

# Enterprise Asset Management (EAM)

Curriculum: Introduction to ERP using Global Bike



# Teaching material - Information

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## Teaching material - Version

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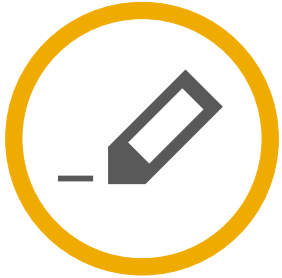
- 3.2 (July 2018)
- Software used
  - SAP ERP 6.08
- Model
  - Global Bike
- Prerequisites
  - No Prerequisites needed





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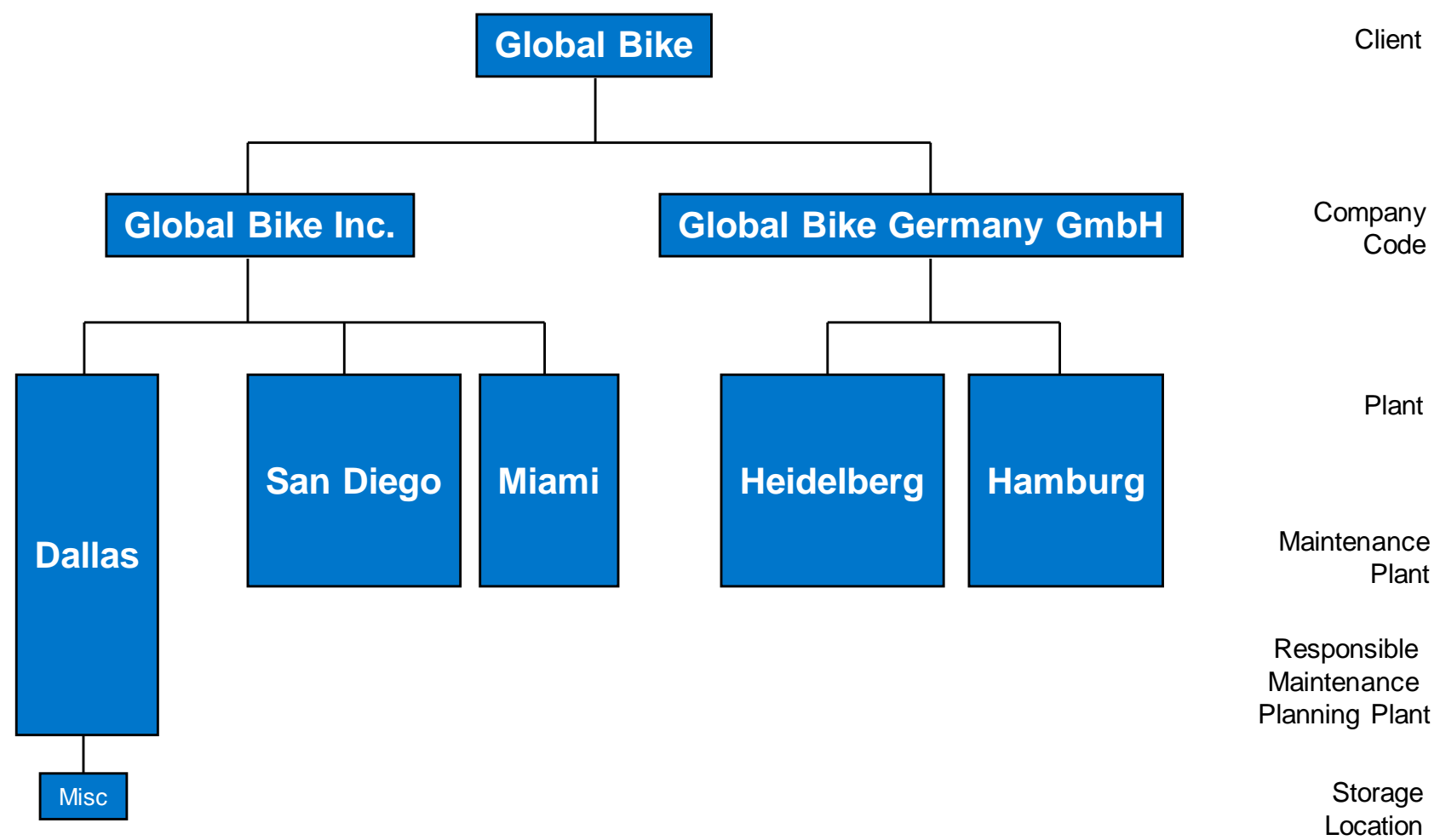
- Planned Repair
- Instant Repair
- External Assignment
- Refurbishment
- Preventive Plant Maintenance
- Stateful Plant Maintenance
- Project oriented Plant Maintenance
- Shift Reports and Shift Notes

# 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

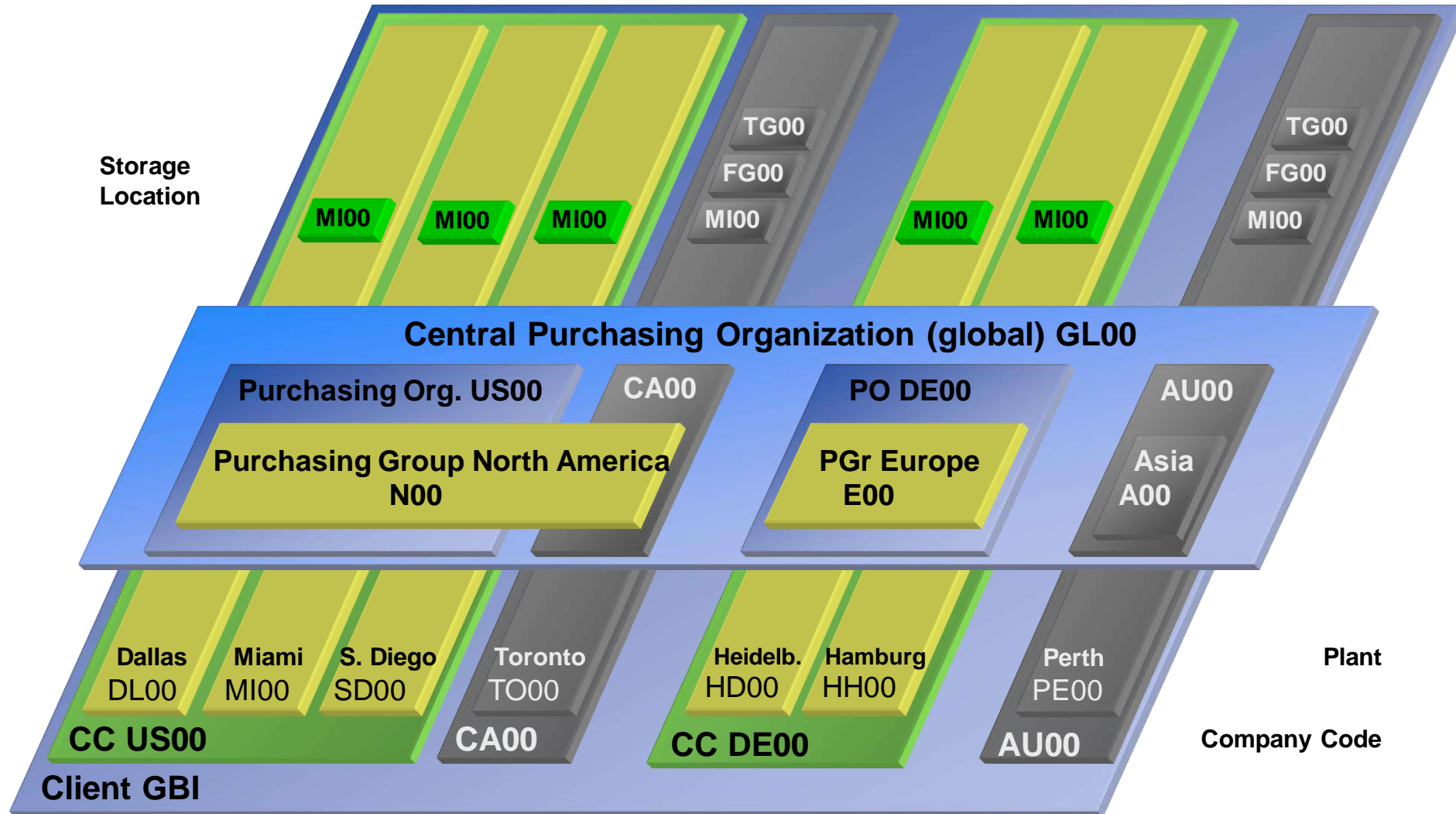


# EAM Organizational Structure

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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

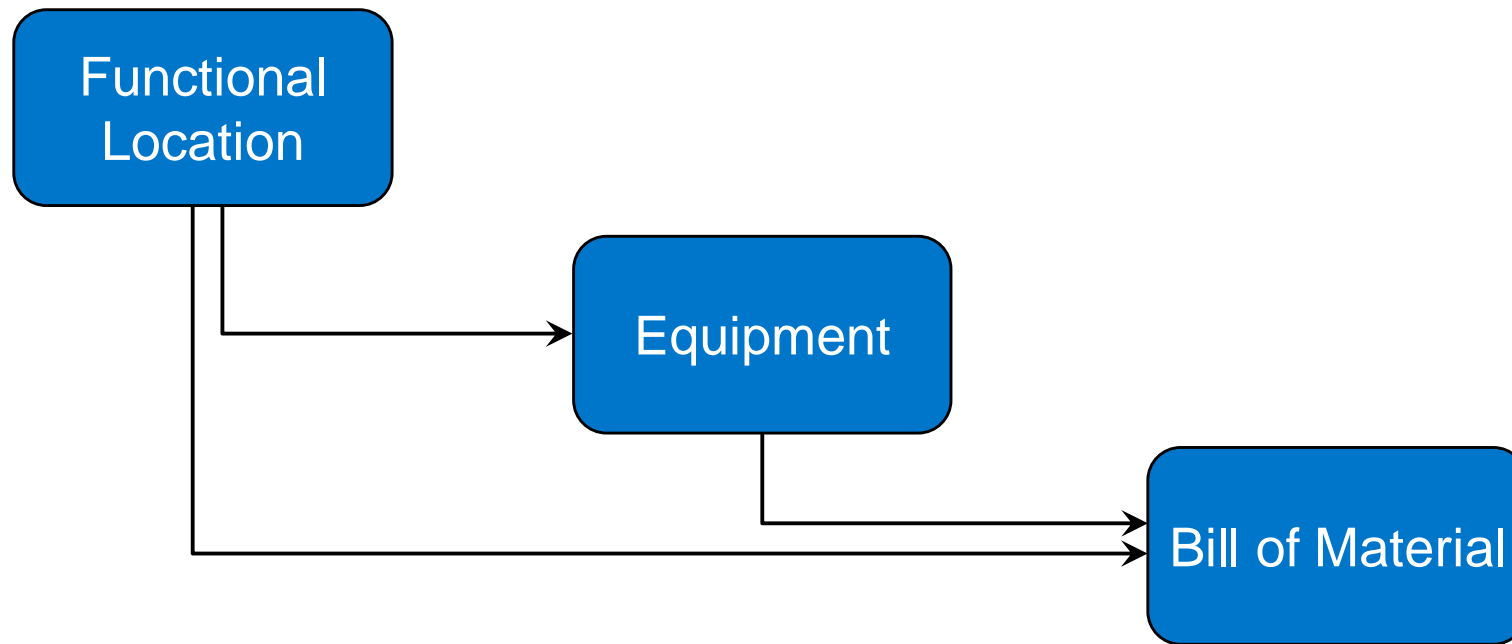
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- EAM Organizational Structure
- **EAM Master Data**
- EAM Processes

# EAM Master Data

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



# Functional Location – Definition

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- Hierarchal organized structure which represents e.g. a technical system, a building or a part of it
- Immobile character
- Structures maintenance objects according to following criteria:
  - spatial (e.g. buildings)
  - technical (e.g. pumping plant)
  - functional (e.g. production of bicycle frames)
- Division in maintenance relevant 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 around the functional location
  - Is required to perform maintenance activities
- Information in four views:
  - General
  - Location
  - Organization
  - Structure

**Display Functional Location: Master Data**

60 | Classification Measuring points/counters Data origin...

Functional loc. DL00-S-SHFL1000 Cat. M Technical system - st...

Description Shop Floor

Status CRTE

General Location Organization Structure

**Account assignment**

Company Code	US00	Global Bike Inc.	Dallas
Business Area	BI00	Bikes	
Asset		/	
Cost Center	NAPM1000	/	NA00 Plant Main Costs
WBS Element			
StandgOrder			
SettlementOrder			

**Responsibilities**

Planning plant	DL00	Plant Dallas	
Planner group	P00	Dallas Group	972-555-3000
Main WorkCtr	MANT1000	/	DL00 Maintenance
Catalog profile			

# 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 title bar reads 'Display Equipment : Location'. Below it, a toolbar contains icons for search, information, and other functions, along with the text 'Class overview' and 'Measuring points/counters'. The main data area is divided into two sections. The top section contains fields for 'Equipment' (10000000), 'Category' (G), 'Description' (Circulation Fan), 'Status' (INST), 'Valid From' (01/01/2009), and 'Valid To' (12/31/9999). The bottom section is a tabbed interface with four tabs: 'General', 'Location', 'Organization', and 'Structure'. The 'Location' tab is currently selected, showing 'Location data' fields: 'MaintPlant' (DL00), 'Location' (DALLAS TX), 'Room' (empty), 'Plant section' (1), 'Work center' (MANT1000), 'ABC indic.' (C), and 'Sort field' (empty). To the right of these fields, additional information is displayed: 'Plant Dallas', 'GBI MFG', 'Hiro Abe 972-555-3000', 'Maintenance', and 'Relatively unimport.'. Below the 'Location data' section is an 'Address' section with fields for 'Name', 'Street', 'Location', 'Telephone', and 'Fax'.

Equipment Data	
Equipment	10000000
Category	G
Description	Circulation Fan
Status	INST
Valid From	01/01/2009
Valid To	12/31/9999

Location Data	
MaintPlant	DL00
Location	DALLAS TX
Room	
Plant section	1
Work center	MANT1000
ABC indic.	C
Sort field	

Address	
Name	
Street	
Location	
Telephone	
Fax	

# 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 similar object should 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

**Create PM Notification: Malfunction Report**

Notification: [M2] Circulation fan defective

Notific. Status: OSNO

Order: [ ]

Notification | Reference object | Malfunction, breakdown | Location data | Items | Tasks

Reference object

Functional loc.: D100-S-SHFL1000 Shop Floor

Equipment: 10000000 Circulation Fan

Assembly: [ ]

Subject

Coding: [ ] [ ]

Description: Circulation fan defective

Subject Long Text

04/05/2018 15:54:07 CET

Circulation fan does not work correctly Exchange Filter.

Responsibilities

Planner group: P00 / D100 Dallas Group

Main WorkCtr: MAINT1000 / D100 Maintenance

Department resp: [ ]

Person respons.: [ ]

Reported by: LEARN-000 Notif.date: 04/05/2018 15:51:41

Malfunction data

Malfunc. start: 04/05/2018 15:51:41 Breakdown

Malfunc. end: [ ] 00:00:00 Breakdown dur.: [ ]

Item

Object part: VENT 1003 Filter

Damage: VENT 1002 Worn Filter

Text: [ ]

Cause: PM-2000 1004 Normal Wear and Tear

Cause text: High dust accumulation

Entry 1 fzm 1

# Notification

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- Functions as requirement analysis and documentation maintenance activities
- Contains rather technical information
- Describes an exceptional state
- Requests necessary maintenance measures
- Already done works can be documented

# Planning

- Order creation and order planning on basis of notified requirements
- Order planning contains:
  - Performed steps (Operations)
  - Needed materials (Components)
  - Required tools

**Create Maintenance order : Central Header**

Order: PM01 \$00000000001 Circulation fan defective  
Sys.Status: CRTD MANC NTUP

HeaderData Operations Components Costs Partner Objects Additional Data

Person responsible  
PlannerGrp: P00 / DL00 Dallas Group  
Mn.wk.ctr: MANT1000 / DL00 Maintenance  
Person resp ...  
Message: \$00000000001  
Costs: USD  
PMActType: 001 Inspection  
SystCond.  
Address

Dates  
Bsc start: 04/05/2018 Priority: 2-High  
Basic fin.: 04/09/2018 Revision:

Reference object  
Func. Loc.: DL00-S-SHFL1000 Shop Floor  
Equipment: 10000000 Circulation Fan  
Assembly:

Malfnctn data Damage Notif. dates  
Damage: VENT 1002 Worn Filter  
Cause: PM-2000 1004 Normal Wear and Tear High dust accumulation

First operation  
Operation: Circulation fan defective CcKey Calculate duration  
WkCtr/Plnt: MANT1000 / DL00 Ctrl key: PM01 Acty Type: MLABOR PRT  
Work durtn: 2.0 HR Number: 1 Oprtn dur.: 2.0 HR Comp.  
Person. no:

# Planning

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- Maintenance order creation in maintenance plans, notifications or without any reference objects
- Responsibilities (external or internal) are allocated
- Material reservations and where-used-lists
- Production resource (e.g. protective clothing)
- Cost estimation



# Controlling

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- Different maintenance order verification
- Order release
- Contains the following functions:
  - Mass change or mass editing
  - Availability check
  - Capacity requirements planning
  - Order release
  - Printing shop floor papers

# Implementation and Completion

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- Implementation of maintenance orders
- Planned/unplanned material withdrawal (goods issue)
- Composition of completion:
  - Time confirmation
  - Technical completion confirmation
  - Technical completion
- Billing after successful technical completion