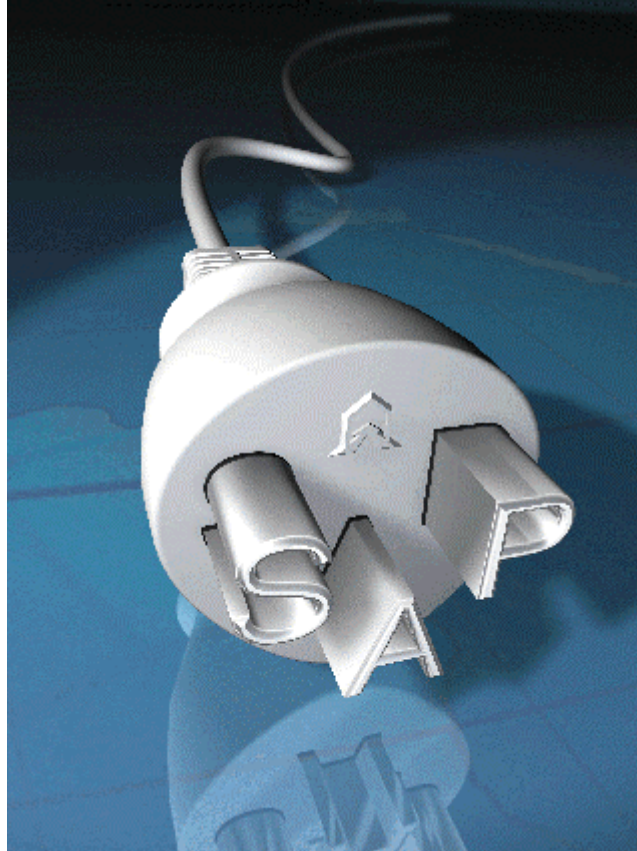


IBS SI Utilities Work Management Interfaces



SAP Release 4.6C / IBS SI Utilities Release 4.62

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1. Interfacing External Systems to SAP IBU Utilities WM

1.1. Introduction

The Work Management environment of IBU Utilities Release 4.62 features different interfaces in two scenarios:

1. OMS Outage Management Scenario
2. CADS Computer Aided Dispatch and Scheduling Scenario

The **Outage Management Scenario** enables:

- Communication between SAP and third party OMS Systems
- Usage of different interfaces techniques like IDOC's and BAPI's

The **Computer Aided Dispatch and Scheduling Scenario** enables:

- Communication between SAP and third party CADS systems
- Automation of standard processes like meter reading, meter replacement, disconnections ...
- Usage of different interfaces techniques like IDOC's and BAPI's

1.1. Functions

Outage Management Scenario

The OMS scenario supports the following functions:

- Download of outage notifications or work orders to an external system
- Creation of restoration work orders from an external system
- Technical completion of the outage notifications or work orders from an external system
- Upload of labor and time confirmations for restoration work orders from an external system

Computer Aided Dispatch and Scheduling Scenario

The CADS scenario supports the following functions:

- Download of meter reading work orders or notifications to an external system
- Download of meter replacement work orders or notifications to an external system
- Download of disconnection/collection/reconnection work orders or notifications to an external system
- Download of meter installation (or similar) work orders or notifications to an external system
- Setting of an user status for work orders or notifications from an external system
- Upload of labor and time confirmations for work orders from an external system
- Technical completion of work orders or notifications from an external system
- Upload of meter reading data from an external system
- Upload of device install/remove/change from an external system
- Upload of Mobile Data Information (MDI) from an external system

1.2. Partner Concept

We will be working in conjunction with a number of carefully selected partners in order to enable our customers to connect Outage Management Systems and Computer Aided Dispatch and Scheduling Systems, both flexibly and reliably. The various responsibilities are allocated as follows:

SAP will supply the technical tools (IDOC's, ALE, RFC), that are necessary for interfacing the external computers, as standard from Release 4.6C and IBU Utilities 4.62 onwards. The interface on SAP side contains IDOC's (Intermediate Documents) as well as BAPI's (Business Application Programming Interfaces).

The partners will assume full responsibility for implementing the processing logic and for the screen layout and communication that takes place between the computers. **They will also be the first point of contact for joint customers in the event of communication errors.**

A **certification procedure** has been implemented by SAP for its partners which checks whether the partners fulfill the necessary requirements for successfully interfacing external systems to SAP by means of the technology and techniques described above. No functional check for testing the application software of the partners is available.

1.3. Technology

BAPI's (Business Application Programming Interfaces) can be accessed using transactional Remote Function Calls (tRFC). This is a simplified technique which enables communication to take place on a program-to-program basis.

SAP offers a sophisticated monitoring system for logical error analysis. In the event of an error, messages can be sent to different persons or employee groups from whose inboxes repostings can be made.

In addition IDOC's can use a tRFC-Interface as well as a file interface. Please refer to the chapter **Related Documents** at the end of this document which refers to documentations for both interface techniques.

1.4. Certification

The list of IDOC's and BAPI's required for a certificate and the assignments of the IDOC's and BAPI's to the two scenarios can be seen in the description of the scenarios later in this document. The minimum requirements that must be fulfilled are described below for each of the two scenarios.

The certificates will contain a list of the certified IDOC's and BAPI's.

1.5. Minimum requirements for the OMS scenario

For the OMS scenario the following activities must be considered:

- SAP sends an outage notification. Receipt of the notification must be verified.
- SAP sends an outage work order. Receipt of the work order must be verified.
- The external system creates a restoration work order in the SAP system.
- The external system sets the status of an outage notification or work order to technically completed

1.6. Minimum requirements for the CADS scenario

For the CADS scenario the following activities must be considered:

- SAP sends a meter reading work order. Receipt of the work order must be verified.
- SAP sends a meter reading notification. Receipt of the notification must be verified.
- SAP sends a meter replacement work order. Receipt of the work order must be verified.
- SAP sends a meter replacement notification. Receipt of the notification must be verified.
- SAP sends a disconnection/collection/reconnection work order. Receipt of the work order must be verified.
- SAP sends a disconnection/collection/reconnection notification. Receipt of the notification must be verified.
- SAP sends a device installation (or similar) work order. Receipt of the work order must be verified.
- SAP sends a device installation (or similar) notification. Receipt of the notification must be verified.
- The external system sets the status of a notification or work order to technically completed

1.7. Assignment of IDOC's and BAPI's to scenarios

The following table shows the assignment of IDOC's to the scenarios:

IDOC	Scenario	Designation
ISU_OMS_NOTIF	OMS	Download outage notification
ISU_OMS_ORDER	OMS	Download outage work order
CONF32	OMS/CADS	Upload labor and time confirmation
ISU_RPL_NOTIF	CADS	Download meter reading or replacement notification
ISU_RPL_ORDER	CADS	Download meter reading or replacement work order
ISU_COL_NOTIF	CADS	Download disconnection/collection/reconnection notifications
ISU_COL_ORDER	CADS	Download disconnection/collection/reconnection work orders
ISU_DL_NOTIF	CADS	Download device installation notifications
ISU_DL_ORDER	CADS	Download device installation work orders
ISU_MR_UPLOAD01	CADS	Upload of meter reading data (created from BAPI)
ISU_DEVICE_CHANGE	CADS	Upload of device install/remove/change
ISU_MDI_UPLOAD	CADS	Upload of Mobile Data Information

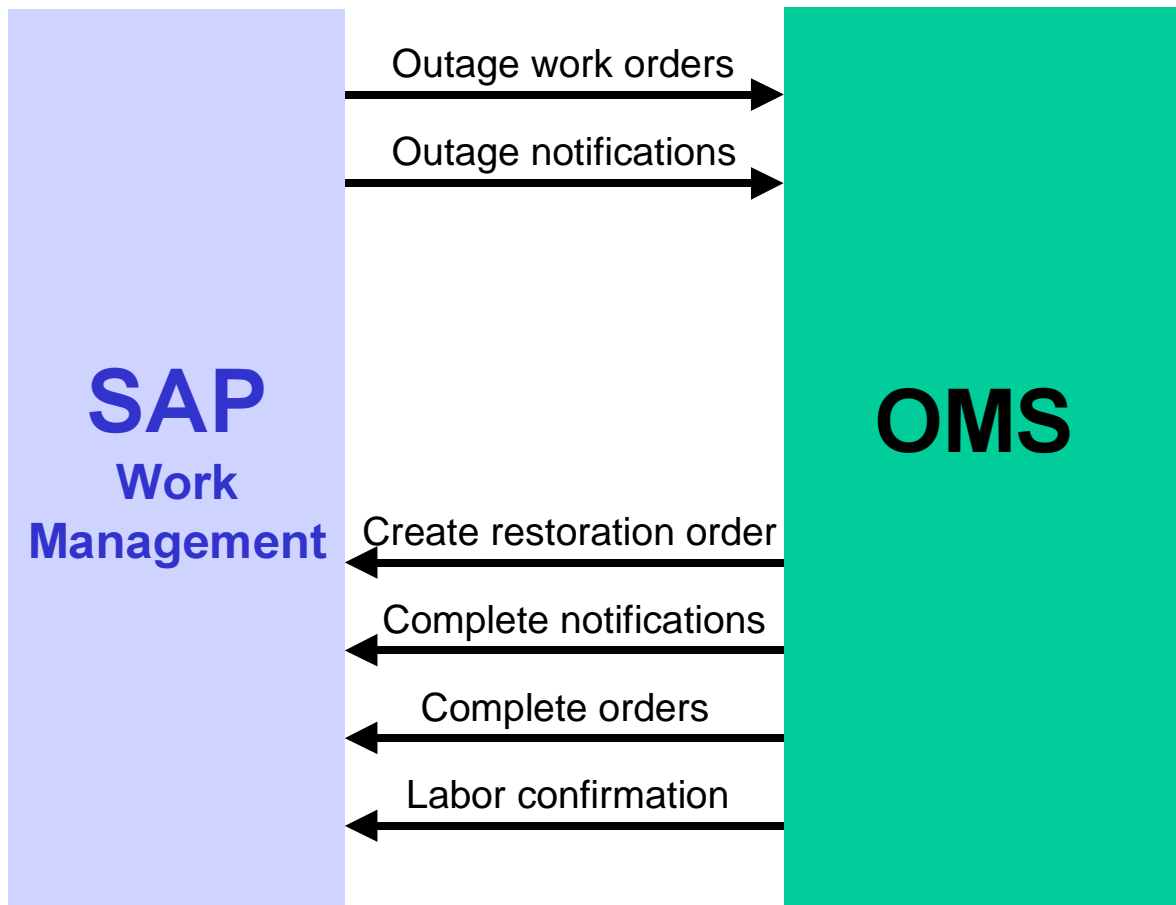
The next table shows the assignment of BAPI's to the scenarios:

BAPI	Scenario	Designation
BAPI_ISUSMORDER_CREATEMULTIPLE	OMS	Create work order
BAPI_ISUSMORDER_SETSTATUSTECHN	OMS/CADS	Complete work order technically
BAPI_ISUSMNOTIF_SETCOMPLETED	OMS/CADS	Complete notification
BAPI_ISUSMORDER_USERSTATUSSET	CADS	Set user status for work order
BAPI_ISUSMNOTIF_USERSTATUSSET	CADS	Set user status for notification
BAPI_MTRREADDDOC_UPLOAD	CADS	Upload meter reading data

2. Outage Scenario

2.1. Overview

This section describes the certification scenario for interfacing **Outage Management Systems** to IBU Utilities Work Management. The following diagram shows the OMS scenario:



2.2. Download of outage notifications or work orders

Objective: send outage notification or work order to OMS

If a customer reports an outage a notification or work order with customer, reference object and outage data is created in the IS-U FO/CIC (Front Office or Customer Interaction Centre). This work order or notification must now be downloaded to the OMS system. The IDOC **ISU_OMS_NOTIF** must be used for notifications and the IDOC **ISU_OMS_ORDER** must be used for work orders.

2.3. Creation of restoration work orders

Objective: create a work order to store power restoration information

If the cause for the outage is located a work order is created to store information about the power restoration. The BAPI **BAPI_ISUSMORDER_CREATEMULTIPLE** must be used for this. Only for the case with outage notifications: All affected outage notifications can be assigned to the restoration work order by entering them in the object list.

2.4. Technical completion of outage notifications or work orders

Objective: complete the outage notifications or work orders after the power has been restored

If the power is restored the outage notifications or work orders must be completed as well as the restoration work order. For notifications the BAPI **BAPI_ISUSMNOTIF_SETCOMPLETED** must be used and corresponding for work orders the BAPI **BAPI_ISUSMORDER_SETSTATUSTECHN**.

2.5. Upload of labor and time confirmations for restoration work orders (optional)

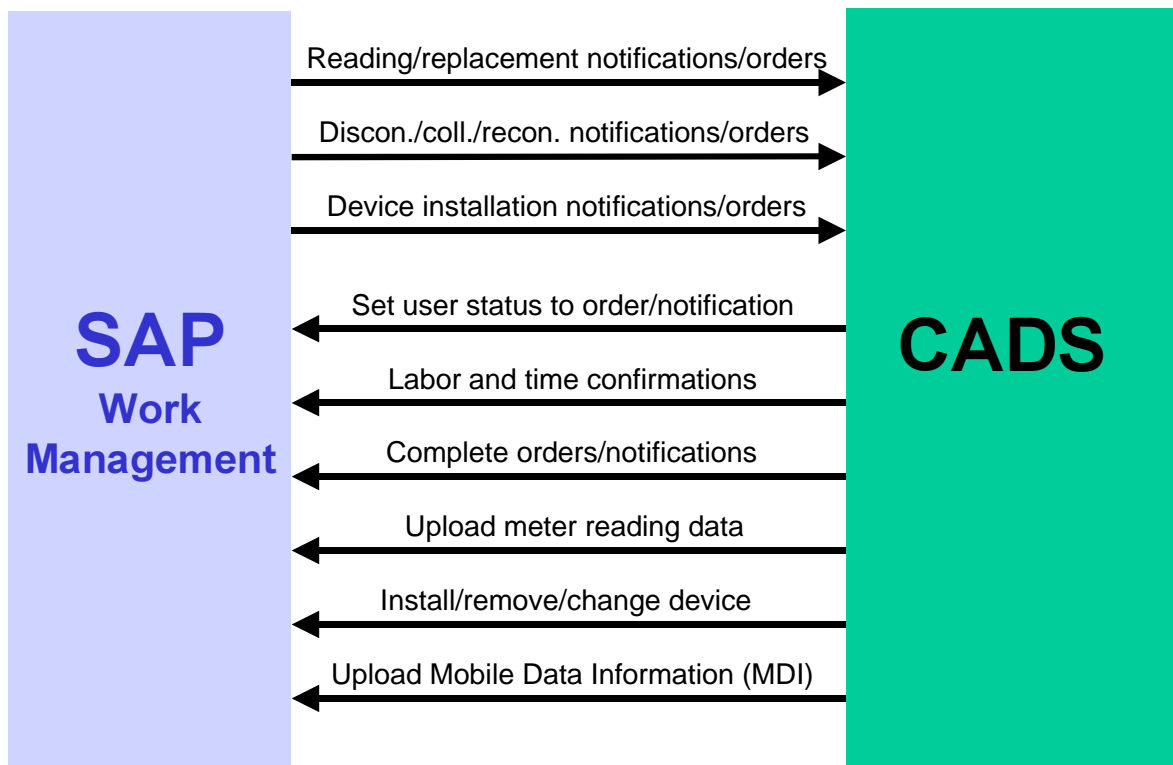
Objective: entry of labor and time confirmations for restoration order

Labor and time confirmations for the restoration work order can be made after power has been restored. The standard IDOC **CONF32** can be used for that. If labor and time confirmations should be entered or not depends on the requirements of the customer.

3. CADS Scenario

3.1. Overview

This section describes the certification scenario for interfacing **Computer Aided Dispatch and Scheduling Systems** to IBU Utilities Work Management. The following diagram shows the OMS scenario:



3.2. Download of meter reading work orders or notifications

Objective: send meter reading work order or notification to CADS

If you process aperiodic meter readings by using work orders or notifications you have to send these work orders or notifications to the external CADS system. The IDOC **ISU_RPL_ORDER** must be used for work orders and the IDOC **ISU_RPL_NOTIF** must be used for notifications.

Note: Work orders or notifications are not automatically created. You have to maintain the relevant customizing entries under *Utilities → Device Management → Meter Reading → Meter Reading Result → Entry → Define Control Parameters for Meter Reading Data Processing*.

3.3. Download of meter replacement work orders or notifications

Objective: send meter replacement work order or notification to CADS

If devices from the periodic replacement list or devices from the sampling procedure have to be replaced, work orders or notifications are created. These work orders or notifications have to be sent to the external CADS system. The IDOC **ISU_RPL_ORDER** must be used for work orders and the IDOC **ISU_RPL_NOTIF** must be used for notifications.

3.4. Download of disconnection/collection/reconnection work orders or notifications

Objective: send disconnection/collection/reconnection work order or notification to CADS

Out of the processing of the disconnection document work orders or notifications for disconnections/collections or reconnections are created. These work orders or notifications have to be send to the external CADS system. The IDOC **ISU_COL_ORDER** must be used for work orders and the IDOC **ISU_COL_NOTIF** must be used for notifications.

3.5. Download of device installation (or similar) work orders or notifications

Objective: send device installation work order or notification to CADS

For the installation of devices (or similar processes) work orders or notifications can be created. These work orders or notifications have to be send to the external CADS system. The IDOC **ISU_DL_ORDER** must be used for work orders and the IDOC **ISU_DL_NOTIF** must be used for notifications.

3.6. Setting of an user status for work orders or notifications (optional)

Objective: set user status for work orders or notifications from CADS

Some status changes of the downloaded work orders or notifications in the external CADS system have to be tracked in the SAP system. This can be done using the user status functionality for work orders and notifications. The BAPI **BAPI_ISUSMORDER_USERSTATUSSET** provides this functionality for work orders and the BAPI **BAPI_ISUSMNOTIF_USERSTATUSSET** provides this functionality for notifications.

3.7. Upload of labor and time confirmations for work orders (optional)

Objective: entry of labor and time confirmations for work orders from CADS

Labor and time confirmations for work orders can be made using the standard IDOC **CONF32**. If labor and time confirmations should be entered or not depends on the requirements and business scenarios of the customer.

3.8. Technical completion of work orders or notifications

Objective: complete work orders or notifications from CADS

After the field work has been finished the work orders or notifications must be completed. For notifications the BAPI **BAPI_ISUSMNOTIF_SETCOMPLETED** must be used and corresponding for work orders the BAPI **BAPI_ISUSMORDER_SETSTATUSTECHN**.

3.9. Upload of meter reading data (optional)

Objective: entry of meter reading data from CADS

It is possible to upload planned as well as unplanned meter readings. Planned meter readings are the ones that have been downloaded as described in chapter 3.2. Unplanned meter readings can occur if a field worker decides to take meter readings of additional, not directly referenced devices. The BAPI **BAPI_MTRREADDOC_UPLOAD** must be used for this. Instead of this BAPI the IDOC **ISU_MR_UPLOAD01** can be used which has been created from this BAPI.

3.10. Upload of device install/remove/change (optional)

Objective: entry of device install/remove/change from CADS

After a field worker has installed, changed or removed a device he can directly enter this data in the CADS system from where it is send to the SAP system. The IDOC **ISU_DEVICE_CHANGE** must be used for this.

3.11. Upload of Mobile Data Information (MDI) (optional)

Objective: entry of additional data from CADS

If additional data like changed bank details of a customer or a new meter reading note should be uploaded the IDOC **ISU_MDI_UPLOAD** must be used.

4. Related Documents

The following documents contain further documentation and technical descriptions of IDOC's and BAPI's that are used within this interface documentation:

- The document *Specification of IDoc's for the download of work orders and notifications to external systems* contains technical descriptions for the IDOC's **ISU_OMS_NOTIF**, **ISU_OMS_ORDER**, **ISU_RPL_NOTIF**, **ISU_RPL_ORDER**, **ISU_COL_NOTIF**, **ISU_COL_ORDER**, **ISU_DL_NOTIF** and **ISU_DL_ORDER**.
- The chapter *Confirmations to PM (CC3)* in the help file *PDC Interface: Linking of Subsystems* contains a description for the IDOC **CONF32**.
- The document *Upload Interfaces for Meter Reading* contains further documentation and the technical description for the IDOC **ISU_MR_UPLOAD01** and the BAPI **BAPI_MTRREADDOC_UPLOAD**.
- The document *Offline Device Management* contains the technical description for the IDOC **ISU_DEVICE_CHANGE**.
- The document *Specification for the upload of Mobile Data Information (MDI)* contains further documentation and the technical description for the IDOC **ISU_MDI_UPLOAD**.

The documentation for the rest of the contained BAPI's can be taken out of the online documentation of the R/3 system.