

# PM - Work Management Interface



HELP.PMWOCALE169

**Release 4.6B**



## Copyright

© Copyright 2000 SAP AG. All rights reserved.

No part of this brochure may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft®, WINDOWS®, NT®, EXCEL®, Word® and SQL Server® are registered trademarks of Microsoft Corporation.

IBM®, DB2®, OS/2®, DB2/6000®, Parallel Sysplex®, MVS/ESA®, RS/6000®, AIX®, S/390®, AS/400®, OS/390®, and OS/400® are registered trademarks of IBM Corporation.

ORACLE® is a registered trademark of ORACLE Corporation, California, USA.

INFORMIX®-OnLine for SAP and Informix® Dynamic Server™ are registered trademarks of Informix Software Incorporated.

UNIX®, X/Open®, OSF/1®, and Motif® are registered trademarks of The Open Group.

HTML, DHTML, XML, XHTML are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Laboratory for Computer Science NE43-358, Massachusetts Institute of Technology, 545 Technology Square, Cambridge, MA 02139.

JAVA® is a registered trademark of Sun Microsystems, Inc., 901 San Antonio Road, Palo Alto, CA 94303 USA.

JAVASCRIPT® is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

SAP, SAP Logo, mySAP.com, mySAP.com Marketplace, mySAP.com Workplace, mySAP.com Business Scenarios, mySAP.com Application Hosting, WebFlow, R/2, R/3, RIVA, ABAP, SAP Business Workflow, SAP EarlyWatch, SAP ArchiveLink, BAPI, SAPPHIRE, Management Cockpit, SEM, are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other products mentioned are trademarks or registered trademarks of their respective companies.

## Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax
	Tip

## Contents

<b>PM - Work Management Interface.....</b>	<b>5</b>
Data Transfer.....	7
Data Transfer From the R/3 System.....	9
Data Transfer to the R/3 System .....	10
IDoc .....	12
User Status.....	14
Creating a User Status Profile.....	15
Maintaining the Distribution Model.....	17
Maintaining a Partner Profile.....	19
Work/Service Order .....	21
Work Center Personnel.....	22
Notification .....	23

## PM - Work Management Interface

### Purpose

The Work Management Interface enables the two-way exchange of data between the R/3 Maintenance and Service Management (MSM) system and Computer-aided Scheduling and Dispatch/Mobile Feedback (CSD/MF) software.

The interface comprises functions and data required for automatic dispatching, travel directions and routing, communication over various radio frequency (RF) networks, and the support of customized (for example, pen-based) technician interfaces. The interface also supports the extraction of assignments, absence information and qualifications for staff assigned to specific work centers or associated hierarchies.

### Implementation Considerations

The interface is available from Release 4.6 and is of particular interest for companies with high volumes of field work that are executed by a large, mobile force of technicians, especially where travel time is a significant productivity factor. Many large field service organizations such as utility and telecommunications companies already use CSD/MF systems in their business.

### Integration

The transfer of work specifications to an external system is achieved through a combination of standard BAPIs (Business Application Program Interfaces) and some specific [IDocs \[Page 12\]](#) (Interchange Documents).

A number of configuration steps must be performed to enable the interface. For more information, refer to:

[Maintaining the Distribution Model \[Page 17\]](#)

[Maintaining a Partner Profile \[Page 19\]](#)

[Creating a User Status Profile \[Page 15\]](#)

### Features

Data is exchanged in a manageable and efficient manner. The interface can be enhanced and expanded to meet specific customer requirements. SAP supports the extension of IDocs to support customer-specific fields and segments. List-editing screens are provided to drive the underlying outbound functions.

SAP provides a process by which IDocs can be created from any standard BAPI. Through the use of IDocs, a batch transfer mechanism can be defined which includes a control function that easily identifies and corrects any processing errors.

### Constraints

The first version of the Work Management Interface does not support:

- The creation of new work orders/operations in the R/3 System from the CSD system
- Changes to the order settlement rule in the R/3 System from the CSD system
- The use of network activities as work requests

**PM - Work Management Interface**

- Work appointments
- External service timesheet entry

The value of the interface is dependent on the following:

1. The SAP System must provide a geographical reference for the work location (for example, using address extension fields or characteristics).
2. The relationship between the field technicians and their geographical service area must be stored in the CSD/MF system.
3. The CSD/MF system must support work dependencies/relationships.
4. All work requests must be created in the SAP System before they can be dispatched.
5. Although the interface functions with dispatch-only products, it is recommended that a mobile feedback tool be provided to the field technicians, and that they return completion and status information through the system from which they were dispatched.
6. The use of notifications as work requests requires corresponding work estimates to be stored in the CSD/MF system.
7. Costs can be charged to a 'standing order' if one is identified in the technical object.

## Data Transfer

### Use

From Release 4.6, you are able to transfer released work specifications to an external system for subsequent finite-resource scheduling and assignment to work crew(s). You can also transfer status and assignment information back to the R/3 System, as well as return completion feedback both during and after the execution of the work.

### Integration

The transfer of data between the R/3 Maintenance and Service Management (MSM) system and Computer-aided Scheduling and Dispatch/Mobile Feedback (CSD/MF) software is achieved through a combination of system standard BAPIs (Business Application Program Interfaces) and some specific [IDocs \[Page 12\]](#) (Interchange Documents).

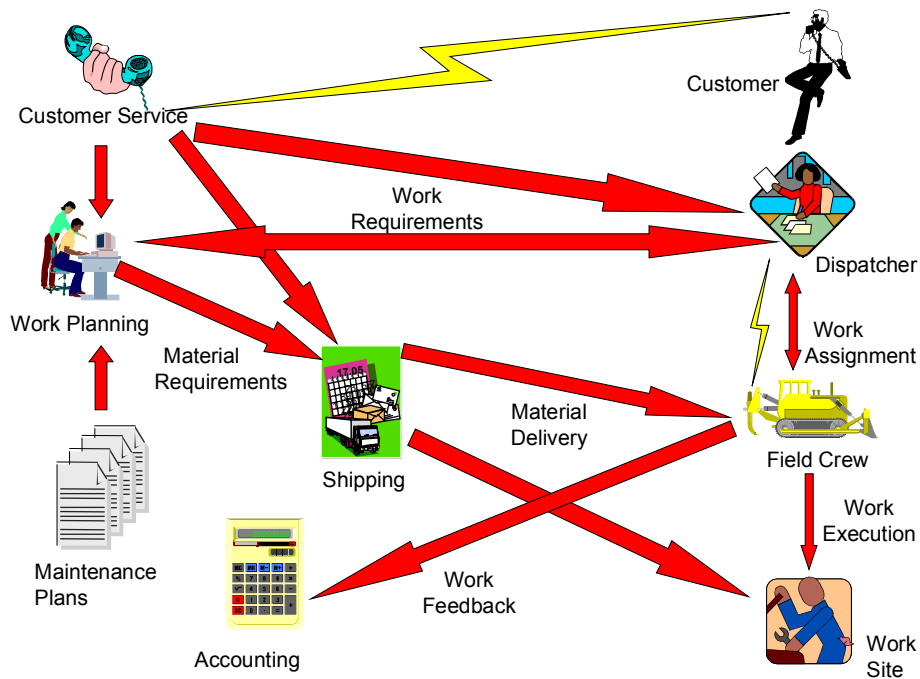
SAP provides a process by which IDocs can be created from any standard BAPI.

### Features

You can differentiate between two types of data transfer:

- [Data transfer from the R/3 System \[Page 9\]](#)
- [Data transfer to the R/3 System \[Page 10\]](#)

The following graphic illustrates the process flow for field service work:



**Data Transfer**

The interface also supports the extraction of assignments, absence information and qualifications for staff assigned to specific work centers or associated hierarchies.

The ability to extract work center availability information is already supported through another interface.

## Data Transfer From the R/3 System

### Purpose

The transfer of planned work (including simple pre-planned work) from the R/3 System is normally done as part of a regular batch process that can be run daily or even hourly. Emergency work requests can be transferred upon creation using workflow. Because the Work Management Interface was developed to support high volume business needs (>10,000 per day) batch transfers represent a more efficient use of the system processing resources than a real-time interface.

### Process Flow

You use a specific transactions to perform the extraction of data to build the [IDocs \[Page 12\]](#) (Interchange Documents). Data can be transferred from the R/3 System for the objects listed below, using the IDocs and data extraction transactions specified:

Object	IDoc	Data extraction transaction
<a href="#">Work/service order [Page 21]</a>	IORDER01	IORD
<a href="#">Notification [Page 23]</a>	INOTIF01	INOT
Work center	LOIWCS02	POIM
<a href="#">Work center personnel [Page 22]</a> (If HR module is being used)	IWKEN01	PWKC

## Data Transfer to the R/3 System

## Data Transfer to the R/3 System

### Purpose

The Computer-aided Scheduling & Dispatch/Mobile Feedback (CSD/MF) software transfers back to the R/3 System interim status updates via BAPIs (Business Application Program Interfaces) or [IDocs \[Page 12\]](#) (Interchange Documents) as the work progresses (for example, work started, work suspended, or work canceled) and a variety of work completion data.

Work completion data comprises:

- Resource usage
- Field equipment changes
- Meter readings
- Textual description of the work results

### Prerequisites

BAPIs or IDocs are used to transfer work completion data back to the R/3 System. The selection criteria for the IDoc require the entry of a [user status \[Page 14\]](#).

### Process Flow

The transfer of IDoc-structured information between SAP and third-party software products may be facilitated by the use of one of several certified interfacing products such as Mercator or via a custom interface developed by the CSD/MF vendor. The following information can be transferred to the R/3 System using the IDocs specified:

Information	Comprising...	IDocs used
Work assignments	Crew assigned, date and time scheduled, work status, changes to work specifications	IOAUPD01 IORUPD01 INTUPD01
Time reporting	Productive time to specific work order and operation, productive time but not to a work order, absence time	IDocs/BAPIs for confirmations (for example, CONF32), CATS and HR
Material usage reporting	Unplanned material usage, material delivery request	IMATIS01 IDocs/BAPIs for material reservation (MRESCR01) and goods movement (WMMBID01)
Equipment usage reporting	Usage time to a specific work order and operation, measurement readings for equipment or functional location, installation/dismantling of equipment, updating master data technical information	CONF32 IMEASR01 PIECEOFEQUIPMENT_INSTALLATFU01 PIECEOFEQUIPMENT_DISMANTLEAT01

Data Transfer to the R/3 System

Identification of follow-up work	Create work notifications	SERVICENOTIFCATION_CREATEFR01
----------------------------------	---------------------------	-------------------------------

## IDoc

## IDoc

### Definition

SAP standard format for electronic data interchange between systems. Different message types (for example, service order, notification) usually have specific formats or SAP IDoc types.

### Use

IDocs are used to transfer a variety of work completion data back to the R/3 System. This data comprises information regarding resource usage, field equipment changes and meter readings, as well as a textual description of the work results. Through the use of IDocs, a batch transfer mechanism can be defined which includes a control mechanism to easily identify and correct any processing errors.

### Structure

The following IDoc types are used when transferring data **from** the R/3 System to Computer-aided Scheduling & Dispatch/Mobile Feedback (CSD/MF) software:

IDoc Type	Used to transfer...
IORDER01	Work/service order data from the R/3 System
INOTIF01	Notification data from the R/3 System
LOIWCS02	Work center data from the R/3 System
IWKCEN01	Personnel data (if HR module is used) from the R/3 System

The following IDoc types are used when transferring data **to** the R/3 System from Computer-aided Scheduling & Dispatch/Mobile Feedback (CSD/MF) software:

IDoc Type	Used to transfer...
IOAUPD01	Work assignment data to the R/3 System. This IDoc can also be used to perform order or work assignment modifications.
IORUPD01	Work assignment data to the R/3 System. This IDoc can also be used to change an order or order operation user status, or to perform the completion of an order.
INTUPD01	Work assignment data to the R/3 System. This IDoc can also be used to perform completion of a notification or notification task.

### Integration

The transfer of IDoc-structured information between the R/3 System and third-party software products may be facilitated by the use of one of several certified interfacing products such as Mercator or via a custom interface developed by the CSD/MF vendor.

SAP supports the extension of IDocs to support customer-specific fields and segments. List screens are provided to drive the underlying outbound functions, which in turn facilitates the creation of IDocs in SAP.

---

## User Status

# User Status

## Definition

Three-letter, case-sensitive code that is defined in a user status profile for orders, operations, notifications and tasks.

## Use

The user status code is set for each operation that is extracted and is used to define the current "owner" of a work/service order or notification. For example, when a work request is created, it could have the status 'NEW' to identify its ownership. When the work is transferred from the R/3 System to the Computer-aided Scheduling & Dispatch (CSD) system, the status could change to 'EXT'. When the work request is returned to the R/3 System after completion, its status could become 'SAP'. Another status such as 'CHG' could be used to identify when data is changed in the R/3 System and must be retransferred to the CSD/MF system.

The CSD/MF system may pass interim status updates to the R/3 System as work progresses. These statuses could identify that work has been started, suspended, or canceled.

## Structure

Although user statuses are supported at task level in notifications, the ability to specify a user status at operation level of a work order is first supported from Release 4.5.

For more information, see [Creating a User Status Profile \[Page 15\]](#).

## Creating a User Status Profile

### Use

Profile that is used to control [user statuses \[Page 14\]](#). The user status profile is created by the user in general status management and defines the sequence in which user statuses can be activated, initial statuses, and allows or prohibits certain business transactions.

### Prerequisites

To ensure that the 'ownership' of work requests is clear, you must create a user status profile in the Implementation Guide (IMG) and assign it to orders, operations, notifications and tasks.

### Procedure

1. To call up the IMG from the initial R/3 screen, choose *Tools → AcceleratedSAP → Customizing → Project management*. The screen *Customizing: Project Administration* is displayed. Choose the pushbutton *SAP Reference IMG*.
2. In the IMG hierarchy, choose *Plant Maintenance and Customer Service → Maintenance Processing and Service Processing* and then either:
  - Maintenance and Service Orders → General Data → Maintain User Status for Orders → Define User Status Profiles, or*
  - Notifications → User Status for Notifications → Define User Status Profiles for Notifications.*
3. Make all the necessary entries and then save the partner profile that you have created.
4. Perform the assignment of the user status profile to maintenance orders and notifications in the IMG under the respective menu paths:
  - Plant Maintenance and Customer Service → Maintenance Processing and Service Processing, and then either:*
  - Maintenance and Service Orders → General Data → Maintain User Status for Orders → Assign User Status Profile to Order Types, or*
  - Notifications → User Status for Notifications → Assign User Status to Notification Types.*

### Result

Example of a possible user status profile:

Status no.	Status	Short text	Initial status	Lowest status no.	Highest status no.	Position	Priority	Auth. code
10	NEW	New SAP Order	Yes	10	99	1	1	PM0001
20	EXT	SAP Order sent to CSD system		20	99	1	1	PM0001

**Creating a User Status Profile**

30	CHG	CSD Order Changed in SAP		20	99	1	1	PM0001
99	SAP	CSD Order returned to SAP		20	99	1	1	PM0001

## Maintaining the Distribution Model

### Use

The distribution model describes the ALE message flow between logical systems. The relationships between logical systems, message types, BAPIs (Business Application Program Interfaces) and filters are defined in the distribution model. Both applications and the ALE layer use the distribution model to determine receivers and to control the data distribution.

### Prerequisites

The logical source system (R/3 System) and the logical target system (external CSD system) from and to which the [IDocs \[Page 12\]](#) are sent, must be specified in the Implementation Guide (IMG) for each outbound IDoc.

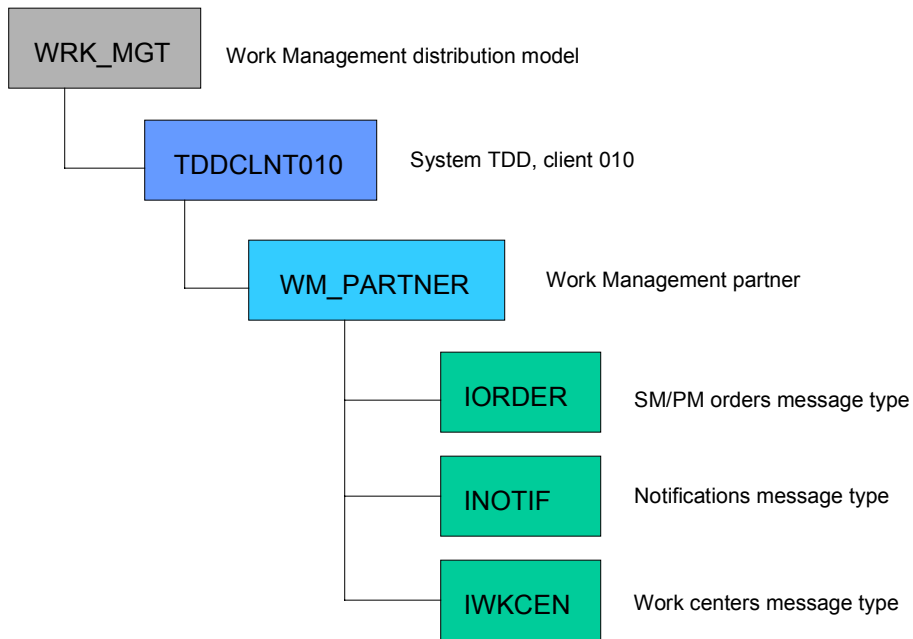
### Procedure

1. To call up the IMG from the initial R/3 screen, choose *Tools* → *AcceleratedSAP* → *Customizing* → *Project Management*. The screen *Customizing: Project Administration* is displayed. Choose the pushbutton *SAP Reference IMG*.
2. In the IMG hierarchy, choose *Basis Components* → *Distribution (ALE)* → *Modelling and Implementing Business Processes* → *Maintain Distribution Model*.
3. In the screen *Display Distribution Model*, choose *Distribution Model* → *Switch processing mode*.
4. In the screen *Change Distribution Model* Choose *Edit* → *Model view* → *Create*, to create a new view in the distribution model.
5. Enter a short text description and a technical name for the model view and choose *Continue*.
6. Position your cursor on the model view that you have created and choose *Edit* → *Add message type*.
7. In the dialog box *Add Message Type*, specify the sender/client (logical source system) and the receiver (logical target system) for each required message type.
8. Save your entries.

### Result

In the following example, TDDCLNT010 is the logical for the R/3 current system and WM\_PARTNER is the logical system for the CSD external system.

Maintaining the Distribution Model



## Maintaining a Partner Profile

### Use

The partner profile contains parameters that define the electronic interchange of data with a partner via that IDoc interface.

### Prerequisites

A partner profile must be maintained in the Implementation Guide (IMG) to enable communication with a partner via the IDoc interface.

The logical system for the external CSD system must contain the following definitions:

#### Outbound parameters

Message type	IDoc type
IORDER	IORDER01
INOTIF	INOTIF01
IWKGEN	IWKGEN01

#### Inbound parameters

Message type	Process code
CONF32	CON5
PIECEOFEQUIPMENT_DISMANTLEATFU	BAPI
PIECEOFEQUIPMENT_INSTALLATFUNC	BAPI
IMATIS	IMAT
IMEASR	IMEA
SERVICENOTIFICATION_CREATEFROM	BAPI
INTUPD	INTU
IORDPD	IORU

Add the necessary configuration to use the standard IDoc for CATS time entry and employee absence recording.

### Procedure

- To call up the IMG from the initial R/3 screen, choose *Tools* → *AcceleratedSAP* → *Customizing* → *Project management*. The screen *Customizing: Project Administration* is displayed. Choose the pushbutton *SAP Reference IMG*.

### Maintaining a Partner Profile

6. In the IMG hierarchy, choose *Basis Components* → *Distribution (ALE)* → *Modelling and Implementing Business Processes* → *Partner Profiles and Time of Processing* → *Maintain Partner Profiles*.
7. Make all the necessary entries and then save the partner profile that you have created.

## Work/Service Order

### Definition

R/3 document containing processing data that can be transferred from the R/3 Maintenance and Service Management (MSM) system to Computer-aided Scheduling & Dispatch (CSD/MF) software.

### Use

A work order may contain multiple operations, which in turn can contain multiple sub-operations. A work/service order can make reference to a business partner (customer), and one or more technical objects (for example, work locations, equipment). Work orders and work operations may have dependencies with one another, as well as external constraints such as permits. Tools, material and/or qualifications can be defined in the work/service order as requirements for the work.

Normally, work information provided by SAP is translated as 1 "job" per work order operation. However, for administrative expediency, the CSD system may dispatch a single "summary" of jobs instead of multiple operations in the work order. Under these circumstances, work completion transactions would normally only be generated for those work requests that were dispatched.

The CSD system may support functionality that permits feedback for jobs to be done to a "standing" work order that is not dispatched but used purely as a cost collector for a specific type of work.

### Structure

The following types of work/service order data can be transferred from the R/3 System using the IORDER01 [IDoc \[Page 12\]](#):

- Order header data
- Permit data
- Technical object data (functional locations and equipment including measuring points)
- Partner data (ship-to party, sold-to party, service-at customer)
- Operation data (sub-operation, splits, material, PRTs, requirements, relationships)
- Notification reference data

The IORD transaction performs the extraction of the work/service order data to build IDocs.

### Integration

The selection criteria for the IDoc requires the entry of a [user status \[Page 14\]](#) code to be used to identify that the order has been transferred to and is now 'owned' by the CSD system. Data can only be extracted for the order if the user status code exists in the user status profile defined for the order.

---

**Work Center Personnel**

## Work Center Personnel

### Definition

Staff assigned to work at a particular work center.

### Use

Work center resources are extracted for specified maintenance work centers or work center hierarchies. For each assigned member of staff, personal information and approved vacation and absence/leave entitlements are extracted.



The period specified for the [IDoc \[Page 12\]](#) creation process must fall within a calendar year. If necessary, another extract process can be run for the period of time that falls into the next year. Entitlements can be carried forward from year to year. Therefore, care must be taken in the use of multi-year entitlement data. Records for the same staff may be duplicated if their work center assignment has changed during the period specified.

## Notification

### Definition

R/3 document containing processing data that can be transferred from the R/3 Maintenance and Service Management (MSM) system to Computer-aided Scheduling & Dispatch (CSD/MF) software.

### Use

Normally, work information provided by SAP via notifications is translated as 1 "job" per notification task. Because no time estimates can be associated with a notification task, the CSD system will have either a table of duration times for each notification type/task code, or will use the duration time defined by the difference between the planned start and planned finish times.

A task can be associated with an item or directly linked to the notification header. Although labor and material usage cannot be reported against a notification or its task, they can be reported against a 'standing order' if one is identified in the technical object referenced by the notification. Otherwise the CSD system would identify the SAP order that is to be used to report actual costs.

### Structure

The following types of notification data can be transferred from the R/3 System using the INOTIF01 IDoc:

- Notification header data
- Technical object data (functional locations and equipment including measuring points)
- Partner data (ship-to party, sold-to party, service-at customer)
- Notification tasks data
- Notification items data

The INOT transaction performs the extraction of the notification data to build IDocs.

### Integration

The selection criteria for the IDoc requires the entry of a [user status \[Page 14\]](#) code to be used to identify that the notification has been transferred to and is now 'owned' by the CSD system. Data can only be extracted for the notification if the user status code exists in the user status profile defined for the notification.