

# Mode-Dependent Tagging

Release ERP 6.0, EhP 3

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**WCM Info Day, October 2009**

Munich, Germany



**wcm**

# Agenda

- **1. Business Process**
  - 2. Customizing
  - 3. Master Data
  - 4. Operational WCD with Mode-Dependent Tagging
  - 5. Final Remarks
- 
- A spiral-bound notebook is shown in a faded, semi-transparent style. It is open to several pages, each with a date at the top: 21, 22, 24, 25, 26, and 27. A pen is resting on the left side of the notebook. The notebook is positioned diagonally across the lower half of the slide.

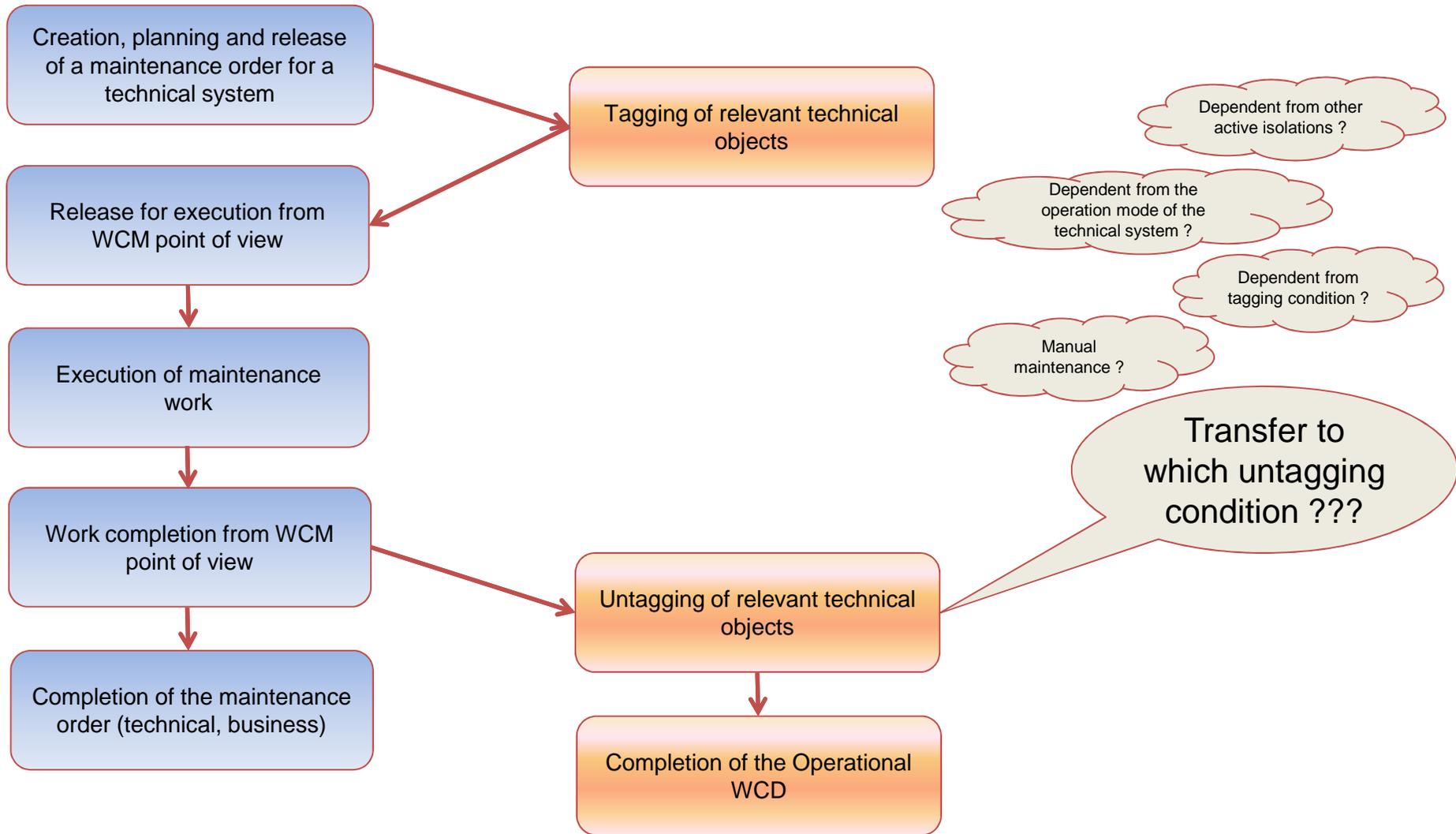
## Underlying Business Process (1/3)

- WCM supports the process of isolating technical objects in order to ensure safe working conditions for e.g. repairing a technical system
  - The isolation is planned and executed by means of an Operational WCD (work clearance document).
- An Operational WCD provides items for listing the technical objects to be isolated together with the following data:
  - Safe operational condition that the technical object is being transferred to when being tagged (=: **tagging condition**, e.g.: OFF, CLOSED),
  - Standard operational condition that the object is being (re-)transferred to when being (temporarily) untagged (=: **untagging condition**, e.g. ON, OPEN).

## Underlying Business Process (2/3)

- For being able to (temporarily) untag a technical object after the whole maintenance work has been completed, the (correct) **untagging condition must be maintained** for the respective WCD item.
  - Note that together with the untagging condition, a related operational type has to be maintained as well in WCM. However, the following is a simplified description in which the **operational types are not considered**.

# Underlying Business Process (3/3)



## Central Requirement of the Business Process (1/2)

- Situation before Release EhP 6.0, EhP 3:
  - The **automatic determination of the correct untagging condition** for a WCD item, based on the overall condition in which the technical system is currently operated (=: operation mode, **plant mode**), is not supported.
    - Instead, the existing defaulting of the untagging condition is based on the operational group and the tagging condition of the WCD item.
      - In Customizing, an individual untagging condition can be assigned to each pair (operational group, tagging condition) as default.
      - Example: For the electrical tagging condition OFF, the respective untagging condition shall be ON.
    - This defaulting can be manually overwritten for each WCD item to be processed (as long as the untagging phase has not been announced for the item).

## Central Requirement of the Business Process (2/2)

- Follow-up action for Release ERP 6.0, EhP 3:
  - As an alternative to the existing defaulting based on the pair (operational group, tagging condition), the untagging condition for a WCD item can be determined automatically from the current plant mode (and from the technical object to be switched).
    - This determination is called „**mode-dependent tagging**“ (although we’re dealing rather with “mode-dependent untagging”).
    - Typical examples for plant modes that are relevant for above determination: Full load, Partial load, System discharged, Outage, Revision.

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# IMG: Activate Mode-Dependent Tagging

The image shows two screenshots from the SAP Implementation Guide (IMG). The left screenshot displays the 'Structure' tree for 'Work Clearance Management'. A red circle highlights the 'Maintain Usage for Work Clearance Documents' node, with a red dashed arrow pointing to the right screenshot. A red text annotation 'Activation per usage of WCD' is placed next to the arrow.

The right screenshot shows the 'Change View "Maintain Usages": Details' form. The 'Operational Cycle' section is expanded, showing the 'Tagging Phase' and 'Temporary Untagging Phase' options. The 'Other' section at the bottom has the 'Mode-Dep. Tagging' checkbox checked and circled in red.

**Change View "Maintain Usages": Details**

Planning Plant: 1000    Werk Hamburg  
Usage: 001  
Descript. Usage: Usage 001 - Mode-dependent Tagging

**Operational Cycle**  
Specification: Tagging cycle with temporary untagging phase

**Tagging Phase**  
 Tag  
 Print Tag

**Temporary Untagging Phase**  
 Untag Temporarily  
 Print Test Tag

**Untagging Phase**  
 Untag

**Approval-Based Switching**

Phase-Specific	For All Phases
Bl. Appr. Tag Phase	Blocking Approval
Bl. App. TU Phase	
Bl. App. Untag Phase	

**Other**  
 Operatnl Protection  
 Multiple Tag  
 Mode-Dep. Tagging  
 Mobile Processing



# IMG: Maintain Plant Modes

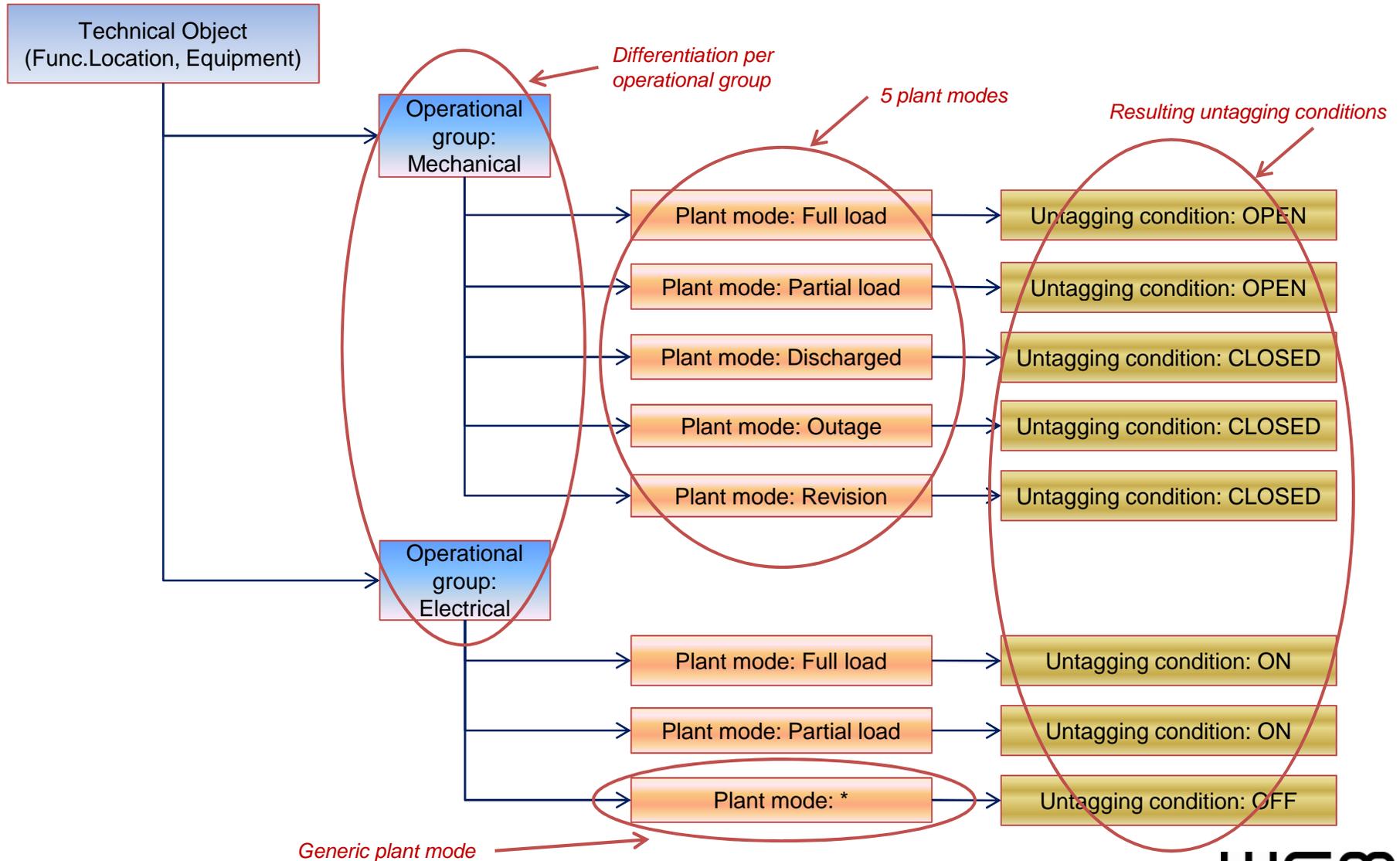
The screenshot shows the SAP IMG (Implementation Guide) interface. The left pane displays the 'Structure' tree under 'Work Clearance Management', with 'Define Overall Conditions of Technical System' highlighted. A red dashed arrow points from this menu item to the main window. The main window title is 'Change View "Define Overall Conditions of Technical System"'. Below the title bar, there is a toolbar with a 'New Entries' button. The main content area displays a table with the following data:

PIPI	OverallCndtn TechSys	Text for Overall Condition
1000	W1	Full Load
1000	W2	Partial Load
1000	W3	System discharged
1000	W4	Outage
1000	W5	Revision

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# Relation: Technical Object + Operational Group + Plant Mode → Untagging Conditions



# Maintain Master Data for Mode-Dependent Tagging

*Entry with operational group and technical objects (either explicitly specified or implicitly taken from a WCD)*

*Untagging condition of generic plant mode*

*Untagging conditions of explicitly specified plant modes*

Technical Object/Overall Condition	Short Text	OperCondtn	Optn Type	Created by	Created on
ML01A	Pump Motor Type	OFF	A	C5114682	14.12.2008
W1	Full Load	ON	A	C5114682	14.12.2008
W2	Partial Load	ON	A	C5114682	14.12.2008

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## Mode-Dependent Tagging of an Operational WCD (1/4)

- The plant mode is maintained in the header data of the WCM objects, especially of the Operational WCD.
- Mode-dependent tagging is only applicable to WCD items referring to a technical object with master data (functional location, equipment).
- If the Operational WCD requires mode-dependent tagging, the following holds:
  - The „preparation“ of the Operational WCD is possible only if master data for mode-dependent tagging (=: MDTG data) exists for all technical objects (with master data) to be switched.
    - Note that in many cases, the untagging condition of a technical object is identical for the majority of plant modes. Making use of the **generic plant mode** in these cases reduces the MDTG data to be maintained.

## Mode-Dependent Tagging of an Operational WCD (2/4)

- For the items (referring to technical objects with master data) of such a WCD, the following holds:
  - Maintaining the untagging condition of a WCD item manually is not allowed.
  - The untagging condition of a WCD item remains initial unless tagging has been confirmed for the item. As soon as this is the case, the untagging condition will be determined automatically (yet not be posted to the database) as follows:
    - If the switched technical object (together with its operational group) is part of another active Operational WCD, the untagging condition is filled with the current operational condition.
      - Represents an automated version of the well-known “adjust untagging” functionality.
    - Otherwise, the MDTG data is used to set the untagging condition.
  - The untagging condition of a WCD item is posted to the database as soon as the (temporary) untagging phase is initiated for the WCD item.
  - If the WCD item is transferred back to the tagging phase after having been temporarily untagged, the untagging condition will be initialized again.

# Mode-Dependent Tagging of an Operational WCD (3/4)

Operational WCD Edit Goto Extras System Help

**Change Operational WCD: Header**

WC Document: 300000019300 Repair Water Pump

Status: PREP ITG

Valid From: 17.12.2008 15:17:00 Valid To: 17.12.2008 15:17:00

Priority: Recall Time: 0

Overall Condtn: W1 Full Load

Revisidn Phase:

Reference Object

Functional Loc.: ML01 Pump HDM 1

Equipment:

Train:

Responsibilities Location Data Planning Data

Planner Group: 100 / 1000 Hr. Weber

Work Center: MECHANIK / 1000 Mechanical maintenance

AuthorizGroup:

*Operational WCD is "prepared"*

*WCD Usage with mode-dependent tagging*

*Plant mode of the technical system: "Full load"*

*Navigation to switching screen*

Operational WCD Edit Goto Extras Switch System Help

**Change Operational WCD: Switching Screen**

WC Document: 300000019300 Repair Water Pump

Status: PREP ITG

CONF	ITG	BTG	ETG	BTUG	ETUG	BUG	EUG	PROT	INAC
0	2	0	0	0	0	0	0	0	0

Technical Object: 06 Tag. Cond. TT TS BIT Ph TR PF

Short Text: Comments

System Status: User Status

OperCondtn	OT	Lock
ON	A	0
ON	A	0

10 F ML01A Pump Motor Type A

ITG

20 F ML01B Pump Motor Type B

ITG

*Operational condition not yet determined, not ready for input*

*Operational group "electrical"*



# Mode-Dependent Tagging of an Operational WCD (4/4)

Operational WCD Edit Goto Extras Switch System Help

Change Operational WCD: Switching Screen

WC Document: 300000019300 Repair Water Pump 1 / 1

Status: PREP ITG

CONF	ITG	BTG	ETG	BTUG	ETUG	BUG	EUG	PROT	INAC
0	2	0	0	0	0	0	0	0	0

Technical Object: 06 Tag. Cond. TT TS B1T Ph TR PF Untag.Cond. UT US  
 Short Text: Comments LT DL Tag  
 System Status: User Status

- 10 F ML01A E OFF A 0  
 Pump Motor Type A  
 ITG
- 20 F ML01B E OFF A 0  
 Pump Motor Type B  
 ITG

*Initiation, execution and confirmation of tagging for both items*

Operational WCD Edit Goto Extras Switch System Help

Change Operational WCD: Switching Screen

WC Document: 300000019300 Repair Water Pump 1 / 1

Status: PREP PPOC ETG

CONF	ITG	BTG	ETG	BTUG	ETUG	BUG	EUG	PROT	INAC
0	0	0	2	0	0	0	0	0	0

Technical Object: 06 Tag. Cond. TT TS B1T Ph TR PF Untag.Cond. UT US  
 Short Text: Comments LT DL Tag  
 System Status: User Status

- 10 F ML01A E OFF A 0  
 Pump Motor Type A  
 ETG  
 OperCondtn ON
- 20 F ML01B E OFF A 0  
 Pump Motor Type B  
 ETG  
 OperCondtn ON

*Untagging condition, determined from master data, not ready for input*

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## Final Remarks

- Before using mode-dependent tagging in EhP 3 + 4 (ERP 6.0), **notes 1277808 + 1300096** shall be installed.
- The functionality of mode-dependent tagging will be complemented by the so-called **Line-Ups** provided with EhP4.

# Questions and Answers



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