

# Enterprise Asset Management (EAM)

Curriculum: Introduction to S/4HANA using Global Bike



# Teaching material - Information

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## Teaching material - Version

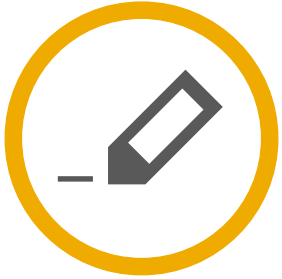
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- 4.2 (July 2023)
- Software used
  - SAP S/4HANA 2022
  - Fiori 3.0
- Model
  - Global Bike
- Prerequisites
  - No Prerequisites needed



# Module Information

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## Authors

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## Target Audience

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- Beginner



# Module Information

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## Learning Objectives

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You are able to

- name some functionalities of the EAM module.
- define the central organizational structures of the EAM module.
- summarize the master data which is most important for the EAM module.
- explain a standard process of the Enterprise Asset Management.

# Functionality

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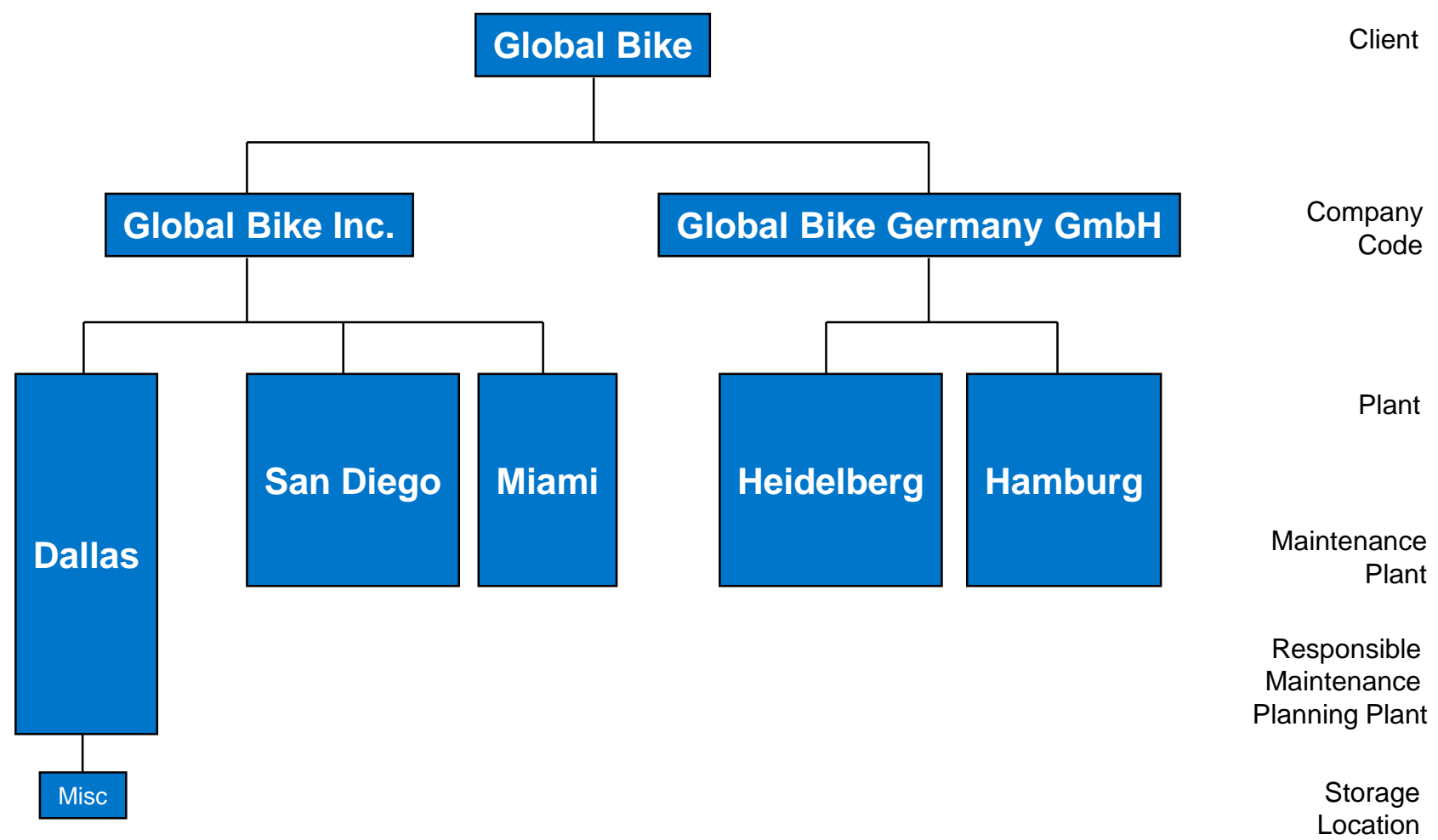
- Planned Repair
- Instant Repair
- External Assignment
- Refurbishment
- Preventive Plant Maintenance
- Project oriented Plant Maintenance
- Shift Reports and Shift Notes

# Agenda

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- EAM Organizational Structure
- EAM Master Data
- EAM Processes

# GBI Structure for Enterprise Asset Management



# EAM Organizational Structure

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- Client
  - An independent environment in the system
- Company Code
  - Smallest org unit for which you can maintain a legal set of books
- Plant
  - Operating area or branch within a company
    - Manufacturing, distribution, purchasing or maintenance facility
- Storage Location
  - An organizational unit allowing differentiation between the various stocks of material in a plant
  - Is required to store spare parts

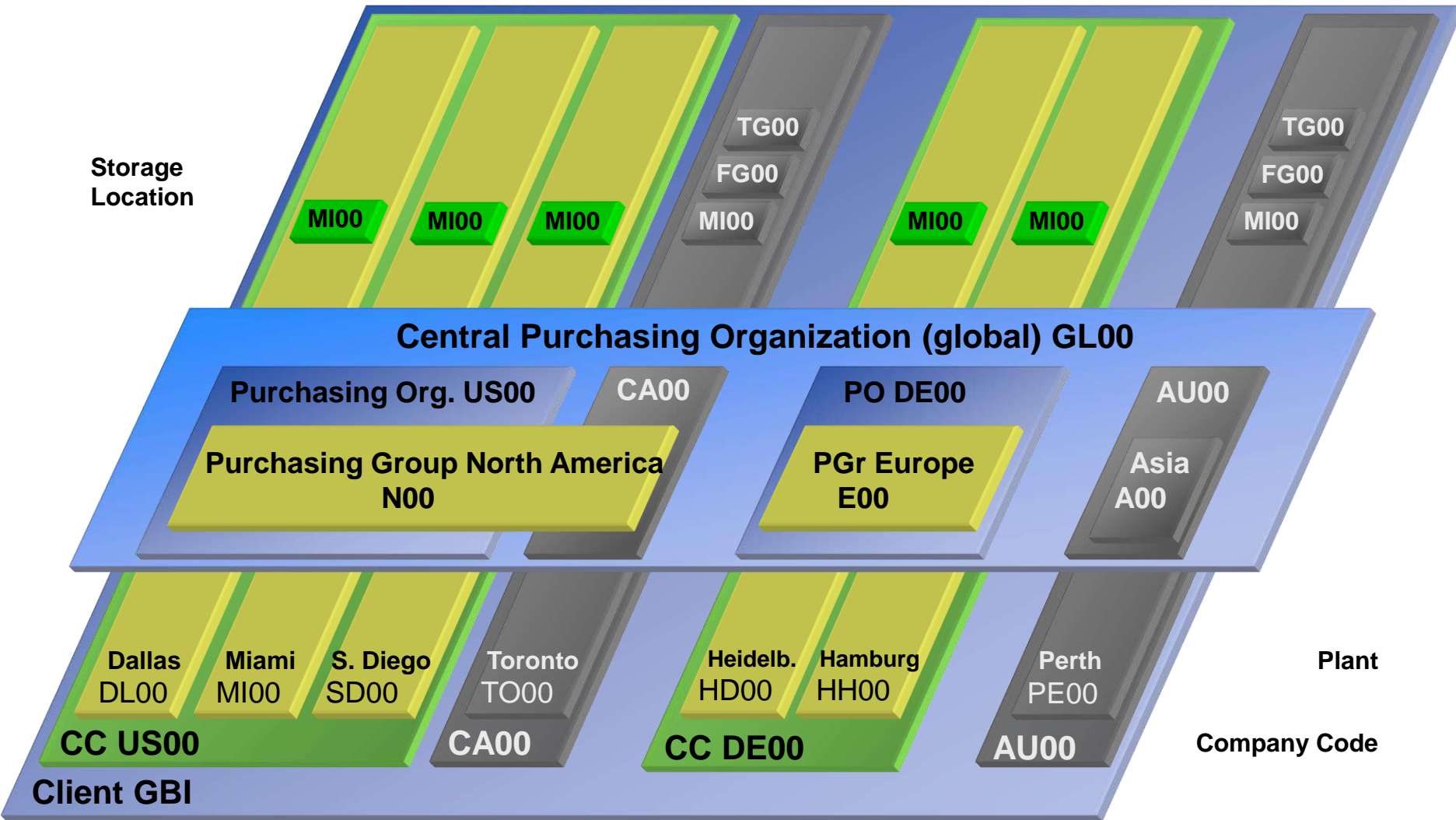


# EAM Organizational Structure

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- Maintenance Plant
  - Plant in which the technical objects of a company are installed
- Maintenance Plant oriented organizational units:
  - Location (e.g. building number, coordinates)
  - Plant Section (responsibility for working assets)
  - Work Center (process measures of plant maintenance)
- Maintenance Planning Plant
  - Plant in which maintenance tasks are planned and prepared
- Planning Plant oriented organizational units :
  - Maintenance Planner Group (responsible for planning and processing maintenance tasks)
  - Work Center

# GBI Enterprise Structure in SAP ERP (EAM)



# Agenda

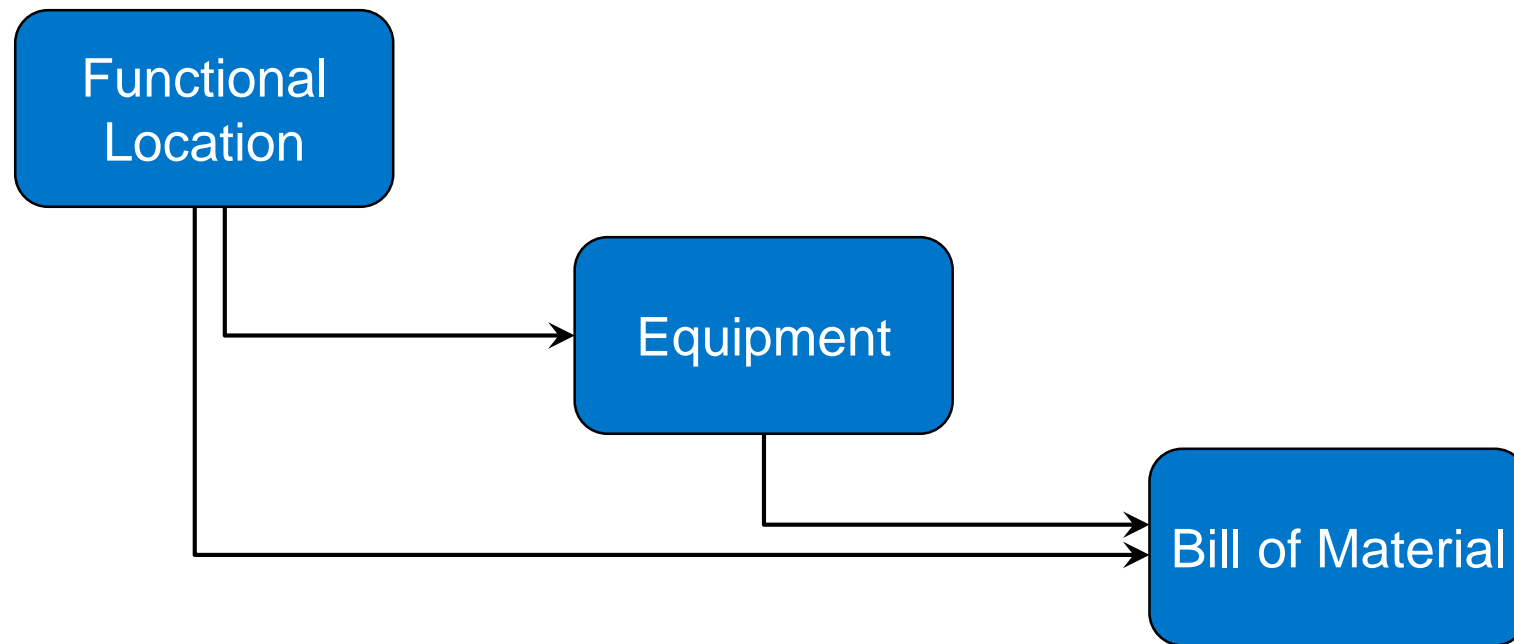
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- EAM Organizational Structure
- **EAM Master Data**
- EAM Processes

# EAM Master Data

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- Functional Location – Master Data
- Equipment – Master Data
- Bill of Material



# Functional Location – Definition

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- Hierarchically organized structure which represents e.g. a technical system, a building or a part of it
- Locations are normally fixed and do not move‘
- Structures maintenance objects according to following criteria:
  - spatial (e.g. buildings)
  - technical (e.g. pumping plant)
  - functional (e.g. production of bicycle frames)
- Functional locations can be used to sub-divide the objects into similar maintenance units
- Functional locations can contain different types of equipment

# Functional Location – Advantages

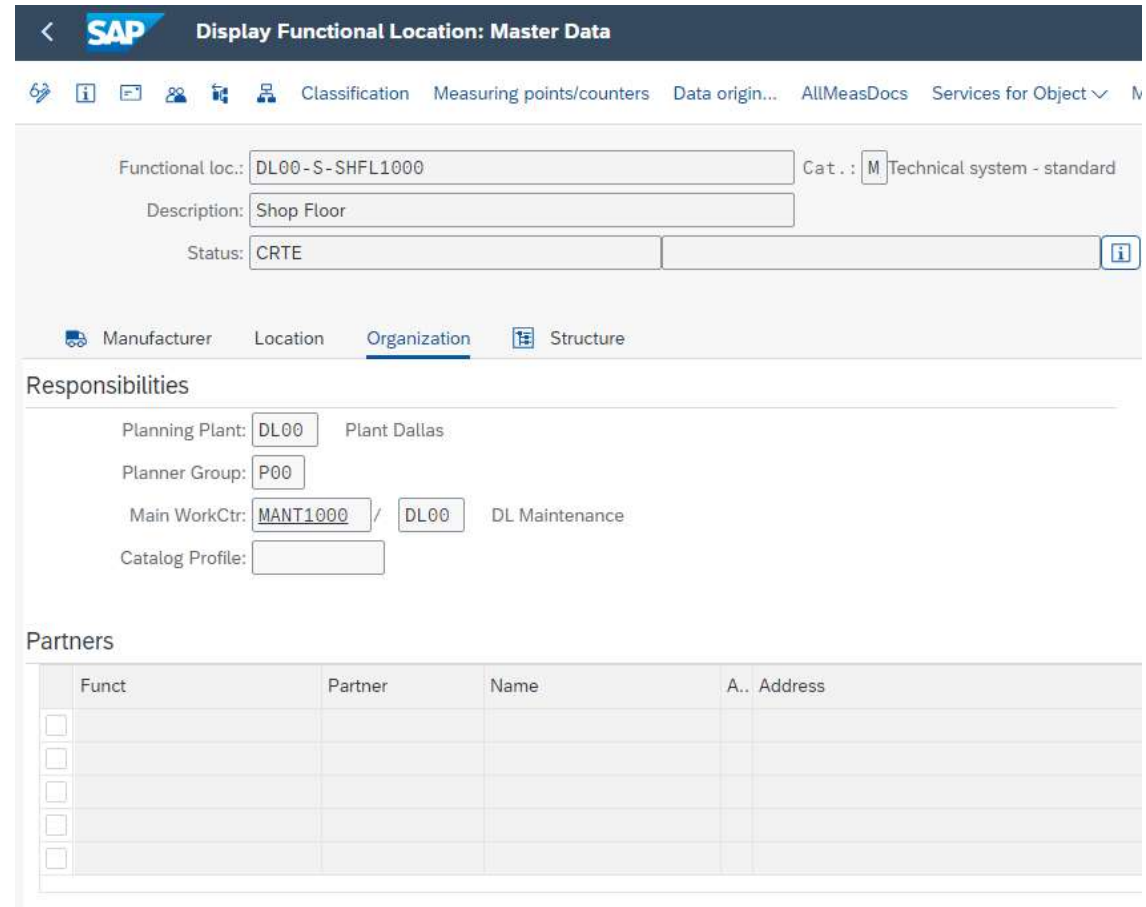
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- Structural depiction of a technical plant
  - Structure indicator makes hierarchy levels visible
- Planning and performing maintenance tasks
- Verification of maintenance tasks
- Data gathering for extended periods of time
- Cost monitoring
- Behavioral analysis individual areas under different conditions



# Functional Location – Master Record

- Functional Location Master Data
  - contains all information about the functional location
  - Could be required in order to perform maintenance activities
- Information in four views:
  - General
  - Location
  - Organization
  - Structure



The screenshot displays the SAP 'Display Functional Location: Master Data' interface. The top navigation bar includes the SAP logo and the title. Below the navigation bar, there are several tabs: 'Classification', 'Measuring points/counters', 'Data origin...', 'AllMeasDocs', and 'Services for Object'. The main data entry area contains the following fields:

- Functional loc.: DL00-S-SHFL1000
- Cat.: M Technical system - standard
- Description: Shop Floor
- Status: CRTE

Below these fields, there are four tabs: 'Manufacturer', 'Location', 'Organization', and 'Structure'. The 'Organization' tab is currently selected. Under the 'Organization' tab, the 'Responsibilities' section is visible, containing the following fields:

- Planning Plant: DL00
- Plant: Dallas
- Planner Group: P00
- Main WorkCtr: MANT1000 / DL00
- DL Maintenance
- Catalog Profile:

Below the 'Responsibilities' section, the 'Partners' section is visible, which is a table with the following columns: 'Funct', 'Partner', 'Name', 'A..', and 'Address'. The table is currently empty.

# Equipment – Definition

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- Individual and autonomous technical unit
- Physical object for which maintenance tasks are planned and performed
- Mobile character
- Examples: pumps, personal computers, circulation fan, engines
- Equipments can be placed in functional locations

# Equipment – Advantages

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- Administration of individual objects and data
- Verification of maintenance tasks
- Object oriented cost monitoring
- Data gathering and analysis for extended periods of time

# Equipment – Master Record

- Equipment Master Data
  - contains all information around equipment
- Information in four views:
  - General
  - Location
  - Organization
  - Structure

The screenshot displays the SAP 'Display Equipment: Location' interface. At the top, the SAP logo and title are visible. Below the title bar, there are navigation icons and tabs: 'Class overview', 'Measuring points/counters', 'AllMeasDocs', 'Services for Object', and 'More'. The main data area contains several input fields: 'Equipment' (10000000), 'Category' (G), 'Equipment/Assets', 'Description' (Circulation Fan), 'Status' (INST), 'Valid From' (01/01/2009), and 'Valid To' (12/31/9999). Below these fields are tabs for 'General', 'Location', 'Organization', 'Structure', 'Sales and Distribution', 'SerData', and 'Configuration data'. The 'Location data' section includes fields for 'MaintPlant' (DL00), 'Location' (DALLAS TX), 'Room', 'Plant Section' (1), 'Work center' (MANT1000), 'ABC Indic.' (C), and 'Sort Field'. The 'Address' section at the bottom has fields for 'Name', 'Street', 'Location', 'Telephone', and 'Fax'. The 'Location' field in the address section is split into three parts.

# Bill of Material – Definition

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- Complete formally structured list of all components
- Material BOMs can be allocated to functional locations or equipment
- Three types of BOMs in Enterprise Asset Management:
  - Material BOMs
  - Equipment BOMs
  - Functional location BOMs

# Bill of Material – Advantages

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- Structuring of objects
- Service parts planning in maintenance orders and maintenance task lists
- Within plant maintenance BOMs are used if there are similar objects that can be maintained



# Agenda

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- EAM Organizational Structure
- EAM Master Data
- EAM Processes

# EAM Process (Planned Repair)

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1. Notification

2. Planning

3. Controlling

4. Implementation

5. Completion

# Notification

- Malfunctions and other requirements are gathered in notifications
- Content:
  - Technical object
  - Location data
  - Reported by
  - Description
  - Notification date
  - Breakdown
  - Damage location, damage cause code

**SAP Create PM Notification: Malfunction Report**

Notification: %0000000001 M2 Circulation fan defective  
Notific. Status: OSNO  
Order:

**Reference Object**

Functional loc.: DL00-S-SHFL1000 Shop Floor  
Equipment: 18000488 Circulation Fan  
Assembly:

**Subject**

Coding:  
Description: Circulation fan defective  
Subject Long Text  
Circulation fan does not work correctly  
Exchange filter

**Responsibilities**

Planner Group: D00 / DL00 Dallas Group  
Main WorkCtr: MANT1000 / DL08 DL Maintenance  
Department resp:  
Person respons:  
Reported By: LEARN-400 Notif. Date: 06/21/2022

**Malfunction Data**

Malfunct. Start: 06/21/2022 09:10:28 Breakdown  
Malfunct. End: 00:00:00 Breakdown Dur.:

**Item**

Object Part: VENT 1003 Filter  
Damage: VENT 1002 Worn Filter  
Text:  
Cause: PM-2006 1004 Normal Wear and Tear  
Cause Text: High dust accumulation

# Notification

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- Notifications are used to tell maintenance that something needs fixing
- They may or may not contain technical information
- They will often highlight a breakdown that needs to be actioned quickly
- Notifications can also be used to record works already carried out because a history needs to be maintained

# Planning

- Order creation and order planning is normally triggered from a notification
- Order planning can include:
  - The steps to be Performed (Operations)
  - Required spare parts (Components)
  - Any specialized tooling

The screenshot displays the SAP 'Create Maintenance order - Central Header' form. The interface includes a top navigation bar with the SAP logo and a title bar. Below the title bar, there are tabs for 'Schedule', 'Determine costs', 'Material availability, overall', and 'More'. The main form area is divided into several sections: 'HeaderData', 'Operations', 'Components', 'Costs', 'Partner', 'Objects', 'Additional Data', and 'Location'. The 'HeaderData' section contains fields for 'Order' (P001, 4000030), 'Circulation fan defective', 'Sys.Status' (REL, MANC, PRC), 'Person responsible', 'PlannerGrp' (P00 / DL00, Dallas Group), 'Mnt.wk.ctr' (MANT1000 / DL00, Maintenance), 'Person respon...', 'Notifctn' (10000006), 'Costs' (0,00 USD), 'PMActType' (001, Inspection), 'SystCond', and 'Address'. The 'Dates' section includes 'Bsc start' (08.05.2018), 'Priority', 'Basic fin.' (08.05.2018), and 'Revision'. The 'Reference object' section contains 'Func. Loc.' (DL00-S-SHFL1000, Shop Floor), 'Equipment' (10000701, Circulation Fan), and 'Assembly'. The 'Malfnctn data' section includes 'Malfn Start' (08.05.2018, 10:51:17), 'Malfn End', 'Breakdown', and 'Breakdown dur.'. The 'First operation' section includes 'Operation' (Circulation fan defective), 'Calc. key' (1 Calculate duration), 'WkCtr/Pint' (MANT1000 / DL00), 'Acty Type' (MLABOR), 'Work durtn' (2,0 HR), 'Number' (1), 'Oprtn dur.' (2,0 HR), 'Person, no.', and 'Comp.'. The form is designed with a clean, professional layout, using a light blue color scheme and clear, legible fonts.

# Planning

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- Maintenance orders can be created from maintenance plans, notifications or created without any reference document
- Responsibilities for external or internal work are defined
- Material reservations take place order upon release
- Production resources like protective clothing and specialist tooling can be listed
- Planned costs are calculated based on internal activity rates and external service costs



# Maintenance Order Control Functions

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- Control functions for maintenance orders can vary depending on the type of order
- Order release is carried out once planning has been completed
- Maintenance orders provide the following functions:
  - Mass change or mass editing
  - Availability check for spare parts
  - Capacity requirements planning
  - Printing work instruction papers

# Implementation and Completion

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- Planned and unplanned material withdrawals (goods issue) are possible
- Order Completion Steps:
  - Time confirmation
  - Technical completion confirmation
  - Technical completion
- Customer billing can be performed after successful technical completion