQL Server Functionalities](#)

3.1.1 Opcenter Execution Core 8.0 to 8.6 SQL Server Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Execution Core (Opcenter EX CR) 8.0 to 8.6** as a SQL Server data source. Opcenter Execution Core supports both Microsoft SQL Server and Oracle database management systems.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Location Management](#)
- [Material Management](#)
- [Production Execution](#)
- [Quality APC](#)

3.1.2 Opcenter Execution Core 8.7 or higher SQL Server Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Execution Core (Opcenter EX CR) 8.7 or higher** as a SQL Server data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Completed WIP](#)
- [Container Management](#)
- [Defect and Non Conformance](#)
- [Device History](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Equipment Performance](#)
- [Labor Management](#)
- [Location Management](#)

- [Material Management](#)
- [Operational Performance and Quality](#)
- [Product and Material Traceability](#)
- [Production Execution](#)
- [Quality APC](#)

3.2 Opcenter Execution Core Oracle

In the following linked pages you can find the possible associations between functionalities and models for these Opcenter Execution Core Oracle data sources:

- [Opcenter Execution Core 8.0 to 8.6 Oracle Functionalities](#)
- [Opcenter Execution Core 8.7 or higher Oracle Functionalities](#)

3.2.1 Opcenter Execution Core 8.0 to 8.6 Oracle Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Execution Core (Opcenter EX CR) 8.0 to 8.6** as an Oracle data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Location Management](#)
- [Material Management](#)
- [Production Execution](#)
- [Quality APC](#)

3.2.2 Opcenter Execution Core 8.7or higher Oracle Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Execution Core (Opcenter EX CR) 8.7 or higher** as Oracle data source.


A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.


- [Completed WIP](#)
- [Container Management](#)
- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Equipment Performance](#)
- [Labor Management](#)
- [Location Management](#)
- [Material Management](#)
- [Operational Performance and Quality](#)
- [Production Execution](#)
- [Quality APC](#)

3.3 Opcenter Execution Discrete SQL Server Functionalities

In the following linked pages you can find the possible associations between functionalities and models for these SQL Server data sources:

- **Opcenter Execution Discrete (Opcenter EX DS) 3.0**
- **Opcenter Execution Discrete (Opcenter EX DS) 3.1 - 3.2 - 3.3**
- **Opcenter Execution Discrete (Opcenter EX DS) 4.0**
- **Opcenter Execution Discrete (Opcenter EX DS) 4.1 - 4.2 - 4.3**
- **Opcenter Execution Discrete (Opcenter EX DS) 4.4 or higher**

 If you are upgrading from Opcenter Execution Discrete 3.x or 4.0 to Opcenter Execution Discrete 4.1 or higher, you must execute the procedure to migrate the EquipmentKey in Opcenter Execution Discrete described in *Opcenter Intelligence User Manual* under the *How to Perform Advanced Operations > How to Manage the Update of a Data Source Product Version* chapter. This migration procedure must be executed only when a customer using Opcenter EX DS 3.x or 4.0 upgrades to Opcenter EX DS 4.1 or higher and Opcenter Intelligence 2401.0001.

 If you are using Opcenter Execution Discrete 2301.0001 or higher as a data source, when more than one equipment hierarchy has been configured, only the equipment hierarchy flagged as default is loaded into the Manufacturing Data Warehouse by Opcenter Intelligence. If only one equipment hierarchy exists in Opcenter EX DS, it is loaded into the MDW.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Certification Management](#) (available starting from Opcenter EX DS 4.4)
- [Defect and Non Conformance](#)
- [Equipment Management](#)
- [Equipment Performance](#)
- [Labor Management](#)
- [Labor Performance](#)
- [Location Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)
- [Quality APC](#)

3.4 Opcenter Execution Electronics SQL Server Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Execution Electronics 8.9 or higher** as a SQL Server data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Completed WIP](#)
- [Container Management](#)
- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Equipment Performance](#)
- [Labor Management](#)

- [Location Management](#)
- [Material Management](#)
- [Operational Performance and Quality](#)
- [Product and Material Traceability](#)
- [Production Execution](#)
- [Quality APC](#)

3.5 Opcenter Execution Pharma Oracle Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Execution Pharma (Opcenter EX PH) 2211 or higher** as an Oracle data source. A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Container Management](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Location Management](#)
- [Material Management](#)
- [Production Execution](#)
- [Production Scheduling](#)

3.6 Opcenter Execution Process Functionalities

In the following linked pages you can find the possible associations between functionalities and models for these Opcenter Execution Process data sources:

- [Opcenter Execution Process \(Opcenter EX PR\) 3.x](#)
- [Opcenter Execution Process \(Opcenter EX PR\) 4.0 or higher](#)

3.6.1 Opcenter Execution Process 3.x


In the following linked pages you can find the possible associations between functionalities and models for **Opcenter Execution Process 3.x** data sources.


A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Equipment Management](#)
- [Location Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)

3.6.2 Opcenter Execution Process 4.0 or higher


In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Execution Process 4.0 or higher** data source.

 If you are using Opcenter Execution Process 2301.0001 or higher as a data source, when more than one equipment hierarchy has been configured, only the equipment hierarchy flagged as default is loaded into the Manufacturing Data Warehouse by Opcenter Intelligence. If only one equipment hierarchy exists in Opcenter EX PR, it is loaded into the MDW.

 Data related to the **Sampling Management** functionality are not available among the measures that can be selected in Smart Views.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Equipment Management](#)
- [Labor Management](#)
- [Location Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)
- [Sampling Management](#)
- [Quality APC](#)

 Select the **Sampling Management** functionality only if you are sure you have selected the **Sampling App** in Opcenter EX PR.

3.7 Opcenter Execution Foundation OEE Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Execution Foundation OEE 2207 or higher** data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Context Management](#)
- [Downtime Management](#)
- [Equipment Capacity](#)
- [Equipment Management](#)
- [Equipment Performance](#)

4 Opcenter Intelligence Sources

The following products are included in Opcenter Intelligence sources:

- [Intelligence Analytical Model](#)

4.1 Intelligence Analytical Model

In the following linked pages you can find the possible associations between functionalities and models for the **Intelligence Analytical Model** data source. A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Equipment Performance](#)
- [Labor Management](#)
- [Labor Performance](#)
- [Location Management](#)
- [Maintenance Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)
- [Quality APC](#)
- [Quality SPC](#)
- [Tag Management](#)

5 Opcenter QL Sources

The following products are included in Opcenter QL sources:

- [Opcenter Quality SQL Server](#)
- [Opcenter Quality Oracle](#)

5.1 Opcenter Quality SQL Server Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Quality (Opcenter QL) 11.0 to 11.3 - 12.0 (Concern and Complaint Management) and SPC (Statistical Process Control)** SQL Server data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Material Management](#)
- [Quality SPC](#)

5.2 Opcenter Quality Oracle Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Quality (Opcenter QL) 11.0 to 11.3 - 12.0 (Concern and Complaint Management) and SPC (Statistical Process Control)** Oracle data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Material Management](#)
- [Quality SPC](#)

6 Opcenter IPL Source

In the following linked pages you can find the possible associations between functionalities and models for the **Opcenter Intra Plant Logistics (IPL) 2210 or higher** SQL Server data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Inventory Management](#)
- [Labor Management](#)
- [Material Consumption](#)
- [Material Container History](#)

Important recommendation on Material Consumption data load

It is strongly recommended that you do not load a high amount of data (6 months at the maximum is the recommended amount) for the **MaterialConsumption** entity.

1. In Opcenter Intelligence Analytical Solution > Scenario > Data source server, select the data source database and click **Open**.
2. In the **Scripts** page, click **Create Script**. See also the *Loading a Script* chapter in *Opcenter Intelligence User Manual*.
3. Select **Material Consumption** model.
4. Select the **MaterialConsumption** entity.
5. Select the **Delete Script** type.
6. Replace the default script with the following SQL Statement. This example shows how to delete 6 months of data.

```
SELECT
    CAST(0 as smallint) as MaterialConsumptionSiteId,
    CAST(CAST(PcbID as nvarchar(255))+ '_' +CAST(McID as nvarchar(255))+ '_' +CAST(Operat
ion as nvarchar(255))+ '_' +CONVERT(NVARCHAR(255), TimeDone, 113)+ '_' +CAST(CompID as
nvarchar(255)) as nvarchar(255)) as MaterialConsumptionKey,
    CAST DATEADD(MINUTE,-5,GETUTCDATE()) as datetime) AS [RowInserted]
FROM [#IPLDB#].dbo.PCBTRACECONSUMPTIONDATA
WHERE DATEDIFF(DAY, InsertDate, GETUTCDATE()) > 182
```

7 SIMATIC IT UA Sources

The following products are included in SIMATIC IT UA sources:

- [SIMATIC IT Unified Architecture Discrete Manufacturing](#)
- [SIMATIC IT Unified Architecture Process Industries](#)

7.1 Unified Architecture Discrete Manufacturing Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **SIMATIC IT Unified Architecture Discrete Manufacturing (SIMATIC IT UADM) 1.0 - 1.1 - 1.2 - 1.3 - 2.3 - 2.4 - 2.5** data source. A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Labor Performance](#)
- [Location Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)
- [Quality APC](#)

7.2 Unified Architecture Process Industries Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **SIMATIC IT Unified Architecture Process Industries (SIMATIC IT UAPI) 1.1 Update 1 - 1.2 - 2.3 - 2.4 - 2.5** data source. A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Equipment Management](#)
- [Location Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)

8 CEP Core Sources

The following products are included in CEP Core sources:

- [Camstar Enterprise Platform Core SQL Server](#)
- [Camstar Enterprise Platform Core Oracle](#)

8.1 Camstar Enterprise Platform Core SQL Server Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Camstar Enterprise Platform (CEP) Core V7 SU4-SU5-SU6-SU7-SU8** as a SQL Server data source. Camstar Enterprise Platform supports both Microsoft SQL Server and Oracle database management systems.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Location Management](#)
- [Material Management](#)
- [Production Execution](#)
- [Quality APC](#)

8.2 Camstar Enterprise Platform Core Oracle Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **Camstar Enterprise Platform (CEP) Core V7 SU4-SU5-SU6-SU7-SU8** as an Oracle data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Location Management](#)
- [Material Management](#)
- [Production Execution](#)
- [Quality APC](#)

9 QMS Sources

The following products are included in QMS sources:

- [QMS Professional SQL Server](#)
- [QMS Professional Oracle](#)

9.1 QMS Professional SQL Server Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **QMS Professional 10.03 - 10.04 - 10.05 - 10.06 - 10.07 (Concern and Complaint Management) and SPC (Statistical Process Control)** SQL Server data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Material Management](#)
- [Quality SPC](#)

9.2 QMS Professional Oracle Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **QMS Professional 10.03 - 10.04 - 10.05 - 10.06 (Concern and Complaint Management) and SPC (Statistical Process Control)** Oracle data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Equipment Management](#)
- [Labor Management](#)
- [Material Management](#)
- [Quality SPC](#)

10 SIMATIC IT Sources

The following products are included in SIMATIC IT sources:

- [SIMATIC IT Reporting Framework](#)
- [SIMATIC IT Production Suite](#)
- [SIMATIC IT Historian](#)
- [SIMATIC IT Line Monitoring System](#)
- [SIMATIC IT Electronic Batch Recording Oracle](#)

10.1 SIMATIC IT Reporting Framework Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **SIMATIC IT Reporting Framework (MDW 1.0)** data source. A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Equipment Performance](#)
- [Labor Management](#)
- [Labor Performance](#)
- [Location Management](#)
- [Maintenance Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)
- [Quality APC](#)
- [Quality SPC](#)

10.2 SIMATIC IT Production Suite Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **SIMATIC IT Production Suite (SIMATIC IT PRS) 7.0 SP1 - 7.0 SP2 - 7.1 - 7.2 - 8.0** data sources. A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Equipment Management](#)
- [Labor Management](#)
- [Location Management](#)
- [Maintenance Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)

10.3 SIMATIC IT Historian Functionalities

In the following linked page you can find the possible associations between functionalities and models for the **SIMATIC IT Historian 7.2** data source. A model can be associated with one or more functionalities. Each page also

shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Tag Management](#)

10.4 SIMATIC IT Line Monitoring System Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **SIMATIC IT Line Monitoring System (SIMATIC IT LMS) 2.2 SP1 HF1 - 2.3 - 2.4 - 2.5 - 2.6 - 2.7** data source.

A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Context Management](#)
- [Downtime Management](#)
- [Equipment Capacity](#)
- [Equipment Management](#)
- [Equipment Performance](#)

10.5 SIMATIC IT Electronic Batch Recording Oracle Functionalities

In the following linked pages you can find the possible associations between functionalities and models for the **SIMATIC IT Electronic Batch Recording (eBR) 6.1.6** Oracle data source. A model can be associated with one or more functionalities. Each page also shows the entities related to the models and the type of these entities. An entity can only be associated with one model.

- [Labor Management](#)
- [Material Management](#)
- [Production Execution](#)
- [Production Scheduling](#)

11 Third-Party Sources

The following products are included in Third-Party sources:

- [SQL Server-based systems](#)
- [Oracle-based systems](#)

11.1 SQL Server

In the following linked pages you can find the possible associations between functionalities and models for the SQL Server data source.

- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Equipment Performance](#)
- [Labor Management](#)
- [Labor Performance](#)
- [Location Management](#)
- [Maintenance Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)
- [Quality APC](#)
- [Quality SPC](#)
- [Tag Management](#)

11.2 Oracle

In the following linked pages you can find the possible associations between functionalities and models for the Oracle data source.

- [Defect and Non Conformance](#)
- [Downtime Management](#)
- [Equipment Management](#)
- [Equipment Performance](#)
- [Labor Management](#)
- [Labor Performance](#)
- [Location Management](#)
- [Maintenance Management](#)
- [Material Management](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)
- [Quality APC](#)
- [Quality SPC](#)
- [Tag Management](#)

12 List of Functionalities

The Opcenter Intelligence data source configuration is based on the following functionalities:

- [Certification Management](#)
- [Completed WIP](#)
- [Container Management](#)
- [Context Management](#)
- [Defect and Non Conformance](#)
- [Device History](#)
- [Downtime Management](#)
- [Equipment Capacity](#)
- [Equipment Management](#)
- [Equipment Performance](#)
- [Inventory Management](#)
- [Labor Management](#)
- [Labor Performance](#)
- [Location Management](#)
- [Maintenance Management](#)
- [Material Consumption](#)
- [Material Container History](#)
- [Material Management](#)
- [Operational Performance and Quality](#)
- [Product and Material Traceability](#)
- [Production Definition](#)
- [Production Execution](#)
- [Production Scheduling](#)
- [Quality APC](#)
- [Quality SPC](#)
- [Sampling Management](#)
- [Tag Management](#)

12.1 Certification Management

The following table shows the models associated with the **Certification Management** functionality.

For security reasons, as well as to allocate the best possible workforce for achieving successful production targets, it must be established who can perform certain actions within a production plant and what specific certified knowledge or know-how (known as Skills) these individuals must possess in order to carry out their activities in the best possible manner. Those users who do not possess the appropriate Certificates attesting they have undergone sufficient training to perform delicate tasks must be inhibited from doing so.

Models and Entities

Model	Entities
Certification Model	Certification
	Skill

Completed WIP

Model	Entities
	SkillCertification
	EquipmentCertification
	LaborCertification

12.2 Completed WIP

The following table shows the models associated with the **Completed WIP** functionality.

Opcenter EX CR provides the ability to display messages associated with specific container attributes and with any service. The Work In Progress (WIP) message capability enforces processing and sends special notifications when a container of material reaches a specific processing point.

Models and Entities

Model	Entities
Completed WIP Model	SummaryTableCompletedWIPSummary
Factory Model	Factory
Operation Model	Operation
Owner Model	Owner
Spec Model	Spec
Time Model	Shift
Transaction Model	TxnType
Workflow Model	Workflow
	WorkflowStep

12.3 Container Management

The following table shows the models associated with the **Container Management** functionality.

For example, Opcenter EX CR provides the ability to manage containers, for example when the container status or context changes, and the management of operations carried out on the container.

Models and Entities

Model	Entities
Container Model	Container
	ContainerClass
	ContainerContainerClass
	ContainerCurrentStatus
	ContainerHierarchy
	ContainerProperty
	ContainerPropertyStaticValue
	ContainerStatus

12.4 Context Management

The following table shows the models associated with the **Context Management** functionality.

Models and Entities

Model	Entity
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Labor Model	Labor

Model	Entity
	LaborClass
	LaborHierarchy
	LaborLaborClass
	LaborProperty
	LaborPropertyStaticValue
Material Lot Model	MaterialLot
	MaterialLotExtendedPropertyStaticValue
	MaterialLotHierarchy
	MaterialLotMaterialDefinition
	MaterialLotPropertyDynamicValue
	MaterialLotPropertyStaticValue
	MaterialLotStatus
Material Model	FunctionalCode
	MaterialClass
	MaterialDefinition
	MaterialDefinitionBillOfMaterial
	MaterialDefinitionHierarchy
	MaterialDefinitionMaterialClass
	MaterialDefinitionPropertyStaticValue

Model	Entity
	MaterialExtendedProperty
	MaterialProperty
Operation Execution Model	OperationExecution
	OperationExecutionClass
	OperationExecutionHierarchy
	OperationExecutionHistory
	OperationExecutionOperationExecutionClass
	OperationExecutionProperty
	OperationExecutionPropertyStaticValue
	OperationExecutionStatus
Operation Response Model	OperationResponse
	OperationResponseClass
	OperationResponseHierarchy
	OperationResponseHistory
	OperationResponseOperationResponseClass
	OperationResponseProperty
	OperationResponsePropertyStaticValue
	OperationResponseStatus
Time Model	Shift

Model	Entity
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.5 Defect and Non Conformance

The following table shows the models associated with the **Defect and Non Conformance** functionality.

Models and Entities

Model	Entities
Defect Model	Defect
	DefectBoardSide
	DefectClass
	DefectDefectClass
	DefectHistory
	DefectLocation
	DefectPinLocation
	DefectReason
	DefectRepairAction
	DefectSeverity
	DefectStatus
	DefectSymptom

Model	Entities
Non Conformance Model	NonConformance
	NonConformanceClass
	NonConformanceHistory
	NonConformanceNonConformanceClass
	NonConformanceProperty
	NonConformancePropertyStaticValue
	NonConformanceStatus
	NonConformanceToolSpecification
	NonConformanceEquipmentSpecification
	NonConformanceMaterialLotSpecification
QMS Model Specific <i>This model is only available for the QMS and Opcenter QL data sources.</i>	Action
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass
Tool Model	Tool
	ToolClass
	ToolDefinition

Model	Entities
	ToolDefinitionPropertyStaticValue
	ToolDefinitionToolClass
	ToolProperty

12.6 Device History

The following table shows the models associated with the **Device History** functionality.

The Device History report reviews the history of a specified device while it is being produced or after it has completed the production process. This report also contains a link that enables you to access the Component Traceability History report.

Models and Entities

Model	Entities
Device History Model	ContainerOperationExecuteTaskComputation
	ContainerOperationExecuteTask
	ContainerOperationExecuteTaskParameter
	ContainerOperationExecuteTaskParameterValue
	ElectronicProcedure
	FailureEvent
	FailureEventCause
	FailureEventDetail
	FailureEventMode
	FailureEventResolution
	FailureEventSeverity

Model	Entities
	FailureEventStatus
	FailureEventType
	SignatureMeaning
	TaskItem
	TaskList
	TaskStatus
Product and Material Traceability Model	ContainerCorrelation
	ContainerOperation
	ContainerOperationAssembly
	ContainerOperationDisassociate
	ContainerOperationHold
	ContainerOperationHoldReason
	ContainerOperationMoveNonStandard
	ContainerOperationRework
	ContainerOperationReworkReason
	ContainerOperationStatus

12.7 Downtime Management

Downtime Management provides a time-based analysis of the issues that affect equipment availability and performance; each downtime event can be attributed to specific causes in order to gain a clear understanding of the most important reasons of unplanned stoppages and production slowdowns. The causes, duration and timing of downtimes may be used to calculate Key Performance Indicators (KPIs) to be analyzed in order to determine and correct the impact of production interruptions.

The following table shows the models associated with the **Downtime Management** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Equipment Root Cause Model	Cause
	DetailedReason
	Reason
	ReasonTree
	ReasonTreeItem
	Status
Equipment Time Model	EquipmentTimeCategory
	EquipmentTimeCategoryHierarchy
	EquipmentTimeModel
	Microstop
Equipment Capacity Model	EquipmentCapacity
	EquipmentCapacityValue
LMS Model Specific for Equipment Time Model <i>This model is only available for the LMS data source.</i>	EquipmentTimeModelEmulation

Model	Entities
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.8 Equipment Capacity

The equipment capacity model is based on a duration time unit. In Opcenter Intelligence this duration can only be expressed in seconds. If you have inserted a different time unit in your contract, you must convert it accordingly.

A functional dependency exists between the Downtime Management and Equipment Capacity functionalities. As a result, the Downtime Management functionality is automatically selected as soon as the user selects the Equipment Capacity functionality.



The measures related to the Equipment Capacity entity are calculated only if an equipment state (EquipmentTimeModel on MDW) exists in the same time range as the capacity sample (EquipmentCapacityValue on MDW).

The following table shows the model associated with the **Equipment Capacity** functionality.

Models and Entities

Model	Entities
Equipment Capacity Model	EquipmentCapacity
	EquipmentCapacityValue

12.9 Equipment Management

According to the hierarchical model defined by the ISA-95 standard, the assets of an enterprise involved in manufacturing are usually organized in a role-based hierarchical fashion. The term role-based is applied to the equipment model to indicate that the hierarchy is defined in terms of the activities that equipment entities may perform. The role-based equipment hierarchy includes the following levels: enterprise, site, area, work center and work unit.

The following table shows the models associated with the **Equipment Management** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
eBR Model Specific for Equipment Model <i>This model is only available for the eBR and Opcenter EX PH data sources.</i>	EquipmentStatusSnapshot
	EquipmentTrace Entity
Equipment Model	Equipment
	EquipmentClass
	EquipmentEquipmentClass
	EquipmentHierarchy
	EquipmentProperty
	EquipmentPropertyStaticValue
Quality Gate Model	QualityGate
	QualityGateEquipmentSpecification
	QualityGateMonitoredEquipment
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass

Model	Entities
	WorkingTimeExceptionWorkingTimeExceptionClass

12.10 Equipment Performance

The following table shows the models associated with the **Equipment Performance** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Equipment Performance Model	Indicator
	IndicatorClass
	IndicatorIndicatorClass
	IndicatorLimit
	IndicatorValue
	IndicatorType
	TargetType
LMS Model Specific for Equipment Performance <i>This model is only available for the LMS data source.</i>	IndicatorValueEmulation
	DesignSpeed

Model	Entities
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.11 Inventory Management

The following table shows the models associated with the **Inventory Management** functionality.

Models and Entities

Model	Entities
Material Container Model	MaterialContainer
	MaterialContainerAction
	MaterialContainerStatus
	MaterialContainerThickness
	Feeder
	MsLevel
Material Inventory Model	MaterialInventory
Material Model	FunctionalCode
	MountingTechnology
	MaterialClass
	MaterialDefinition

Model	Entities
	MaterialDefinitionBillOfMaterial
	MaterialDefinitionHierarchy
	MaterialDefinitionMaterialClass
	MaterialDefinitionPropertyStaticValue
	MaterialExtendedProperty
	MaterialProperty

12.12 Labor Management

The following table shows the models associated with the **Labor Management** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Labor Model	Labor
	LaborClass
	LaborHierarchy
	LaborLaborClass
	LaborProperty

Model	Entities
	LaborPropertyStaticValue
Labor Model Adv	LaborPropertyDynamicValue
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.13 Labor Performance

The following table shows the models associated with the **Labor Performance** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Labor Time Model	LaborTimeCategory
	LaborTimeCategoryHierarchy
	LaborTimeModel
Time Model	Shift

Model	Entities
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.14 Location Management

The following table shows the models associated with the **Location Management** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Material Lot Model	MaterialLot
	MaterialLotExtendedPropertyStaticValue
	MaterialLotHierarchy
	MaterialLotMaterialDefinition
	MaterialLotPropertyDynamicValue
	MaterialLotPropertyStaticValue

Model	Entities
Material Operation Model	Location
	LocationHierarchy
	MaterialLotOperation
	MaterialLotOperationClass
	MaterialLotOperationMaterialLotOperationClass
	MaterialLotOperationProperty
	MaterialLotOperationPropertyStaticValue
	MaterialLotOperationHierarchy
	MaterialLotStatus
Material Operation Model Adv	MaterialLotOperationPropertyDynamicValue
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.15 Maintenance Management

The functionality of maintaining equipment and tools ensures the equipment and tools availability for manufacturing. It also may include scheduling for periodic, preventive, or predictive maintenance as well as responding to immediate problems.

The following table shows the models associated with the **Maintenance Management** functionality.

Models and Entities

Model	Entities
Maintenance Definition Model	MaintenanceDefinition
	MaintenanceDefinitionClass
	MaintenanceDefinitionMaintenanceDefinitionClass
	MaintenanceDefinitionProperty
	MaintenanceDefinitionPropertyStaticValue
Maintenance Execution Model	MaintenanceExecution
	MaintenanceExecutionClass
	MaintenanceExecutionHierarchy
	MaintenanceExecutionMaintenanceExecutionClass
	MaintenanceExecutionProperty
	MaintenanceExecutionPropertyStaticValue
	MaintenanceExecutionStatus
Maintenance Execution Model Adv	MaintenanceExecutionPropertyDynamicValue
Maintenance Request Model	MaintenanceRequest
	MaintenanceRequestClass
	MaintenanceRequestHierarchy
	MaintenanceRequestMaintenanceRequestClass
	MaintenanceRequestProperty
	MaintenanceRequestPropertyStaticValue

Model	Entities
	MaintenanceRequestStatus
Maintenance Response Model	MaintenanceResponse
	MaintenanceResponseClass
	MaintenanceResponseHierarchy
	MaintenanceResponseMaintenanceResponseClass
	MaintenanceResponseProperty
	MaintenanceResponsePropertyStaticValue
	MaintenanceResponseStatus
Maintenance Response Model Adv	MaintenanceResponsePropertyDynamicValue
Maintenance Scheduling Model	MaintenanceScheduling
	MaintenanceSchedulingClass
	MaintenanceSchedulingHierarchy
	MaintenanceSchedulingMaintenanceSchedulingClass
	MaintenanceSchedulingProperty
	MaintenanceSchedulingPropertyStaticValue
	MaintenanceSchedulingStatus

12.16 Material Consumption

This functionality enables users to get insights on placed/rejected components, material corrections, the location of material in the manufacturing and stock areas, cost, etc.

The following table shows the models associated with the **Material Consumption** functionality.

Models and Entities

Model	Entities
Material Consumption Model	MaterialConsumption
Material Container Model	MaterialContainer
	MaterialContainerAction
	MaterialContainerStatus
	MaterialContainerThickness
	Feeder
	MsdLevel

12.17 Material Container History

The following table shows the models associated with the **Material Container History** functionality.

Models and Entities

Model	Entities
Material Container History Model	MaterialContainerHistory
Material Container Model	MaterialContainer
	MaterialContainerStatus
	MaterialContainerAction
	MaterialContainerThickness
	Feeder
	MsdLevel

12.18 Material Management

According to the ISA-95 standard, the material model defines the actual materials, material definitions, and information about classes of material definitions.

The following table shows the models associated with the **Material Management** functionality.

Models and Entities

Model	Entities
Bof Model	BillOfFeature
	BillOfFeatureItem
Bom Model	BillOfMaterial
	BillOfMaterialItem
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Customer Model	Customer
Material Model	FunctionalCode
	MountingTechnology
	MaterialClass
	MaterialDefinition
	MaterialDefinitionBillOfMaterial
	MaterialDefinitionHierarchy

Model	Entities
	MaterialDefinitionMaterialClass
	MaterialDefinitionPropertyStaticValue
	MaterialExtendedProperty
	MaterialProperty
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.19 Operational Performance and Quality

The following table shows the models associated with the **Operational Performance and Quality** functionality. It contains throughput and quality data related to each individual transaction (operation or workflow step).

Models and Entities

Model	Entities
Factory Model	Factory
Operation Model	Operation
Operational Performance and Quality Model	QtyAdjustReason
	ReworkReason
	SummaryTableOEERawDetails
Owner Model	Owner
Spec Model	Spec

Model	Entities
Time Model	Shift
Transaction Model	TxnType
Workflow Model	Workflow
	WorkflowStep

12.20 Product and Material Traceability

The following table shows the models associated with the **Product and Material Traceability** functionality.

The Container Traceability report enables you to enter a manufacturing container or serial number identifier and get back a list of all component material items listed on the applicable BOM or material list and the issue status for each item. Each container has a unique identifier used for traceability and the performance of shop floor transactions.

Models and Entities

Model	Entities
Operation Model	Operation
Product and Material Traceability Model	ContainerCorrelation
	ContainerOperation
	ContainerOperationAssembly
	ContainerOperationDisassociate
	ContainerOperationHold
	ContainerOperationHoldReason
	ContainerOperationMoveNonStandard
	ContainerOperationRework
	ContainerOperationReworkReason

Model	Entities
	ContainerOperationStatus
Recipe Model	Recipe
ReferenceDesignator Model	ReferenceDesignator
Time Model	Shift
Transaction Model	TxnType
Workflow Model	Workflow
	WorkflowStep

12.21 Production Definition

Product definition management shall be defined as the collection of activities that manage all the information about the product required for manufacturing, including the product production rules, which contain the information used to instruct a manufacturing operation how to produce a product. The operations definition may apply to defining production, maintenance, quality test and inventory operations.

The following table shows the models associated with the **Production Definition** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Operation Definition Model	OperationDefinition
	OperationDefinitionClass

Model	Entities
	OperationDefinitionEquipmentSpecification
	OperationDefinitionMaterialDefinitionSpecificationIn
	OperationDefinitionOperationDefinitionClass
	OperationDefinitionProperty
	OperationDefinitionPropertyStaticValue
	ProductionProcess
	ProductionProcessOperationDefinition
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.22 Production Execution

Operations execution is a report on requested manufacturing and is a collection of operations responses. Operations responses are responses from manufacturing that are associated with an operations request. The operations execution may apply to production, maintenance, quality test and inventory operations.

The following table shows the models associated with the **Production Execution** functionality.

Models and Entities

Model	Entities
CEP Model Specific for Operation Response <i>(This model is only available for the CEP and Opcenter EX CR Oracle data sources).</i>	OperationResponseCapacityValue
	OperationResponseCapacityValueStatus

Model	Entities
	OperationResponseYield
	OperationResponseYieldStatus
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
eBR Model Specific for Operation Execution <i>(This model is only available for the eBR and Opcenter EX PH data sources).</i>	OperationExecutionCompensation
	OperationExecutionPalletSpecification
	OperationResponseParameterValue
	OperationResponseParameter
	OperationResponseParameterValueProcessingMode
	OperationResponseParameterValueEbrStatus
	OperationResponseParameterValueStatus
	OperationResponseParameterStatus
	ActionTrace
	OperationExecutionConsumption
	OperationExecutionConsumptionActionType
	OperationExecutionConsumptionBalanceType

Model	Entities
	OperationExecutionConsumptionBarcode
	OperationExecutionConsumptionCombination
	OperationExecutionConsumptionMaterialLineStatus
	OperationExecutionConsumptionReconciliationCheck
	OperationExecutionConsumptionRFReconciliationCheck
	OperationExecutionConsumptionWeighingMode
	OperationExecutionConsumptionWeighingStatus
	OperationExecutionConsumptionWeighingType
	Workcenter
	Workstation
Operation Execution Model	OperationExecution
	OperationExecutionClass
	OperationExecutionHierarchy
	OperationExecutionHistory
	OperationExecutionOperationExecutionClass
	OperationExecutionProperty
	OperationExecutionPropertyStaticValue
	OperationExecutionStatus

Model	Entities
Operation Execution Model Adv	OperationExecutionPropertyDynamicValue
Operation Response Model	OperationResponse
	OperationResponseClass
	OperationResponseHierarchy
	OperationResponseHistory
	OperationResponseOperationResponseClass
	OperationResponseProperty
	OperationResponsePropertyStaticValue
	OperationResponseStatus
Operation Response Model Adv	OperationResponseEquipmentRequirement
	OperationResponseEquipmentSpecification
	OperationResponseLaborSpecification
	OperationResponseMaterialDefinitionRequirementIn
	OperationResponseMaterialLotSpecificationIn
	OperationResponseMaterialLotSpecificationOut
	OperationResponsePropertyDynamicValue
	OperationResponseScrewingToolHistory
	OperationResponseToolDefinitionRequirement
	OperationResponseToolSpecification

Model	Entities
Result Model	Result
	ResultHistory
	ResultHistoryTraceabilityDetail
	ResultStrategy
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.23 Production Scheduling

A request for operations to be performed shall be listed as an operations schedule. An operations schedule shall be made up of one or more operations requests. An operations schedule may be defined for any specific category of operations; production, maintenance, quality, or inventory, or it may be defined for a combination of categories.

The following table shows the models associated with the **Production Scheduling** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Final Product Model	FinalProductFamily

Model	Entities
	FinalProductType
Milestone Model	Milestone
	MilestoneDiagram
	MilestoneHistory
Operation Request Model	OperationRequest
	OperationRequestClass
	OperationRequestHierarchy
	OperationRequestOperationRequestClass
	OperationRequestProperty
	OperationRequestPropertyStaticValue
	OperationRequestStatus
Operation Scheduling Model	OperationScheduling
	OperationSchedulingClass
	OperationSchedulingExtendedProperty
	OperationSchedulingExtendedPropertyStaticValue
	OperationSchedulingHierarchy
	OperationSchedulingMaterialDefinition
	OperationSchedulingOperationSchedulingClass
	OperationSchedulingProperty

Model	Entities
	OperationSchedulingPropertyStaticValue
	OperationSchedulingStatus
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.24 Quality APC

Quality operations management shall be defined as the collection of activities which coordinate, direct and track the functions that measure and report on quality. The broad scope of quality operations management includes both quality operations and the management of those operations to ensure the quality of intermediate and final products.

The following table shows the models associated with the **Quality APC (Advanced Process Control)** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Quality Execution Model	QualityExecution
	QualityExecutionClass
	QualityExecutionHierarchy

Model	Entities
	QualityExecutionProperty
	QualityExecutionPropertyStaticValue
	QualityExecutionQualityExecutionClass
	QualityExecutionStatus
Quality Execution Model Adv	QualityExecutionPropertyDynamicValue
Quality Request Model	QualityRequest
	QualityRequestClass
	QualityRequestHierarchy
	QualityRequestProperty
	QualityRequestPropertyStaticValue
	QualityRequestQualityRequestClass
	QualityRequestStatus
Quality Response Model	QualityFailure
	QualityLimit
	QualityLimitClass
	QualityLimitQualityLimitClass
	QualityLimitStatus
	QualityParameter
	QualityParameterValue

Model	Entities
	QualityResponse
	QualityResponseClass
	QualityResponseHierarchy
	QualityResponseProperty
	QualityResponsePropertyStaticValue
	QualityResponseQualityResponseClass
	QualityResponseStatus
Quality Response Model Adv	QualityResponsePropertyDynamicValue
Quality Scheduling Model	QualityScheduling
	QualitySchedulingClass
	QualitySchedulingHierarchy
	QualitySchedulingProperty
	QualitySchedulingPropertyStaticValue
	QualitySchedulingQualitySchedulingClass
	QualitySchedulingStatus
Quality Task Definition Model	QualityTaskDefinition
	QualityTaskDefinitionClass
	QualityTaskDefinitionProperty
	QualityTaskDefinitionPropertyStaticValue

Model	Entities
	QualityTaskDefinitionQualityTaskDefinitionClass
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.25 Quality SPC

Process analysis provides feedback about specific manufacturing processes across multiple production runs or batches. This information is used to optimize or modify specific production processes. Process analysis often includes SPC analysis and process modelling and uses information collected from the multiple activities that measure operating parameters.

The following table shows the models associated with the **Quality SPC (Statistical Process Control)** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Quality Execution Model	QualityExecution
	QualityExecutionClass
	QualityExecutionHierarchy
	QualityExecutionProperty

Model	Entities
	QualityExecutionPropertyStaticValue
	QualityExecutionQualityExecutionClass
	QualityExecutionStatus
Quality Execution Model Adv	QualityExecutionPropertyDynamicValue
Quality Request Model	QualityRequest
	QualityRequestClass
	QualityRequestHierarchy
	QualityRequestProperty
	QualityRequestPropertyStaticValue
	QualityRequestQualityRequestClass
	QualityRequestStatus
Quality Response Model	QualityFailure
	QualityLimit
	QualityLimitClass
	QualityLimitQualityLimitClass
	QualityLimitStatus
	QualityParameter
	QualityParameterValue
	QualityResponse

Model	Entities
	QualityResponseClass
	QualityResponseHierarchy
	QualityResponseProperty
	QualityResponsePropertyStaticValue
	QualityResponseQualityResponseClass
	QualityResponseStatus
Quality Response Model Adv	QualityResponsePropertyDynamicValue
Quality Scheduling Model	QualityScheduling
	QualitySchedulingClass
	QualitySchedulingHierarchy
	QualitySchedulingProperty
	QualitySchedulingPropertyStaticValue
	QualitySchedulingQualitySchedulingClass
	QualitySchedulingStatus
Quality Task Definition Model	QualityTaskDefinition
	QualityTaskDefinitionClass
	QualityTaskDefinitionProperty
	QualityTaskDefinitionPropertyStaticValue
	QualityTaskDefinitionQualityTaskDefinitionClass

Model	Entities
Time Model	Shift
Time Model Adv	WorkingTimeException
	WorkingTimeExceptionClass
	WorkingTimeExceptionWorkingTimeExceptionClass

12.26 Sampling Management

Sampling management shall be defined as the collection of activities that manage all the information about the results of laboratory analysis. Samples are extracted from one or more material lots in order to be analyzed to evaluate the sample status and take quality control actions or trigger reanalysis processes. This is particularly useful, for example, when performing physical, biological and chemical tests. One or more parameters can be associated with a sample. Parameters can also be included in groups. The analysis can be performed on single parameters or on groups of parameters to obtain an overall result or a more detailed outcome.

The following table shows the models associated with the **Sampling Management** functionality.

Models and Entities

Model	Entities
Common Model	ExtendedPropertyType
	Site
	Uom
	TimeZone
	TimeZoneDaylightTimeSaving
Sampling Model	Parameter
	ParameterGroup
	ParameterResult
	Sample

Model	Entities
	SampleResult
	SampleResultParameterGroup

12.27 Tag Management

The following table shows the model associated with the **Tag Management** functionality.

Models and Entities

Model	Entities
Tag Model	Tag
	TagValue
	TagClass
	TagTagClass
	TagType

13 Analytical Model Entities

The Opcenter Intelligence analytical model is based on the following entities.

- [Action](#)
- [ActionTrace](#)
- [BillOfFeature](#)
- [BillOfFeatureItem](#)
- [BillOfMaterial](#)
- [BillOfMaterialItem](#)
- [Cause](#)
- [Certification](#)
- [ContainerClass](#)
- [ContainerContainerClass](#)
- [ContainerCorrelation](#)
- [ContainerCurrentStatus](#)
- [Container](#)
- [ContainerHierarchy](#)
- [ContainerOperationAssembly](#)
- [ContainerOperationDisassociate](#)
- [ContainerOperation](#)
- [ContainerOperationExecuteTaskComputation](#)
- [ContainerOperationExecuteTask](#)
- [ContainerOperationExecuteTaskParameter](#)
- [ContainerOperationExecuteTaskParameterValue](#)
- [ContainerOperationHold](#)
- [ContainerOperationHoldReason](#)
- [ContainerOperationMoveNonStandard](#)
- [ContainerOperationRework](#)
- [ContainerOperationReworkReason](#)
- [ContainerOperationStatus](#)
- [ContainerProperty](#)
- [ContainerPropertyStaticValue](#)
- [ContainerStatus](#)
- [Customer](#)
- [Defect](#)
- [DefectBoardSide](#)
- [DefectClass](#)
- [DefectDefectClass](#)
- [DefectHistory](#)
- [DefectLocation](#)
- [DefectPinLocation](#)
- [DefectReason](#)
- [DefectRepairAction](#)
- [DefectSeverity](#)
- [DefectStatus](#)
- [DefectSymptom](#)
- [DesignSpeed](#)
- [DetailedReason](#)
- [ElectronicProcedure](#)
- [Equipment](#)
- [EquipmentCapacity](#)
- [EquipmentCapacityValue](#)
- [EquipmentCertification](#)

- [EquipmentClass](#)
- [EquipmentEquipmentClass](#)
- [EquipmentHierarchy](#)
- [EquipmentProperty](#)
- [EquipmentPropertyStaticValue](#)
- [EquipmentStatusSnapshot](#)
- [EquipmentTimeCategory](#)
- [EquipmentTimeCategoryHierarchy](#)
- [EquipmentTimeModelEmulation](#)
- [EquipmentTimeModel](#)
- [EquipmentTrace Entity](#)
- [ExtendedPropertyType](#)
- [Factory](#)
- [FailureEventCause](#)
- [FailureEventDetail](#)
- [FailureEvent](#)
- [FailureEventMode](#)
- [FailureEventResolution](#)
- [FailureEventSeverity](#)
- [FailureEventStatus](#)
- [FailureEventType](#)
- [Feeder](#)
- [FinalProductFamily](#)
- [FinalProductType](#)
- [FunctionalCode](#)
- [Indicator](#)
- [IndicatorClass](#)
- [IndicatorIndicatorClass](#)
- [IndicatorLimit](#)
- [IndicatorType](#)
- [IndicatorValue](#)
- [IndicatorValueEmulation](#)
- [Labor](#)
- [LaborCertification](#)
- [LaborClass](#)
- [LaborHierarchy](#)
- [LaborLaborClass](#)
- [LaborProperty](#)
- [LaborPropertyStaticValue](#)
- [LaborPropertyDynamicValue](#)
- [LaborTimeCategory](#)
- [LaborTimeCategoryHierarchy](#)
- [LaborTimeModel](#)
- [Location](#)
- [LocationHierarchy](#)
- [MaintenanceDefinition](#)
- [MaintenanceDefinitionClass](#)
- [MaintenanceDefinitionMaintenanceDefinitionClass](#)
- [MaintenanceDefinitionProperty](#)
- [MaintenanceDefinitionPropertyStaticValue](#)
- [MaintenanceExecutionClass](#)
- [MaintenanceExecution](#)
- [MaintenanceExecutionHierarchy](#)

Tag Management

- [MaintenanceExecutionMaintenanceExecutionClass](#)
- [MaintenanceExecutionPropertyDynamicValue](#)
- [MaintenanceExecutionProperty](#)
- [MaintenanceExecutionPropertyStaticValue](#)
- [MaintenanceExecutionStatus](#)
- [MaintenanceRequestClass](#)
- [MaintenanceRequest](#)
- [MaintenanceRequestHierarchy](#)
- [MaintenanceRequestMaintenanceRequestClass](#)
- [MaintenanceRequestProperty](#)
- [MaintenanceRequestPropertyStaticValue](#)
- [MaintenanceRequestStatus](#)
- [MaintenanceResponseClass](#)
- [MaintenanceResponse](#)
- [MaintenanceResponseHierarchy](#)
- [MaintenanceResponseMaintenanceResponseClass](#)
- [MaintenanceResponsePropertyDynamicValue](#)
- [MaintenanceResponseProperty](#)
- [MaintenanceResponsePropertyStaticValue](#)
- [MaintenanceResponseStatus](#)
- [MaintenanceSchedulingClass](#)
- [MaintenanceScheduling](#)
- [MaintenanceSchedulingHierarchy](#)
- [MaintenanceSchedulingMaintenanceSchedulingClass](#)
- [MaintenanceSchedulingProperty](#)
- [MaintenanceSchedulingPropertyStaticValue](#)
- [MaintenanceSchedulingStatus](#)
- [MaterialClass](#)
- [MaterialConsumption](#)
- [MaterialContainer](#)
- [MaterialContainerAction](#)
- [MaterialContainerHistory](#)
- [MaterialContainerStatus](#)
- [MaterialContainerThickness](#)
- [MaterialDefinition](#)
- [MaterialDefinitionBillOfMaterial](#)
- [MaterialDefinitionHierarchy](#)
- [MaterialDefinitionMaterialClass](#)
- [MaterialDefinitionPropertyStaticValue](#)
- [MaterialExtendedProperty](#)
- [MaterialInventory](#)
- [MaterialLot](#)
- [MaterialLotExtendedPropertyStaticValue](#)
- [MaterialLotHierarchy](#)
- [MaterialLotMaterialDefinition](#)
- [MaterialLotOperation](#)
- [MaterialLotOperationClass](#)
- [MaterialLotOperationHierarchy](#)
- [MaterialLotOperationMaterialLotOperationClass](#)
- [MaterialLotOperationProperty](#)
- [MaterialLotOperationPropertyStaticValue](#)
- [MaterialLotOperationPropertyDynamicValue](#)
- [MaterialLotPropertyDynamicValue](#)

- [MaterialLotPropertyStaticValue](#)
- [MaterialProperty](#)
- [Microstop](#)
- [Milestone](#)
- [MilestoneDiagram](#)
- [MilestoneHistory](#)
- [MountingTechnology](#)
- [MsLevel](#)
- [NonConformance](#)
- [NonConformanceClass](#)
- [NonConformanceEquipmentSpecification](#)
- [NonConformanceHistory](#)
- [NonConformanceNonConformanceClass](#)
- [NonConformanceMaterialLotSpecification](#)
- [NonConformanceProperty](#)
- [NonConformancePropertyStaticValue](#)
- [NonConformanceStatus](#)
- [NonConformanceToolSpecification](#)
- [Operation](#)
- [OperationDefinition](#)
- [OperationDefinitionClass](#)
- [OperationDefinitionEquipmentSpecification](#)
- [OperationDefinitionMaterialDefinitionSpecificationIn](#)
- [OperationDefinitionOperationDefinitionClass](#)
- [OperationDefinitionProperty](#)
- [OperationDefinitionPropertyStaticValue](#)
- [OperationExecution](#)
- [OperationExecutionClass](#)
- [OperationExecutionCompensation](#)
- [OperationExecutionConsumption](#)
- [OperationExecutionConsumptionActionType](#)
- [OperationExecutionConsumptionBalanceType](#)
- [OperationExecutionConsumptionBarcode](#)
- [OperationExecutionConsumptionCombination](#)
- [OperationExecutionConsumptionMaterialLineStatus](#)
- [OperationExecutionConsumptionReconciliationCheck](#)
- [OperationExecutionConsumptionRFReconciliationCheck](#)
- [OperationExecutionConsumptionWeighingMode](#)
- [OperationExecutionConsumptionWeighingStatus](#)
- [OperationExecutionConsumptionWeighingType](#)
- [OperationExecutionHierarchy](#)
- [OperationExecutionHistory](#)
- [OperationExecutionOperationExecutionClass](#)
- [OperationExecutionPalletSpecification](#)
- [OperationExecutionProperty](#)
- [OperationExecutionPropertyDynamicValue](#)
- [OperationExecutionPropertyStaticValue](#)
- [OperationExecutionStatus](#)
- [OperationRequest](#)
- [OperationRequestClass](#)
- [OperationRequestHierarchy](#)
- [OperationRequestOperationRequestClass](#)
- [OperationRequestProperty](#)

- [OperationRequestPropertyStaticValue](#)
- [OperationRequestStatus](#)
- [OperationResponse](#)
- [OperationResponseCapacityValue](#)
- [OperationResponseCapacityValueStatus](#)
- [OperationResponseClass](#)
- [OperationResponseEquipmentRequirement](#)
- [OperationResponseEquipmentSpecification](#)
- [OperationResponseHierarchy](#)
- [OperationResponseHistory](#)
- [OperationResponseLaborSpecification](#)
- [OperationResponseMaterialDefinitionRequirementIn](#)
- [OperationResponseMaterialLotSpecificationIn](#)
- [OperationResponseMaterialLotSpecificationOut](#)
- [OperationResponseOperationResponseClass](#)
- [OperationResponseParameter](#)
- [OperationResponseParameterStatus](#)
- [OperationResponseParameterValueEbrStatus](#)
- [OperationResponseParameterValue](#)
- [OperationResponseParameterValueProcessingMode](#)
- [OperationResponseParameterValueStatus](#)
- [OperationResponseProperty](#)
- [OperationResponsePropertyDynamicValue](#)
- [OperationResponsePropertyStaticValue](#)
- [OperationResponseScrewingToolHistory](#)
- [OperationResponseStatus](#)
- [OperationResponseToolDefinitionRequirement](#)
- [OperationResponseToolSpecification](#)
- [OperationResponseYield](#)
- [OperationResponseYieldStatus](#)
- [OperationScheduling](#)
- [OperationSchedulingClass](#)
- [OperationSchedulingExtendedProperty](#)
- [OperationSchedulingExtendedPropertyStaticValue](#)
- [OperationSchedulingHierarchy](#)
- [OperationSchedulingMaterialDefinition](#)
- [OperationSchedulingOperationSchedulingClass](#)
- [OperationSchedulingProperty](#)
- [OperationSchedulingPropertyStaticValue](#)
- [OperationSchedulingStatus](#)
- [Owner](#)
- [Parameter](#)
- [ParameterGroup](#)
- [ParameterResult](#)
- [ProductionProcess](#)
- [ProductionProcessOperationDefinition](#)
- [PropertyType](#)
- [QtyAdjustReason](#)
- [QualityExecutionClass](#)
- [QualityExecution](#)
- [QualityExecutionHierarchy](#)
- [QualityExecutionPropertyDynamicValue](#)
- [QualityExecutionProperty](#)

- [QualityExecutionPropertyStaticValue](#)
- [QualityExecutionQualityExecutionClass](#)
- [QualityExecutionStatus](#)
- [QualityFailure](#)
- [QualityGate](#)
- [QualityGateEquipmentSpecification](#)
- [QualityGateMonitoredEquipment](#)
- [QualityLimit](#)
- [QualityLimitClass](#)
- [QualityLimitQualityLimitClass](#)
- [QualityLimitStatus](#)
- [QualityParameter](#)
- [QualityParameterValue](#)
- [QualityRequestClass](#)
- [QualityRequest](#)
- [QualityRequestHierarchy](#)
- [QualityRequestProperty](#)
- [QualityRequestPropertyStaticValue](#)
- [QualityRequestQualityRequestClass](#)
- [QualityRequestStatus](#)
- [QualityResponse](#)
- [QualityResponseClass](#)
- [QualityResponseHierarchy](#)
- [QualityResponsePropertyDynamicValue](#)
- [QualityResponseProperty](#)
- [QualityResponsePropertyStaticValue](#)
- [QualityResponseQualityResponseClass](#)
- [QualityResponseStatus](#)
- [QualityTaskDefinition](#)
- [QualityTaskDefinitionClass](#)
- [QualityTaskDefinitionProperty](#)
- [QualityTaskDefinitionPropertyStaticValue](#)
- [QualityTaskDefinitionQualityTaskDefinitionClass](#)
- [Reason](#)
- [ReasonTree](#)
- [ReasonTreeItem](#)
- [Recipe](#)
- [ReferenceDesignator](#)
- [Result](#)
- [ResultHistory](#)
- [ResultHistoryTraceabilityDetail](#)
- [ResultStrategy](#)
- [ReworkReason](#)
- [Sample](#)
- [SampleResult](#)
- [SampleResultParameterGroup](#)
- [Shift](#)
- [SignatureMeaning](#)
- [Site](#)
- [Skill](#)
- [SkillCertification](#)
- [Spec](#)
- [Status](#)

- [SummaryTableCompletedWIPSummary](#)
- [SummaryTableOEERawDetails](#)
- [TagClass](#)
- [Tag](#)
- [TagTagClass](#)
- [TagType](#)
- [TagValue](#)
- [TargetType](#)
- [TaskItem](#)
- [TaskList](#)
- [TaskStatus](#)
- [TimeZone](#)
- [TimeZoneDaylightTimeSaving](#)
- [Tool](#)
- [ToolClass](#)
- [ToolDefinition](#)
- [ToolDefinitionPropertyStaticValue](#)
- [ToolDefinitionToolClass](#)
- [ToolProperty](#)
- [ToolPropertyStaticValue](#)
- [TxnType](#)
- [Uom](#)
- [Workcenter](#)
- [Workflow](#)
- [WorkflowStep](#)
- [WorkingTimeExceptionClass](#)
- [WorkingTimeException](#)
- [WorkingTimeExceptionWorkingTimeExceptionClass](#)
- [Workstation](#)

13.1 Entities from Action to IndicatorValueEmulation

13.1.1 Action Entity

Contains information about a corrective action executed as a consequence of an identified defect.

Attributes

Attribute	Description
ActionSiteId	Identifier of the Site this entity is related to.
ActionKey	Unique identifier of the action.
DefectId	Identifier of the associated defect.
LaborId	Identifier of the associated person.

Attribute	Description
NonConformanceId	Identifier of the associated non conformance.
Description	Contains additional information and descriptions about the action.
DueDateTime	Due date/time for the action.
Name	Name of the action.
Quantity	Number of occurrences of the action (value for this attribute is always 1, it can be used to count the number of occurrences of a specific action, or of all action executed).
StartDateTime	Starting date/time of the action.
EndDateTime	End date/time of the action.
Duration	Duration of the action.
PlannedDuration	Planned duration of the action.

13.1.2 Action Trace Entity

Contains information about an action executed as a consequence of the consumption of a manufacturing request (work order).

Attributes

Attribute	Description
ActionTraceKey	Unique identifier of the action trace.
ActionTraceSiteId	Identifier of the Site this entity is related to.
Comment	Comment inserted by the user.
Description	Contains additional information and descriptions about the action trace.
EndDateTime	End date/time of the action trace.

Attribute	Description
LaborId	Identifier of the associated person.
Name	Name of the action trace.
StartDateTime	Starting date/time of the action trace.
Valid	Specifies if the action trace is valid or not.

13.1.3 BillOfFeature Entity

Bills of Features are empty containers that, once created, must be associated to the Features, Feature Values and Options that will be used for generating Work Orders of different production types, as well as for creating Work Orders from a Master Plan associated with Qualification Criteria.

Bills of Features can also be associated with Product Configurations, to define (together with Bills of Materials) the structures of the Product Configuration associated with the Final Product Type.

Attributes

Attribute	Description
BillOfFeatureSiteId	Identifier of the Site for which the Bill Of Feature is defined.
BillOfFeatureKey	A unique identification of the Bill Of Feature.
Description	Contains additional information on the Bill Of Feature.
IsCurrent	Specifies if the Bill Of Feature is related to Current or Historic data.
Name	Name of the Bill Of Feature.
Revision	The Revision (version) of the Bill of Features to be associated with the Product Configuration and Final Product Type.

13.1.4 BillOfFeatureItem Entity

Bill of Feature Item objects identify the items that make up the complete Bill of Feature.

Attributes

Attribute	Description
BillOfFeatureItemSiteId	Identifier of the Site for which the Bill Of Feature Item is defined.
BillOfFeatureItemKey	A unique identification of the Bill Of Feature Item.
BillOfFeatureId	Identifier of the Bill Of Feature the Item belongs to.
Description	Contains additional information on the Bill Of Feature Item.
Name	Name of the Bill Of Feature Item.
Value	Value of the Bill Of Feature Item.

13.1.5 BillOfMaterial Entity

Listing of all the subassemblies, parts and/or materials that are used in the production of a product including the quantity of each material required to make a product.

Attributes

Attribute	Description
BillOfMaterialSiteId	Identifier of the Site for which the BoM is defined.
BillOfMaterialKey	A unique identification of the BoM.
Name	Name of the BoM.
Description	Contains additional information on the BoM.
Quantity	Reference quantity of the BoM.
UomId	Identifier of the unit of measure of the associated quantity, if applicable.
MaterialDefinitionId	Identifier of the material definition.

13.1.6 BillOfMaterialItem Entity

Bill of Material Item objects identify the items that make up the complete bill of material.

Attributes

Attribute	Description
BillOfMaterialItemSiteId	Identifier of the Site for which the BoM Item is defined.
BillOfMaterialItemKey	A unique identification of the BoM Item.
BillOfMaterialId	Identifier of the BoM the Item belongs to.
Name	BoM Item name.
Description	Contains additional information of the BoM Item.
MaterialDefinitionId	Identifier of the material definition.
Quantity	Specifies the amount of required resources.
UomId	Identifier of the unit of measure of the associated quantity, if applicable.
MountingTechnologyId	<p>For Opcenter Execution Electronics data source this field contains the identifier of the mounting technology applied during the mounting operation of PCB components.</p> <p>It can assume the values:</p> <ul style="list-style-type: none"> • SMT (Surface Mount Technology) • THT (Thru Hole Technology) • Undefined

13.1.7 Cause Entity

Defines a possible cause for an asset status (as defined in a reason tree).

Attributes

Attribute	Description
CauseSiteId	Identifier of the Site this entity is related to.
CauseKey	A unique identification of the cause.
Name	Name of the cause.

Attribute	Description
Description	Contains additional information about the cause.
Color	Color to be used to represent this cause.
IsStop	Specifies if the cause is corresponding to an asset stop (downtime).

13.1.8 Certification Entity

A Certification represents an "authorization" that is created ad-hoc with particular characteristics and then assigned to a User or Role to define the sphere of action within which he can operate.

Attributes

Attribute	Description
CertificationSiteId	Identifier of the Site this entity is related to.
CertificationKey	A unique identification of the entity.
Description	Contains additional information about the certification.
Name	Name of the certification.

13.1.9 ContainerClass Entity

A Container Class is a representation of a grouping of containers with similar characteristics for a definite purpose. Any container may be a member of zero or more container classes.

Attributes

Attribute	Description
ContainerClassSiteId	Identifier of the Site for which the Container is defined.
ContainerClassKey	Primary key of the Container object.
Name	A unique identification of the Container Class.
Description	Contains additional information about the Container Class.

13.1.10 ContainerContainerClass Entity

Contains the relationship between Container and ContainerClass entities.

Attributes

Attribute	Description
ContainerContainerClassSiteId	Identifier of the Site this entity is related to.
ContainerContainerClassKey	A unique identification of this entity.
ContainerId	Identifier of the Container object.
ContainerClassId	Identifier of the Container Class object.

13.1.11 ContainerCorrelation Entity

The ContainerCorrelation entity is used to correlate a single history mainline record (representing a single transaction) to the container(s) to which it applies.

Attributes

Attribute	Description
ContainerCorrelationKey	A unique identification of the ContainerCorrelation.
ContainerCorrelationSiteId	Identifier of the Site this entity is related to.
ContainerId	Identifier of the container to which the transaction is applied.
ContainerOperationId	Identifier of the operation executed on the container.
ParentContainerId	Identifier of the parent element in the Container Hierarchy.

13.1.12 ContainerCurrentStatus Entity

This entity describes the current status of the container (for example: Factory, Operation, Equipment, Spec, Workflow, WorkflowStep).

Attributes

Attribute	Description
ContainerCurrentStatusSiteId	Identifier of the Site for which this entity is defined.
ContainerCurrentStatusKey	A unique identification of the container current status.
ContainerId	Unique identifier of the container.
EquipmentId	Unique identifier of the Equipment associated with the container.
FactoryId	Unique identifier of the Factory where the container is located.
LocationId	Unique identifier of the logical or physical place in which the container is located.
MaterialDefinitionId	Unique identifier of the material definition (product) associated with the container.
OperationId	Identifier of the operation associated with the container.
OperationExecutionId	Identifier of the manufacturing order associated with the container.
SecondaryUomId	Identifier of the secondary Uom associated with the container secondary quantity.
SpecId	Identifier of the Spec associated with the container.
UomId	Identifier of the Uom associated with the container quantity.
WorkflowStepId	Identifier of the workflow step associated with the container.
ContainerQty	Quantity of product related to the container.
ContainerSecondaryQty	Secondary quantity of product related to the container.
CurrentStepPass	Pass of the current step.
LastMoveDate	Last date when the container was moved.

Attribute	Description
OpSecondaryStartQty	Product secondary quantity for a container at the start of the operation.
OpStartQty	Product quantity for a container at the start of the operation.
ReworkLoopCount	Number of times a container has entered a rework loop.
ReworkTotalCount	Total number of reworks executed on the container.
TimersCount	Total number of timers.
LastMoveDateGMT	Last date when the container was moved expressed in Greenwich Mean Time.
OriginalQty	Original quantity for the container.

13.1.13 Container Entity

This entity describes an Opcenter Execution Core or Pharma storage unit.

Attributes

Attribute	Description
ContainerKey	A unique identification of the container.
ContainerSiteId	Identifier of the Site this entity is related to.
ContainerStatusId	A unique identifier of the container status.
IsInProcess	Boolean that specifies if the container is being processed or not. It can assume the following values: <ul style="list-style-type: none"> • 1 means that the container is being processed • 0 means that the container is not being processed
IsInRework	Boolean that specifies if the container is being reworked or not. It can assume the following values: <ul style="list-style-type: none"> • 1 means that the container is being reworked • 0 means that the container is not being reworked

Attribute	Description
IsFailed	Indicates if the container has any open defects that result in a failed status of the container.
SerialNumber	Serial number that identifies the container.
LevelName	A Container Level is the tracking designation assigned to a container. Commonly used level names are batch and lot. Levels are defined to meet the specific requirements of each company. If the data source is Opcenter EX EL, it can assume the values: Board, PCB Panel, etc.
Description	Contains additional information and descriptions about the container.
Name	Name of the container.

13.1.14 ContainerHierarchy Entity

The assets of an enterprise involved in manufacturing are usually organized in a role-based hierarchical fashion. Lower-level groupings are combined to form higher levels in the role-based hierarchy. In some cases, a grouping within one level may be incorporated into another grouping at that same level.

Attributes

Attribute	Description
ContainerHierarchySiteId	Foreign key to the Site the Container Hierarchy is related to.
ContainerHierarchyKey	A unique identification of an element in the Container Hierarchy.
ContainerId	Identifier of the Container entity.
ParentContainerId	Identifier of the parent element in the Container Hierarchy.
StartDateTime	The starting date/time of this Container hierarchy element.
EndDateTime	The ending date/time of this Container hierarchy element.

13.1.15 ContainerOperationAssembly Entity

The assembly operation is executed when one or more containers are assembled following a specific sequence.

Attributes

Attribute	Description
ContainerOperationAssemblySiteId	Identifier of the Site this entity is related to.
ContainerOperationAssemblyKey	A unique identification of the assembly operation.
AssembledContainerId	Identifier of the container that is being assembled.
AssembledMaterialDefinitionId	Identifier of the material associated with the container that is being assembled.
Assembled2ContainerId	Identifier of the second container that is being assembled.
Assembled2MaterialDefinitionId	Identifier of the material associated with the second container that is being assembled.
Assembled3ContainerId	Identifier of the third container that is being assembled.
Assembled3MaterialDefinitionId	Identifier of the material associated with the third container that is being assembled.
AssembledOnContainerId	Identifier of the container on which other containers are assembled.
AssembledOnMaterialDefinitionId	Identifier of the material of the container on which other containers are assembled.
ContainerOperationStatusId	Unique identifier of the status of the operation executed on the container.
EquipmentId	Identifier of the equipment.
IssueQuantity	IssueActualsHistory.Qty
PartNumberMaterialDefinitionId	Identifier of the part number of the material definition related to this entity.
OperationId	Identifier of the operation.

Attribute	Description
OperationExecutionId	A unique identification of the operation execution.
RecipeId	A unique identification of the recipe that defines the container settings.
ReferenceDesignatorId	Identifier of the reference designator, i.e. the location of a component within a printed circuit board.
SubAssembledOnContainerId	Identifier of the container assembled separately but designed to be incorporated with other containers.
SubAssembledOnMaterialDefinitionId	Identifier of the material of the container on which other containers are assembled.
Txn	The allowed transactions for the movement of material through the operation.
TxnDate	Date and time when the transaction was performed expressed in local time.
TxnDateGMT	Date and time when the transaction was performed expressed in Greenwich Mean Time.
TxnTypeId	Identifier of the type of performed transaction.

13.1.16 ContainerOperationDisassociate Entity

The disassociate operation is executed when PCBs are depanled from their parent panel at a step based on a specific sequence.

Attributes

Attribute	Description
ContainerOperationDisassociateSiteId	Identifier of the Site this entity is related to.
ContainerOperationDisassociateKey	A unique identification of the disassociate operation executed on a PCB container.
ContainerId	Identifier of the PCB container that is being disassociated from the parent container.

Attribute	Description
ContainerOperationId	Identifier of the operation executed on a container.
ParentContainerId	Identifier of the parent container from which child PCB containers are disassociated.
Sequence	The sequence of operations followed when the disassociation is executed.
Txn	Transactions available for the container.
TxnDateGMT	Date of the transaction execution expressed in Greenwich Mean Time.

13.1.17 ContainerOperation Entity

Contains details about the operation executed on a container.

Attributes

Attribute	Description
ContainerOperationSiteId	Identifier of the Site this entity is related to.
ContainerOperationKey	A unique identification of the container operation.
ContainerId	A unique identification of the container.
ContainerOperationStatusId	A unique identification of the container operation status.
ContainerStepPass	The number of times the Container has passed through this Workflow Step.
EquipmentId	A unique identification of the equipment.
LaborId	A unique identification of the labor who managed the transaction.
MaterialDefinitionId	A unique identification of the material definition.

Attribute	Description
OperationExecutionId	A unique identification of the operation execution.
OperationId	A unique identification of the operation.
ParentContainerId	A unique identification of the parent container, i.e. a container (panel) that has children.
RecipeId	A unique identification of the recipe that defines the container settings.
Quantity	Quantity specified in the History Mainline grid, which lists the transactions performed on a container.
MoveInCycletime	Cycletime specified in the MoveInHistory table. MoveIn is a transaction performed on a container.
MoveCycletime	Cycletime specified in the MoveHistory table. Move is a transaction performed on a container.
MoveInQuantity	Quantity specified in the MoveInHistory table. MoveIn is a transaction performed on a container.
MoveQuantity	Quantity specified in the MoveHistory table. Move is a transaction performed on a container.
Txn	The allowed transactions for the movement of material through the operation.
TxnDate	Date of the transaction execution expressed in the plant local time.
TxnDateGMT	Date of the transaction execution expressed in Greenwich Mean Time.
TxnTypeId	Identifier of the type of transaction associated with the entity.
WorkflowStepId	Identifier of the workflow step associated with the entity.

13.1.18 ContainerOperationExecuteTaskComputation Entity

The Computation modeling object allows you to create and maintain process computation definitions for use with EProcedure tasks.

Attributes

Attribute	Description
ContainerOperationExecuteTaskComputationKey	A unique identification of the entity.
ContainerOperationExecuteTaskComputationSite Id	Identifier of the Site this entity is related to.
Description	Contains additional information about the entity.
Name	Name of the entity.

13.1.19 ContainerOperationExecuteTask Entity

History of the task execution performed on the container.

Attributes

Attribute	Description
ContainerOperationExecuteTaskKey	A unique identification of the entity.
ContainerOperationExecuteTaskSiteId	Identifier of the Site this entity is related to.
ComputationValue	Result of the computation task.
ContainerOperationExecuteTaskComputationId	Identifier of the computation task associated with the operation executed on the container.
ContainerOperationId	Identifier of the operation executed on the container.
CoSignerLaborId	Identifier of the employee who provided an additional or alternate electronic signature.
ElectronicProcedureId	Identifier of the Electronic Procedure.
LaborId	Identifier of the employee.

Attribute	Description
OperationId	Identifier of the operation associated with the container.
ParentContainerId	Identifier of the parent element in the Container Hierarchy.
SignatureMeaningId	Identifier of the name or description allowing you to determine the reason for the signature.
SignerLaborId	Identifier of the employee who provided an electronic signature for the transaction.
TaskItemId	Identifier of an item created as a task.
TaskStatusId	Identifier of the status of the task. Possible statuses include: <ul style="list-style-type: none"> • Not Executed • Pass • Fail
Txn	Transaction associated with the entity.
TxnDate	Value that can be supplied in the transaction (such as when IOT sends a message from the equipment – it passes in the TxnDate) expressed in local time.
TxnDateGMT	Value that can be supplied in the transaction (such as when IOT sends a message from the equipment – it passes in the TxnDate) expressed in Greenwich Mean Time.
TxnTypeId	Identifier of the transaction type associated with the entity.
WorkflowStepId	Identifier of the workflow step associated with the entity.

13.1.20 ContainerOperationExecuteTaskParameter Entity

List of all possible parameters associated with a task, for example: pH, temperature, diameter, etc.)

Attributes

Attribute	Description
ContainerOperationExecuteTaskParameterKey	A unique identification of the entity.

Attribute	Description
ContainerOperationExecuteTaskParameterSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information about the entity.
Name	Name of the entity.

13.1.21 ContainerOperationExecuteTaskParameterValue Entity

Runtime values that parameters associated with a task can assume, including limits and unit of measure.

Attributes

Attribute	Description
ContainerOperationExecuteTaskId	Identifier of the task of the operation executed on the container.
ContainerOperationExecuteTaskParameterId	Identifier of the task parameter for the operation executed on the container.
ContainerOperationExecuteTaskParameterValue Key	A unique identification of the entity.
ContainerOperationExecuteTaskParameterValue SiteId	Identifier of the Site this entity is related to.
LowerLimit	Lower limit established for data points when collecting container data.
StringValue	Value for a property of type String.
TxnDate	Transaction date expressed in local time.
TxnDateGMT	Transaction date expressed in Greenwich Mean Time.
UomId	Identifier of the unit of measure for the property value.
UpperLimit	Upper limit established for data points when collecting container data.

13.1.22 ContainerOperationHold Entity

Operation executed on a container in the Hold transaction. The Hold transaction enables you to put a container on hold for a specific reason (for example, a scheduled inspection or audit).

Attributes

Attribute	Description
Comment	Information or instructions for the Hold transaction or the container.
ContainerId	Identifier of the container that was placed on Hold.
ContainerOperationHoldKey	A unique identification of the entity.
ContainerOperationHoldReasonId	Identifier of the reason why the container operation was placed on Hold.
ContainerOperationHoldSiteId	Identifier of the Site this entity is related to.
LaborId	Identifier of the employee responsible for the operation.
OperationId	Identifier of the operation that was placed on Hold.
TxnDate	Transaction date expressed in local time.
TxnDateGMT	Transaction date expressed in Greenwich Mean Time.
WorkflowStepId	Identifier of the workflow step associated with the container that was placed on Hold.

13.1.23 ContainerOperationHoldReason Entity

Name of the user code group that defines hold reasons for the operation.

Attributes

Attribute	Description
ContainerOperationHoldReasonKey	A unique identification of the entity.
ContainerOperationHoldReasonSiteId	Identifier of the Site this entity is related to.

Attribute	Description
Description	Contains additional information about the hold reason.
Name	Name of the hold reason.

13.1.24 ContainerOperationMoveNonStandard Entity

Operation executed on a container in the Move NonStandard transaction.

Attributes

Attribute	Description
Comment	Information or instructions for the transaction or the container.
ContainerId	Identifier of the container on which the operation was executed.
ContainerOperationMoveNonStandardKey	A unique identification of the entity.
ContainerOperationMoveNonStandardSiteId	Identifier of the Site this entity is related to.
LaborId	Identifier of the employee responsible for the operation.
OperationId	Identifier of the operation executed on the container.
ToWorkflowStepId	Identifier of the To Step of the workflow.
TxnDate	Transaction date expressed in local time.
TxnDateGMT	Transaction date expressed in Greenwich Mean Time.
WorkflowStepId	Identifier of the workflow step associated with the container.

13.1.25 ContainerOperationRework Entity

Operation executed on a container in the Rework transaction. Rework is a manufacturing process during which current work goes through extra processing steps to correct a problem that occurred during normal processing.

Attributes

Attribute	Description
Comment	Information or instructions for the transaction or the container.
ContainerId	Identifier of the container on which a rework operation was executed.
ContainerOperationReworkKey	A unique identification of the entity.
ContainerOperationReworkReasonId	Identifier of the reason why a rework operation had to be performed for the container.
ContainerOperationReworkSiteId	Identifier of the Site this entity is related to.
LaborId	Identifier of the employee responsible for the rework operation.
OperationId	Identifier of the rework operation.
TxnDate	Transaction date expressed in local time.
TxnDateGMT	Transaction date expressed in Greenwich Mean Time.
WorkflowStepId	Identifier of the workflow step associated with the container.

13.1.26 ContainerOperationReworkReason Entity

Name of the user code group that defines rework reasons for the operation.

Attributes

Attribute	Description
ContainerOperationReworkReasonKey	A unique identification of the rework reason.
ContainerOperationReworkReasonSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information about the rework reason.

Attribute	Description
Name	Name of the rework reason.

13.1.27 ContainerOperationStatus Entity

The status of the operation executed on the container. For example, if the data source is Opcenter Execution Electronics, it can assume the **Fail** or **Pass** values.

Attributes

Attribute	Description
ContainerOperationStatusSiteId	Identifier of the Site this entity is related to.
ContainerOperationStatusKey	A unique identification of the container operation status.
Name	Name of the container operation status.
Description	Contains additional information and descriptions about the container operation status.

13.1.28 ContainerProperty Entity

Container properties define properties of the container. Containers may have zero or more container properties. Container properties may include a unit of measure.

Attributes

Attribute	Description
ContainerPropertySiteId	Identifier of the Site the Container Property is related to.
ContainerPropertyKey	A unique identification of the Container Property.
PropertyTypeKey	Type of property (e.g. Numeric, DateTime, String, ...)
UomId	Identifier of the unit of measure.
Name	Name of the property.
Description	Contains additional information about the property.

Attribute	Description
Multivalue	Specifies if the property can have multiple values.

13.1.29 ContainerPropertyStaticValue Entity

Specifies the current property values of the container.

Attributes

Attribute	Description
ContainerPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
ContainerPropertyStaticValueKey	A unique identification of the entity.
ContainerId	Identifier of the Container entity.
ContainerPropertyId	Identifier of the Container property entity.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.1.30 ContainerStatus Entity

Contains the possible states of a container.

Attributes

Attribute	Description
ContainerStatusKey	A unique identification of the container status.
ContainerStatusSiteId	Identifier of the Site this entity is related to.

Attribute	Description
Description	Contains additional information and descriptions about the container status.
Name	Name of the container status.

13.1.31 Customer Entity

The customer for whom the manufacturing order was created.

Attributes

Attribute	Description
CustomerSiteId	Identifier of the Site this entity is related to.
CustomerKey	A unique identification of the customer.
Description	Contains additional information and descriptions about the customer.
Name	Name of the customer.

13.1.32 DefectBoardSide Entity

This entity describes the side of the board where the defect was located. For example, if the data source is Opcenter Execution Electronics, it can assume the following values:

- 0 = Top
- 1 = Bottom
- 2 = Both
- 3 = None

Attributes

Attribute	
DefectBoardSideSiteId	Identifier of the Site this entity is related to.
DefectBoardSideKey	A unique identifier of the board side. It can assume the values: 0, 1, 2, 3.

Attribute	
Description	Contains additional information and descriptions about the board side.
Name	Name of the board side. It can assume the values: Top, Bottom, Both, None.

13.1.33 DefectClass Entity

Represents a grouping of Defects.

Attributes

Attributes	Description
DefectClassSiteId	Identifier of the Site for which the Defect Class is defined.
DefectClassKey	A unique identification of the Defect Class.
Name	Name of the Defect Class.

13.1.34 DefectDefectClass Entity

Contains the relationship between Defect and DefectClass entities.

Attributes

Attribute	Description
DefectDefectClassSiteId	Identifier of the Site this entity is related to.
DefectDefectClassKey	A unique identification of this entity.
DefectId	Identifier of the Defect object.
DefectClassId	Identifier of the DefectClass object.

13.1.35 Defect Entity

Represents a defect that has been identified in a final or intermediate material.

Attributes

Attribute	Description
DefectSiteId	Identifier of the Site for which the Defect is defined.
DefectKey	A unique identification of the Defect.
Name	Name of the Defect.
Description	Contains additional information about the Defect.
NonConformanceId	Reference to the non-conformance originating from this Defect.
StartDateTime	The starting date/time of this Defect.
EndDateTime	The ending date/time of this Defect.
Duration	Duration of the Defect.
MaterialDefinitionId	Identifier of the material definition.
Quantity	Number of Defects that have been detected.

13.1.36 DefectHistory Entity

Contains a list of defects logged for the same combination of Product, Component Identifier, and Defect Reason. Each Defect contains a description of the defect reason and the number of times the defect reason was changed.

Attributes

Attribute	Description
ContainerId	Identifier of the container the defect is logged against.
ContainerOperationId	Identifier of the operation executed on the container.
ContainerQuantity	The ContainerQuantity field represents the total quantity of the container. If the container is a parent (such as a Panel) the Quantity will be the sum of the Quantity of each child container.

Attribute	Description
ContainerStepPass	The number of times the Container has passed through this Workflow Step.
CreateDate	The date (expressed in local time) when the 'original' defect is created. This value will not change when actions such as a Change Status (Repair, Reopen, NFF) or a Change Reason action are performed.
DefectBoardSideId	Identifier of the Defect Board Side that corresponds to this Defect History.
DefectHistoryKey	A unique identifier of the Defect History.
DefectHistorySiteId	Identifier of the Site this entity is related to.
DefectId	Identifier of the defect contained in the Defect History.
DefectLocationId	Identifier of the Defect Location that corresponds to this Defect History.
DefectPinLocationId	Identifier of the Defect Pin Location that corresponds to this Defect History.
DefectReasonId	Identifier of the Defect Reason that corresponds to this Defect History.
DefectRepairActionId	Identifier of the Defect Repair Action that corresponds to this Defect History.
DefectSeverityId	Identifier of the Defect Severity that corresponds to this Defect History.
DefectStatusId	Identifier of the Defect Status that corresponds to this Defect History.
DefectSymptomId	Identifier of the Defect Symptom that corresponds to this Defect History.
EquipmentId	Identifier of the Equipment that corresponds to this Defect History.

Attribute	Description
FactoryId	Identifier of the factory associated with this Defect History.
FromContainerMaterialDefinitionId	Material included in the Container where the defect was logged.
FromDefectMaterialDefinitionId	Material for which the defect was logged.
InspectLaborId	Identifier of the employee who found the defect during inspection.
IsFailed	Indicates if the container has open defects whose Severity results in the container as being considered 'failed'.
OperationExecutionId	Identifier of the Operation Execution that corresponds to this Defect History.
OperationId	Identifier of the Operation that corresponds to this Defect History.
RepairDate	The date (expressed in local time) when the defect was repaired.
RepairLaborId	Identifier of the employee who repaired the defect.
ReplacedContainerId	This field would hold a value if the defect was repaired and a container was used to replace the component. In that case, this is the identifier of the replaced container.
SpecId	Identifier of the spec (specification) associated with the entity.
Txn	The allowed transactions for the movement of material through the operation.
TxnDate	Value that can be supplied in the transaction (such as when IOT sends a message from the equipment – it passes in the TxnDate) expressed in local time.
TxnDateGMT	Value that can be supplied in the transaction (such as when IOT sends a message from the equipment – it passes in the TxnDate) expressed in Greenwich Mean Time.
UpdateDate	The date (expressed in local time) when the defect is updated.
WorkflowId	Identifier of the workflow associated with the entity.

Attribute	Description
WorkflowStepId	Identifier of the workflow step associated with the entity.

13.1.37 DefectLocation Entity

Reference designator against which the defect was logged.

Attributes

Attribute	Description
DefectLocationSiteId	Identifier of the Site this entity is related to.
DefectLocationKey	A unique identifier of the defect location.
Description	Contains additional information and descriptions about the defect location.
Name	Name of the defect location.

13.1.38 DefectPinLocation Entity

Identifies the pin number/name where the defect is located. The Pin can either come from the CAD data (if the defect is logged in the Production Client) or could be reported by the test equipment automatic data collection.

Attributes

Attributes	Description
DefectPinLocationSiteId	Identifier of the Site this entity is related to.
DefectPinLocationKey	A unique identifier of the pin location.
Description	Contains additional information and descriptions about the pin location.
Name	Name of the pin location.

13.1.39 DefectReason Entity

Defect reason provided when the defect was logged.

Attributes

Attribute	Description
DefectReasonSiteId	Identifier of the Site this entity is related to.
DefectReasonKey	A unique identifier of the Defect Reason.
Description	Contains additional information and descriptions about the Defect Reason.
Name	Name of the Defect Reason.

13.1.40 DefectRepairAction Entity

A defect repair action is a user code representing an action that can be taken to repair a defect. The user selects a repair action when logging a defect repair.

Attributes

Attribute	Description
DefectRepairActionSiteId	Identifier of the Site this entity is related to.
DefectRepairActionKey	A unique identifier of the defect repair action.
Description	Contains additional information and descriptions about the defect repair action.
IsRequiredReplacement	Indicates whether the operator must supply an action taken to replace a defective component.
Name	The name of the defect repair action.

13.1.41 DefectSeverity Entity

The defect severity associated with the defect reason code.

Attributes

Attribute	Description
DefectSeveritySiteId	Identifier of the Site this entity is related to.
DefectSeverityKey	A unique identifier of the defect severity.
Description	Contains additional information and descriptions about the defect severity.
Name	Name of the defect severity.

13.1.42 DefectStatus Entity

The status of a defect. For example, if the data source is Opcenter Execution Electronics, it can assume the following values:

- 0 = Open defect
- 1 = Defect repaired
- 2 = NFF (No Fault Found)

Attributes

Attribute	Description
DefectStatusSiteId	Identifier of the Site this entity is related to.
DefectStatusKey	A unique identifier of the defect status. It can assume the values 0 , 1 or 2 .
Description	Contains additional information and descriptions about the defect status.
Name	Name of the defect status. It can assume the values: Open defect , Defect repaired , NFF (No Fault Found) .

13.1.43 DefectSymptom Entity

Code selected by a technician (when required) to identify a symptom associated with a defect (for example "Low Voltage") indicative of the need to repair the resource.

Attributes

Attribute	Description
DefectSymptomKey	A unique identification of the entity.
DefectSymptomSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information about the defect symptom.
Name	Name of the entity.

13.1.44 DesignSpeed Entity

Contains the value of a designed/planned speed for a specific equipment/product/shift/order.

Attributes

Attribute	Description
DesignSpeedSiteId	Identifier of the Site this entity is related to.
DesignSpeedKey	A unique identification of the speed.
Name	Name of the speed.
Description	Contains additional information about the speed.
Value	Value of the speed.
UomId	Identifier of the unit of measurement for the speed.
StartDateTime	Starting date/time of the period where the speed value is valid.
EndDateTime	End date/time of the period where the speed value is valid.
EquipmentId	Identifier of the associated equipment.
MaterialDefinitionId	Identifier of the associated material/product.
OperationExecutionId	Identifier of the associated production order.
ShiftId	Identifier of the associated work shift.

13.1.45 DetailedReason Entity

Defines a possible detailed reason for a reason (as defined in a reason tree).

Attributes

Attribute	Description
DetailedReasonSiteId	Identifier of the Site this entity is related to.
DetailedReasonKey	A unique identification of the detailed reason.
Name	Name of the detailed reason.
Description	Contains additional information about the detailed reason.
Color	Color to be used to represent this detailed reason.
IsStop	Specify if the detailed reason is corresponding to an asset stop (downtime).

13.1.46 ElectronicProcedure Entity

An Electronic Procedure (EProcedure) is a revisionable object that enables you to assign a collection of tasks to a Specification (Spec).

Attributes

Attribute	Description
ElectronicProcedureKey	A unique identification of the Electronic Procedure.
ElectronicProcedureSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information about the Electronic Procedure.
Name	Name of the Electronic Procedure.

13.1.47 EquipmentCapacity Entity

Defines a measure of the equipment capacity (e.g. a theoretical production speed, the actual production speed, the target cycle time, etc.)

Attributes

Attribute	Description
EquipmentCapacitySiteId	Identifier of the Site this entity is related to.
EquipmentCapacityKey	A unique identification of the equipment capacity.
Name	Name of the equipment capacity.
Description	Contains additional information about the equipment capacity.
UomKey	Identifier of the equipment capacity unit of measurement.

13.1.48 EquipmentCapacityValue Entity

Defines a recorded value for a particular equipment capacity.

Attributes

Attribute	Description
EquipmentCapacityValueSiteId	Identifier of the Site this entity is related to.
EquipmentCapacityValueKey	A unique identification of the equipment capacity value.
EquipmentCapacityId	Identifier of the associated equipment capacity.
EquipmentId	Identifier of the equipment this value has been recorded for.
Value	Value of the equipment capacity.
StartDateTime	Starting date/time of the capacity value.
EndDateTime	Ending date/time of the capacity value.
Duration	Duration of the capacity value.

13.1.49 EquipmentCertification Entity

Certifications can be associated with specific machines to be used in the production. Users/User Roles linked to those Certifications will be able to execute operations using one or more Equipment Types.

Attributes

Attribute	Description
EquipmentCertificationSiteId	Identifier of the Site this entity is related to.
EquipmentCertificationKey	A unique identification of the entity.
CertificationId	Identifier of the Certification associated with one or more specific machines.
EquipmentId	Identifier of the Equipment used to execute the operations allowed with the Certification.
EquipmentClassId	Identifier of the equipment class, that is a grouping of Equipment with similar characteristics, associated with the entity.

13.1.50 EquipmentClass Entity

An Equipment Class is a representation of a grouping of Equipment with similar characteristics for a definite purpose such as manufacturing operations definition, scheduling, capability and performance. Any piece of equipment may be a member of zero or more equipment classes.

Attributes

Attribute	Description
EquipmentClassSiteId	Identifier of the Site for which the Equipment is defined.
EquipmentClassKey	Primary key of the Equipment object.
Name	A unique identification of the Equipment Class.
Description	Contains additional information about the Equipment Class.

13.1.51 Equipment Entity

A representation of the elements of the equipment hierarchy model. Equipment may be a listing of sites, areas, production units, production.

Attributes

Attribute	Description
EquipmentSiteId	Identifier of the Site for which the Equipment has been defined.
EquipmentKey	A unique identification of the Equipment.
Name	Name that identifies the Equipment.
Description	Contains additional information about the Equipment.

13.1.52 EquipmentEquipmentClass Entity

Contains the relationship between Equipment and EquipmentClass entities.

Attributes

Attribute	Description
EquipmentEquipmentClassSiteId	Identifier of the Site this entity is related to.
EquipmentEquipmentClassKey	A unique identification of this entity.
EquipmentId	Identifier of the Equipment object.
EquipmentClassId	Identifier of the Equipment Class object.

13.1.53 EquipmentHierarchy Entity

The assets of an enterprise involved in manufacturing are usually organized in a role based hierarchical fashion. Lower-level groupings are combined to form higher levels in the role based hierarchy. In some cases, a grouping within one level may be incorporated into another grouping at that same level.

Attributes

Attribute	Description
EquipmentHierarchySiteId	Foreign key to the Site the Equipment Hierarchy is related to.
EquipmentHierarchyKey	A unique identification of an element in the Equipment Hierarchy.
EquipmentId	Identifier of the Equipment entity.
ParentEquipmentId	Identifier of the parent element in the Equipment Hierarchy.
StartDateTime	The starting date/time of this equipment hierarchy element.
EndDateTime	The ending date/time of this equipment hierarchy element.

13.1.54 EquipmentProperty Entity

Equipment properties define properties of the equipment. Equipment may have zero or more equipment properties. Equipment properties may include a unit of measure.

Attributes

Attribute	Description
EquipmentPropertySiteId	Identifier of the Site the Equipment Property is related to.
EquipmentPropertyKey	A unique identification of the Equipment Property.
PropertyTypeKey	Type of property (e.g. Numeric, DateTime, String, ...)
UomId	Identifier of the unit of measure.
Name	Name of the property.
Description	Contains additional information about the property.
Multivalue	Specifies if the property can have multiple values.

13.1.55 EquipmentPropertyStaticValue Entity

Specifies the current property values of the equipment.

Attributes

Attributes	Description
EquipmentPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
EquipmentPropertyStaticValueKey	A unique identification of the entity.
EquipmentId	Identifier of equipment entity.
EquipmentPropertyId	Identifier of equipment property entity.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.1.56 EquipmentStatusSnapshot

Describes equipment snapshots about status properties.

Attributes

Attribute	Description
EquipmentStatusSnapshotKey	A unique identification of the entity.
EquipmentStatusSnapshotSiteId	Identifier of the Site this entity is related to.
CurrentRotation	Number of the rotation that actually occurred.
CurrentValue	Defines if the Status code is the current value of the status property.
EquipmentId	Identifier of the equipment concerned by the snapshot.
EquipmentPropertyId	Identifier of the property concerned by the snapshot.

Attribute	Description
MaxRotation	Maximum rotation of the status property.
PeremptionDate	Peremption date of the status property.
StatusLabel	Status label of the status property.
TotalCycle	Total number of the cycle for the property.
TotalRotation	Total rotation of the status property.

13.1.57 EquipmentTimeCategory Entity

Defines a category of operating or not-operating time of a production equipment or physical asset.

Attributes

Attribute	Description
EquipmentTimeCategorySiteId	Identifier of the Site this entity is related to.
EquipmentTimeCategoryKey	A unique identification of the time category.
Name	The name of the time category.
Description	Contains additional information and descriptions about the time category.
Color	Color representing the time category.

13.1.58 EquipmentTimeCategoryHierarchy Entity

Equipment time categories can be organized into a time model, therefore defining a hierarchy of time categories.

Attributes

Attribute	Description
EquipmentTimeCategoryHierarchySiteId	Identifier of the Site this entity is related to.

Attribute	Description
EquipmentTimeCategoryHierarchyKey	A unique identification of the time category hierarchy element.
EquipmentTimeCategoryId	The identifier of the corresponding time category entity.
ParentEquipmentTimeCategoryId	The identifier of the parent time category entity.
StartDateTime	Starting date/time of the hierarchy element.
EndDateTime	End date/time of the hierarchy element.

13.1.59 EquipmentTimeModelEmulation Entity

Defines the recording of a piece of equipment or asset state, split by Shift context. This entity is relevant only in case SIMATIC IT LMS or SIMATIC IT Reporting Framework is used as a data source.

Attributes

Attribute	Description
EquipmentTimeModelEmulationSiteId	Identifier of the Site this entity is related to.
EquipmentTimeModelEmulationKey	A unique identification of this state recording.
EquipmentId	Identifier of the equipment/asset.
EquipmentTimeCategoryId	Identifier of the associated time category.
LaborId	Identifier of the associated person.
MaterialDefinitionId	Identifier of the associated material/product.
MaterialLotId	Identifier of the associated material lot.
OperationExecutionId	Identifier of the associated production order.
OperationResponseId	Identifier of the associated production order operation/step.
ShiftId	Identifier of the associated work shift.

Attribute	Description
ReasonTreeItemId	Identifier of the corresponding reason tree item (state/cause/reason/detailed reason).
Comment	User comment.
IsHidden	Identifies an hidden state.
IsPlanned	Identifies a planned state.
WorkingDate	Calendar day associated with the state.
StartDateTime	Starting date/time.
EndDateTime	Ending date/time.
Duration	Duration.
Sequence	Sequential order of the record in case of asset state split over multiple shifts.
DurationNoBreak	State duration without breaks.

13.1.60 EquipmentTimeModel Entity

Defines the recording of a piece of equipment or asset state.

Attributes

Attribute	Description
EquipmentTimeModelSiteId	Identifier of the Site this entity is related to.
EquipmentTimeModelKey	A unique identification of this state recording.
EquipmentId	Identifier of the equipment/asset.
EquipmentTimeCategoryId	Identifier of the associated time category.

Attribute	Description
MicrostopId	Identifier of the associated microstop context (permits to identify states that are classified as microstops).
ReasonTreeItemId	Identifier of the corresponding reason tree item (state/cause/reason/detailed reason).
StartDateTime	Starting date/time.
EndDateTime	Ending date/time.
Duration	Duration.
RootCauseEquipmentId	Identifier of the asset that is the root-cause machine that caused a downtime, i.e. the machine that caused the asset stop (for example a line).
RootCauseReasonTreeItemId	Identifier of the reason tree item corresponding to the state that caused a downtime.

13.1.61 EquipmentTrace Entity

This entity describes equipment traces.

Attributes

Attribute	Description
EquipmentTraceKey	A unique identification of the entity.
EquipmentTraceSiteId	Identifier of the Site this entity is related to.
AssemblyEquipmentId	Identifier of the equipment assembled with the equipment that generated the data.
Batch	Unique identifier of the batch that generated the data.
CombiningQuantity	Quantity for combining.
CombiningQuantityUomId	The unit of measure of the quantity for combining.

Attribute	Description
Comment	Comments for the trail.
CreationDatetime	Date and time of the trail creation.
Direction	Direction of the action concerned by the trail.
Environment	XFP Environment.
EPE	EPE used by the equipment that generated the data.
EPEValue	Value returned by the EPE during a process.
EquipmentId	Identifier of the equipment concerned by the trail.
EquipmentPropertyId	Identifier of the property concerned by the trail.
EquipmentStatusSnapshotId	Identifier of the snapshot which describes the different values of status properties.
Function	Description of the action tracked by the trail. The functions are predefined and permit to define the different uses of the equipment.
IsMain	Specifies if the trail is the original trail.
LaborId	Identifier of the user login (person) during the trail.
LDU	Time limit to use the property.
LDUUomId	Identifier of the time unit limit to use the property, for example: hour, day, etc.
LocationId	Identifier of the location of the equipment.
MaterialDefinitionId	Identifier of the item concerned by the trail.
MaterialLotId	Identifier of the lot concerned by the trail.
MaxRotation	Maximum rotations for the property concerned by the trail.

Attribute	Description
Message	Message which describes the trail.
OperationExecutionMaterialLotId	Identifier of the work order lot number used in the tracked action.
OperationExecutionNumber	Number of the work order used in the tracked action.
OperationResponseId	Identifier of the task that generated the data.
OriginEquipmentTrace	Trail id of the first parent trail.
OriginFunction	Description of the tracked action by the original trail. The functions are predefined and permit to define the different uses of the equipment.
ParentEquipmentTrace	Trail id of the parent trail.
PICode	Process instructions code used for recording the data.
ProducedMaterialDefinitionId	Identifier of the work order product number used in the tracked action.
PropertyAttribute	Attribute of the property concerned by the trail.
PropertyAttributeValue	Value of the property concerned by the trail regardless of the property type.
PropertyAttributeValueBefore	Old value of the property concerned by the trail.
PropertyListValue	Current value of the list property for the equipment concerned by the trail.
RefEquipmentId	Identifier of the equipment to which the trail refers. For instance, if a combination occurred, the field will contain the source equipment or destination equipment.
SignedLaborId	Identifier of the signed user (person).
WorkcenterId	Identifier of the workcenter concerned by the trail.

Attribute	Description
WorkstationId	Identifier of the workstation used in the tracked action.

13.1.62 ExtendedPropertyType Entity

Contains the possible extended properties (for example the features when the data source is Opcenter Execution Discrete 4.4 or higher).

Attributes

Attribute	Description
ExtendedPropertyTypeKey	A unique identification of the extended property.
Name	The name of the extended property.
Description	Contains additional information and descriptions on the extended property.

13.1.63 Factory Entity

This entity describes a factory, which is any division, department, or group that is separated for accounting and reporting purposes. An enterprise can contain one or more factories.

It often represents a physical manufacturing building, but can also represent the company itself, or a large division within the company.

Attributes

Attribute	Description
FactoryKey	A unique identification of the factory.
FactorySiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the factory.
Name	Name of the factory.

13.1.64 FailureEventCause Entity

Failure mode associated with this event. Failure modes are used to record the actual cause of the failure.

Attributes

Attribute	Description
FailureEventCauseKey	A unique identification of the cause of the event failure.
FailureEventCauseSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information about the cause of the event failure.
Name	Name of the cause of the event failure.

13.1.65 FailureEventDetail Entity

Additional details about the failure of the event.

Attributes

Attribute	Description
ContainerId	Identifier of the container affected by the failure event.
EquipmentId	Identifier of the equipment affected by the failure event.
FailureEventDetailKey	A unique identification of the failure event detail.
FailureEventDetailSiteId	Identifier of the Site this entity is related to.
FailureEventId	Identifier of the failure event.
MaterialDefinitionId	Identifier of the material affected by the failure event.

13.1.66 FailureEvent Entity

The Failures page provides a place for you to enter one or more failure sources for the event. Information for each failure source includes failure mode, type, severity, and description.

Attributes

Attribute	Description
Comment	Optional description of the failure mode.
Description	Contains additional information about the failure event.
FailureEventCauseId	Identifier of the actual cause of the failure event.
FailureEventKey	A unique identification of the failure event.
FailureEventModeId	Identifier of the failure mode associated with this event. Failure modes are used to record the actual cause of the failure.
FailureEventResolutionId	Identifier of the resolution of the failure event.
FailureEventSeverityId	Identifier of the severity of the failure during the event.
FailureEventSiteId	Identifier of the Site this entity is related to.
FailureEventStatusId	Identifier of the status of the failure event.
FailureEventTypeId	Identifier of the failure type associated with this event. Failure types describe the characteristic of the failure as well as provide a way to categorize it (such as intermittent or continuous).
LaborId	Identifier of the employee responsible for the failure event.
Name	Name of the failure event.
ReportedDate	Date and time the failure event was recorded in local time.
ReportedDateGMT	Date and time the failure event was recorded in Greenwich Mean Time.

13.1.67 FailureEventMode Entity

Failure mode associated with this event. Failure modes are used to record the actual cause of the failure. A Failure Mode describes the actual cause of a failure. Failure modes are specified when recording or managing events.

Attributes

Attribute	Description
FailureEventModeKey	A unique identification of the failure event mode.
FailureEventModeSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information about the failure event mode.
Name	Name of the failure event mode.

13.1.68 FailureEventResolution Entity

When you resolve a record, you change its status to Closed and you can no longer perform any actions on it. You can resolve both events and nonconformances.

Attributes

Attribute	Description
FailureEventResolutionKey	A unique identification of the failure event resolution.
FailureEventResolutionSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information about the failure event resolution.
Name	Name of the failure event resolution.

13.1.69 FailureEventSeverity Entity

A Failure Severity defines the severity of a failure during an event. For example, you can create a succession of severities from minor to critical. Failure severities are specified when recording or managing events and nonconformances.

Attributes

Attribute	Description
FailureEventSeverityKey	A unique identification of the failure severity during the event.
FailureEventSeveritySiteId	Identifier of the Site this entity is related to.

Attribute	Description
Description	Contains additional information about the failure severity during the event.
Name	Name of the failure severity during the event.

13.1.70 FailureEventStatus Entity

Status of an event failure record. In Opcenter Execution Core, this status can assume the following values:

- Active
- Pending
- Escalated
- Void
- Closed
- Deleted
- Initiated
- In Review

Attributes

Attribute	Description
FailureEventStatusKey	A unique identification of the status of an event failure record.
FailureEventStatusSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information about the status of an event failure record.
Name	Name of the status of an event failure record.

13.1.71 FailureEventType Entity

Failure type associated with an event. Failure types describe the characteristic of the failure as well as provide a way to categorize it (such as intermittent or continuous).

Attributes

Attribute	Description
FailureEventTypeKey	A unique identification of the failure type associated with an event.

Attribute	Description
FailureEventTypeSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information about the failure type associated with an event.
Name	Name of the failure type associated with an event.

13.1.72 Feeder Entity

A feeder is a type of equipment resource that fits into a slot on a machine to deliver a consumable material or component during manufacturing.

Attributes

Attribute	Description
FeederSiteId	Identifier of the Site this entity is related to.
FeederKey	A unique identification of the feeder.
Description	Contains additional information and descriptions about the feeder.
ExternalNumber	External number of the feeder.
Name	Name of the feeder.

13.1.73 FinalProductFamily Entity

An ERP Order can be identified by a Final Product Family, which represents a specific configuration needed to produce a certain product and it is the unique identifier of the structures (Bill of Materials and Bill of Features) making up the Product Configuration required to produce the Final Product Type associated with the ERP Order. If you produce the same car for ten times, you have one Bill of Materials and one Bill of Features which are always the same, belonging to a specific Final Product Family.

Attributes

Attribute	Description
FinalProductFamilySiteId	Identifier of the Site this entity is related to.

Attribute	Description
FinalProductFamilyKey	A unique identification of the final product family.
BillOfFeatureId	The unique identifier of the Bill of Features to be associated with the Product Configuration and Final Product Type.
BillOfMaterialId	The unique identifier of the Bill of Materials to be associated with the Product Configuration and Final Product Type.
Description	Contains additional information and descriptions on the final product family.
Name	Name of the the final product family.
Revision	In Opcenter Execution Discrete, certain MES entities may undergo major changes to their structure: the result is known as a Revision of the original MES entity.

13.1.74 FinalProductType Entity

An ERP Order is a customer order for the production of a specific product and it is associated with a Final Product Type, which represents the final product of a specific plant.

Attributes

Attribute	Description
FinalProductTypeSiteId	Identifier of the Site this entity is related to.
FinalProductTypeKey	A unique identification of the Final Product Type.
Description	Contains additional information and descriptions on the Final Product Type.
Name	Name of the Final Product Type.

13.1.75 FunctionalCode Entity

Materials can be grouped by specifying a Functional Code, that is a unique name to define their functionality or class (for example, "insulation", "electronics", "hardware" and so on).

Attributes

Attribute	Description
FunctionalCodeSiteId	Identifier of the Site this entity is related to.
FunctionalCodeKey	A unique identification of the functional code.
Description	Contains additional information and descriptions on the functional code.
Name	The name of the functional code.

13.1.76 IndicatorClass Entity

An indicator class is a representation of a grouping of indicators with similar characteristics for a definite purpose.

Attributes

Attribute	Description
IndicatorClassSiteId	Identifier of the Site this entity is related to.
IndicatorClassKey	Unique identifier of the indicator class entity.
Name	Name of the indicator class.
Description	Contains additional information about the indicator class.

13.1.77 Indicator Entity

Represents a definition of a quantity like a production counter, a material/consumable consumption measure.

Attributes

Attribute	Description
IndicatorSiteId	Identifier of the Site this entity is related to.
IndicatorKey	Unique identifier of the indicator entity.
Name	Name of the indicator.

Attribute	Description
Description	Contains additional information about the indicator.
UomId	Identifier of the unit of measurement for the indicator.

13.1.78 IndicatorIndicatorClass Entity

Entity containing the relationship between indicator and indicator class entities.

Attributes

Attribute	Description
IndicatorIndicatorClassSiteId	Identifier of the Site this entity is related to.
IndicatorIndicatorClassKey	Unique identifier of this entity.
IndicatorClassId	Identifier of the indicator class.
IndicatorId	Identifier of the indicator.

13.1.79 IndicatorLimit Entity

Value of high and low limits and target for a specific piece of equipment, KPI and time range combination. This entity is relevant only in case SIMATIC IT LMS or SIMATIC IT Reporting Framework is used as data source.

Attributes

Attribute	Description
IndicatorLimitSiteId	Identifier of the Site this entity is related to.
IndicatorLimitKey	Unique identifier of the indicator limit entity.
BaseOnTimeUomId	Identifier of the unit of measurement corresponding to the unit of time (if applicable) the Uom is related to.
EquipmentId	Identifier of the associated equipment.
IndicatorId	Identifier of the associated indicator definition.

Attribute	Description
UomId	Identifier of the unit of measurement of the indicator (may be related to a unit of time expressed by means of BaseOnTimeUomId).
HighIsBetter	Defines if the higher is the indicator value the better.
HighLimit	Higher limit of the indicator.
LowLimit	Lower limit of the indicator.
Target	Target value of the indicator.
StartDateTime	Validity start date/time.
EndDateTime	Validity end date/time.

13.1.80 IndicatorType Entity

Represents a particular kind of indicator (algorithm or counter). This entity is relevant only in case SIMATIC IT LMS or SIMATIC IT Reporting Framework is used as a data source.

Attributes

Attribute	Description
IndicatorTypeKey	Unique identifier of the indicator type entity.
Name	Name of the indicator type.
Description	Contains additional information about the indicator type.

13.1.81 IndicatorValueEmulation Entity

Represents a measured value for an indicator, including the association with relevant context. This entity is relevant only in case SIMATIC IT LMS or SIMATIC IT Reporting Framework is used as a data source.

Attributes

Attribute	Description
IndicatorValueEmulationSiteId	Identifier of the Site this entity is related to.
IndicatorValueEmulationKey	Unique identifier of the entity.
Sequence	Defines the sequential order of multiple records resulting from the split of a single measurement over multiple contexts.
EquipmentId	Identifier of the equipment this measure is related to.
IndicatorId	Identifier of the indicator definition.
IndicatorTypeId	Identifier of the indicator type.
LaborId	Identifier of the associated person.
MaterialDefinitionId	Identifier of the associated material/product.
MaterialLotId	Identifier of the associated production lot.
OperationExecutionId	Identifier of the associated production order.
OperationResponseId	Identifier of the associated production order operation/step.
SchedulingTypeId	Identifier of the corresponding clustering category (day, week, month, ...)
ShiftId	Identifier of the associated work shift.
TargetTypeId	Identifier of the target type.
ControlHighValue	Value
ControlLowValue	Value
RejectHighValue	Value
RejectLowValue	Value
TargetValue	Target value.

Attribute	Description
Value	Value of the indicator.
WorkingDate	Associated calendar day.
StartDateTime	Validity starting date/time of the value.
EndDateTime	Validity end date/time of the value.
Duration	Validity duration of the value.

13.1.82 IndicatorValue Entity

Represents a measured value for an indicator.

Attributes

Attribute	Description
IndicatorValueSiteId	Identifier of the Site this entity is related to.
IndicatorValueKey	Unique identifier of the indicator value entity.
EquipmentId	Identifier of the equipment this measure is related to.
IndicatorId	Identifier of the indicator definition.
Value	Value of the indicator.
StartDateTime	Validity starting date/time of the value.
EndDateTime	Validity end date/time of the value.
Duration	Validity duration of the value.

13.2 Entities from Labor to MaintenanceRequestHierarchy

13.2.1 LaborCertification Entity

In case of complex or crucial activities that require more users with specific Skills, it is possible to configure personnel (human resources) to be associated with Process Operations, Process Steps, Work Order Operations and Work Order Steps. In detail, each Human Resource lists the Certifications required to start a Work Order Operation/ Step, specifying how many users must possess each Certification.

Attributes

Attribute	Description
LaborCertificationSiteId	Identifier of the Site this entity is related to.
LaborCertificationKey	A unique identification of the entity.
CertificationId	Identifier of the Certification required to execute specific operations.
LaborId	Identifier of the selected personnel authorized to execute specific operations.
ExpirationDate	A Certification assigned to a User or Role must have an expiration date. If the Certification has expired, the User will not be authorized to proceed.

13.2.2 LaborClass Entity

A labor class is a representation of a grouping of labor resources (persons) with similar characteristics for a definite purpose (e.g. administrators, maintenance operators, developer, line operators etc.)

Attributes

Attribute	Description
LaborClassSiteId	Identifier of the Site this entity is related to.
LaborClassKey	Unique identifier of a Labor Class.
Name	Name of the Labor Class.
Description	Contains additional information about the Labor Class.

13.2.3 Labor Entity

The MOM domain includes some of the functionalities of providing status of personnel and may include time and attendance reporting, certification tracking, as well as the ability to track production support functions performed by personnel, such as material preparation or tool room work, and providing the status as a basis for activity-based costing. Labor entity is a representation of a specifically identified individual (Person). A labor entity may represent a person who is a member of zero or more labor classes.

Attributes

Attribute	Description
LaborSiteId	Identifier of the Site this entity is related to.
LaborKey	Unique identifier of the labor entity.
Name	The name of the individual.
Description	Contains additional information about the individual.

13.2.4 LaborHierarchy Entity

Contains information about hierarchy of persons (e.g. teams composed by persons).

Attributes

Attribute	Description
LaborHierarchySiteId	Identifier of the Site this entity is related to.
LaborHierarchyKey	Unique identifier of an element of the hierarchy.
LaborId	Identifier of the corresponding labor entity.
ParentLaborId	Identifier of the parent labor entity.
StartDateTime	The starting date/time of this labor hierarchy element.
EndDateTime	The ending date/time of this labor hierarchy element.

13.2.5 LaborLaborClass Entity

Contains the relationship between Labor and Labor Class entities.

Attributes

Attribute	Description
LaborLaborClassSiteId	Identifier of the Site this entity is related to.
LaborLaborClassKey	Unique identifier of this entity.
LaborId	Identifier of the Labor entity.
LaborClassId	Identifier of the Labor Class entity.

13.2.6 LaborPropertyDynamicValue Entity

Dynamic value of a labor property. Dynamic values permit to manage the history of any change applied to the property.

Attributes

Attribute	Description
LaborPropertyDynamicValueSiteId	Identifier of the Site this entity is related to.
LaborPropertyDynamicValueKey	A unique identification of a labor property dynamic value.
LaborPropertyId	Identifier of the labor property.
LaborId	Identifier of the labor id.
StartDateTime	The starting date/time of this labor property dynamic value.
EndDateTime	The ending date/time of this labor property dynamic value.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Duration	Duration of the value.
Sequence	Value for a multivalue property.

Attribute	Description
StringValue	Value for a property of type String.

13.2.7 LaborProperty Entity

Properties of a person shall be defined as labor properties. Each person shall have zero or more labor properties. Person properties may include the current availability of a person and other current information, such as location and assigned activity, and the unit of measure of the current information.

Attributes

Attribute	Description
LaborPropertySiteId	Identifier of the Site this entity is related to.
LaborPropertyKey	Unique identification of the Property.
Name	Name of the Property.
Description	Contains additional information about the property.
PropertyTypeKey	Type of the property (Numeric, DateTime, String).
UomId	Identifier of the unit of measure of the associated property value.
Multivalue	Specifies if the property can have multiple values.

13.2.8 LaborPropertyStaticValue Entity

Specifies the current property value of the person.

Attributes

Attribute	Description
LaborPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
LaborPropertyStaticValueKey	Unique identification of the property value.
LaborId	Identifier of the labor entity.

Attribute	Description
LaborPropertyId	Identifier of the labor property entity.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.
DatetimeValue	Value for a property of type DateTime.
Sequence	Value for a multivalue property.

13.2.9 LaborTimeCategory Entity

Category of time that can be associated with a specific individual defined as a labor entity.

Attributes

Attribute	Description
LaborTimeCategorySiteId	Identifier of the Site this entity is related to.
LaborTimeCategoryKey	Unique identification of the Labor Time Category.
Name	Name of the Labor Time Category.
Description	Contains additional information about the Labor Time Category.
Color	Color associated with the Labor Time Category.

13.2.10 LaborTimeCategoryHierarchy Entity

Labor time categories can be further divided into more detailed time categories therefore defining a hierarchy of time categories.

Attributes

Attribute	Description
LaborTimeCategoryHierarchySiteId	Identifier of the Site this entity is related to.

Attribute	Description
LaborTimeCategoryHierarchyKey	A unique identification of a specific element in the hierarchy.
LaborTimeCategoryId	Identifier of the corresponding labor time category entity.
ParentLaborTimeCategoryId	Identifier of the parent labor time category entity.
StartDateTime	The starting date/time of this labor hierarchy element.
EndDateTime	The ending date/time of this labor hierarchy element.

13.2.11 LaborTimeModel Entity

Specifies the amount of time of a specific time category associated with a specific individual.

Attributes

Attribute	Description
LaborTimeModelSiteId	Identifier of the Site this entity is related to.
LaborTimeModelKey	Unique identification of the Labor Time Model element.
LaborTimeCategoryId	Identifier of the Labor Time Category.
LaborId	Identifier of the labor entity.
Duration	Duration of the Time Category.
StartDateTime	The starting date/time of this labor entity.
EndDateTime	The ending date/time of this labor entity.

13.2.12 Location Entity

Locations define the logical or physical places in which resources are located or are expected to be located within a plant (site). Locations may be made up of smaller operational locations (therefore defining a location hierarchy).

Attributes

Attribute	Description
LocationSiteId	Identifier of the Site this entity is related to.
LocationKey	A unique identification of a specific Location.
Name	The name of the Location.
Description	Contains additional information and descriptions about the Location.

13.2.13 LocationHierarchy Entity

Contains information about the hierarchy of Locations.

Attributes

Attribute	Description
LocationHierarchySiteId	Identifier of the Site this entity is related to.
LocationHierarchyKey	A unique identification of a specific element in the Location Hierarchy.
LocationId	Identifier of the corresponding Location entity.
ParentLocationId	Identifier of the parent Location entity.
StartDateTime	The starting date/time of this location element.
EndDateTime	The ending date/time of this location element.

13.2.14 MaintenanceDefinitionClass Entity

A representation of a grouping of maintenance definitions with similar characteristics.

Attributes

Attribute	Description
MaintenanceDefinitionClassSiteId	Identifier of the Site this entity is related to.

Attribute	Description
MaintenanceDefinitionClassKey	A unique identification of the maintenance definition class.
Name	Name of the maintenance definition class.
Description	Contains additional information on the maintenance definition class.

13.2.15 MaintenanceDefinition Entity

Defines the information used to instruct maintenance personnel on which activities are required to perform the specified maintenance activity, how to perform those activities, how long they typically take and the resources required for each sub-activity – not only in terms of special tools and jigs or test equipment, but also the required qualifications for personnel.

Attributes

Attribute	Description
MaintenanceDefinitionSiteId	Identifier of the Site this entity is related to.
MaintenanceDefinitionKey	A unique identification of the maintenance definition.
Name	Name of the maintenance definition.
Description	Contains additional information on the maintenance definition.

13.2.16 MaintenanceDefinitionMaintenanceDefinitionClass Entity

Defines the relationship between maintenance definition and maintenance definition class entities.

Attributes

Attribute	Description
MaintenanceDefinitionMaintenanceDefinitionClassSiteId	Identifier of the Site this entity is related to.
MaintenanceDefinitionMaintenanceDefinitionClassKey	A unique identification of this relationship entity.

Attribute	Description
MaintenanceDefinitionId	Identifier of the maintenance definition class.
MaintenanceDefinitionClassId	Identifier of the maintenance definition.

13.2.17 MaintenanceDefinitionProperty Entity

Properties of maintenance definitions shall be represented as maintenance definition properties. Each maintenance definition can have unique values for zero or more maintenance definition properties.

Attributes

Attribute	Description
MaintenanceDefinitionPropertySiteId	Identifier of the Site this entity is related to.
MaintenanceDefinitionPropertyKey	A unique identification of a maintenance property.
Name	Identifier of the unit of measure for the property value.
Description	Type of the property value.
PropertyTypeId	Name of the property.
UomId	Contains additional information about the property.
Multivalue	Specifies if the property can have multiple values.

13.2.18 MaintenanceDefinitionPropertyStaticValue Entity

Current value of a maintenance definition property.

Attributes

Attribute	Description
MaintenanceDefinitionPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
MaintenanceDefinitionPropertyStaticValueKey	A unique identification of a maintenance definition property static value.

Attribute	Description
MaterialDefinitionId	Identifier of the maintenance definition.
MaterialDefinitionPropertyId	Identifier of the maintenance definition property.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
StringValue	Value for a property of type String.
Sequence	Value for a multivalue property.

13.2.19 MaintenanceExecutionClass Entity

A representation of a grouping of maintenance executions with similar characteristics.

Attributes

Attribute	Description
MaintenanceExecutionClassSiteId	Identifier of the Site this entity is related to.
MaintenanceExecutionClassKey	A unique identification of a maintenance execution class.
Name	Name of the maintenance execution class.
Description	Contains additional information about the maintenance execution class.

13.2.20 MaintenanceExecution Entity

The execution of a maintenance request shall be presented as maintenance execution. Maintenance execution is used in the analytical model to represent the execution of a maintenance order.

Attributes

Attribute	Description
MaintenanceExecutionSiteId	Identifier of the Site this entity is related to.

Attribute	Description
MaintenanceExecutionKey	A unique identification of an maintenance execution.
Name	Name of the maintenance execution.
Description	Contains additional notes regarding the maintenance execution.
MaintenanceExecutionStatusId	Identifier of the maintenance execution status.
StartDateTime	The actual starting date/time of this maintenance execution.
EndDateTime	The actual ending date/time of this maintenance execution.
Duration	Actual duration of the maintenance execution.

13.2.21 MaintenanceExecutionHierarchy Entity

A maintenance execution can be made up of one or more maintenance executions, therefore defining a hierarchy of maintenance executions.

Attributes

Attribute	Description
MaintenanceExecutionHierarchySiteId	Identifier of the Site this entity is related to.
MaintenanceExecutionHierarchyKey	A unique identification of the hierarchy element.
ParentMaintenanceExecutionId	Identifier of the parent maintenance execution.
MaintenanceExecutionId	Identifier of the corresponding maintenance execution.
StartDateTime	The starting date/time of this maintenance execution hierarchy element.
EndDateTime	The ending date/time of this maintenance execution hierarchy element.

13.2.22 MaintenanceExecutionMaintenanceExecutionClass Entity

Defines the relationship between maintenance execution and maintenance execution class entities.

Attributes

Attribute	Description
MaintenanceExecutionMaintenanceExecutionClass SiteId	Identifier of the Site this entity is related to.
MaintenanceExecutionMaintenanceExecutionClass Key	A unique identification of this relationship entity.
MaintenanceExecutionId	Identifier of the maintenance execution.
MaintenanceExecutionClassId	Identifier of the maintenance execution class.

13.2.23 MaintenanceExecutionPropertyDynamicValue Entity

Dynamic value of an maintenance execution property. Dynamic values permit to manage the history of any change applied to the property.

Attributes

Attribute	Description
MaintenanceExecutionPropertyDynamicValueSiteId	Identifier of the Site this entity is related to.
MaintenanceExecutionPropertyDynamicValueKey	A unique identification of a maintenance execution property dynamic value.
MaintenanceExecutionId	Identifier of the maintenance execution.
MaintenanceExecutionPropertyId	Identifier of the maintenance execution property.
StartDateTime	The starting date/time of this maintenance execution property dynamic value.
EndDateTime	The ending date/time of this maintenance execution property dynamic value.
DatetimeValue	Value for a property of type DateTime.

Attribute	Description
FloatValue	Value for a property of type Numeric.
Duration	Duration of the value.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.2.24 MaintenanceExecutionProperty Entity

Properties of maintenance executions shall be presented as maintenance execution properties. Each maintenance execution can have unique values for zero or more maintenance execution properties.

Attributes

Attribute	Description
MaintenanceExecutionPropertySiteId	Identifier of the Site this entity is related to.
MaintenanceExecutionPropertyKey	A unique identification of this maintenance execution property.
Name	Name of the property.
Description	Contains additional information about the property.
PropertyTypeId	Type of the property value.
UomId	Identifier of the unit of measure for the property value.
Multivalue	Specifies if the property can have multiple values.

13.2.25 MaintenanceExecutionPropertyStaticValue Entity

Current value of a operation execution property.

Attributes

Attribute	Description
MaintenanceExecutionPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
MaintenanceExecutionPropertyStaticValueKey	A unique identification of a maintenance execution property static value.
MaintenanceExecutionId	Identifier of the maintenance execution property.
MaintenanceExecutionPropertyId	Identifier of the maintenance execution property.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.
DatetimeValue	Value for a property of type DateTime.
Sequence	Value for a multivalue property.

13.2.26 MaintenanceExecutionStatus Entity

Contains the possible states of a maintenance execution.

Attributes

Attribute	Description
MaintenanceExecutionStatusSiteId	Identifier of the Site this entity is related to.
MaintenanceExecutionStatusKey	A unique identification of a maintenance execution status.
Name	Name of the maintenance execution status.
Description	Contains additional information about the maintenance execution status.

13.2.27 MaintenanceRequestClass Entity

A representation of a grouping of maintenance requests with similar characteristics.

Attributes

Attribute	Description
MaintenanceRequestClassSiteId	Identifier of the Site this entity is related to.
MaintenanceRequestClassKey	A unique identification of the maintenance request class.
Name	Name of the maintenance request class.
Description	Contains additional information about the maintenance request class.

13.2.28 MaintenanceRequest Entity

A maintenance scheduling shall be made up of one or more maintenance requests. Each maintenance request shall correspond to, or reference, an identified maintenance definition. Maintenance requests therefore contain information about scheduled maintenance operations or maintenance steps within a maintenance order.

Attributes

Attribute	Description
MaintenanceRequestSiteId	Identifier of the Site this entity is related to.
MaintenanceRequestKey	A unique identification of the maintenance request.
Name	Name of the maintenance request.
Description	Contains additional information about the operation request.
MaintenanceDefinitionId	Identifier of the maintenance definition that corresponds to this maintenance request.
MaintenanceSchedulingId	Identifier of the associated maintenance scheduling entity.
EquipmentId	Identifier of the equipment related to the maintenance request.
MaintenanceRequestStatusId	Identifier of the state of the maintenance request.
StartDateTime	Estimated starting date/time of this maintenance request.
EndDateTime	Estimated ending date/time of this maintenance request.

Attribute	Description
Duration	Estimated duration of the maintenance request.
Sequence	Indicates the sequence number among other maintenance requests within the same maintenance schedule.

13.2.29 MaintenanceRequestHierarchy Entity

A maintenance request can be made up of multiple nested maintenance requests, therefore defining a maintenance request hierarchy.

Attributes

Attribute	Description
MaintenanceRequestHierarchySiteId	Identifier of the Site this entity is related to.
MaintenanceRequestHierarchyKey	A unique identification of a maintenance request hierarchy element.
MaintenanceRequestId	Identifier of the corresponding maintenance request.
MaintenanceOperationRequestId	Identifier of the parent maintenance request.
StartDateTime	The starting date/time of this maintenance request hierarchy element.
EndDateTime	The ending date/time of this maintenance request hierarchy element.

13.3 Entities from MaintenanceRequestMaintenanceRequestClass to MaintenanceSchedulingStatus

13.3.1 MaintenanceRequestMaintenanceRequestClass Entity

This entity defines the relationship between operation request and operation request class entities.

Attributes

Attribute	Description
MaintenanceRequestMaintenanceRequestClassSiteId	Identifier of the Site this entity is related to.
MaintenanceRequestMaintenanceRequestClassKey	A unique identification of this relationship entity.
MaintenanceRequestId	Identifier of the maintenance request.
MaintenanceRequestClassId	Identifier of the maintenance request class.

13.3.2 MaintenanceRequestProperty Entity

Properties of maintenance requests shall be presented as maintenance request properties. Each maintenance request can have unique values for zero or more maintenance request properties.

Attributes

Attribute	Description
MaintenanceRequestPropertySiteId	Identifier of the Site this entity is related to.
MaintenanceRequestPropertyKey	A unique identification of the maintenance request property.
PropertyTypeId	Type of the property.
UomId	Identifier of the unit of measure for the property value.

13.3.3 MaintenanceRequestPropertyStaticValue Entity

Current value of an operation request property.

Attributes

Attribute	Description
MaintenanceRequestPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
MaintenanceRequestPropertyStaticValueKey	A unique identification of a maintenance request property static value.

Attribute	Description
MaintenanceRequestPropertyId	Identifier of the maintenance request property.
MaintenanceRequestId	Identifier of the maintenance request.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.3.4 MaintenanceRequestStatus Entity

Contains the possible states of an operation request.

Attributes

Attribute	Description
MaintenanceRequestStatusSiteId	Identifier of the Site this entity is related to.
MaintenanceRequestStatusKey	A unique identification of a maintenance request status.
Name	Name of the maintenance request status.
Description	Contains additional information about the maintenance request status.

13.3.5 MaintenanceResponseClass Entity

A representation of a grouping of maintenance responses with similar characteristics.

Attributes

Attribute	Description
MaintenanceResponseClassSiteId	Identifier of the Site this entity is related to.

Attribute	Description
MaintenanceResponseClassKey	A unique identification of the maintenance response class.
Name	Name of the maintenance response class.
Description	Contains additional information about the maintenance response class.

13.3.6 MaintenanceResponse Entity

The executions from manufacturing that are associated with a maintenance request shall be defined as a maintenance response. Operation responses are basically the unit of work within a maintenance execution. Maintenance responses therefore are used to represent the execution of each maintenance order operation or maintenance order step.

Attributes

Attribute	Description
MaintenanceResponseSiteId	Identifier of the Site this entity is related to.
MaintenanceResponseKey	A unique identification of the maintenance response.
Name	Name of the maintenance response.
Description	Contains additional information about the maintenance response.
Sequence	Indicates the sequence number among other maintenance requests within the same maintenance execution.
MaintenanceDefinitionId	Identifier of the maintenance definition that corresponds to this maintenance response.
MaintenanceExecutionId	Identifier of the maintenance execution this maintenance response belongs to.
MaintenanceResponseStatusId	Identifier of the state of the maintenance response.
EquipmentId	Identifier of the equipment used for the maintenance response.
StartDateTime	The actual starting date/time of this maintenance response.

Attribute	Description
EndTime	The actual ending date/time of this maintenance response.
Duration	Actual duration of the maintenance response.

13.3.7 MaintenanceResponseHierarchy Entity

A maintenance response can be made up of multiple nested maintenance responses, therefore defining a maintenance response hierarchy.

Attributes

Attribute	Description
MaintenanceResponseHierarchySiteId	Identifier of the Site this entity is related to.
MaintenanceResponseHierarchyKey	A unique identification of a maintenance response hierarchy element.
MaintenanceResponseId	Identifier of the corresponding maintenance response.
ParentMaintenanceResponseId	Identifier of the parent maintenance response.
StartTime	The starting date/time of this maintenance response hierarchy element.
EndTime	The ending date/time of this maintenance response hierarchy element.

13.3.8 MaintenanceResponseMaintenanceResponseClass Entity

This entity defines the relationship between maintenance response and maintenance response class entities.

Attributes

Attribute	Description
MaintenanceResponseMaintenanceResponseClassSiteId	Identifier of the Site this entity is related to.

Attribute	Description
MaintenanceResponseMaintenanceResponseClassKey	A unique identification of this relationship entity.
MaintenanceResponseId	Identifier of the maintenance response.
MaintenanceResponseClassId	Identifier of the maintenance response class.

13.3.9 MaintenanceResponsePropertyDynamicValue Entity

Dynamic value of a maintenance response property. Dynamic values permit to manage the history of any change applied to the property.

Attributes

Attribute	Description
MaintenanceResponsePropertyDynamicValueSiteId	Identifier of the Site this entity is related to.
MaintenanceResponsePropertyDynamicValueKey	A unique identification of a maintenance response property dynamic value.
MaintenanceResponseId	Identifier of the maintenance response.
MaintenanceResponsePropertyId	Identifier of the maintenance response property.
StartDateTime	The starting date/time of this maintenance response property dynamic value.
EndDateTime	The ending date/time of this maintenance response property dynamic value.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Duration	Duration of the value.
Sequence	Value for a multivalue property.

Attribute	Description
StringValue	Value for a property of type String.

13.3.10 MaintenanceResponseProperty Entity

Properties of maintenance responses shall be presented as maintenance response properties. Each maintenance response can have unique values for zero or more maintenance response properties.

Attributes

Attribute	Description
MaintenanceResponsePropertySiteId	Identifier of the Site this entity is related to.
MaintenanceResponsePropertyKey	A unique identification of the maintenance response property.
Name	Name of the property.
Description	Contains additional information about the property.
PropertyTypeId	Type of the property.
UomId	Identifier of the unit of measure for the property value.
Multivalue	Specifies if the property can have multiple values.

13.3.11 MaintenanceResponsePropertyStaticValue Entity

Current value of a maintenance response property.

Attributes

Attribute	Description
MaintenanceResponsePropertyStaticValueSiteId	Identifier of the Site this entity is related to.
MaintenanceResponsePropertyStaticValueKey	A unique identification of a maintenance response property static value.

Attribute	Description
MaintenanceResponseId	Identifier of the maintenance response.
MaintenanceResponsePropertyId	Identifier of the maintenance response property.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.
DatetimeValue	Value for a property of type datetime.
Sequence	Value for a multivalue property.

13.3.12 MaintenanceResponseStatus Entity

Contains the possible states of a maintenance response.

Attributes

Attribute	Description
MaintenanceResponseStatusSiteId	Identifier of the Site this entity is related to.
MaintenanceResponseStatusKey	A unique identification of a maintenance response status.
Name	Name of the maintenance response status.
Description	Contains additional information about the maintenance response status.

13.3.13 MaintenanceSchedulingClass Entity

A representation of a grouping of maintenance scheduling with similar characteristics.

Attributes

Attribute	Description
MaintenanceSchedulingClassSiteId	Identifier of the Site this entity is related to.

Attribute	Description
MaintenanceSchedulingClassKey	A unique identification of the maintenance scheduling class.
Name	Name of the maintenance scheduling class.
Description	Contains additional information and descriptions of the maintenance scheduling class.

13.3.14 MaintenanceScheduling Entity

A request for maintenance (maintenance order) to be performed is a maintenance scheduling.

Attributes

Attribute	Description
MaintenanceSchedulingSiteId	Identifier of the Site this entity is related to.
MaintenanceSchedulingKey	A unique identification of the maintenance scheduling.
Name	Name of the maintenance scheduling.
Description	Contains additional information and descriptions of the maintenance scheduling.
MaintenanceSchedulingStatusId	Identifier of the associated maintenance scheduling status.
StartDateTime	Estimated starting time of the maintenance scheduling.
EndDateTime	Estimated ending time of the maintenance scheduling.
Duration	Estimated duration of the maintenance scheduling.

13.3.15 MaintenanceSchedulingHierarchy Entity

A maintenance scheduling can be made up of multiple nested maintenance scheduling elements, therefore defining a maintenance scheduling hierarchy.

Attributes

Attribute	Description
MaintenanceSchedulingHierarchySiteId	Identifier of the Site this entity is related to.
MaintenanceSchedulingHierarchyKey	A unique identification of a maintenance scheduling hierarchy element.
MaintenanceSchedulingId	Identifier of the corresponding maintenance scheduling.
ParentMaintenanceSchedulingId	Identifier of the parent maintenance scheduling.
StartDateTime	The starting date/time of this maintenance scheduling hierarchy element.
EndDateTime	The ending date/time of this maintenance scheduling hierarchy element.

13.3.16 MaintenanceSchedulingMaintenanceSchedulingClass Entity

Defines the relationship between maintenance scheduling and maintenance scheduling class entities.

Attributes

Attribute	Description
MaintenanceSchedulingMaintenanceSchedulingClassSiteId	Identifier of the Site this entity is related to.
MaintenanceSchedulingMaintenanceSchedulingClassKey	A unique identification of this relationship entity.
MaintenanceSchedulingClassId	Identifier of the maintenance scheduling.
MaintenanceSchedulingId	Identifier of the maintenance scheduling class.

13.3.17 MaintenanceSchedulingProperty Entity

Properties of maintenance scheduling shall be presented as maintenance scheduling properties. Each maintenance scheduling can have unique values for zero or more maintenance scheduling properties.

Attributes

Attribute	Description
MaintenanceSchedulingPropertySiteId	Identifier of the Site this entity is related to.
MaintenanceSchedulingPropertyKey	A unique identification of the maintenance scheduling property.
UomId	Identifier of the unit of measure for the property value.
PropertyTypeId	Type of the property.
Name	Name of the property.
Description	Contains additional information and descriptions of the property.
Multivalue	Specifies if the property can have multiple values.

13.3.18 MaintenanceSchedulingPropertyStaticValue Entity

Current value of a maintenance scheduling property.

Attributes

Attribute	Description
MaintenanceSchedulingPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
MaintenanceSchedulingPropertyStaticValueKey	A unique identification of a maintenance scheduling property static value.
MaintenanceSchedulingId	Identifier of the maintenance scheduling.
MaintenanceSchedulingPropertyId	Identifier of the maintenance scheduling property.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.

Attribute	Description
StringValue	Value for a property of type String.

13.3.19 MaintenanceSchedulingStatus Entity

Contains the possible states of an operation scheduling.

Attributes

Attribute	Description
MaintenanceSchedulingStatusSiteId	Identifier of the Site this entity is related to.
MaintenanceSchedulingStatusKey	A unique identification of a maintenance scheduling status.
Name	Name of the maintenance scheduling status.
Description	Contains additional information and descriptions of the maintenance scheduling status.

13.4 Entities from MaterialClass to NonConformanceToolSpecification

13.4.1 MaterialClass Entity

A representation of groupings of material definitions for a definite purpose such as manufacturing operations definition, scheduling, capability and performance shall be presented as a material class. A material definition shall belong to zero or more material classes.

Attributes

Attribute	Description
MaterialClassSiteId	Identifier of the Site this entity is related to.
MaterialClassKey	A unique identification of a specific Material Class.
Name	Name of the Material Class.

Attribute	Description
Description	Contains additional information and descriptions about the Material Class.

13.4.2 MaterialConsumption Entity

The Material Consumption entity allows users to perform in-depth analysis of material consumption over a selected time period using different attributes such as customer, placed/rejected components, material corrections, part, cost, and so on.

Attributes

Attribute	Description
Correction	Correction applied to the material amount.
Cost	Current monetary value of the material consumption volume.
CustomerId	Unique identifier of the customer associated with the product.
EquipmentId	Unique identifier of the equipment associated with the material consumption.
InitialAmount	The initial amount of the components on a container.
MaterialConsumptionKey	A unique identification of the material consumption.
MaterialConsumptionSiteId	Identifier of the Site this entity is related to.
MaterialContainerId	Identifier of the material container related to the material consumption.
MaterialDefinitionId	Unique identifier of the final material.
OperationExecutionId	Identifier of the manufacturing order associated with the material consumption.
OperationId	Identifier of the operation associated with the material consumption.
PartNumberMaterialDefinitionId	Identifier of the part number of the material definition related to this entity.

Attribute	Description
Placed	Status of the container.
Recipeld	Identifier of the recipe that defines the material consumption.
Rejected	Status of the container.
Slot	Slot where the container is placed.
Station	Station on the machine where the container is located.
SubSlot	Sub-slot where the container is placed.
Timestamp	Date and time of the material consumption.

13.4.3 MaterialContainerAction Entity

A record describing the action is created each time an operator performs a predefined task such as connecting a feeder to a reel on a kitting station. This is used to trace errors and to reduce the possibility of reoccurrence.

Attributes

Attributes	Description
MaterialContainerActionSiteId	Identifier of the Site this entity is related to.
MaterialContainerActionKey	A unique identification of the Material Container Action.
Description	Contains additional information and descriptions on the Material Container Action.
Name	Name of the Material Container Action.

13.4.4 MaterialContainer Entity

Master data for a Material Container (reel), the data is added when a reel is kitted to a feeder for the first time.

Attributes

Attribute	Description
MaterialContainerSiteId	Identifier of the Site this entity is related to.
MaterialContainerKey	A unique identification of the Material Container.
Direction	The direction of the component on the supply form. It can assume the following values: 0, 90, 180, 270.
LotNumber	Specifies the lot number of the container.
Manufacturer	Identification of the component manufacturer.
ManufacturerPartNumber	The part number as specified by the manufacturer.
ReceiveDate	Date when the container was first registered.
Remark	A text containing remarks about the container.
Remark2	Can contain additional remarks or customer specific entries.
Remark3	Can contain additional remarks or customer specific entries.
Supplier	The supplier of the container.
SupplyFormName	Name of the form where the material container supply is detailed.
Type	<p>Component type: it can be one of the following:</p> <ul style="list-style-type: none"> • SMD (0), • Other (1), • Paste (2), • Stencil (3), • Squeegee1 (4), • BareBoard (5), • Backup Plate (6), • Cleaning Paper (7), • Cleaning Solvent (8), • Squeegee2 (9)

13.4.5 MaterialContainerHistory Entity

Tracking of all container transactions and actions that have been executed on a material container, for example location change, operator actions, material status etc.

Attributes

Attribute	Description
MaterialContainerHistorySiteId	Identifier of the Site this entity is related to.
MaterialContainerHistoryKey	A unique identification of the Material Container History.
EquipmentId	Identifier of the equipment related to this entity.
FeederId	Identifier of the feeder used if the component reel is placed on a feeder.
LaborId	Identifier of the personnel related to this entity.
MaterialContainerId	Identifier of the reel (material container).
MaterialContainerActionId	Identifier of the action performed on the reel.
MaterialContainerThicknessId	Identifier of the thickness of the component body.
MaterialDefinitionId	Identifier of the material definition related to this entity.
MsdLevelId	Identifier of the Moisture Sensitivity Level (MSL), an electronic standard used by manufacturers for MSD components.
Comment	The comment made by the operator. The comment can for example describe the action taken by the operator.
DryTimeStamp	For dry components this field is a timestamp specifying when the reel was placed in a dry storage. For other components it is the time when the reel was added to the table and it is not updated again.
InitialAmount	Initial number of components on a reel (container).

Attribute	Description
OpenTimeStamp	For dry components this field identifies the time when the reel was opened. For other components it is the time for the last kitting meaning that it will be update each time a kitting occurs.
Slot	The slot where the reel is placed.
Station	The station where the reel is placed.
SubSlot	The sub-slot where the reel is placed.
Timestamp	A timestamp identifying when an action on the material container has occurred.

13.4.6 MaterialContainerStatus Entity

Material container status description. Examples are Accepted, Rejected, Spliced, Blocked, and others.

Attributes

Attribute	Description
MaterialContainerStatusSiteId	Identifier of the Site this entity is related to.
MaterialContainerStatusKey	A unique identification of the Material Container Status.
Description	Contains additional information and descriptions on the Material Container Status.
Name	Name of the Material Container Status.

13.4.7 MaterialContainerThickness Entity

This entity shows the thickness of a Moisture Sensitive Device (MSD) component. It can assume the following values:

- 1 is $\pm 1.4\text{mm}$,
- 2 is -1.4 and $\pm 2.0\text{mm}$,
- 3 is -2.0 and ± 4.5 ,
- 4 is BGA -17 x 17mm

Attributes

Attribute	Description
MaterialContainerThicknessSiteId	Identifier of the Site this entity is related to.
MaterialContainerThicknessKey	A unique identification of the Material Container Thickness.
Description	Contains additional information and descriptions about the Material Container Thickness.
Name	Name of the Material Container Thickness.

13.4.8 MaterialDefinitionBillOfMaterial Entity

For the Electronics Industry, this entity establishes a relationship between the material definition and the bill of material, as in this industry more than one product (material definition) can be manufactured using the same bill of material.

Attributes

Attribute	Description
MaterialDefinitionBillOfMaterialSiteId	Identifier of the Site this entity is related to.
MaterialDefinitionBillOfMaterialKey	Unique identifier of this entity.
BillOfMaterialId	Identifier of the Bill of Material.
MaterialDefinitionId	Identifier of the Material Definition entity.

13.4.9 MaterialDefinition Entity

A representation of a material (consumed or produced) with similar characteristics for the purpose of manufacturing operations definition, scheduling, capability and performance shall be presented as a material definition.

Attributes

Attribute	Description
MaterialDefinitionSiteId	Identifier of the Site this entity is related to.
MaterialDefinitionKey	A unique identification of a specific Material Definition.

Attribute	Description
FunctionalCodeId	Identifier of the functional code by which the material defined by this entity is grouped.
MountingTechnologyId	For Opcenter Execution Electronics data source this field contains the identifier of the mounting technology applied during the mounting operation of PCB components. It can assume the values: <ul style="list-style-type: none"> • SMT (Surface Mount Technology) • THT (Thru Hole Technology) • Undefined
Identifier	String that contains the NId value (Numeric Identifier for Process CPG and Discrete Industry).
Name	Name of the Material Definition.
Description	Contains additional information and descriptions about the Material Definition.

13.4.10 MaterialDefinitionHierarchy Entity

A material definition may be defined as containing an assembly of material definitions and as part of an assembly of material definitions, therefore defining a hierarchy of material definitions.

Attributes

Attribute	Description
MaterialDefinitionHierarchySiteId	Identifier of the Site this entity is related to.
MaterialDefinitionHierarchyKey	Unique identification of a specific Material Definition Hierarchy element.
MaterialDefinitionId	Identifier of the corresponding Material Definition entity.
ParentMaterialDefinitionId	Identifier of the parent Material Definition entity.
StartDateTime	The starting date/time of this Material Definition Hierarchy element.

Attribute	Description
EndTime	The ending date/time of this Material Definition Hierarchy element.

13.4.11 MaterialDefinitionMaterialClass Entity

Contains the relationship between Material Definition and Material Class entities.

Attributes

Attribute	Description
MaterialDefinitionMaterialClassSiteId	Identifier of the Site this entity is related to.
MaterialDefinitionMaterialClassKey	Unique identifier of this entity.
MaterialDefinitionId	Identifier of the corresponding Material Definition entity.
MaterialClassId	Identifier of the corresponding Material Class entity.

13.4.12 MaterialDefinitionPropertyStaticValue Entity

Contains the static value of a Material Definition Property.

Attributes

Attribute	Description
MaterialDefinitionPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
MaterialDefinitionPropertyStaticValueKey	Unique identifier of a specific Material Definition Property value.
MaterialDefinitionId	Identifier of the corresponding Material Definition entity.
MaterialPropertyId	Identifier of the corresponding Material Definition Property.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.

13.4.13 MaterialExtendedProperty Entity

Contains the extended material properties of a material definition or material lot.

Attributes

MaterialExtendedPropertySiteId	Identifier of the Site this entity is related to.
MaterialExtendedPropertyKey	A unique identification of the material extended property.
ExtendedPropertyTypeId	A unique identification of the type of extended property.
Description	Contains additional information and descriptions on the material extended property.
IsOption	Identifies whether this extended property is optional (value = 1) or not (value = 0).
Name	The name of the material extended property.

13.4.14 MaterialInventory Entity

Monthly historical and current material amount, monetary value and location.

Attributes

Attribute	Description
MaterialInventorySiteId	Identifier of the Site this entity is related to.
MaterialInventoryKey	A unique identification of the material inventory.
LaborId	Identifier of the labor related to the material inventory.
MaterialContainerId	Identifier of the material container related to the material inventory.
MaterialContainerStatusId	Identifier of the material container status related to the material inventory.

Attribute	Description
MaterialDefinitionId	Identifier of the material definition related to the material inventory.
Correction	Correction to the amount, used in combination with splicing. This is updated by the shop floor applications during splicing, after manual count.
Cost	Current monetary value of the inventory volume.
Currency	Currency used for the monetary value.
Errors	Number of errors produced for a material inventory.
ExpirationDateTime	Expiration date and time of the material inventory.
InitialAmount	The initial amount of the components on a container.
Inventory	Number of containers in stock.
IsCurrent	Specifies if the inventory is related to Current or Historic data.
Slot	The slot where the container is placed.
Station	The station where the container is placed.
SubSlot	The subslot where the container is placed.
Used	Used subtracted from InitialAmount gives the amount left on a container.
Timestamp	Timestamp of the snapshot.

13.4.15 MaterialLot Entity

A uniquely identified specific amount of material, either countable or weighable, shall be presented as a material lot. A material lot describes the planned or actual total quantity or amount of material available, its current state, and its specific property values. Material lot can represent either consumed or produced quantities.

Attributes

Attribute	Description
MaterialLotSiteId	Identifier of the Site this entity is related to.
MaterialLotKey	A unique identification of the Material Lot.
Name	Name of the Material Lot.
Description	Contains additional information and descriptions about the Material Lot.
MaterialDefinitionId	Identifier of the the Material Definition that defines this Material Lot.
MaterialLotStatusId	Identifier of the material status for this material lot.
Quantity	The quantity of the Material Lot.
UomId	The unit of measure of the associated quantity.
ValidFromDateTime	Starting validity Date/time of the lot.
ValidToDateTime	Ending validity Date/time of the lot.

13.4.16 MaterialLotExtendedPropertyStaticValue Entity

Contains the static value of a Material Lot Extended Property.

Attributes

MaterialLotExtendedPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
MaterialLotExtendedPropertyStaticValueKey	A unique identification of the Material Lot Extended Property Static Value.
MaterialExtendedPropertyId	Unique identifier of the Material Extended Property.
MaterialLotId	Unique identifier of the material lot.

Value	String that represents the value of this property for the specified material lot.
ValueDescription	Contains additional information and descriptions on the value of this property for the specified material lot.
ValueName	The name of the value of this property for the specified material lot.

13.4.17 MaterialLotHierarchy Entity

A material lot may be made up of material sublots. A material lot or a material subplot may be defined as follows by containing an assembly of material lots or material sublots and as part of an assembly of material lots or material sublots.

Attributes

Attribute	Description
MaterialLotHierarchySiteId	Identifier of the Site this entity is related to.
MaterialLotHierarchyKey	A unique identification of an element in a Material Lot Hierarchy.
MaterialLot	Identifier of the the corresponding Material Lot entity.
ParentMaterialLotId	Identifier of the the parent Material Lot entity.
StartDateTime	The starting date/time of this Material Lot Hierarchy element.
EndDateTime	The ending date/time of this Material Lot Hierarchy element.

13.4.18 MaterialLotMaterialDefinition Entity

The representation of a material (consumed or produced) for a uniquely identified specific amount of material, either countable or weighable.

Attributes

Attribute	Description
MaterialLotMaterialDefinitionSiteId	Identifier of the Site this entity is related to.
MaterialLotMaterialDefinitionKey	A unique identification of the Material Lot Material Definition.
MaterialDefinitionId	A unique identification of the Material Definition.
MaterialLotId	A unique identification of the Material Lot.
UomId	Identifier of the unit of measure for the value.
ConsumedQuantity	Value of the consumed material.
Quantity	The quantity to be produced for a specific order.

13.4.19 MaterialLotOperationClass Entity

A representation of groupings of material lot operations/activities for a definite purpose shall be presented as a material lot operation class.

Attributes

Attribute	Description
MaterialLotOperationClassSiteId	Identifier of the Site this entity is related to.
MaterialLotOperationClassKey	A unique identification of the Material Lot Operation Class.
Name	Name of the Material Lot Operation Class.
Description	Contains additional information about the Material Lot Operation Class.

13.4.20 MaterialLotOperation Entity

A material lot operation contains information about an operation/activity executed on a specific material lot (movement, consumption etc.)

Attributes

Attribute	Description
MaterialLotOperationSiteId	Identifier of the Site this entity is related to.
MaterialLotOperationKey	A unique identification of Material Lot Operation.
OperationDateTime	Date/time of the operation.
MaterialLotId	Identifier of the Material Lot on which the operation has been executed.
MaterialDefinitionId	Identifier of the the corresponding Material Definition.
LocationId	Identifier of the the location of the Material Lot.
ActualQuantity	Quantity of the lot before the operation.
OperationQuantity	Quantity of the lot after the operation.
UomId	Identifier of the unit of measure of the quantity.
SourceLocationId	Identifier of the the source location.
SourceMaterialDefinitionId	Identifier of the source Material Definition.
SourceMaterialLotId	Identifier of the source Material Lot.
SourceUomId	Identifier of the unit of measure of the source quantity.
EquipmentId	Identifier of the target equipment.
SourceEquipmentId	Identifier of the source equipment.

13.4.21 MaterialLotOperationHierarchy Entity

A hierarchy of Material Lot Operations.

Attributes

Attributes	Description
MaterialLotOperationHierarchySiteId	Identifier of the Site this entity is related to.
MaterialLotOperationHierarchyKey	A unique identification of an element in the Material Lot Operation Hierarchy.
MaterialLotOperationId	Identifier of the corresponding Material Lot Operation.
ParentMaterialLotOperationId	Identifier of the parent Material Lot Operation.
StartDateTime	The starting date/time of this Material Lot Operation Hierarchy element.
EndDateTime	The ending date/time of this Material Lot Operation Hierarchy element.

13.4.22 MaterialLotOperationMaterialLotOperationClass Entity

Contains the relationship between Material Lot Operation and Material Lot Operation Class entities.

Attributes

Attribute	Description
MaterialLotOperationMaterialLotOperationClassSiteId	Identifier of the Site this entity is related to.
MaterialLotOperationMaterialLotOperationClassKey	A unique identification of this entity.
MaterialLotOperationClassId	Identifier of the Material Lot Operation Class.
MaterialLotOperationId	Identifier of the Material Lot Operation.

13.4.23 MaterialLotOperationPropertyDynamicValue Entity

Dynamic value of a material lot operation property. Dynamic values permit to manage the history of any change applied to the property.

Attributes

Attribute	Description
MaterialLotOperationPropertyDynamicValueSiteId	Identifier of the Site this entity is related to.
MaterialLotOperationPropertyDynamicValueKey	A unique identification of a material lot property dynamic value.
MaterialLoytOperationPropertyId	Identifier of the material property.
MaterialLotId	Identifier of the material lot id.
StartDateTime	The starting date/time of this material lot property dynamic value.
EndDateTime	The ending date/time of this material lot property dynamic value.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Duration	Duration of the value.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.4.24 MaterialLotOperationProperty Entity

Properties of a material lot operations shall be defined as material lot properties. Each material lot operation shall have zero or more properties.

Attributes

Attribute	Description
MaterialLotOperationPropertySiteId	Identifier of the Site this entity is related to.
MaterialLotOperationPropertyKey	A unique identification of a Material Lot Operation Property.

Attribute	Description
UomId	The unit of measure of the associated Property value.
PropertyTypeId	Type of the Property (Numeric, DateTime, String).
Name	Name of the Property.
Description	Contains additional information about the Property.
Multivalue	Specifies if the Property can have multiple values.

13.4.25 MaterialLotOperationPropertyStaticValue Entity

Entity containing the static value of a Material Lot Operation Property.

Attributes

Attribute	Description
MaterialLotOperationPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
MaterialLotOperationPropertyStaticValueKey	A unique identification of a Material Lot Operation Property static value.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.4.26 MaterialLotPropertyDynamicValue Entity

Dynamic value of a material property. Dynamic values allow you to manage the history of any change applied to the property.

Attributes

Attribute	Description
MaterialLotPropertyDynamicValueSiteId	Identifier of the Site this entity is related to.
MaterialLotPropertyDynamicValueKey	A unique identification of a material lot property dynamic value.
MaterialPropertyId	Identifier of the material property.
MaterialLotId	Identifier of the material lot id.
StartDateTime	The starting date/time of this material lot property dynamic value.
EndDateTime	The ending date/time of this material lot property dynamic value.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Duration	Duration of the value.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.4.27 MaterialLotPropertyStaticValue Entity

Contains the static value of a Material Lot Property.

Attributes

Attribute	Description
MaterialLotPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
MaterialLotPropertyStaticValueKey	A unique identification of a material lot property static value.
MaterialLotId	Identifier of the material lot.

Attribute	Description
MaterialPropertyId	Identifier of the material property.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.
DatetimeValue	Value for a property of type DateTime.
Sequence	Value for a multivalue property.

13.4.28 MaterialLotStatus Entity

Defines a possible status for a material lot.

Attributes

Attribute	Description
MaterialLotStatusSiteId	Identifier of the Site this entity is related to.
MaterialLotStatusKey	A unique identification of a material lot status.
Description	Contains additional information about the material lot status.
Name	Name of the material lot status.

13.4.29 MaterialProperty Entity

Properties of a material definition or material lot shall be presented as material properties. Each material can have unique values for zero or more material properties, such as a specific pH value for the specific material lot, or a specific density for the material lot.

Attributes

Attribute	Description
MaterialPropertySiteId	Identifier of the Site this entity is related to.
MaterialPropertyKey	A unique identification of a material property.

Attribute	Description
Name	Name of the material property.
Description	Contains additional information about the material property.
PropertyTypeId	Type of the material property value.
UomId	Identifier of the unit of measure for the value.
Multivalue	Specifies if the property can have multiple values.

13.4.30 Microstop Entity

Defines a possible microstop context value for a piece of equipment/asset state.

Attributes

Attribute	Description
MicrostopKey	Unique identifier of the microstop value.
Value	True (the state is a microstop) or False (the state is not a microstop).

13.4.31 MilestoneDiagram Entity

Diagram showing the milestone sequence within a Production Flow Control.

Attributes

Attribute	Description
MilestoneDiagramSiteId	Identifier of the Site this entity is related to.
MilestoneDiagramKey	A unique identification of the milestone diagram.
FinalProductTypeId	Identifier of the Final Product Type through which the Production Flow Control including the milestone is associated with a Material Tracking Unit.

Attribute	Description
Description	Contains additional information and descriptions on the milestone diagram.
Name	Name of the milestone diagram.
Revision	Identifies the revision (version) of the Production Flow Control Diagram.

13.4.32 Milestone Entity

Each product to be produced must undergo a specific Production Flow Control. This means going through a set of predefined business Milestones, relevant to a specific plant and logically connected through Transitions. An example could be: a Vehicle body painting or its assembly.

Attributes

Attribute	Description
MilestoneSiteId	Identifier of the Site this entity is related to.
MilestoneKey	A unique identification of the milestone.
MilestoneDiagramId	Identifier of the diagram showing the Production Flow Control of a milestone sequence.
Description	Contains additional information and descriptions on the milestone.
Name	The name of the milestone.
Sequence	Number that indicates the order in which the milestone will be hypothetically executed during the production process.

13.4.33 MilestoneHistory Entity

Information on the history of the reached Milestones.

Attributes

Attribute	Description
MilestoneHistorySiteId	Identifier of the Site this entity is related to.
MilestoneHistoryKey	A unique identification of the milestone history.
EquipmentId	Identifier of the equipment where the milestone has been reached.
FinalProductTypeId	Identifier of the Final Product Type through which the Production Flow Control including the milestone is associated with a Material Tracking Unit.
MaterialLotId	A unique identification of the Material Lot.
MilestoneId	A unique identification of the milestone the history refers to.
OperationSchedulingId	ERP order for Opcenter Execution Discrete 4.4 or higher.
EventDateTime	Date and time when the milestone has been reached.

13.4.34 MountingTechnology Entity

Mounting technology information allows customers to distinguish which technology was applied during the mounting operation of PCB components, like for example:

- **SMT** (Surface Mount Technology)
- **THT** (Thru Hole Technology)
- **Undefined** Indicates the mounting technology is unknown or not applicable.

Attributes

Attribute	Description
MountingTechnologySiteId	Identifier of the Site this entity is related to.
MountingTechnologyKey	Unique identification of the mounting technology.
Name	The name of the mounting technology.
Description	Contains additional information on the mounting technology.

13.4.35 MsdLevel Entity

The Moisture Sensitivity Level is an electronic standard used by manufacturers for Moisture Sensitive Device (MSD) components. It relates to the packaging and handling precautions for some semiconductors, ranging from level 1 (unlimited) to 6 (must be baked prior to use).

Attributes

Attribute	Description
MsdLevelSiteId	Identifier of the Site this entity is related to.
MsdLevelKey	A unique identification of the MsdLevel.
Description	Contains additional information and descriptions about the MsdLevel.
Name	Name of the MsdLevel.

13.4.36 NonConformanceClass Entity

A representation of a type or grouping of NonConformance entities.

Attributes

Attribute	Description
NonConformanceClassSiteId	Identifier of the Site this entity is related to.
NonConformanceClassKey	A unique identification of a NonConformance class.
Name	Name of the NonConformance class.

13.4.37 NonConformance Entity

During the execution of manufacturing activities, shop floor operators might encounter anomalies in manufacturing operations or in related entities. In such scenarios, operators can bring these anomalies to the notice of Production Coordinators by declaring Non-Conformances.

Attributes

Attribute	Description
NonConformanceSiteId	Identifier of the Site this entity is related to.

Attribute	Description
NonConformanceKey	A unique identification of a Non-Conformance.
Name	Name of the Non-Conformance.
NonConformanceStatusId	Identifier of the Non-Conformance status.
StartDateTime	Date on which the Non-Conformance was closed.
EndDateTime	Date on which the Non-Conformance was declared.
Duration	Duration of the Non-Conformance.
EquipmentId	The equipment related to the Non-Conformance.
MaterialDefinitionId	The Material Definition related to the Non-Conformance.
ToolDefinitionId	The Tool Definition related to the Non-Conformance.
OperationExecutionId	Identifier of the operation execution (work order) the Non-Conformance is related to.
OperationResponseId	Identifier of the operation response (work order operation/step) the Non-Conformance is related to.
MaterialLotId	Identifier of the material lot the Non-Conformance is related to.
Comment	Notes inserted by the user while declaring the Non-Conformance.
InspectedQuantity	Quantity of the inspected material.
NonConformantQuantity	Partial quantity of the inspected material that has been found to be non-conformant.

13.4.38 NonConformanceEquipmentSpecification Entity

Equipment related to a Non-Conformance.

Attributes

Attributes	Description
NonConformanceNonConformanceClassSiteId	Identifier of the Site this entity is related to.
NonConformanceNonConformanceClassKey	A unique identification of this relationship entity.
NonConformanceClassId	Identifier of the NonConformance class.
NonConformanceld	Identifier of the NonConformance.

13.4.39 NonConformanceHistory Entity

History of non-conformance status changes, like for example open to scrap, open to repair, repair to close and return to work, etc.

Attributes

Attribute	Description
NonConformanceHistorySiteId	Identifier of the Site this entity is related to.
NonConformanceHistoryKey	A unique identification of the non-conformance history.
StartDateTime	Date and time when the status started.
Duration	Status duration expressed in seconds.
EndDateTime	Date and time when the status ended.
LaborId	Identifier of the operator who performed the non-conformance status change.
NonConformanceld	Identifier of the non-conformance the history refers to.
NonConformanceStatusId	Identifier of the non-conformance status.
EquipmentId	Identifier of the equipment the non-conformance history refers to.

13.4.40 NonConformanceMaterialLotSpecification Entity

Material lot related to a Non-Conformance.

Attributes

Attribute	Description
NonConformanceMaterialLotSpecificationSiteId	Identifier of the Site this entity is related to.
NonConformanceMaterialLotSpecificationKey	A unique identification of a NonConformance material lot specification.
NonConformancelId	Identifier of the Non-Conformance.
MaterialLotSiteId	Identifier of the site the material lot is related to.
MaterialLotKey	Identifier of the material lot.

13.4.41 NonConformanceNonConformanceClass Entity

This entity defines the relationship between NonConformance and NonConformance class entities.

Attributes

Attribute	Description
NonConformanceNonConformanceClassSiteId	Identifier of the Site this entity is related to.
NonConformanceNonConformanceClassKey	A unique identification of this relationship entity.
NonConformanceClassId	Identifier of the NonConformance class.
NonConformancelId	Identifier of the NonConformance.

13.4.42 NonConformanceProperty Entity

Properties of NonConformances shall be presented as NonConformance properties. Each NonConformance can have unique values for zero or more NonConformance properties.

Attributes

Attribute	Description
NonConformancePropertySiteId	Identifier of the Site this entity is related to.

Attribute	Description
NonConformancePropertyKey	A unique identification of a NonConformance property.
Name	Name of the property.
PropertyTypeId	Type of the property value.
UomId	Identifier of the unit of measure for the property value.

13.4.43 NonConformancePropertyStaticValue Entity

Current value of a NonConformance property.

Attributes

Attribute	Description
NonConformancePropertyStaticValueSiteId	Identifier of the Site this entity is related to.
NonConformancePropertyStaticValueKey	A unique identification of a NonConformance property static value.
NonConformanceId	Identifier of the NonConformance.
NonConformancePropertyId	Identifier of the NonConformance property.
StringValue	Value for a property of type String.

13.4.44 NonConformanceStatus Entity

Defines a possible status for a NonConformance.

Attributes

Attribute	Description
NonConformanceStatusSiteId	Identifier of the Site this entity is related to.
NonConformanceStatusKey	A unique identification of a NonConformance status.

Attribute	Description
Name	Name of the NonConformance status.

13.4.45 NonConformanceToolSpecification Entity

An identification of a NonConformance tool.

Attributes

Attributes	Description
NonConformanceToolSpecificationSiteId	Identifier of the Site this entity is related to.
NonConformanceToolSpecificationKey	A unique identification of a NonConformance tool specification.
NonConformanceld	Identifier of the NonConformance.
ToolSiteId	Identifier of the site the tool is related to.
ToolKey	Identifier of the tool.

13.5 Entities from Operation to OperationRequestStatus

13.5.1 Operation Entity

This entity describes an Operation, which is a manufacturing or processing point where inventory and production activities are tracked.

Attributes

Attribute	Description
OperationKey	A unique identification of the operation.
OperationSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the operation.

Attribute	Description
Name	Name of the operation.

13.5.2 OperationDefinitionClass Entity

A representation of a grouping of operation definitions with similar characteristics.

Attributes

Attribute	Description
OperationDefinitionClassSiteId	Identifier of the Site this entity is related to.
OperationDefinitionClassKey	A unique identification of the operation definition class.
Name	Name of the operation definition class.
Description	Contains additional information on the operation definition class.

13.5.3 OperationDefinition Entity

An operations definition defines a production operation or a single step within such production operation.

Attributes

Attribute	Description
OperationDefinitionSiteId	Identifier of the Site this entity is related to.
OperationDefinitionKey	A unique identification of the operation definition.
Name	Name of the operation definition.
Description	Contains additional information on the operation definition.

13.5.4 OperationDefinitionEquipmentSpecification Entity

Specifies the equipment used by the operation definition.

Attributes

Attribute	Description
OperationDefinitionEquipmentSpecificationSiteId	Identifier of the Site this entity is related to.
OperationDefinitionEquipmentSpecificationKey	A unique identification of the operation definition equipment specification.
EquipmentId	Identifier of the equipment.
OperationDefinitionId	Identifier of the operation definition.
Quantity	The actual produced quantity associated with this operation definition equipment specification.
StartDateTime	The actual starting date/time of this operation definition equipment specification.
EndDateTime	The actual ending date/time of this operation definition equipment specification.
Duration	The actual duration of this operation definition equipment specification.

13.5.5 OperationDefinitionMaterialDefinitionSpecificationIn Entity

An identification of a material that should be consumed and that is specified in the operation definition.

Attributes

Attribute	Description
OperationDefinitionMaterialDefinitionSpecificationInSiteId	Identifier of the Site this entity is related to.
OperationDefinitionMaterialDefinitionSpecificationInKey	A unique identification of the material definition specification specified in the operation definition.
MaterialDefinitionId	A unique identification of the material definition.
OperationDefinitionId	A unique identification of the operation definition.

Attribute	Description
Quantity	The quantity of material that should be consumed.
UomId	Identifier of the unit of measure for the quantity.

13.5.6 OperationDefinitionOperationDefinitionClass Entity

Defines the relationship between operation definition and operation definition class entities.

Attributes

Attribute	Description
OperationDefinitionOperationDefinitionClassSiteId	Identifier of the Site this entity is related to.
OperationDefinitionOperationDefinitionClassKey	A unique identification of this relationship entity.
OperationDefinitionClassId	Identifier of the operation definition class.
OperationDefinitionId	Identifier of the operation definition.

13.5.7 OperationDefinitionProperty Entity

Properties of operation definitions shall be presented as operation definition properties. Each operation definition can have unique values for zero or more operation definition properties.

Attributes

Attribute	Description
OperationDefinitionPropertySiteId	Identifier of the Site this entity is related to.
OperationDefinitionPropertyKey	A unique identification of an operation definition property.
UomId	Identifier of the unit of measure for the property value.
PropertyTypeId	Type of the property value.
Name	Name of the property.

Attribute	Description
Description	Contains additional information about the property.
Multivalue	Specifies if the property can have multiple values.

13.5.8 OperationDefinitionPropertyStaticValue Entity

Current value of an operation definition property.

Attributes

Attribute	Description
OperationDefinitionPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
OperationDefinitionPropertyStaticValueKey	A unique identification of an operation definition property static value.
OperationDefinitionId	Identifier of the operation definition.
OperationDefinitionPropertyId	Identifier of the operation definition property.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.5.9 OperationExecutionClass Entity

A representation of a grouping of operation executions with similar characteristics.

Attributes

Attribute	Description
OperationExecutionClassSiteId	Identifier of the Site this entity is related to.

Attribute	Description
OperationExecutionClassKey	A unique identification of an operation execution.
Name	Name of the operation execution.
Description	Contains additional information about the operation execution.

13.5.10 OperationExecutionCompensation Entity

Contains information about compensators of work orders. This entity is relevant only to SIMATIC IT EBR or Opcenter EX Pharma sources.

Attributes

Attribute	Description
OperationExecutionCompensationSiteId	Identifier of the Site this entity is related to.
OperationExecutionCompensationKey	A unique identification of this operation execution compensation.
CompensatedOperationResponseId	Identifier of the production/work order phase/operation/step that will be compensated.
CompensatorOperationResponseId	Identifier of the production/work order operation/step that will compensate.
OperationExecutionId	Identifier of the production/work order.
CompensatorDoseNumber	The number of doses of compensator.
Percentage	Compensation percentage.

13.5.11 OperationExecutionConsumptionActionType Entity

Type of action (preparation or manufacturing) performed for the consumption.

Attributes

Attribute	Description
OperationExecutionConsumptionActionTypeKey	A unique identification of this entity.
OperationExecutionConsumptionActionTypeSite Id	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the entity.
Name	Name of the type of action (preparation or manufacturing).

13.5.12 OperationExecutionConsumptionBalanceType Entity

Type of scale used for the weighing.

Attributes

Attribute	Description
OperationExecutionConsumptionBalanceTypeKey	Identifier of the Site this entity is related to.
OperationExecutionConsumptionBalanceTypeSite Id	A unique identification of this entity.
Description	Contains additional information and descriptions about the type of scale.
Name	Name of the type of scale.

13.5.13 OperationExecutionConsumptionBarcode Entity

Barcode label.

Attributes

Attribute	Description
OperationExecutionConsumptionBarcodeKey	A unique identification of this entity.

Attribute	Description
OperationExecutionConsumptionBarcodeSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the consumption barcode.
Name	Name of the consumption barcode.

13.5.14 OperationExecutionConsumptionCombination Entity

Combination mode of the consumption.

Attributes

Attribute	Description
OperationExecutionConsumptionCombination Key	A unique identification of this entity. It can assume the following values: <ul style="list-style-type: none"> • If combined weigh line = R • If cancelled weigh line = X
OperationExecutionConsumptionCombination SiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the consumption combination.
Name	Name of the consumption combination. It can assume the following values: <ul style="list-style-type: none"> • If combined weigh line = R • If cancelled weigh line = X

13.5.15 OperationExecutionConsumption Entity

This entity describes the consumption related to the execution of a manufacturing request (work order).

Attributes

Attribute	Description
OperationExecutionConsumptionSiteId	Identifier of the Site this entity is related to.
OperationExecutionConsumptionKey	A unique identification of this entity.
ActionTraceId	Identifier of the action trace.
BalanceNumber	Number of the scale.
CalculatedNet	Net weight of an item.
CombinationDatetime	In case of combined weigh line, this field contains the date and time of the combination.
CombinationLaborId	In case of combined weigh line, this field contains the person responsible for the combination.
CombinationWorkstationId	In case of combined weigh line, this field contains the workstation on which the combination was recorded.
ConcordanceNumber	Number of the concordance.
ConsumedMaterialDefinitionId	Item code of the consumed material.
ConsumedQuantity	Specifies the amount of material consumed by the consumption.
ContainerId	A unique identification of the container.
CorrectLot	Specifies if the lot is correct or not.
CountingUomId	Identifier of the unit of measure used for the count.
EndGrossQuantity	Final gross quantity.
EndOfContainer	Specifies if the container is the final one or not.
EquipmentId	Identifier of the equipment related to the consumption.
ForcedLot	Specifies if the lot has been forced or not.

Attribute	Description
ForcedPrecision	Specifies if the precision has been forced or not.
ForcedRelease	Specifies if the release has been forced or not.
ForcedWeighing	Specifies if the weighing has been forced or not.
Gross	The value of the gross weight.
ItemDensity	Value of the item density.
ItemPotency	Value of the item potency.
ItemPotency2	Another value of the item potency.
ItemUomId	Identifier of the unit of measure of the item.
KeyboardInput	Specifies if an input has been received using the keyboard.
LabelNumber	Number of the label.
LocationId	Identifier of the corresponding Location entity.
LotDensity	Density of the lot used for consumption.
LotPotency	Potency of the lot used for consumption.
LotPotency2	Another potency of the lot used for consumption.
MaterialLotId	Identifier of the material lot.
NumberOfContainers	Number of the containers used for the consumption.
OperationExecutionConsumptionActionTypeId	Type of action (preparation or manufacturing) performed for the consumption.
OperationExecutionConsumptionBalanceType	Type of scale used for the weighing.
OperationExecutionConsumptionBarcodeId	Identifier of the barcode label.

Attribute	Description
OperationExecutionConsumptionCombinationId	Identifier of the combination mode of the consumption.
OperationExecutionConsumptionMaterialLineStatusId	Identifier of the status of the material line after the consumption.
OperationExecutionConsumptionReconciliationCheckId	Identifier of the reconciliation check of the radio frequency.
OperationExecutionConsumptionRFReconciliationCheckId	Identifier of the radio frequency reconciliation check.
OperationExecutionConsumptionWeighingModeId	Identifier of the weighing mode used to weigh the amount of material.
OperationExecutionConsumptionWeighingStatusId	Identifier of the state of the weighing, for example: in progress, ended, etc.
OperationExecutionConsumptionWeighingTypeId	Identifier of the type of weighing, for example OF, MP, etc.
OperationExecutionId	Identifier of the operation execution (work order).
OperationResponseId	Identifier of the operation response (work order operation).
PalletNumber	The number of the pallet.
Potency2UomId	Identifier of the unit of measure of the second potency value.
PotencyUomId	Identifier of the unit of measure of the potency.
PrintedLabel	Specifies if the label has been printed or not.
RadioFrequencyReconciliationCheckDatetime	In case the weigh line is controlled before weighing, this field contains the date and time of the reconciliation check of the radio frequency.
RadioFrequencyReconciliationCheckLaborId	In case the weigh line is controlled before weighing, this field contains the person responsible for the reconciliation check of the radio frequency.

Attribute	Description
RadioFrequencyReconciliationCheckWorkstationId	In case the weigh line is controlled before weighing, this field contains the workstation on which the reconciliation check of the radio frequency was recorded.
ReconciliationCheckDatetime	In case the weigh line is controlled after weighing, this field contains the date and time of the reconciliation check.
ReconciliationCheckLaborId	In case the weigh line is controlled after weighing, this field contains the identifier of person responsible for the reconciliation check.
ReconciliationCheckWorkstationId	In case the weigh line is controlled after weighing, this field contains the the workstation on which the reconciliation check was recorded.
RemainingQuantity	Remaining quantity in the container after the consumption.
SameContainer	Species if the same container has been used or not.
SourceEquipmentId	Identifier of the source equipment.
StartGrossQuantity	Initial gross quantity.
StockUomId	Identifier of the unit of measure of the stock.
TagDensity	Specifies if the density has been tagged or not.
Tare	The tare of the pallet.
TicketNumber	Number of the ticket.
Tolerance	Value of the tolerance.
WDUCleanDatetime	WDU clean date and time.
WeighingDatetime	End date and time of the weighing.
WeighingGap	Gap applied to the weighing.
WeighingIndex	Index of the weighing.

Attribute	Description
WeighingLaborId	In case of simple weigh line, this field contains the identifier of the person responsible for the weighing.
WeighingStartDatetime	In case of simple weigh line, this field contains the starting date and time of the weighing.
WeighingUomId	In case of simple weigh line, this field contains the unit of measure of the weighing.
WeighingWorkstationId	In case of simple weigh line, this field contains the workstation on which the weighing was recorded.
WorkcenterId	A unique identification of the workcenter.

13.5.16 OperationExecutionConsumptionMaterialLineStatus Entity

Status of the material line after the consumption.

Attributes

Attribute	Description
OperationExecutionConsumptionMaterialLineStatusKey	Identifier of the Site this entity is related to.
OperationExecutionConsumptionMaterialLineStatusSiteId	A unique identification of this entity.
Description	Contains additional information and descriptions about the status of the material line.
Name	Name of the status of the material line.

13.5.17 OperationExecutionConsumptionReconciliationCheck Entity

The reconciliation check of the radio frequency.

Attributes

Attribute	Description
OperationExecutionConsumptionReconciliationCheckKey	A unique identification of this entity. It can assume the following values: <ul style="list-style-type: none"> • If the weigh line is controlled after weighing = R • If the line is a cancelled weigh line = X
OperationExecutionConsumptionReconciliationCheckSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the consumption reconciliation check.
Name	Name of the consumption reconciliation check. It can assume the following values: <ul style="list-style-type: none"> • If the weigh line is controlled after weighing = R • If the line is a cancelled weigh line = X

13.5.18 OperationExecutionConsumptionRFReconciliationCheck Entity

Radio frequency reconciliation check.

Attributes

Attribute	Description
OperationExecutionConsumptionRFReconciliationCheckKey	A unique identification of this entity. It can assume the following values: <ul style="list-style-type: none"> • If the weigh line is controlled before combination = R • If the line is a cancelled weigh line = X
OperationExecutionConsumptionRFReconciliationCheckSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the RF reconciliation check.
Name	Name of the RF reconciliation check.

13.5.19 OperationExecutionConsumptionWeighingMode Entity

Weighing mode used to weigh the amount of material.

Attributes

Attribute	Description
OperationExecutionConsumptionWeighingMode Key	A unique identification of this entity.
OperationExecutionConsumptionWeighingMode SiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the weighing mode.
Name	Name of the weighing mode.

13.5.20 OperationExecutionConsumptionWeighingStatus Entity

Describes the state of the weighing, for example: in progress, ended, etc.

Attributes

Attribute	Description
OperationExecutionConsumptionWeighingStatus Key	A unique identification of this entity.
OperationExecutionConsumptionWeighingStatus SiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the weighing status.
Name	Name of the weighing status.

13.5.21 OperationExecutionConsumptionWeighingType Entity

Describes the type of weighing, for example OF, MP, etc.

Attributes

Attribute	Description
OperationExecutionConsumptionWeighingType Key	A unique identification of this entity.
OperationExecutionConsumptionWeighingType SiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the weighing type.
Name	Name of the weighing type.

13.5.22 OperationExecution Entity

The execution of a manufacturing request (work order) shall be presented as an operation execution.

Attributes

Attributes	Description
OperationExecutionSiteId	Identifier of the Site this entity is related to.
OperationExecutionKey	A unique identification of an operation execution.
Name	Name of the operation execution.
Description	Contains additional notes regarding the operation execution.
OperationExecutionStatusId	Identifier of the operation execution status.
EquipmentId	Identifies where the operation execution fits within the equipment hierarchy.
MaterialDefinitionId	Identifier of the final material of the operation execution.
BillOfMaterialId	Identifier of the bill of material (the collection of all material used in the operation execution).
OperationSchedulingId	Identifier of the associated operation scheduling entity.
PlannedStartDateTime	The estimated starting date/time of this operation execution.

Attributes	Description
PlannedEndTime	The estimated ending date/time of this operation execution.
ProducedQuantity	Specifies the amount of material produced by this operation execution.
ReworkedQuantity	Specifies the amount of material reworked by this operation execution.
ScrapQuantity	Specifies the amount of material scrapped by this operation execution.
UomId	Identifier of the unit of measure for the quantity.
StartTime	The actual starting date/time of this operation execution.
EndTime	The actual ending date/time of this operation execution.
Duration	Actual duration of the operation execution.
PlannedQuantity	Specifies the quantity of material planned for the order execution.
PlannedQuantityUomId	Identifier of the unit of measure for the planned quantity.
WorkflowId	Identifier of the workflow related to the order execution.

13.5.23 OperationExecutionHierarchy Entity

An operation execution can be made up of one or more operation executions, therefore defining a hierarchy of operation executions.

Attributes

Attribute	Description
OperationExecutionHierarchySiteId	Identifier of the Site this entity is related to.
OperationExecutionHierarchyKey	A unique identification of the hierarchy element.
ParentOperationExecutionId	Identifier of the parent operation execution.

Attribute	Description
OperationExecutionId	Identifier of the corresponding operation execution.
StartDateTime	The starting date/time of this operation execution hierarchy element.
EndDateTime	The ending date/time of this operation execution hierarchy element.

13.5.24 OperationExecutionHistory Entity

History of the order statuses, for example: Running, Created, Paused, etc.

Attributes

Attribute	Description
OperationExecutionHistorySiteId	Identifier of the Site this entity is related to.
OperationExecutionHistoryKey	A unique identification of the Operation Execution History.
OperationExecutionId	Identifier of the operation execution (manufacturing order) associated with the entity.
OperationExecutionStatusId	Identifier of the operation execution (manufacturing order) status.
LaborId	Identifier of the personnel who executed the order.
StartDateTime	The starting date and time of the order status.
EndDateTime	The ending date and time of the order status.
Duration	Duration of the status (difference between start and end time).

13.5.25 OperationExecutionOperationExecutionClass Entity

Defines the relationship between operation execution and operation execution class entities.

Attributes

Attribute	Description
OperationExecutionOperationExecutionClassSiteId	Identifier of the Site this entity is related to.
OperationExecutionOperationExecutionClassKey	A unique identification of this relationship entity.
OperationExecutionId	Identifier of the operation execution.
OperationExecutionClassId	Identifier of the operation execution class.

13.5.26 OperationExecutionPalletSpecification Entity

Contains information about declarations of production of pallets. This entity is relevant only to SIMATIC IT EBR or Opcenter EX Pharma sources.

Attributes

Attribute	Description
OperationExecutionPalletSpecificationSiteId	Identifier of the Site this entity is related to.
OperationExecutionPalletSpecificationKey	A unique identification of this operation execution pallet specification.
MaterialDefinitionId	Identifier of the material definition related to the material contained in the pallet.
OperationExecutionId	Identifier of the production/work order.
TareUomId	The tare unit of the pallet.
Identifier	Pallet identifier.
Label	The label associated with the pallet.
LotNumber	The declared lot number.
PalletType	The pallet type.
Quantity	Theoretical quantity in stock unit.

Attribute	Description
Tare	The tare of the pallet.

13.5.27 OperationExecutionPropertyDynamicValue Entity

Dynamic value of an operation execution property. Dynamic values permit to manage the history of any change applied to the property.

Attributes

Attribute	Description
OperationExecutionPropertyDynamicValueSiteId	Identifier of the Site this entity is related to.
OperationExecutionPropertyDynamicValueKey	A unique identification of an operation execution property dynamic value.
OperationExecutionId	Identifier of the operation execution.
OperationExecutionPropertyId	Identifier of the operation execution property.
StartDateTime	The starting date/time of this operation execution property dynamic value.
EndDateTime	The ending date/time of this operation execution property dynamic value.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Duration	Duration of the value.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.5.28 OperationExecutionProperty Entity

Properties of operation executions shall be presented as operation execution properties. Each operation execution can have unique values for zero or more operation execution properties.

Attributes

Attribute	Description
OperationExecutionPropertySiteId	Identifier of the Site this entity is related to.
OperationExecutionPropertyKey	A unique identification of this operation execution property.
Name	Name of the property.
Description	Contains additional information about the property.
PropertyTypeId	Type of the property value.
UomId	Identifier of the unit of measure for the property value.
Multivalue	Specifies if the property can have multiple values.

13.5.29 OperationExecutionPropertyStaticValue Entity

Current value of an operation execution property.

Attributes

Attribute	Description
OperationExecutionPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
OperationExecutionPropertyStaticValueKey	A unique identification of an operation execution property static value.
OperationExecutionId	Identifier of the operation execution.
OperationExecutionPropertyId	Identifier of the operation execution property.
StringValue	Value for a property of type String.

13.5.30 OperationExecutionStatus Entity

Contains the possible states of an operation execution.

Attributes

Attribute	Description
OperationExecutionStatusSiteId	Identifier of the Site this entity is related to.
OperationExecutionStatusKey	A unique identification of an operation execution status.
Name	Name of the operation execution status.
Description	Contains additional information about the operation execution status.

13.5.31 OperationRequestClass Entity

A representation of a grouping of operation requests with similar characteristics.

Attributes

Attribute	Description
OperationRequestClassSiteId	Identifier of the Site this entity is related to.
OperationRequestClassKey	A unique identification of the operation request class.
Name	Name of the operation request class.
Description	Contains additional information about the operation request class.

13.5.32 OperationRequest Entity

An operations scheduling shall be made up of one or more operation requests. Each operation request shall correspond to, or reference, an identified operation definition.

Attributes

Attribute	Description
OperationRequestSiteId	Identifier of the Site this entity is related to.
OperationRequestKey	A unique identification of the operation request.

Attribute	Description
Name	Name of the operation request.
Description	Contains additional information about the operation request.
UomId	Unit of measure for the operation request.
OperationDefinitionId	Identifier of the operation definition that corresponds to this operation request.
MaterialDefinitionId	Identifier of the material definition produced by the operation request.
OperationSchedulingId	Identifier of the associated operation scheduling entity.
EquipmentId	Identifier of the equipment to be used for the operation request.
OperationRequestStatusId	Identifier of the state of the operation request.
StartDateTime	Estimated starting date/time of this operation request.
EndDateTime	Estimated ending date/time of this operation request.
EstimatedQuantity	The estimated quantity of the material to be produced by the operation request.
Duration	Estimated duration of the operation request.
Sequence	Indicates the sequence number among other operation requests within the same operation schedule.

13.5.33 OperationRequestHierarchy Entity

An operation request can be made up of multiple nested operation requests, therefore defining an operation request hierarchy.

Attributes

Attribute	Description
OperationRequestHierarchySiteId	Identifier of the Site this entity is related to.

Attribute	Description
OperationRequestHierarchyKey	A unique identification of an operation request hierarchy element.
OperationRequestId	Identifier of the corresponding operation request.
ParentOperationRequestId	Identifier of the parent operation request.
StartDateTime	The starting date/time of this operation request hierarchy element.
EndDateTime	The ending date/time of this operation request hierarchy element.

13.5.34 OperationRequestOperationRequestClass Entity

Defines the relationship between operation request and operation request class entities.

Attributes

Attribute	Description
OperationRequestOperationRequestClassSiteId	Identifier of the Site this entity is related to.
OperationRequestOperationRequestClassKey	A unique identification of this relationship entity.
OperationRequestId	Identifier of the operation request.
OperationRequestClassId	Identifier of the operation request class.

13.5.35 OperationRequestProperty Entity

Properties of operation requests shall be presented as operation request properties. Each operation request can have unique values for zero or more operation request properties.

Attributes

Attribute	Description
OperationRequestPropertySiteId	Identifier of the Site this entity is related to.

Attribute	Description
OperationRequestPropertyKey	A unique identification of the operation request property.
PropertyTypeId	Type of the property.
UomId	Identifier of the unit of measure for the property value.
Name	Name of the property.
Description	Contains additional information about the property.
Multivalue	Specifies if the property can have multiple values.

13.5.36 OperationRequestPropertyStaticValue Entity

Current value of an operation request property.

Attributes

Attribute	Description
OperationRequestPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
OperationRequestPropertyStaticValueKey	A unique identification of an operation request property static value.
OperationRequestPropertyId	Identifier of the operation request property.
OperationRequestId	Identifier of the operation request.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.5.37 OperationRequestStatus Entity

Contains the possible states of an operation request.

Attributes

Attribute	Description
OperationRequestStatusSiteId	Identifier of the Site this entity is related to.
OperationRequestStatusKey	A unique identification of an operation request status.
Name	Name of the operation request status.
Description	Contains additional information about the operation request status.

13.6 Entities from OperationResponseCapacityValue to OperationResponseYieldStatus

13.6.1 OperationResponseCapacityValue Entity

Contains information about cycle time related to product or workflow step. This entity is relevant only in case CEP or Opcenter EX Core data sources are used.

Attributes

Attribute	Description
OperationResponseCapacityValueSiteId	Identifier of the Site this entity is related to.
OperationResponseCapacityValueKey	A unique identification of the operation response capacity value.
EventDateTime	Transaction date/time.
OperationResponseCapacityValueStatusId	Identifier of the associated capacity value status.
OperationResponseId	Identifier of the associated operation response.
OperationExecutionId	Identifier of the associated operation execution.
MaterialDefinitionId	Identifier of the associated material definition.

Attribute	Description
Quantity	Quantity related to this cycle time entity.
Cycletime	Cycle time value.

13.6.2 OperationResponseCapacityValueStatus Entity

Contains information about cycle time related to product or workflow step. This entity is relevant only in case CEP or Opcenter EX Core data sources are used.

Attributes

Attribute	Description
OperationResponseCapacityValueStatusSiteId	Identifier of the Site this entity is related to.
OperationResponseCapacityValueStatusKey	A unique identification of the operation response capacity value status.
Name	Name of the operation response capacity value status.
Description	Contains additional information about the operation response capacity value status.

13.6.3 OperationResponseClass Entity

A representation of a grouping of operation responses with similar characteristics.

Attributes

Attribute	Description
OperationResponseClassSiteId	Identifier of the Site this entity is related to.
OperationResponseClassKey	A unique identification of the operation response class.
Name	Name of the operation response class.
Description	Contains additional information about the operation response class.

13.6.4 OperationResponse Entity

The executions from manufacturing that are associated with an operation request shall be defined as an operation response. Operation responses are basically the units of work within an operation execution. Operation response typically corresponds to work order operations or work order steps.

Attributes

Attribute	Description
OperationResponseSiteId	Identifier of the Site this entity is related to.
OperationResponseKey	A unique identification of the operation response.
Name	Name of the operation response.
Description	Contains additional information about the operation response.
Identifier	String that contains the NId value (Numeric Identifier for Process CPG and Discrete Industry).
Sequence	Indicates the sequence number among other operation requests within the same operation execution.
OperationDefinitionId	Identifier of the operation definition that corresponds to this operation response.
OperationExecutionId	Identifier of the operation execution this operation response belongs to.
OperationResponseStatusId	Identifier of the state of the operation response.
MaterialDefinitionId	Identifier of the material definition produced by the operation response.
EquipmentId	Identifier of the equipment used for the operation response.
OperationRequestId	Identifier of the operation request that corresponds to this operation response.
ProducedQuantity	Specifies the amount of material produced by this operation response.
ReworkedQuantity	Specifies the amount of material reworked by this operation response.
ScrapQuantity	Specifies the amount of material scrapped by this operation response.

Attribute	Description
UomId	Identifier of the unit of measure for the quantity.
StartDateTime	The actual starting date/time of this operation response.
EndDateTime	The actual ending date/time of this operation response.
Duration	Actual duration of the operation response.

13.6.5 OperationResponseEquipmentRequirement Entity

Specifies the equipment required by the operation response.

Attributes

Attribute	Description
OperationResponseEquipmentRequirementSiteId	Identifier of the Site this entity is related to.
OperationResponseEquipmentRequirementKey	A unique identification of the operation response equipment requirement.
EquipmentId	Identifier of the equipment.
OperationResponseId	Identifier of the operation response.
Quantity	The quantity associated with this operation response equipment requirement.

13.6.6 OperationResponseEquipmentSpecification Entity

Specifies the equipment used by the operation response.

Attributes

Attribute	Description
OperationResponseEquipmentSpecificationSiteId	Identifier of the Site this entity is related to.

Attribute	Description
OperationResponseEquipmentSpecificationKey	A unique identification of the operation response equipment specification.
OperationResponseId	Identifier of the operation response.
EquipmentId	Identifier of the equipment.
StartDateTime	The actual starting date/time of this operation response equipment specification.
EndDateTime	The actual ending date/time of this operation response equipment specification.
Duration	The actual duration of this operation response equipment specification.
Quantity	The actual produced quantity associated with this operation response equipment specification.

13.6.7 OperationResponseHierarchy Entity

An operation response can be made up of multiple nested operation responses, therefore defining an operation response hierarchy.

Attributes

Attribute	Description
OperationResponseHierarchySiteId	Identifier of the Site this entity is related to.
OperationResponseHierarchyKey	A unique identification of an operation response hierarchy element.
OperationResponseId	Identifier of the corresponding operation response.
ParentOperationResponseId	Identifier of the parent operation response.
StartDateTime	The starting date/time of this operation response hierarchy element.

Attribute	Description
EndTime	The ending date/time of this operation response hierarchy element.

13.6.8 OperationResponseHistory Entity

History of the statuses of the order operations, for example: Running, Paused, Created, etc.

Attributes

Attribute	Description
OperationResponseHistorySiteId	Identifier of the Site this entity is related to.
OperationResponseHistoryKey	A unique identification of the Operation Response History.
OperationResponseId	Identifier of the operation response (work order operation) associated with the entity.
OperationResponseStatusId	Identifier of the operation response (work order operation) status.
LaborId	Identifier of the personnel who executed the work order operation.
StartTime	The starting date and time of the work order operation status.
EndTime	The ending date and time of the work order operation status.
Duration	Duration of the status (difference between start and end time).

13.6.9 OperationResponseLaborSpecification Entity

An identification of a personnel used during the execution of a production operation/step.

Attributes

Attribute	Description
OperationResponseLaborSpecificationSiteId	Identifier of the Site this entity is related to.

Attribute	Description
OperationResponseLaborSpecificationKey	A unique identification of an operation response labor specification.
LaborId	Identifier of the personnel (defined as a labor entity).
OperationResponseId	Identifier of the corresponding operation response.
StartDateTime	The starting date/time of this operation response hierarchy element.
EndDateTime	The ending date/time of this operation response hierarchy element.
Quantity	Specifies the amount of personnel resources used.
Duration	The actual duration of use of the personnel during the operation.

13.6.10 OperationResponseMaterialDefinitionRequirementIn Entity

Specifies the material that is expected to be used by the operation for a specific operation execution.

Attributes

Attribute	Description
OperationResponseMaterialDefinitionRequirementInSiteId	Identifier of the Site this entity is related to.
OperationResponseMaterialDefinitionRequirementInKey	A unique identification of an operation response material definition requirement.
MaterialDefinitionId	Identifier of the material definition required by the operation response.
OperationResponseId	Identifier of the corresponding operation response.
UomId	Identifier of the unit of measure for the quantity.
Quantity	Quantity of material that should be consumed as required by the operation response.

13.6.11 OperationResponseMaterialLotSpecificationIn Entity

An identification of a material that was consumed during the execution of a production operation/step.

Attributes

Attribute	Description
OperationResponseMaterialLotSpecificationInSiteId	Identifier of the Site this entity is related to.
OperationResponseMaterialLotSpecificationInKey	A unique identification of an operation response material lot specification.
OperationResponseId	Identifier of the corresponding operation response.
MaterialLotId	Identifier of the corresponding material lot.
Quantity	Specifies the amount of material consumed by the operation.
StartDateTime	The starting date/time of this operation response material lot specification.
EndDateTime	The ending date/time of this operation response material lot specification.
Duration	The duration of this operation response material lot specification.

13.6.12 OperationResponseMaterialLotSpecificationOut Entity

An identification of a material that was produced during the execution of a production operation/step.

Attributes

Attribute	Description
OperationResponseMaterialLotSpecificationOutSiteId	Identifier of the Site this entity is related to.
OperationResponseMaterialLotSpecificationOutKey	A unique identification of an operation response material lot specification.

Attribute	Description
OperationResponseId	Identifier of the corresponding operation response.
MaterialLotId	Identifier of the corresponding material lot.
Quantity	Specifies the amount of material produced by the operation.
StartDateTime	The starting date/time of this operation response material lot specification.
EndDateTime	The ending date/time of this operation response material lot specification.
Duration	The duration of this operation response material lot specification.

13.6.13 OperationResponseOperationResponseClass Entity

Defines the relationship between operation response and operation response class entities.

Attributes

Attribute	Description
OperationResponseOperationResponseClassSiteId	Identifier of the Site this entity is related to.
OperationResponseOperationResponseClassKey	A unique identification of this relationship entity.
OperationResponseId	Identifier of the operation response.
OperationResponseClassId	Identifier of the operation response class.

13.6.14 OperationResponseParameter Entity

Definition of parameters (process instruction tag in SIMATIC IT eBR) used in work order operations/steps, such as electronic work instructions or workflow tasks. This entity is relevant only in case SIMATIC IT eBR is used as data source.

Attributes

Attribute	Description
OperationResponseParameterSiteId	Identifier of the Site this entity is related to.
OperationResponseParameterKey	A unique identification of this operation response parameter.
OperationResponseParameterStatusId	Identifier of the associated parameter status.
Description	Contains additional information about the operation response parameter.
Family	Family of the parameter.
LastVersion	Flag determining if this is the record of the highest version of a parameter.
Name	Name of the operation response parameter.

13.6.15 OperationResponseParameterStatus Entity

A possible status of a parameter. This entity is relevant only in case SIMATIC IT eBR is used as data source.

Attributes

Attribute	Description
OperationResponseParameterStatusSiteId	Identifier of the Site this entity is related to.
OperationResponseParameterStatusKey	A unique identification of the operation response parameter status.
Name	Name of the operation response parameter status (created, validated, obsolete).
Description	Contains additional information about the operation response parameter status.

13.6.16 OperationResponseParameterValueEbrStatus Entity

Defines all possible eBR status values. This entity is relevant only in case SIMATIC IT eBR is used as a data source.

Attributes

Attribute	Description
OperationResponseParameterValueEbrStatusSiteId	Identifier of the Site this entity is related to.
OperationResponseParameterValueEbrStatusKey	A unique identification of the operation response parameter value eBR status.
Name	Name of the eBR status, which can assume the following values: <ul style="list-style-type: none"> • Approved • AwaitingAlertProcessing • AwaitingReview • AwaitingValidation • PreparationInProgress • Rejected • ReviewInProgress
Description	Contains additional information about the operation response parameter value eBR status.

13.6.17 OperationResponseParameterValue Entity

A recorded value for an operation/step parameter (a Process Instruction tag in SIMATIC IT eBR). This entity is relevant only in case SIMATIC IT eBR is used as a data source.

Attributes

Attribute	Description
OperationResponseParameterValueSiteId	Identifier of the Site this entity is related to.
OperationResponseParameterValueKey	A unique identification of the operation response parameter value.
AnomalyOperationRequestId	Process Instruction code and version when an anomaly occurs.
LaborId	User login who was logged during the process.

Attribute	Description
MaterialDefinitionId	Identifier of the material definition corresponding to the final product code of the work order in which the data was recorded.
OperationExecutionId	Identifier of the production/work order in which the data was recorded.
OperationRequestId	Identifier of the operation request corresponding to the process instruction.
OperationResponseId	Identifier of the operation response corresponding to the task that generated the data.
OperationResponseParameterId	Identifier of the parameter.
OperationResponseParameterValueEbrStat usId	Identifier of the corresponding eBR status.
OperationResponseParameterValueProcessi ngModelId	Identifier of the corresponding processing mode.
OperationResponseParameterValueStatusId	Identifier of the corresponding process instruction status.
RemarkOperationRequestId	Identifier of the operation request corresponding to the process instruction when a remark occurs.
UomId	Identifier of the unit of measurement for numeric value.
DatetimeValue	Value for a property of type datetime.
FloatValue	Value for a property of type Numeric.
ForcedValue	Defines if the value has been forced.
HighLimit	Higher limit of the parameter.
InputDateTime	Date the data was recorded.
LowLimit	Lower limit of the parameter.

Attribute	Description
StringValue	Value for a property of type String.

13.6.18 OperationResponseParameterValueProcessingMode Entity

Defines all possible execution modes of a process instruction. This entity is relevant only in case SIMATIC IT eBR is used as a data source.

Attributes

Attribute	Description
OperationResponseParameterValueProcessingModeSiteId	Identifier of the Site this entity is related to.
OperationResponseParameterValueProcessingModeKey	A unique identification of the operation response processing mode.
Name	Name of the operation response processing mode (Simulation, Manufacturing, ExecutionTest).
Description	Contains additional information about the operation response processing mode.

13.6.19 OperationResponseParameterValueStatus Entity

Identifies all possible process instruction state values. This entity is relevant only in case SIMATIC IT eBR is used as a data source.

Attributes

Attribute	Description
OperationResponseParameterValueStatusSiteId	Identifier of the Site this entity is related to.
OperationResponseParameterValueStatusKey	A unique identification of the operation response parameter value status.

Attribute	Description
Name	Name of the process instruction status, which can assume the following values: <ul style="list-style-type: none"> • Accepted • Created • Launched • Obsolete • ToBeQualified
Description	Contains additional information about the operation response parameter value status.

13.6.20 OperationResponsePropertyDynamicValue Entity

Dynamic value of an operation response property. Dynamic values allow you to manage the history of any change applied to the property.

Attributes

Attribute	Description
OperationResponsePropertyDynamicValueSiteId	Identifier of the Site this entity is related to.
OperationResponsePropertyDynamicValueKey	A unique identification of an operation response property dynamic value.
OperationResponseId	Identifier of the operation response.
OperationResponsePropertyId	Identifier of the operation response property.
StartDateTime	The starting date/time of this operation response property dynamic value.
EndDateTime	The ending date/time of this operation response property dynamic value.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Duration	Duration of the value.

Attribute	Description
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.6.21 OperationResponseProperty Entity

Properties of operation responses shall be presented as operation response properties. Each operation response can have unique values for zero or more operation response properties.

Attributes

Attribute	Description
OperationResponsePropertySiteId	Identifier of the Site this entity is related to.
OperationResponsePropertyKey	A unique identification of the operation response property.
Name	Name of the property.
Description	Contains additional information about the property.
PropertyTypeId	Type of the property.
UomId	Identifier of the unit of measure for the property value.
Multivalue	Specifies if the property can have multiple values.

13.6.22 OperationResponsePropertyStaticValue Entity

Current value of an operation response property.

Attributes

Attribute	Description
OperationResponsePropertyStaticValueSiteId	Identifier of the Site this entity is related to.
OperationResponsePropertyStaticValueKey	A unique identification of an operation response property static value.

Attribute	Description
OperationResponseId	Identifier of the operation response.
OperationResponsePropertyId	Identifier of the operation response property.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.
DatetimeValue	Value for a property of type datetime.
Sequence	Value for a multivalue property.

13.6.23 OperationResponseScrewingToolHistory Entity

Screwing Tools (for example, Screwdrivers) are specific Tools used during the execution of Work Order Operations of type Screwing (for example, those operations required for installing wheels on the vehicle).

Attributes

Attribute	Description
OperationResponseScrewingToolHistorySiteId	Identifier of the Site this entity is related to.
OperationResponseScrewingToolHistoryKey	A unique identification of the entity.
OperationResponseId	Identifier of the operation response associated with the screwing tool.
ToolId	Identifier of the tool definition created for screwing operations.
AngleValue	Value of the angle of the screwing operation that has been executed (Field: Angle).
EventDateTime	Date and time when the operation response was executed (field: Usage date).
IsOk	Flag that indicates that the execution of the screwing operation was successful.

Attribute	Description
ResultValue	The outcome of the operation response (field: Reason).
Sequence	The sequence of steps of the operation response (field: ItemId).
TorqueValue	Value of the torque of the screwing operation that has been executed (field: Torque).

13.6.24 OperationResponseStatus Entity

Contains the possible states of an operation request.

Attributes

Attribute	Description
OperationResponseStatusSiteId	Identifier of the Site this entity is related to.
OperationResponseStatusKey	A unique identification of a operation response status.
Name	Name of the operation response status.
Description	Contains additional information about the operation response status.

13.6.25 OperationResponseToolDefinitionRequirement Entity

Within the context of the product, a Tool Definition is an abstract representation of a specific tool (for example, "drill bit, 5 mm"). A Tool Definition is instantiated multiple times to represent the number of actual Tools used in the plant (for example, "fifty individual 5mm drill bits"). This entity contains the requirements to be satisfied in a tool definition.

Attributes

Attribute	Description
OperationResponseToolDefinitionRequirementsSiteId	Identifier of the Site this entity is related to.
OperationResponseToolDefinitionRequirementKey	A unique identification of the tool definition requirement.

Attribute	Description
OperationResponseId	Identifier of the operation response related to the tool definition requirements.
ToolDefinitionId	Identifier of the tool for which the definition requirement has to be satisfied.
AngleValueMax	The maximum value allowed for the angle applied during the screwing operation for the tool to be used.
AngleValueMin	The minimum value allowed for the angle applied during the screwing operation for the tool to be used.
NumberOfBolts	Number of total bolts to be screwed by the actual Screwdriver.
TimesToBeUsed	Number of times the tool is used.
TorqueValueMax	Maximum value of the torque of the screwing operation that has been executed.
TorqueValueMin	Minimum value of the torque of the screwing operation that has been executed.

13.6.26 OperationResponseToolSpecification Entity

An identification of a tool used/consumed during the execution of a production operation/step.

Attributes

Attribute	Description
OperationResponseToolSpecificationSiteId	Identifier of the Site this entity is related to.
OperationResponseToolSpecificationKey	A unique identification of the operation response tool specification.
ToolId	Identifier of the tool.
OperationResponseId	Identifier of the operation response.

Attribute	Description
StartDateTime	The starting date/time of this operation response tool specification.
EndDateTime	The ending date/time of this operation response tool specification.
Quantity	Specifies the amount of tools used/consumed by the operation.
Duration	Specifies the duration.

13.6.27 OperationResponseYield Entity

Yield of the operation response.

Attributes

Attribute	Description
OperationResponseYieldSiteId	Identifier of the Site this entity is related to.
OperationResponseYieldKey	A unique identification of the operation response yield.
MaterialDefinitionId	Identifier of the material definition.
OperationResponseId	Identifier of the production/work order operation/step.
LaborId	Identifier of the personnel who executed the operation.
OperationResponseYieldStatusId	Identifier of the operation response yield status.
EventDateTime	Operation date/time.
Quantity	Quantity.

13.6.28 OperationResponseYieldStatus Entity

Yield of the operation response.

Attributes

Attribute	Description
OperationResponseYieldSiteId	Identifier of the Site this entity is related to.
OperationResponseYieldKey	A unique identification of the operation response yield.
MaterialDefinitionId	Identifier of the material definition.
OperationResponseId	Identifier of the production/work order operation/step.
LaborId	Identifier of the personnel who executed the operation.
OperationResponseYieldStatusId	Identifier of the operation response yield status.
EventDateTime	Operation date/time.
Quantity	Quantity.

13.7 Entities from OperationSchedulingClass to QualityParameterValue

13.7.1 OperationSchedulingClass Entity

A representation of a grouping of operation scheduling with similar characteristics.

Attributes

Attribute	Description
OperationSchedulingClassSiteId	Identifier of the Site this entity is related to.
OperationSchedulingClassKey	A unique identification of the operation scheduling class.
Name	Name of the operation scheduling class.
Description	Contains additional information and descriptions of the operation scheduling class.

13.7.2 OperationScheduling Entity

A request for operations (work order / production order) to be performed is an operation scheduling. The operations scheduling may apply not only to scheduling of production operation, but also to maintenance, quality test, and inventory operations. Operation scheduling defines production of products and intermediates, as defined by physical segments of operations. In Opcenter Execution Discrete 4.4 or higher this entity represents the ERP order.

Attributes

Attribute	Description
OperationSchedulingSiteId	Identifier of the Site this entity is related to.
OperationSchedulingKey	A unique identification of the operation scheduling.
Name	Name of the operation scheduling.
Description	Contains additional information and descriptions of the operation scheduling.
EquipmentId	Identifies where the operation scheduling fits within the role-based equipment hierarchy.
BillOfMaterialId	Identifier of the bill of material associated with the operation scheduling.
Identifier	String that contains the NId value (Numeric Identifier for Process CPG Industry).
UomId	Name of the unit of measure of the estimated quantity.
MaterialDefinitionId	Identifier of the associated material definition of the material to be produced.
OperationSchedulingStatusId	Identifier of the associated operation scheduling status.
StartDateTime	Estimated starting time of the operation scheduling.
EndDateTime	Estimated ending time of the operation scheduling.
EstimatedQuantity	Estimated quantity of material to be produced.
Duration	Estimated duration of the operation scheduling.

Attribute	Description
FinalProductFamilyId	Identifier of the final product family this entity is related to.
FinalProductTypeId	Identifier of the final product type this entity is related to.
MaterialLotId	Identifier of the material lot concerned by the operation scheduling.
CustomerType	Type of customer according to the company classification.
Sequence	Value for a multivalue property.
SerialNumber	Serial code of a specific operation scheduling.

13.7.3 OperationSchedulingExtendedProperty Entity

Contains the extended properties of an operation scheduling.

Attributes

Attribute	Description
OperationSchedulingExtendedPropertySiteId	Identifier of the Site this entity is related to.
OperationSchedulingExtendedPropertyKey	A unique identification of the Operation Scheduling Extended Property.
ExtendedPropertyTypeId	A unique identification of the type of extended property.
Description	Contains additional information and descriptions on the Operation Scheduling Extended Property.
IsOption	Identifies whether this extended property is optional (value = 1) or not (value = 0).
Name	The name of the Operation Scheduling Extended Property.

13.7.4 OperationSchedulingExtendedPropertyStaticValue Entity

Contains the static value of an Operation Scheduling Extended Property.

Attributes

Attribute	Description
OperationSchedulingExtendedPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
OperationSchedulingExtendedPropertyStaticValueKey	A unique identification of the Operation Scheduling Extended Property Static Value.
OperationSchedulingId	A unique identification of the Operation Scheduling.
OperationSchedulingExtendedPropertyId	A unique identification of the Operation Scheduling Property.
Value	String that represents the value of this property for the specified Operation Scheduling.
ValueDescription	Contains additional information and descriptions on the value of this property for the specified Operation Scheduling.
ValueName	The name of the value of this property for the specified Operation Scheduling.

13.7.5 OperationSchedulingHierarchy Entity

An operation scheduling can be made up of multiple nested operation scheduling elements, therefore defining an operation scheduling hierarchy.

Attributes

Attribute	Description
OperationSchedulingHierarchySiteId	Identifier of the Site this entity is related to.
OperationSchedulingHierarchyKey	A unique identification of an operation scheduling hierarchy element.
OperationSchedulingId	Identifier of the corresponding operation scheduling.
ParentOperationSchedulingId	Identifier of the parent operation scheduling.

Attribute	Description
StartDateTime	The starting date/time of this operation scheduling hierarchy element.
EndDateTime	The ending date/time of this operation scheduling hierarchy element.

13.7.6 OperationSchedulingMaterialDefinition Entity

Specifies the material that is expected to be used by the operation for a specific operation scheduling.

Attributes

Attribute	Description
OperationSchedulingMaterialDefinitionSiteId	Identifier of the Site this entity is related to.
OperationSchedulingMaterialDefinitionKey	A unique identification of the operation scheduling material definition.
MaterialDefinitionId	Identifier of the material definition required by the operation scheduling.
OperationSchedulingId	Identifier of the operation scheduling for which the material definition is required.
UomId	Identifier of the unit of measure for the quantity.
Quantity	Quantity of material that should be consumed as required by the operation scheduling.

13.7.7 OperationSchedulingOperationSchedulingClass Entity

Defines the relationship between operation scheduling and operation scheduling class entities.

Attributes

Attribute	Description
OperationSchedulingOperationSchedulingClassSiteId	Identifier of the Site this entity is related to.

Attribute	Description
OperationSchedulingOperationSchedulingClassKey	A unique identification of this relationship entity.
OperationSchedulingClassId	Identifier of the operation scheduling class.
OperationSchedulingId	Identifier of the operation scheduling.

13.7.8 OperationSchedulingProperty Entity

Properties of operation scheduling shall be presented as operation scheduling properties. Each operation scheduling can have unique values for zero or more operation scheduling properties.

Attributes

Attribute	Description
OperationSchedulingPropertySiteId	Identifier of the Site this entity is related to.
OperationSchedulingPropertyKey	A unique identification of the operation scheduling property.
UomId	Identifier of the unit of measure for the property value.
PropertyTypeId	Type of the property.
Name	Name of the property.
Description	Contains additional information and descriptions of the property.
Multivalue	Specifies if the property can have multiple values.

13.7.9 OperationSchedulingPropertyStaticValue Entity

Current value of an operation scheduling property.

Attributes

Attribute	Description
OperationSchedulingPropertyStaticValueSiteId	Identifier of the Site this entity is related to.

Attribute	Description
OperationSchedulingPropertyStaticValueKey	A unique identification of an operation scheduling property static value.
OperationSchedulingId	Identifier of the operation scheduling.
OperationSchedulingPropertyId	Identifier of the operation scheduling property.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.7.10 OperationSchedulingStatus Entity

Contains the possible states of an operation scheduling.

Attributes

Attribute	Description
OperationSchedulingStatusSiteId	Identifier of the Site this entity is related to.
OperationSchedulingStatusKey	A unique identification of an operation scheduling status.
Name	Name of the operation scheduling status.
Description	Contains additional information and descriptions on the operation scheduling status.

13.7.11 Owner Entity

This entity describes an owner.

Attributes

Attribute	Description
OwnerKey	A unique identification of the owner.
OwnerSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the owner.
Name	Name of the owner.

13.7.12 Parameter Entity

Parameters that are analyzed in a laboratory for a specific lot material.

Attributes

Attribute	Description
ParameterSiteId	Identifier of the Site this entity is related to.
ParameterKey	A unique identification of a parameter.
Description	Contains additional information and descriptions on the parameter.
Name	Name of the parameter.

13.7.13 ParameterGroup Entity

Group of parameters of a specific lot material that are analyzed in a laboratory.

Attributes

Attribute	Description
ParameterGroupSiteId	Identifier of the Site this entity is related to.
ParameterGroupKey	A unique identification of a parameter group.
Description	Contains additional information and descriptions on the parameter group.

Attribute	Description
Name	Name of the parameter group.

13.7.14 ParameterResult Entity

Result of the laboratory analysis performed on the parameter of a specific lot material.

Attributes

Attribute	Description
ParameterResultSiteId	Identifier of the Site this entity is related to.
ParameterResultKey	A unique identification of a parameter result.
ParameterGroupId	Identifier of the group that includes the parameter.
ParameterId	Identifier of the parameter.
FloatValue	Value of the parameter if it is a numeric value.
StringValue	Value of the parameter if it is a string value.
UomId	Identifier of the UoM for the parameter.
LowerLimit	Lower limit of the parameter value.
UpperLimit	Upper limit of the parameter value.
LowSpec	Lower specification limit.
HighSpec	Highest specification limit.
HighDeviation	Higher deviation limit.
LowDeviation	Lower deviation limit.

Attribute	Description
Reanalysis	Counter that specifies how many times the reanalysis was executed. It can assume the following values: <ul style="list-style-type: none">• 0 = no reanalysis• 1 = the reanalysis was executed once• 2 = the reanalysis was executed twice• x = the reanalysis was executed x times
Result	A short string expressing the outcome of the analysis.
Comment	A more detailed explanation on the analysis outcome.
SampleResultId	Identifier of the overall sample result.

13.7.15 ProductionProcess Entity

Contains information about the production process. A Production Process is an abstract representation of the sequence of operations and steps involved in producing a specific product.

Attributes

Attribute	Description
ProductionProcessSiteId	Identifier of the Site this entity is related to.
ProductionProcessKey	A unique identification of a production process.
Name	Name of the production process.
Description	Contains additional notes regarding the production process.
MaterialDefinitionId	Identifier of the material definition related to the production process.
Quantity	Specifies the amount of material required for the production process.
UomId	Identifier of the unit of measure for the quantity.

13.7.16 ProductionProcessOperationDefinition Entity

Contains the relationship between the Production Process and Operation Definition entities.

Attributes

Attribute	Description
ProductionProcessOperationDefinitionSiteId	Identifier of the Site this entity is related to.
ProductionProcessOperationDefinitionKey	A unique identification of this relationship entity.
OperationDefinitionId	Identifier of the corresponding operation definition entity.
ProductionProcessId	Identifier of the corresponding production process entity.
Quantity	Specifies the amount of operation definition related to the production process.

13.7.17 PropertyType Entity

Contains the possible data types of a property value.

Attributes

Attribute	Description
PropertyTypeKey	A unique identification of a property type ("String" or "Numeric" or "DateTime").
Name	Name of the property type ("String" or "Numeric" or "DateTime").
Description	Contains additional information and descriptions on the property type.

13.7.18 QtyAdjustReason Entity

This entity describes the reason why a specific quantity had to be adjusted. Examples of the possible reasons are:

- Out of Spec
- Failed Test
- Dropped
- Scratch
- Leak
- Bent
- Misaligned
- Operator Error
- Failed Component

Attributes

Attribute	Description
QtyAdjustReasonKey	A unique identification of the reason to adjust the quantity.
QtyAdjustReasonSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the reason to adjust the quantity.
Name	Name of the reason to adjust the quantity.

13.7.19 QualityExecutionClass Entity

A representation of a grouping of quality executions with similar characteristics.

Attributes

Attribute	Description
QualityExecutionClassSiteId	Identifier of the Site this entity is related to.
QualityExecutionClassKey	A unique identification of a quality execution class.
Name	Name of the quality execution class.
Description	Contains additional information about the quality execution class.

13.7.20 QualityExecution Entity

The execution of a quality related requests shall be presented as quality executions. Quality execution is used in the analytical model to represent the execution of scheduled quality orders or jobs.

Attributes

Attribute	Description
QualityExecutionSiteId	Identifier of the Site this entity is related to.
QualityExecutionKey	A unique identification of a quality execution.

Attribute	Description
Name	Name of the quality execution.
Description	Contains additional notes regarding the quality execution.
QualityExecutionStatusId	Identifier of the quality execution status.
EquipmentId	Identifies where the quality execution fits within the equipment hierarchy.
MaterialDefinitionId	Identifier of the material related to the quality execution.
StartDateTime	The actual starting date/time of this quality execution.
EndDateTime	The actual ending date/time of this quality execution.
Duration	Actual duration of the quality execution.
OperationExecutionId	Identifier of the production work order related to this quality order.

13.7.21 QualityExecutionHierarchy Entity

An operation execution can be made up of one or more operations executions, therefore defining a hierarchy of operation executions.

Attributes

Attribute	Description
QualityExecutionHierarchySiteId	Identifier of the Site this entity is related to.
QualityExecutionHierarchyKey	A unique identification of the hierarchy element.
ParentQualityExecutionId	Identifier of the parent quality execution.
QualityExecutionId	Identifier of the corresponding quality execution.
StartDateTime	The starting date/time of this quality execution hierarchy element.

Attribute	Description
EndTime	The ending date/time of this quality execution hierarchy element.

13.7.22 QualityExecutionPropertyDynamicValue Entity

Dynamic value of a quality execution property. Dynamic values permit to manage the history of any change applied to the property.

Attributes

Attribute	Description
QualityExecutionPropertyDynamicValueSiteId	Identifier of the Site this entity is related to.
QualityExecutionPropertyDynamicValueKey	A unique identification of a quality execution property dynamic value.
QualityExecutionId	Identifier of the quality execution.
QualityExecutionPropertyId	Identifier of the quality execution property.
StartTime	The starting date/time of this quality execution property dynamic value.
EndTime	The ending date/time of this quality execution property dynamic value.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Duration	Duration of the value.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.7.23 QualityExecutionProperty Entity

Properties of quality executions shall be presented as quality execution properties. Each quality execution can have unique values for zero or more quality execution properties.

Attributes

Attribute	Description
QualityExecutionPropertySiteId	Identifier of the Site this entity is related to.
QualityExecutionPropertyKey	A unique identification of this quality execution property.
Name	Name of the property.
Description	Contains additional information about the property.
PropertyTypeId	Type of the property value.
UomId	Identifier of the unit of measure for the property value.
Multivalue	Specifies if the property can have multiple values.

13.7.24 QualityExecutionPropertyStaticValue Entity

Current value of a quality execution property.

Attributes

Attribute	Description
QualityExecutionPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
QualityExecutionPropertyStaticValueKey	A unique identification of a quality execution property static value.
QualityExecutionId	Identifier of the quality execution property.
QualityExecutionPropertyId	Identifier of the quality execution property.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.
DatetimeValue	Value for a property of type DateTime.

Attribute	Description
Sequence	Value for a multivalue property.

13.7.25 QualityExecutionQualityExecutionClass Entity

Defines the relationship between quality execution and quality execution class entities.

Attributes

Attribute	Description
QualityExecutionOQualityExecutionClassSiteId	Identifier of the Site this entity is related to.
QualityExecutionQualityExecutionClassKey	A unique identification of this relationship entity.
QualityExecutionId	Identifier of the quality execution.
QualityExecutionClassId	Identifier of the quality execution class.

13.7.26 QualityExecutionStatus Entity

Contains the possible states of an operation execution.

Attributes

Attribute	Description
QualityExecutionStatusSiteId	Identifier of the Site this entity is related to.
QualityExecutionStatusKey	A unique identification of a quality execution status.
Name	Name of the quality execution status.
Description	Contains additional information about the quality execution status.

13.7.27 QualityFailure Entity

Failures represent potential problems which can occur during the life cycle of a product or process. They can be assigned to Quality Characteristics (Attributive, Variable and Visual).

Attributes

Attribute	Description
QualityFailureSiteId	Identifier of the Site this entity is related to.
QualityFailureKey	A unique identification of the quality failure.
Name	Name of the quality failure.
Description	Contains additional information and descriptions on the quality failure.

13.7.28 QualityGate Entity

Represents an entity used to monitor the equipment.

Attributes

Attribute	Description
QualityGateSiteId	Identifier of the Site this entity is related to.
QualityGateKey	A unique identification of the quality gate.
Description	Contains additional information and descriptions on the quality gate.
Name	Name of the quality gate.

13.7.29 QualityGateEquipmentSpecification Entity

Specifies the equipment declared as quality gate.

Attributes

Attribute	Description
QualityGateEquipmentSpecificationSiteId	Identifier of the Site this entity is related to.
QualityGateEquipmentSpecificationKey	A unique identification of the quality gate equipment specification.

Attribute	Description
EquipmentId	Identifier of the equipment.
QualityGateId	Identifier of the quality gate.

13.7.30 QualityGateMonitoredEquipment Entity

Specifies the equipment monitored by the quality gate.

Attributes

Attribute	Description
QualityGateMonitoredEquipmentSiteId	Identifier of the Site this entity is related to.
QualityGateMonitoredEquipmentKey	A unique identification of the monitored equipment.
EquipmentId	Identifier of the equipment that is being monitored.
QualityGateId	Identifier of the quality gate that is monitoring the equipment.

13.7.31 QualityLimitClass Entity

A representation of a grouping of specification limits with similar characteristics.

Attributes

Attribute	Description
QualityLimitClassSiteId	Identifier of the Site this entity is related to.
QualityLimitClassKey	A unique identification of this quality limit class.
Name	Name of the quality limit class.
Description	Contains additional information and descriptions on the quality limit class.

13.7.32 QualityLimit Entity

Defines the specification limits of a parameter.

Attributes

Attribute	Description
QualityLimitSiteId	Identifier of the Site this entity is related to.
QualityLimitKey	A unique identification of these specification limits.
QualityParameterId	Identifier of the parameter these specification limits are associated with.
StartDateTime	Specifies the effectivity starting date/time.
EndDateTime	Specifies the effectivity ending date/time.
HighLimit	Upper limit of the value.
Target	Value rendered at the shop floor as target value.
LowLimit	Lower limit of the value.

13.7.33 QualityLimitQualityLimitClass Entity

This entity defines the relationship between quality limit and quality limit class entities.

Attributes

Attribute	Description
QualityLimitQualityLimitClassSiteId	Identifier of the Site this entity is related to.
QualityLimitQualityLimitClassKey	A unique identification of this relationship entity.
QualityLimitId	Identifier of the quality limit entity.
QualityLimitClassId	Identifier of the quality limit class entity.

13.7.34 QualityLimitStatus Entity

Contains the possible states of a quality specification limit.

Attributes

Attribute	Description
QualityLimitStatusSiteId	Identifier of the Site this entity is related to.
QualityLimitStatusKey	A unique identification of a quality limit status.
Name	Name of the quality limit status.
Description	Contains additional information and descriptions on the quality limit status.

13.7.35 QualityParameter Entity

Production parameters which have a measurable effect on the product's quality attributes.

Attributes

Attribute	Description
QualityParameterSiteId	Identifier of the Site this entity is related to.
QualityParameterKey	A unique identification of a quality parameter.
Name	Name of the quality parameter.
Description	Contains additional information and descriptions on the quality parameter.
UomId	Identifier of the parameter value unit of measurement.

13.7.36 QualityParameterValue Entity

Value of a quality parameter.

Attributes

Attribute	Description
QualityParameterValueSiteId	Identifier of the Site this entity is related to.
QualityParameterValueKey	A unique identification of a quality parameter value.
QualityResponseId	Identifier of the quality operation the parameter is associated with.
QualityParameterId	Identifier of the quality parameter.
QualityFailureId	Identifier of the failure associated with the quality parameter.
MaterialLotId	Identifier of the material lot the parameter is associated with.
LaborId	Identifier of the personnel that measured the quality parameter.
SampleId	Identifier of the sample extracted from the material lot associated with the parameter.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
StringValue	Value for a property of type String.
StartDateTime	The starting date/time of this quality parameter value.
EndDateTime	The ending date/time of this quality parameter value.

13.8 Entities from *QualityRequestClass* to *QualitySchedulingStatus*

13.8.1 *QualityRequestClass* Entity

A representation of a grouping of quality requests with similar characteristics.

Attributes

Attribute	Description
QualityRequestClassSiteId	Identifier of the Site this entity is related to.
QualityRequestClassKey	A unique identification of the quality request class.
Name	Name of the quality request class.
Description	Contains additional information about the quality request class.

13.8.2 QualityRequest Entity

A quality scheduling (i.e. a quality order or job or operation) shall be made up of one or more quality requests (quality tasks). Each quality request shall correspond to, or reference, an identified quality task definition. Quality requests therefore contain information about scheduled quality quality tasks within a quality order/operation.

Attributes

Attribute	Description
QualityRequestSiteId	Identifier of the Site this entity is related to.
QualityRequestKey	A unique identification of the quality request.
Name	Name of the quality request.
Description	Contains additional information about the quality request.
QualityTaskDefinitionId	Identifier of the quality task definition that corresponds to this quality request.
LaborId	Identifier of the labor (person) associated with the quality request.
QualitySchedulingId	Identifier of the associated quality scheduling entity.
EquipmentId	Identifier of the equipment related to the quality request.
QualityRequestStatusId	Identifier of the state of the quality request.
StartDateTime	Estimated starting date/time of this quality request.

Attribute	Description
EndTime	Estimated ending date/time of this quality request.
Duration	Estimated duration of the quality request.

13.8.3 QualityRequestHierarchy Entity

A quality request can be made up of multiple nested quality requests, therefore defining a quality request hierarchy.

Attributes

Attribute	Description
QualityRequestHierarchySiteId	Identifier of the Site this entity is related to.
QualityRequestHierarchyKey	A unique identification of an quality request hierarchy element.
QualityRequestId	Identifier of the corresponding quality request.
ParentQualityRequestId	Identifier of the parent quality request.
StartTime	The starting date/time of this quality request hierarchy element.
EndTime	The ending date/time of this quality request hierarchy element.

13.8.4 QualityRequestProperty Entity

Properties of quality requests shall be presented as quality request properties. Each quality request can have unique values for zero or more quality request properties.

Attributes

Attribute	Description
QualityRequestPropertySiteId	Identifier of the Site this entity is related to.
QualityRequestPropertyKey	A unique identification of the quality request property.

Attribute	Description
PropertyTypeId	Type of the property.
UomId	Identifier of the unit of measure for the property value.
Name	Name of the property.
Description	Contains additional information about the property.
Multivalue	Specifies if the property can have multiple values.

13.8.5 QualityRequestPropertyStaticValue Entity

Current value of a quality request property.

Attributes

Attribute	Description
QualityRequestPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
QualityRequestPropertyStaticValueKey	A unique identification of a quality request property static value.
QualityRequestPropertyId	Identifier of the quality request property.
QualityRequestId	Identifier of the quality request.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.8.6 QualityRequestQualityRequestClass Entity

This entity defines the relationship between quality request and quality request class entities.

Attributes

Attribute	Description
QualityRequestQualityRequestClassSiteId	Identifier of the Site this entity is related to.
QualityRequestQualityRequestClassKey	A unique identification of this relationship entity.
QualityRequestId	Identifier of the quality request.
QualityRequestClassId	Identifier of the quality request class.

13.8.7 QualityRequestStatus Entity

Contains the possible states of a quality request.

Attributes

Attribute	Description
QualityRequestStatusSiteId	Identifier of the Site this entity is related to.
QualityRequestStatusKey	A unique identification of a quality request status.
Name	Name of the quality request status.
Description	Contains additional information about the quality request status.

13.8.8 QualityResponseClass Entity

A representation of a grouping of quality responses with similar characteristics.

Attributes

Attribute	Description
QualityResponseClassSiteId	Identifier of the Site this entity is related to.
QualityResponseClassKey	A unique identification of this quality response class.
Name	Name of the quality response class.

Attribute	Description
Description	Contains additional information and descriptions on the quality response class.

13.8.9 QualityResponse Entity

An operation/task during which one or more quality parameters are collected (e.g. a work instruction, a quality test operation, quality task etc.)

Attributes

Attribute	Description
QualityResponseSiteId	Identifier of the Site this entity is related to.
QualityResponseKey	A unique identification of a quality response.
Name	Name of the quality response.
Description	Contains additional information and descriptions on the quality response.
LaborId	Identifier of the personnel who executed the quality operation/task.
QualityResponseStatusId	Identifier of the quality response state.
EquipmentId	Identifies where the quality operation/task fits within the role-based equipment hierarchy.
QualityTaskDefinitionId	Identifier of the associated quality task definition.
QualityExecutionId	Identifier of the associated quality execution.
OperationResponseId	Identifier of the operation response (production step) this quality operation/task is associated with.
StartDateTime	The starting date/time of this quality response.
EndDateTime	The ending date/time of this quality response.

Attribute	Description
Duration	The duration of this quality response.

13.8.10 QualityResponseHierarchy Entity

A quality response can be made up of multiple nested quality responses therefore defining a quality response hierarchy.

Attributes

Attribute	Description
QualityResponseHierarchySiteId	Identifier of the Site this entity is related to.
QualityResponseHierarchyKey	A unique identification of a quality response hierarchy element.
ParentQualityResponseId	Identifier of the corresponding quality response.
QualityResponseId	Identifier of the parent quality response.
StartDateTime	The starting date/time of this quality response hierarchy element.
EndDateTime	The ending date/time of this quality response hierarchy element.

13.8.11 QualityResponsePropertyDynamicValue Entity

Dynamic value of a quality response property. Dynamic values permit to manage the history of any change applied to the property.

Attributes

Attribute	Description
QualityResponsePropertyDynamicValueSiteId	Identifier of the Site this entity is related to.
QualityResponsePropertyDynamicValueKey	A unique identification of a quality response property dynamic value.

Attribute	Description
QualityResponseId	Identifier of the quality response.
QualityResponsePropertyId	Identifier of the quality response property.
StartDateTime	The starting date/time of this quality response property dynamic value.
EndDateTime	The ending date/time of this quality response property dynamic value.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Duration	Duration of the value.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.8.12 QualityResponseProperty Entity

Properties of quality responses shall be presented as quality response properties. Each quality response can have unique values for zero or more quality response properties.

Attributes

Attribute	Description
QualityResponsePropertySiteId	Identifier of the Site this entity is related to.
QualityResponsePropertyKey	A unique identification of the quality response property.
Name	Name of the property.
UomId	Identifier of the unit of measure for the property value.
PropertyTypeId	Type of the property.

13.8.13 QualityResponsePropertyStaticValue Entity

Current value of a quality response property.

Attributes

Attribute	Description
QualityResponsePropertyStaticValueSiteId	Identifier of the Site this entity is related to.
QualityResponsePropertyStaticValueKey	A unique identification of a quality response property static value.
QualityResponseId	Identifier of the quality response.
QualityResponsePropertyId	Identifier of the quality response property.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
StringValue	Value for a property of type String.
Sequence	Value for a multivalue property.

13.8.14 QualityResponseQualityResponseClass Entity

This entity defines the relationship between quality response and quality response class entities.

Attributes

Attribute	Description
QualityResponseQualityResponseClassSiteId	Identifier of the Site this entity is related to.
QualityResponseQualityResponseClassKey	A unique identification of this relationship entity.
QualityResponseId	Identifier of the quality response entity.
QualityResponseClassId	Identifier of the quality response class entity.

13.8.15 QualityResponseStatus Entity

Contains the possible states of a quality response.

Attributes

Attribute	Description
QualityResponseStatusSiteId	Identifier of the Site this entity is related to.
QualityResponseStatusKey	A unique identification of a quality response status.
Name	Name of the quality response status.
Description	Contains additional information and descriptions on the quality response status.

13.8.16 QualitySchedulingClass Entity

A representation of a grouping of quality scheduling with similar characteristics.

Attributes

Attribute	Description
QualitySchedulingClassSiteId	Identifier of the Site this entity is related to.
QualitySchedulingClassKey	A unique identification of the quality scheduling class.
Name	Name of the quality scheduling class.
Description	Contains additional information and descriptions of the quality scheduling class.

13.8.17 QualityScheduling Entity

A request for quality operations (quality-related work order / quality job) to be performed is a quality scheduling. Quality scheduling defines scheduling of quality operations and tasks.

Attributes

Attribute	Description
QualitySchedulingSiteId	Identifier of the Site this entity is related to.
QualitySchedulingKey	A unique identification of the quality scheduling.
Name	Name of the quality scheduling.
Description	Contains additional information and descriptions of the quality scheduling.
EquipmentId	Identifies where the quality scheduling fits within the role based equipment hierarchy.
MaterialDefinitionId	Identifier of the associated material definition.
QualitySchedulingStatusId	Identifier of the associated quality scheduling status.
StartDateTime	Estimated starting time of the quality scheduling.
EndDateTime	Estimated ending time of the quality scheduling.
Duration	Estimated duration of the quality scheduling.

13.8.18 QualitySchedulingHierarchy Entity

A quality scheduling can be made up of multiple nested quality scheduling element, therefore defining a quality scheduling hierarchy.

Attributes

Attribute	Description
QualitySchedulingHierarchySiteId	Identifier of the Site this entity is related to.
QualitySchedulingHierarchyKey	A unique identification of a quality scheduling hierarchy element.
QualitySchedulingId	Identifier of the corresponding quality scheduling.
QualityOperationSchedulingId	Identifier of the parent quality scheduling.

Attribute	Description
StartDateTime	The starting date/time of this quality scheduling hierarchy element.
EndDateTime	The ending date/time of this quality scheduling hierarchy element.

13.8.19 QualitySchedulingProperty Entity

Properties of quality scheduling shall be presented as quality scheduling properties. Each quality scheduling can have unique values for zero or more quality scheduling properties.

Attributes

Attribute	Description
QualitySchedulingPropertySiteId	Identifier of the Site this entity is related to.
QualitySchedulingPropertyKey	A unique identification of the quality scheduling property.
UomId	Identifier of the unit of measure for the property value.
PropertyTypeId	Type of the property.
Name	Name of the property.
Description	Contains additional information and descriptions of the property.
Multivalue	Specifies if the property can have multiple values.

13.8.20 QualitySchedulingPropertyStaticValue Entity

Current value of a quality scheduling property.

Attributes

Attribute	Description
QualitySchedulingPropertyStaticValueSiteId	Identifier of the Site this entity is related to.

Attribute	Description
QualitySchedulingPropertyStaticValueKey	A unique identification of a quality scheduling property static value.
QualitySchedulingId	Identifier of the quality scheduling.
QualitySchedulingPropertyId	Identifier of the quality scheduling property.
DatetimeValue	Value for a property of type DateTime.
FloatValue	Value for a property of type Numeric.
Sequence	Value for a multivalue property.
StringValue	Value for a property of type String.

13.8.21 QualitySchedulingQualitySchedulingClass Entity

Defines the relationship between quality scheduling and quality scheduling class entities.

Attributes

Attribute	Description
QualitySchedulingQualitySchedulingClassSiteId	Identifier of the Site this entity is related to.
QualitySchedulingQualitySchedulingClassKey	A unique identification of this relationship entity.
QualitySchedulingClassId	Identifier of the quality scheduling.
QualitySchedulingId	Identifier of the quality scheduling class.

13.8.22 QualitySchedulingStatus Entity

Contains the possible states of a quality scheduling.

Attributes

Attribute	Description
QualitySchedulingStatusSiteId	Identifier of the Site this entity is related to.
QualitySchedulingStatusKey	A unique identification of a quality scheduling status.
Name	Name of the quality scheduling status.
Description	Contains additional information and descriptions of the quality scheduling status.

13.9 Entities from QualityTaskDefinitionClass to Workstation

13.9.1 QualityTaskDefinitionClass Entity

A representation of a grouping of quality operation/tasks with similar characteristics.

Attributes

Attribute	Description
QualityTaskDefinitionClassSiteId	Identifier of the Site this entity is related to.
QualityTaskDefinitionClassKey	A unique identification of a quality task definition class.
Name	Name of the quality task definition class.
Description	Contains additional information and descriptions on the quality task definition class.

13.9.2 QualityTaskDefinition Entity

A definition of a quality-relevant operation/task.

Attributes

Attribute	Description
QualityTaskDefinitionSiteId	Identifier of the Site this entity is related to.
QualityTaskDefinitionKey	A unique identification of a quality task definition.

Attribute	Description
Name	Name of the quality task.
Description	Contains additional information and descriptions on the quality task definition.

13.9.3 QualityTaskDefinitionProperty Entity

Properties of quality responses shall be presented as quality task definition properties. Each quality task definition can have unique values for zero or more quality task definition properties.

Attributes

Attribute	Description
QualityTaskDefinitionPropertySiteId	Identifier of the Site this entity is related to.
QualityTaskDefinitionPropertyKey	A unique identification of the quality task definition property.
Name	Name of the property.
Description	Contains additional information and descriptions on the property.
PropertyTypeId	Type of the property.
UomId	Identifier of the unit of measure for the property value.

13.9.4 QualityTaskDefinitionPropertyStaticValue Entity

Current value of a quality task definition property.

Attributes

Attribute	Description
QualityTaskDefinitionPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
QualityTaskDefinitionPropertyStaticValueKey	A unique identification of a quality task definition property static value.

Attribute	Description
QualityTaskDefinitionId	Identifier of the quality task definition.
QualityTaskDefinitionPropertyId	Identifier of the quality task definition property.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.
DatetimeValue	Value for a property of type DateTime.
Sequence	Value for a multivalue property.

13.9.5 QualityTaskDefinitionQualityTaskDefinitionClass Entity

This entity defines the relationship between quality task definition and quality task definition class entities.

Attributes

Attribute	Description
QualityTaskDefinitionQualityTaskDefinitionClassSiteId	Identifier of the Site this entity is related to.
QualityTaskDefinitionQualityTaskDefinitionClassKey	A unique identification of this relationship entity.
QualityTaskDefinitionId	Identifier of the quality task definition entity.
QualityTaskDefinitionClassId	Identifier of the quality task definition class entity.

13.9.6 Reason Entity

Defines one of the possible reasons for an asset state cause (as defined in a reason tree).

Attributes

Attribute	Description
ReasonSiteId	Identifier of the Site this entity is related to.

Attribute	Description
ReasonKey	A unique identification of the Reason.
Name	Name of the reason.
Description	Contains additional information about the reason.
Color	Color to be used to represent this reason.
IsStop	Specifies if the reason is corresponding to an asset stop state (downtime).

13.9.7 ReasonTree Entity

Defines a reason tree, which defines the hierarchy of all possible asset states, causes, reasons and detailed reasons.

Attributes

Attribute	Description
ReasonTreeSiteId	Identifier of the Site this entity is related to.
ReasonTreeId	A unique identification of the reason tree.
Name	Name of the reason tree.
Description	Contains additional information about the reason tree.

13.9.8 ReasonTreeItem Entity

Defines one element of a reason tree item.

Attributes

Attribute	Description
ReasonTreeItemSiteId	Identifier of the Site this entity is related to.
ReasonTreeItemId	A unique identification of the reason tree item.

Attribute	Description
EquipmentTimeCategoryID	Identifier of the associated time category.
ReasonTreeId	Identifier of the reason tree this item belongs to.
StatusId	Identifier of the associated status.
CauseId	Identifier of the associated cause.
ReasonId	Identifier of the associated reason.
DetailedReasonId	Identifier of the associated detailed reason.

13.9.9 Recipe Entity

A recipe usually defines the resource settings, such as the timing and temperature of a machine, for use in manufacturing. Once defined, the recipe is typically, but not always, performed by the resource itself.

Attributes

Attribute	Description
RecipeSiteId	Identifier of the Site this entity is related to.
RecipeKey	A unique identification of the recipe.
Name	Name of the recipe.
Description	Contains additional information and descriptions about the recipe.

13.9.10 ReferenceDesignator Entity

Identifies the location of a component within a printed circuit board.

Attributes

Attribute	Description
ReferenceDesignatorSiteId	Identifier of the Site this entity is related to.

Attribute	Description
ReferenceDesignatorKey	A unique identification of the reference designator.
Name	Name of the reference designator.
Description	Contains additional information and descriptions about the reference designator.

13.9.11 Result Entity

Outcome of the execution of a specific work order operation or work order step, that is if it was completed successfully and the Material Tracking Unit was produced correctly.

Attributes

Attribute	Description
ResultSiteId	Identifier of the Site this entity is related to.
ResultKey	A unique identification of the result.
EquipmentId	The machine for which the result was issued.
MaterialLotId	Identifier of the material lot for which the result was issued.
OperationResponseId	Identifier of the operation response (work order operation/step) for which the result was issued.
ResultStrategyId	Identifier of the result strategy to be adopted.
Activity	Type of specification (for example Tool, Material, Quality Inspection, or Work Instruction) for which the result was set.
IsKO	Flag that indicates that the execution of the Work Order Operation or Work Order Step was not completed successfully and the Material Tracking Unit was not produced correctly.

Attribute	Description
Value	<p>The outcome of the Work Order Operation or Work Order Step and of the production of the corresponding Material Tracking Unit.</p> <p>For example, it can assume the following values but you can add custom values according to your requirements.</p> <ul style="list-style-type: none"> • OK • NOK • Not Executed

13.9.12 ResultHistory Entity

The log of the result.

Attributes

Attribute	Description
ResultHistorySiteId	Identifier of the Site this entity is related to.
ResultHistoryKey	A unique identification of the result history.
EquipmentId	The machine for which the result was issued.
LaborId	Identifier of the employee responsible for issuing the result.
MaterialLotId	Identifier of the material lot for which the result was issued.
OperationResponseId	Identifier of the operation response (work order operation/step) for which the result was issued.
ResultId	Identifier of the result.
ResultStrategyId	Identifier of the result strategy to be adopted.
Activity	Type of specification (for example Tool, Material, Quality Inspection, or Work Instruction) for which the result was set.
EventDateTime	Date and time when the Result was issued.

Attribute	Description
IsKO	Flag that indicates that the execution of the Work Order Operation or Work Order Step was not completed successfully and the Material Tracking Unit was not produced correctly.
IsPartial	Flag that indicates that the execution of the Work Order Operation or Work Order Step was partially completed.
Value	<p>The outcome of the Work Order Operation or Work Order Step and of the production of the corresponding Material Tracking Unit.</p> <p>For example, it can assume the following values but you can add custom values according to your requirements.</p> <ul style="list-style-type: none"> • OK • NOK • Not Executed

13.9.13 ResultHistoryTraceabilityDetail Entity

Opcenter Execution Discrete provides the possibility of configuring Barcode Rules to validate a Barcode string. When the MTU enters the Equipment to which Traceability Operations are linked, if the Operator inserts a Barcode, the system automatically compares the received Barcode with the configured Barcode Rule and behaves accordingly.

Attributes

Attribute	Description
ResultHistoryTraceabilityDetailSiteId	Identifier of the Site related to this entity.
ResultHistoryTraceabilityDetailKey	Unique identifier of the entity.
ResultHistoryId	Identifier of the result history.
Barcode	Barcode string.

13.9.14 ResultStrategy Entity

Corrective actions to be adopted when a Result is declared on a Work Order Operation and Batch/Serial Number. Depending on the specific production process, it can be defined when the Result declaration is issued or later. For example, to recover a NOK result the Work Order Operation on Batch/Serial Numbers with a negative result might need to be repeated. The Repeat action is also the strategy/corrective action released as OOTB.

Attributes

Attribute	Description
ResultStrategySiteId	Identifier of the Site this entity is related to.
ResultStrategyKey	A unique identification of the result strategy.
Description	Contains additional information and descriptions on the result strategy.
Name	Name of the result strategy.

13.9.15 ReworkReason Entity

This entity describes the reason why a rework was to be performed. Examples of the possible reasons are:

- Replace Component
- Missing Label
- Retest
- Failed Test
- Repair

Attributes

Attribute	Description
ReworkReasonKey	A unique identification of the Rework Reason.
ReworkReasonSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the Rework Reason.
Name	Name of the Rework Reason.

13.9.16 Sample Entity

Material sample extracted from a material lot in order to be analyzed in a laboratory.

Attributes

Attribute	Description
SampleSiteId	Identifier of the Site this entity is related to.

Attribute	Description
SampleKey	A unique identification of a sample.
SampleType	Type of sample to perform a Quality Control procedure.
Name	Name of the sample.
Description	Contains additional information and descriptions on the sample.
Quantity	Amount of sample to be analyzed in a laboratory.
UomId	Identifier of the UoM to express the amount of sample.
MaterialDefinitionId	Identifier of the sample material associated with the Material Tracking Unit (MTU).
SourceMaterialLotId	Identifier of the source Material Tracking Unit (MTU) from which the sample is to be created.
MaterialLotId	Identifier of the Material Lot associated with the Material Tracking Unit (MTU) from which the sample is to be created.
EquipmentId	Identifier of the Equipment associated with the Work Order related to the sample.
LaborId	Identifier of the personnel that executes the sample analysis.
OperationExecutionId	Identifier of the Work Order associated with the creation of the Sample.
OperationResponseId	Identifier of the Work Order operations executed on the sample.
TaskOperationResponseId	Identifier of the sample operation response (Task).
WorkProcessOperationResponseId	Identifier of the operations that make up the Sampling Work Process.

13.9.17 SampleResult Entity

Overall result of the laboratory analysis for a specific sample.

Attributes

Attributes	Description
SampleResultSiteId	Identifier of the Site this entity is related to.
SampleResultKey	A unique identification of the sample result.
SampleId	Identifier of the sample.
Result	String that specifies the Overall result for the sample.
ExecutionEndDateTime	End date and time of the laboratory analysis for the sample.
Reanalysis	Counter that specifies how many times the reanalysis was executed. It can assume the following values: <ul style="list-style-type: none">• 0 = no reanalysis• 1 = the reanalysis was executed once• 2 = the reanalysis was executed twice• x = the reanalysis was executed x times

13.9.18 SampleResultParameterGroup Entity

Defines the relationship between sample result and parameter group entities.

Attributes

Attributes	Description
SampleResultParameterGroupSiteId	Identifier of the Site this entity is related to.
SampleResultParameterGroupKey	A unique identification of a Sample Result Parameter Group.
SampleResultId	Identifier of the Sample Result.
ParameterGroupId	Identifier of the Parameter Group.
Result	A short string expressing the outcome of the analysis executed on a parameter group.
Comment	A more detailed explanation on the outcome of the analysis executed on a parameter group.

Attributes	Description
Reanalysis	Counter that specifies how many times the reanalysis was executed. It can assume the following values: <ul style="list-style-type: none"> • 0 = no reanalysis • 1 = the reanalysis was executed once • 2 = the reanalysis was executed twice • x = the reanalysis was executed x times

13.9.19 Shift Entity

Contains information about a specific working shift, as defined in a work shift calendar. This entity is relevant only in case SIMATIC IT LMS or SIMATIC IT Reporting Framework are used as data sources.

Attributes

Attribute	Description
ShiftSiteId	Identifier of the Site this entity is related to.
ShiftKey	A unique identification of the shift.
Name	The name or identifier of the shift.
Description	Contains additional information and descriptions of the shift.
StartTime	Starting date/time of the shift.
EndTime	End date/time of the shift.

13.9.20 SignatureMeaning Entity

An Electronic Signature (ESig) Meaning represents the purpose and accountability of a signature. It enables you to establish what process is being verified when an electronic signature is applied.

Attributes

Attribute	Description
SignatureMeaningSiteId	Identifier of the Site this entity is related to.
SignatureMeaningKey	A unique identification of the Electronic Signature Meaning.

Attribute	Description
Description	Contains additional information about the Electronic Signature Meaning.
Name	Name of the Electronic Signature Meaning.

13.9.21 Site Entity

A site is a physical, geographical, or logical grouping determined by the enterprise. It may contain areas, production lines, process cells, and production units. A geographical location and main production capability usually identifies a site. Sites generally have well-defined manufacturing capabilities.

Attributes

Attribute	Description
Siteld	A unique identification of the site.
TimeZoneId	Identifier of the site time zone.
Name	Name of the site.
Description	Contains additional information and descriptions of the site.
Longitude	Longitude of the site geospatial location.
Latitude	Latitude of the site geospatial location.

13.9.22 SkillCertification Entity

Skills are linked to Certifications: by creating Certifications that include one or more specific Skills, it is possible to allow or deny the execution of specific Process Operations, Work Order Operations and/or Work Order Steps.

Attributes

Attribute	Description
SkillCertificationSiteld	Identifier of the Site this entity is related to.
SkillCertificationKey	A unique identification of the entity.

Attribute	Description
CertificationId	Identifier of the Certification(s) linked to the Skill.
SkillId	Identifier of the Skills included in the Certification.

13.9.23 Skill Entity

A Skill represents a specific requirement that can be associated with Process Operations, Work Order Operations, Process Steps and/or Work Order Steps, to permit a more granular control on their execution. Skills are linked to Certifications: by creating Certifications that include one or more specific Skills, it is possible to allow or deny the execution of specific Process Operations, Work Order Operations and/or Work Order Steps.

Attributes

Attribute	Description
SkillSiteId	Identifier of the Site this entity is related to.
SkillKey	A unique identification of the entity.
Description	Contains additional information about the skill.
Name	Name of the skill.

13.9.24 Spec Entity

This entity describes a Spec (specification), which defines the activities carried out at a step in a workflow or master recipe and includes detailed scheduling and processing parameter information. Specs reference many other modeling components including Operation, Setup, Data Collection Definition, and Resource.

Attributes

Attribute	Description
SpecKey	A unique identification of the Spec.
SpecSiteId	Identifier of the Site this entity is related to.
Revision	Identifies the revision of the entity.
Description	Contains additional information and descriptions about the Spec.

Attribute	Description
Name	Name of the Spec.

13.9.25 Status Entity

Defines one of the possible states of an asset (as defined in a reason tree).

Attributes

Attribute	Description
StateSiteId	Identifier of the Site this entity is related to.
StateKey	A unique identification of the state.
Name	Name of the state.
Description	Contains additional information and descriptions of the state.
Color	Color to be used to represent the state.
IsStop	Defines if the state is corresponding to an asset stop (downtime).

13.9.26 SummaryTableCompletedWIPSummary Entity

The isCompletedWIPSummary table is a persistent table that stores the final information for all containers that have completed processing.

This table is populated when a container is moved to a step where IsLastStep = true.

This summary will also flag the containers that were completed on time. This table can be used to calculate workflow cycle times, throughput, yield, and on-time delivery.

Attributes

Attribute	Description
SummaryTableCompletedWIPSummaryKey	A unique identification of the entity.
SummaryTableCompletedWIPSummarySiteId	Identifier of the Site this entity is related to.
CalendarDate	Date on which the shift is working.

Attribute	Description
CompletedDate	Datetime when the container is completed.
CompletedDateGMT	Datetime when the container is completed expressed in Greenwich Mean Time.
ContainerId	Identifier of the container associated with the entity.
EndQty	Container quantity when the container was moved to the step isLastStep.
FactoryId	Identifier of the factory associated with the entity.
FactoryStartDate	Start datetime of the manufacturing process.
FactoryStartDateGMT	Start datetime of the manufacturing process expressed in Greenwich Mean Time.
LaborId	Identifier of the labor (employee) associated with the entity.
ManufacturingCycleTime	The difference expressed in seconds between CompletedDate and FactoryStartDate .
MaterialDefinitionId	Identifier of the material definition (product) associated with the entity.
MfgOrderPlannedQty	The quantity planned for the manufacturing order.
MfgOrderPlannedQtyUomId	The unit of measure of the quantity planned for the manufacturing order.
OperationExecutionId	Identifier of the operation execution (manufacturing order) associated with the entity.
OperationId	Identifier of the operation associated with the entity.
OwnerId	Identifier of the owner associated with the entity.
PastDue	It can assume the value 0 or 1. <ul style="list-style-type: none"> • 1 means that the container was completed late. • 0 means it was completed on time.

Attribute	Description
PlannedCompletionDate	Datetime when the completion of the container is planned.
PlannedCompletionDateGMT	Datetime when the completion of the container is planned expressed in Greenwich Mean Time.
PlannedQty	The quantity planned for the container.
PlannedQtyUomId	The unit of measure of the quantity planned for the container.
SecondaryEndQty	Container secondary quantity when the container was moved to the step isLastStep.
SecondaryStartQty	Secondary quantity with which the container started.
SecondaryUomId	Identifier of the secondary Uom associated with the entity.
ShiftId	Identifier of the shift associated with the entity.
SpecId	Identifier of the Spec associated with the entity.
StartQty	Quantity with which the container started.
TimePassedCompletionDate	Time in days the container was passed its MfgOrder completion date. <ul style="list-style-type: none"> • Positive value means it was past due. • Negative number means it finished early.
TxnTypeId	Identifier of the TxnType associated with the entity.
UomId	Identifier of the Uom associated with the entity.
WorkflowId	Identifier of the workflow associated with the entity.
WorkflowStepId	Identifier of the workflow step associated with the entity.

13.9.27 SummaryTableOEERawDetails Entity

This entity is a persistent table that stores throughput and quality data that is not aggregated. Each row represents an individual transaction.

Attributes

Attribute	Description
SummaryTableOEERawDetailsKey	A unique identification of the entity.
SummaryTableOEERawDetailsSiteId	Identifier of the Site this entity is related to.
CalendarDate	Date on which the shift is working.
ContainerId	Identifier of the container associated with the entity.
CycleStartGMT	Start time of the cycle expressed in Greenwich Mean Time.
CycleTime	Cycle time value.
EquipmentClassId	Identifier of the equipment class associated with the entity.
EquipmentId	Identifier of the equipment associated with the entity.
FactoryId	Identifier of the factory associated with the entity.
GoodQty	Total good transacted quantity. On movement transactions, this is the quantity that left the operation.
IdealCycleTime	Used for Overall Equipment Effectiveness (OEE) calculations. Fastest time required to process the total quantity. This is calculated based on the ideal cycle time for the product and resource multiplied by the total quantity (TotalQty*Resources Ideal Cycletime).
LaborId	Identifier of the labor (employee) associated with the entity.
LossQty	Total of loss or adjusted negative quantity populated when a change quantity transaction is executed.
MaterialClassId	Identifier of the material class (product family) associated with the entity.
MaterialDefinitionId	Identifier of the material definition (product) associated with the entity.

Attribute	Description
OperationExecutionId	Identifier of the operation execution (manufacturing order) associated with the entity.
OperationId	Identifier of the operation associated with the entity.
OwnerId	Identifier of the owner associated with the entity.
ProcessTime	Time the container is in process. This is set when the container is moved out using the MoveStd transaction.
QtyAdjustReasonId	Identifier of the QtyAdjustReason associated with the entity.
QueueTime	Time the container waits to be processed. This is set on the MoveIn transaction.
ReworkedQty	Total quantity reworked when a rework transaction is executed.
ReworkReasonId	Identifier of the ReworkReason associated with the entity.
SecondaryGoodQty	Total good transacted secondary quantity. On movement transactions, this is the secondary quantity that left the operation.
SecondaryLossQty	Total of loss or adjusted negative secondary quantity populated when a change quantity transaction is executed.
SecondaryReworkedQty	Total secondary quantity reworked when a rework transaction is executed.
SecondaryTotalQty	Total transaction secondary quantity. On movement transactions, this is the secondary quantity moved to the operation.
SecondaryUomId	Identifier of the secondary Uom associated with the entity.
ShiftId	Identifier of the shift associated with the entity.
SpecId	Identifier of the spec associated with the entity.
TotalQty	Total transaction quantity. On movement transactions, this is the quantity moved to the operation.

Attribute	Description
TxnDate	Datetime of the transaction type.
TxnDateGMT	Datetime of the transaction type expressed in Greenwich Mean Time.
TxnTypeId	Identifier of the TxnType associated with the entity.
UomId	Identifier of the Uom associated with the entity.
WorkflowId	Identifier of the workflow associated with the entity.
WorkflowStepId	Identifier of the workflow step associated with the entity.
TotalDefectCount	The number of logged defects.
Qty	Quantity of defects associated with the entity.
OpenDefectCount	The number of defects that have not been repaired.
FailedQty	Quantity of failed occurrences.
IsFailed	Indicates if there are any open defects that result in a failed status of the container.
ChildCount	The number of children of a container.

13.9.28 TagClass Entity

A representation of a grouping of tags with similar characteristics.

Attributes

Attribute	Description
TagClassSiteId	Identifier of the Site this entity is related to.
TagClassKey	A unique identification of a tag class.
Description	Contains additional information and descriptions on the tag class.

Attribute	Description
Name	Name of the tag class.

13.9.29 Tag Entity

Tags act as containers able to archive, aggregate, contextualize and analyze data from many data sources.

Attributes

Attribute	Description
TagSiteId	Identifier of the Site this entity is related to.
TagKey	A unique identification of a tag.
UomId	Identifier of the unit of measurement of the tag.
TagTypeId	Identifier of the type of tag.
Description	Contains additional information and descriptions on the tag.
Name	Name of the tag.

13.9.30 TagTagClass Entity

This entity defines the relationship between tag and tag class entities.

Attributes

Attribute	Description
TagTagClassSiteId	Identifier of the Site this entity is related to.
TagTagClassKey	A unique identification of this entity.
TagClassId	Identifier of the tag class entity.
TagId	Identifier of the tag entity.

13.9.31 TagType Entity

Contains the possible data types of a tag value.

Attributes

Attribute	Description
TagTypeKey	A unique identification of a tag type ("String" or "Numeric").
Name	Name of the tag type ("String" or "Numeric").
Description	Contains additional information and descriptions on the tag type.

13.9.32 TagValue Entity

Defines a recorded value for a particular tag.

Attributes

Attribute	Description
TagValueSiteId	Identifier of the Site this entity is related to.
TagValueKey	A unique identification of a tag value.
EquipmentId	Identifier of the Equipment object.
TagId	Identifier of the tag entity.
EventDateTime	The date and time of the tag sampling.
FloatValue	Value for a tag of type numeric.
StringValue	Value for a tag of type string.

13.9.33 TargetType Entity

Represents a particular kind of target value for an indicator.

Attributes

Attribute	Description
TargetTypeKey	A unique identification of the target type.
Name	Name of the target type.
Description	Contains additional information and descriptions on the target type.

13.9.34 TaskItem Entity

A Task is a unit of work required to be completed for a container at a specification.

Attributes

Attribute	Description
TaskItemSiteId	Identifier of the Site this entity is related to.
TaskItemKey	A unique identification of the task item.
TaskListId	Identifier of the task list including the task item.
Sequence	Sequence number assigned to the task based on the sequence in which it appears in the Tasks grid of the Task List modeling object.
Description	Contains additional information about the task item.
Name	Name of the task item.

13.9.35 TaskList Entity

A Task List provides a method for defining a list of tasks to be executed against a specification. You specify whether the tasks must be performed in sequential order.

Attributes

Attribute	Description
TaskListSiteId	Identifier of the Site this entity is related to.
TaskListKey	A unique identification of the task list.

Attribute	Description
Description	Contains additional information about the task list.
Name	Name of the task list.

13.9.36 TaskStatus Entity

Status of the task item. For Opcenter Execution Core, this status can assume either of the following values: **PASS** or **FAIL**.

Attributes

Attribute	Description
TaskStatusSiteId	Identifier of the Site this entity is related to.
TaskStatusKey	A unique identification of the Task Status.
Description	Contains additional information about the Task Status.
Name	Name of the Task Status.

13.9.37 TimeZoneDaylightTimeSaving Entity

Entity containing information about daylight saving time for each time zone.

Attributes

Attribute	Description
TimeZoneDaylightTimeSavingKey	A unique identification of the entity.
TimeZoneId	Identifier of the associated time zone.
Offset	Offset compared to non-daylight saving time.
DateFrom	Starting date of daylight saving period.
DateTo	End date of daylight saving period.

13.9.38 TimeZone Entity

Defines a time zone in terms of offset to UTC.

Attributes

Attribute	Description
TimeZoneKey	A unique identification of the time zone.
Name	Name of the time zone.
Description	Contains additional information and descriptions of the time zone.
OffSet	Offset with respect to UTC time (in minutes).

13.9.39 ToolClass Entity

A representation of a grouping of tools with similar characteristics.

Attributes

Attribute	Description
ToolClassSiteId	Identifier of the Site this entity is related to.
ToolClassKey	A unique identification of a tool class.
Name	Name of the tool class.
Description	Contains additional information and descriptions of the tool class.

13.9.40 ToolDefinition Entity

A representation of a tool with similar characteristics for the purpose of manufacturing operations definition, scheduling, capability and performance shall be presented as a tool definition.

Attributes

Attribute	Description
ToolDefinitionSiteId	Identifier of the Site this entity is related to.

Attribute	Description
ToolDefinitionKey	A unique identification of a tool definition.
Name	Name of the tool definition.
Description	Contains additional information and descriptions of the tool definition.

13.9.41 ToolDefinitionPropertyStaticValue Entity

Current value of a tool definition property.

Attributes

Attribute	Description
ToolDefinitionPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
ToolDefinitionPropertyStaticValueKey	A unique identification of a tool definition property static value.
ToolDefinitionId	Identifier of the tool definition.
ToolPropertyId	Identifier of the tool definition property.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.
DatetimeValue	Value for a property of type DateTime.
Sequence	Value for a multivalue property.

13.9.42 ToolDefinitionToolClass Entity

This entity defines the relationship between tool definition and tool definition class entities.

Attributes

Attribute	Description
ToolDefinitionToolClassSiteId	Identifier of the Site this entity is related to.
ToolDefinitionToolClassKey	A unique identification of this relationship entity.
ToolDefinitionId	Identifier of the tool definition entity.
ToolClassId	Identifier of the tool definition class entity.

13.9.43 Tool Entity

Defines a tool to be used or consumed in a manufacturing operation or a specific task of an operation.

Attributes

Attribute	Description
ToolSiteId	Identifier of the Site this entity is related to.
ToolKey	A unique identification of the tool.
Name	Name of the tool.
Description	Contains additional information and descriptions of the tool.
ToolDefinitionId	Identifier of the associated tool definition.

13.9.44 ToolProperty Entity

Properties of tools shall be presented as tool properties. Each tool can have unique values for zero or more tool properties.

Attributes

Attribute	Description
ToolPropertySiteId	Identifier of the Site this entity is related to.
ToolPropertyKey	A unique identification of the tool property.

Attribute	Description
Name	Name of the property.
Description	Contains additional information and descriptions of the property.
PropertyTypeId	Type of the property.
UomId	Identifier of the unit of measure for the property value.
Multivalue	Specifies if the property can have multiple values.

13.9.45 ToolPropertyStaticValue Entity

Current value of a tool property.

Attributes

Attribute	Description
ToolPropertyStaticValueSiteId	Identifier of the Site this entity is related to.
ToolPropertyStaticValueKey	A unique identification of a tool property static value.
ToolId	Identifier of the tool.
ToolPropertyId	Identifier of the tool property.
StringValue	Value for a property of type String.
FloatValue	Value for a property of type Numeric.
DatetimeValue	Value for a property of type DateTime.
Sequence	Value for a multivalue property.

13.9.46 TxnType Entity

This entity describes a transaction type. Examples of the values this entity can assume are:

- Change Qty
- Rework

- Move
- Move In
- MoveStd

Attributes

Attribute	Description
TxnTypeKey	A unique identification of the transaction type.
TxnTypeSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the transaction type.
Name	Name of the transaction type.

13.9.47 Uom Entity

Identifies a unit of measurements for a property value.

Attributes

Attribute	Description
UomKey	A unique identification of the Uom.
Name	Name of the Uom.
Description	Contains additional information and descriptions of the Uom.
UomSystemId	Identifier of the unit of measurement system.
UomCategoryId	Identifier of the unit of measurement category.

13.9.48 Workcenter Entity

Equipment item that performs production, storage, material movement, or any other scheduled activity.

Attributes

Attribute	Description
WorkcenterKey	A unique identification of this entity.
WorkcenterSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the workcenter.
Name	Name of the workcenter.

13.9.49 Workflow Entity

A workflow defines a sequence of workflow steps that are used to manufacture a product.

Attributes

Attribute	Description
WorkflowKey	A unique identification of the workflow.
WorkflowSiteId	Identifier of the Site this entity is related to.
Revision	Identifies the revision of the entity.
Description	Contains additional information and descriptions about the workflow.
Name	Name of the workflow.

13.9.50 WorkflowStep Entity

A step defines the processing for that point in the workflow. Each step refers to a set of instructions that may include a combination of the following:

- Tasks to be performed by an employee.
- Events that must occur to process the container at that step.

Attributes

Attribute	Description
WorkflowStepKey	A unique identification of the workflow step.

Attribute	Description
WorkflowStepSiteId	Identifier of the Site this entity is related to.
Sequence	Identifies the sequence of the workflow steps within the workflow.
Description	Contains additional information and descriptions about the workflow step.
Name	Name of the workflow step.
IsLastStep	Identifies whether the workflow step is the last step or not.
Workfloid	Id of the workflow that includes this workflow step.

13.9.51 WorkingTimeExceptionClass Entity

Identifies an exception to a working time defined in a production/work calendar, typically representing a non-working period within a planned working time. This entity is relevant only in case SIMATIC IT LMS or SIMATIC IT Reporting Framework are used as data sources.

Attributes

Attribute	Description
WorkingTimeExceptionClassSiteId	Identifier of the Site this entity is related to.
WorkingTimeExceptionClassKey	A unique identification of the working time exception class.
Name	Name of the working time exception class.
Description	Contains additional information and descriptions of the working time exception.

13.9.52 WorkingTimeException Entity

Identifies an exception to a working time defined in a production/work calendar, typically representing a non-working period within a planned working time. This entity is relevant only in case SIMATIC IT LMS or SIMATIC IT Reporting Framework are used as data sources.

Attributes

Attribute	Description
WorkingTimeExceptionSiteId	Identifier of the Site this entity is related to.
WorkingTimeExceptionKey	A unique identification of the working time exception.
EquipmentSiteId	Identifier of the Site related to the equipment where the working time exception is recorded.
EquipmentKey	A unique identification of the equipment where the working time exception is recorded.
StartDateTime	Starting date/time of the exception.
EndDateTime	Ending date/time of the exception.
Duration	Duration of the exception.

13.9.53 WorkingTimeExceptionWorkingTimeExceptionClass Entity

Defines the relationship between working time exception and working time exception class entities. This entity is relevant only in case SIMATIC IT LMS or SIMATIC IT Reporting Framework are used as data sources.

Attributes

Attribute	Description
WorkingTimeExceptionWorkingTimeExceptionClassSiteId	Identifier of the Site this entity is related to.
WorkingTimeExceptionWorkingTimeExceptionClassKey	A unique identification of this relationship entity.
WorkingTimeExceptionClassId	Identifier of the working time exception class.
WorkingTimeExceptionId	Identifier of the working time exception.

13.9.54 Workstation Entity

A workstation is a work area used by one person with a computer terminal connected to a network.

Attributes

Attribute	Description
WorkstationKey	A unique identification of this entity.
WorkstationSiteId	Identifier of the Site this entity is related to.
Description	Contains additional information and descriptions about the workstation.
Name	Name of the workstation.

14 Opcenter Intelligence Smart Views Data

When you select measures and attributes in the cards of a smart view, you are choosing the information on the basis of which you want to aggregate, filter or group data for analysis in runtime dashboards.

When the Smart View is deployed, one or more data marts are created, which are made up of related fact tables (measures) and dimensions/contexts (attributes). A fact table is created for each card where measures have been selected and dimensions are created for each selected attribute card.

The available fact tables and dimensions depend on functionalities, on available sources and on the selected measures/attributes. Some of the displayed measures and attributes are provided out of the box, while other depend on the data warehouse content and are loaded during a project synchronization.

14.1 Measures and Attributes Distribution in Cards

While measures are distributed in cards according to data warehouse entities, attributes are further subdivided depending on the data warehouse table they belong to. The following attribute types can be present in the corresponding cards:

Type	Description
Standard	Basic information about the entity. They are always present in the attribute cards.
Class	Classification created for the entity in the data source. Classes that are mutually exclusive can be merged into a single attribute by means of the Merge Attributes operation. See <i>Opcenter Intelligence User Manual</i> for more details.
Property	Property configured for the entity in the data source.
Hierarchy	Hierarchy of the entity distributed in levels as defined in the data source. Since we do not have a prior knowledge of the different hierarchy levels, they are shown as Level0 , Level1 , etc. However, like all other measures and attributes, they can be renamed.
Lookup	Additional information on the entity.

Data Management in Smart Views

In these linked pages, you can find a description on how data is managed in smart views for the following entities:

- [Downtime Management](#)
- [Equipment Capacity](#)
- [Equipment Performance](#)

14.2 Downtime Management Data in Smart Views

Downtime Management data can be used for different purposes, for example to perform a time-based analysis on the issues that affect asset availability and performance, or calculate the Availability KPI, which is one of the elements required to calculate the OEE KPI.

Contextualization on Downtime Management data is executed automatically on **Site**, **Equipment**, **ReasonTreeItem** and all the **Time Definitions** contexts.

For more details, see:

- [Downtime Management OOTB Contexts](#)
- *How to Configure Smart Views > Selecting Measures in Opcenter Intelligence User Manual.*

Downtime Management Measures

The list of measures is dynamic. For Downtime Management, they are generated on the basis of time categories acquired in the data warehouse (the reference tables are **bm20.EquipmentTimeCategory** for the lookup and **bm20.EquipmentTimeModel** for the values).

Example

In this example, the following time categories were present in the data warehouse:

- Planned Maintenance
- Productive Time
- Scheduled Maintenance
- ...

Downtime Management

- ☐ Planned Maintenance EquipmentTimeCategory
- ☒ Productive Time EquipmentTimeCategory
- ☒ Scheduled Maintenance EquipmentTimeCategory
- ☐ Scheduled Up Time EquipmentTimeCategory
- ☒ Scheduled breaks EquipmentTimeCategory
- ☒ Standby EquipmentTimeCategory
- ☐ Total Time EquipmentTimeCategory
- ☒ Unscheduled Downtime EquipmentTimeCategory
- ☐ Up EquipmentTimeCategory

Downtime Management OOTB Contexts

The following out-of-the-box contexts are associated with the Downtime Management entity:

- **Equipment**
- **Microstop**
- **ReasonTreeItem**
- **Site**
- **Time definitions** to filter data based on time units (for details, see *How to Configure the Time Definition > Time Management in Smart Views in Opcenter Intelligence User Manual*).

14.3 Equipment Capacity Data in Smart Views

Equipment Capacity data can be used for different purposes, such as:

- provide the calculation of theoretical equipment production based on the speed value in a specific time span,
- calculate the Performance KPI, which is one of the elements required to calculate the OEE KPI.


Contextualization on Equipment Capacity data is executed automatically on **Equipment**, **ReasonTreeItem**, **Site** and **Time definitions** contexts.

For more details, see

- [Equipment Capacity OOTB Contexts](#)
- *How to Configure Smart Views > Selecting Measures in Opcenter Intelligence User Manual.*

Equipment Capacity Measures

The list of measures is dynamic. For Equipment Capacity, they are generated on the basis of speed and cycle time acquired in the data warehouse (the reference tables are **bm20.EquipmentCapacity** for the lookup and **bm20.EquipmentCapacityValue** for the values).

 In this table the speed value is always expected, because when smart view values are calculated the capacity is always calculated.

Example

In this example, the following speeds were present in the data warehouse:

- Actual Speed
- ActualCycleTime
- CycleTime
- ...

Equipment Capacity

▼ EQUIPMENTCAPACITYVALUE

☒ Actual Speed EquipmentCapacity
☐ ActualCycleTime EquipmentCapacity
☒ CycleTime EquipmentCapacity
☒ Packing Speed EquipmentCapacity
☐ Target Cycle Time EquipmentCapacity
☒ Target Speed EquipmentCapacity

Equipment Capacity OOTB Contexts

The following out-of-the-box contexts are associated with the Equipment Capacity entity:

- **Equipment**
- **ReasonTreeItem**
- **Site**

- **Time definitions** to filter data based on time units (for details, see *How to Configure the Time Definition > Time Management in Smart Views in Opcenter Intelligence User Manual*).

14.4 Equipment Performance Data in Smart Views

Equipment Performance data can be used for different purposes, such as:

- calculate the Quality ratio KPI, which is one of the elements required to calculate the OEE KPI,
- calculate totals based on production counters (good, scrap, reworked, etc.).

Contextualization on Equipment Performance data is executed automatically on **Equipment**, **Site** and **Time definitions** contexts (see [Equipment Performance OOTB Contexts](#)).

Equipment Performance Measures

The list of measures is dynamic. For Equipment Performance, they are generated on the basis of counters acquired in the data warehouse (the reference tables are **bm20.Indicator** for the lookup and **bm20.IndicatorValue** for the values and for the main contexts).

Example

In this example, the following counters were present in the data warehouse:

- Counter A
- Counter B
- Counter C
- ...

Equipment Performance

▼ INDICATORVALUE

☒ Counter A Indicator
☒ Counter B Indicator
☒ Counter C Indicator
☒ Counter D Indicator
☒ Good Items Indicator
☐ Produced Bottles 100cl Indicator
☐ Produced Bottles 125cl Indicator
☐ Produced Bottles 150cl Indicator

Equipment Performance OOTB Contexts

The following out-of-the-box contexts are associated with the Equipment Performance entity:

- **Equipment**
- **Site**
- **Time definitions** to filter data based on time units (for details, see *How to Configure the Time Definition > Time Management in Smart Views in Opcenter Intelligence User Manual*).