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SAP Predefined ALE Business Processes

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A Business and Technical Roadmap to Deploying SAP

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INTRODUCTION **8**

PREDEFINED ALE BUSINESS PROCESSES **9**

CROSS-APPLICATION BUSINESS PROCESSES 9
Central User Administration 9
ALE Mandatory Activities for Central User Administration 9
Define Logical System 9
Assign Logical System to Client 10
Create RFC Connections 10
Select Model View for Central Administration 11
Set Distribution Parameters for Fields 12
Transfer Users and Company Addresses from New Systems 12
Time Sheet and HR in Distributed Systems 13
Distributing the Required Master Data 13
Distributing External Services Data (MM-SRV) 14
Transporting Tables 15
Narrow Coupling 15
Accessing Overviews of Time Data in the HR system 15
Recording Attendance/Absence 16
Recording Time Data as EE Remuneration Information 16
Different Payment 17
Global Checks Against Data in HR System 17
Transferring Time Data Entered to HR 18
Displaying Follow-on Document in HR 19
Recording Travel Expenses 20
Loose Coupling 20
Distributing Time Data Overviews 21
Recording Attendances/Absences 22
Recording Time Data as EE Remuneration Information 23
Different Payment 23
Global Checks Against Data in the HR System 24
Transferring Time Data Entered to HR 26
Displaying Follow-on Document in HR 27
Recording Travel Expenses 27
Time Sheet and External Time Recording 28
Supplying the Time Sheet with External Time Data 28
Transfer of Time Data to Time Sheet 28
Using the Worklist 29
Select Data 30
Transfer Master Data to External System 31
Distribution of Banks 31
Make Settings for Distributing Bank Master Data 32
Distribute Banks 33
INFORMATION SYSTEMS 33
Logistics Information Systems 33
Cumulative Data Transfer 33
Inventory Information System 34

Purchasing Information System 35
Sales and Distribution Information System 36
LOGISTICS 37
Master Data Distribution 38
Distribution of Work Breakdown Structure 38
Integrated Distributed PDM Solution (ID PDM) 39
Change Authorizations 40
Display Objects with Change Authorization 41
Maintain Profile Names for Change Authorization 42
Maintain profile assignment in system and field groups 42
Specify sequence of change profile 0
Object Status 1
Define BOM status 2
Define Material Status 3
Define document statuses 3
Define class status 4
Define characteristic statuses 4
Define status for dependencies 5
Define statuses for change master records 5
Field Groups 6
Field Groups for Object Lists 6
Define field groups 6
Assign fields 7
Proposal for distribution model: Customer and vendor masters 8
Logistics <-> Logistics This section contains ALE business processes in which Logistics data is exchanged between systems. 11
Sales and Operations Planning 11
Production Program Reporting 12
Product Costing 13
Stock Transfer Between Distributed Systems 14
Separate Sales and Shipping 18
Purchasing: Distributed Contracts 21
Logistics <-> Logistics - Information Systems 23
Cumulative Data Transfer 23
Inventory Information System 24
Purchasing Information System 25
Sales and Distribution Information System 26
LO <-> HR 27
Set Business Event Billing 27
Business Event Attendees: Set Up Customer 28
Business Event Attendees: Set Contact Persons 29
Set Up Material as Resource in Training and Event Management 30
Set Up Confirmations from PP/PI/PM/CS/PS 31
Daily Work Schedule at Logistics Work Center 33
Availability of Employees in Logistics 34
Qualifications and Requirements Profiles in Logistics 35
Set Work Center Integration 35
0 Assignment of Employees in Logistics 36

Create Sales Personnel in HR 36
2 Set Partner Functions PM/QM/CS 37
3 Set Partner Functions for SD 38
Logistics <-> Accounting 38
Distributed Credit Management 38
Set up Material Price Dispatch 40
Logistics <-> External Systems 41
External Transportation Planning Systems 41
Define Logical Non-SAP Systems 42
Define RFC Destination 43
Maintain Allocation of Non-SAP System to ALE Output 43
Maintain ALE Port Definition 44
Maintain ALE Partner Profiles 45
Maintain Transportation Planning Point for External Systems 45
Maintain Materials Cumulation for Routes 46
Maintain Planning Restriction for Routes 48
Maintain Output Control for Delivery Transfers 49
Activate Change Management for Master Data 50
External Product Planning Optimization 51
Configure Warehouse Management 53
HUMAN RESOURCES 65
Auto-Customizing 66
Master Data Distribution 67
Set Distribution of Cost Centers 67
Distribute HR Master Data 67
Customer Enhancements 67
Customer Enhancement (User Exit): ALE Functions in HR 67
BAdI: Inbound Processing for HR Master Data 69
BAdI: Check/Additional Processing of Object in Inbound 69
BAdI: Customer-Defined Inbound Processing 69
BAdI: Fine Tuning of Original System Mechanism 71
BAdI: Outbound Processing HR Master Data 73
Set Transfer of HR Master Data from External Systems 74
Set Up Distributed Organizational Management 75
Distributed HR Master Data 76
Serialize HR Master Data 77
Filter HR Master Data Generically 77
HR <-> LO 78
Set Business Event Billing 78
Business Event Attendees: Set Up Customer 79
Business Event Attendees: Set Contact Persons 80
Set Up Material as Resource in Training and Event Management 80
Set Up Confirmations from PP/PI/PM/CS/PS 81
Daily Work Schedule at Logistics Work Center 84
Availability of Employees in Logistics 85
Qualifications and Requirements Profiles in Logistics 85
Set Work Center Integration 86
Assignment of Employees in Logistics 87
Create Sales Personnel in HR 87

Set Partner Functions PM/QM/CS 88
Set Partner Functions for SD 88
HR <-> AC 89
Coding Block 89
Local validation for coding block 90
Remote Check (Status of HR and AC: 4 Minimum) 91
Remote Check (Status of HR: 4 Minimum, Status of AC: 4 Maximum) 91
Set Remuneration Statement 91
Set Activity Allocation for Time Management 92
Posting of Payroll Results to Accounting 94
Set Up 'HR and Accounting from Release 4.0A' Scenario 95
'HR Rel. 4.0A and Acctg Release Earlier than 4.0' Scenario 96
'HR Rel.earlier than 4.0A and Acctg Rel. from 4.0A' scenario 98
Set Up Data Medium Exchange for Payroll Results 101
Set Third Party Remittance 101
Set Pre-notification 102
Set Creditors from HR Master Data 102
Transfer Personnel Cost Planning to Accounting 103
Configure Scenario 'HR or Accounting With Release Earlier Than 4 A' 103
Szenario 'HR und RW mit Release ab 4A' einstellen 105
Read Market Value of Awards From Treasury 107
Set Activity Allocation for Training & Event Management 107
2 Set Cost Transfer Posting for Training and Event Management 108
Set Payment Method and Bank Information 109
HR Payroll: Construction Industry 110
HR <-> External Systems 110
Connection with an External Payroll System 111
Export Payroll Data 111
Import Payroll Data 111
Connection of External Time Recording System using CC 112
Processing Personnel Time Events 112
Processing Employee Expenditures (External Wage Types) 114
Supply SAP Time Management with External Time Data 116
Transfer Master Data to External System 116
Checking Time Data 116
Transfer Time Data to HR System 117
Transfer of Operative Planned Working Times to the HR System 118
Supply SAP Human Resources with External Time Wage Types 119
Transfer Master Data to External System 120
Check External Wage Types 120
Transfer External Wage Types to HR System 121
ACCOUNTING 122
Master Data Distribution 123
Distribution of Internal Orders 123
Distribution of Work Breakdown Structure 124
Proposal for distribution model: Customer and vendor masters 125
AC <-> AC 127
Special Ledger 128

Consolidation 129
Profitability Analysis 130
Set distributed cash management 132
Distribution of Financial Accounting Data 132
Initialize rollups for monthly debits and credits 135
Maintain clearing accounts for decentralized systems 136
Set Posting Keys for Transfer Postings 136
Set account conversion 136
Check Application Consistency 137
Asset Accounting Settings 137
Cost Center Accounting 138
Activity-Based Costing 145
Set distribution of profit center data (ALE) 146
AC <-> LO This section contains ALE business processes in which Accounting data and Logistics data is exchanged between R/3 Systems. 147
Distributed Credit Management 147
Set up Material Price Dispatch 149
AC <-> HR 150
Coding Block 150
Local validation for coding block 151
Remote Check (Status of HR and AC: 4 Minimum) 152
Remote Check (Status of HR: 4 Minimum, Status of AC: 4 Maximum) 152
Set Remuneration Statement 153
Set Activity Allocation for Time Management 153
Posting of Payroll Results to Accounting 155
Set Up 'HR and Accounting from Release 4.0A' Scenario 155
'HR Rel. 4.0A and Acctg Release Earlier than 4.0' Scenario 156
'HR Rel.earlier than 4.0A and Acctg Rel. from 4.0A' scenario 158
Set Up Data Medium Exchange for Payroll Results 161
Set Third Party Remittance 161
Set Prenotification 162
Set Creditors from HR Master Data 163
Transfer Personnel Cost Planning to Accounting 163
Configure Scenario 'HR or Accounting With Release Earlier Than 4 A' 163
Szenario 'HR und RW mit Release ab 4A' einstellen 165
Read Market Value of Awards From Treasury 167
Set Activity Allocation for Training & Event Management 168
Set Cost Transfer Posting for Training and Event Management 169
Set Payment Method and Bank Information 169
HR Payroll: Construction Industry 170

INTRODUCTION

Welcome to the fascinating world of SAP. This book helps you crack the tricks of mastering SAP HANA Customization

Predefined ALE Business Processes

Cross-Application Business Processes

Central User Administration

ALE Mandatory Activities for Central User Administration

Carry out all the mandatory activities in this Implementation Guide. (see **Additional information** -> **Activity importance**).

- Define the logical systems under *Basis -> Application Link Enabling (ALE) -> Sending and Receiving Systems -> Logical Systems-> Define Logical System*.
  Choose *New entries* and enter a name and a description for the logical system you want to create. The assignment must be unique - one client can be assigned to only one logical system.
- Under *Sending and Receiving Systems -> Logical Systems-> Assign Client to Logical System*, assign one logical system to one client. Select a line and choose *Detail*. The detail screen appears. In the *Logical system* field enter the name of the logical system that you want to assign the client to and save your entries.
- Define the RFC destinations for the logical systems under *Sending and Receiving Systems -> Systems in Network*. The remote function call is controlled through the parameters of the RFC destination. The name of the RFC destination should match the name of the corresponding logical system (e.g. B20CLNT323).
- Define the system environment under *Model view for central administration*.

Define Logical System

In this step, you can define the **logical systems** in your distributed system.

Caution

Logical systems are defined **cross-client**.

Activities

1. To create a logical system, choose *Edit -> New Entries*.
2. Enter a name for the logical system that you want to create.
3. Enter a description of the logical system.

   If you want to change this entry:

   a) Select the appropriate line.

   b) Choose *Edit -> Change field contents*.

   c) Enter the new text.

   d) Choose *Replace*.
4. Save your entries.

Assign Logical System to Client

In this work step, you assign a client to each logical system.

Actions

1. Select one line.
2. Choose: *Goto -> Details*. The 'Client Details' screen appears.
3. In the field *Logical system*, enter the name of the logical system to which you want to assign the selected client.
4. Save your entries.

Notes on the transport

These settings cannot be transported. When a new system is being set up, these settings must be made after the system installation has been completed.

Create RFC Connections

In this section, you define the technical parameters for the RFC destinations.

The Remote Function Call (RFC) is controlled by the RFC destination parameters.

To create an RFC port, the RFC destinations must be assigned.

The name of the RFC destination should be the same as the logical system name.

The following types of RFC destinations can be assigned:

- R/2 connections
- SAP connections
- Internal connections
- Logical destinations
- CMC connections
- SNA/CPI-C connections
- TCP/IP connections
- ABAP driver connections

Example

. For an SAP connection, enter the following parameters:

- Name of RFC destination: SBSP00
- Connection type: 3 (for SAP connection)
- Target system: bspserver0
- System number: ,

- User in target system: CPIC
- Password, language and target client.

Standard settings

No RFC destinations are assigned in the standard system.

Activities

1. Select one of the types (for example, SAP connections) and choose **Edit** -> **create**;
2. Enter the parameters required for that type.
3. For an SAP connection, these are, for example, the name of the RFC destination, the name of the partner system, logon parameters (see example).

Processing RFCs With Errors

Since RFC destinations are usually registered in the QOUT Scheduler when you use ALE, it is usually no longer necessary to schedule the program RSARFCEX in a background job for the collective processing of RFCs with errors. We also recommend that you do not do this. The QOUT Scheduler now repeats the execution of RFCs with errors automatically (See transaction SMQ. For detailed documentation about the QOUT Scheduler, see the SAP Library under qRFC (Queued Remote Function Call)).

In some cases, for example, if there are many RFCs with errors, and they cannot be executed again with the QOUT Scheduler, you can start the report RSARFCEX manually.

Practise handling errors in remote function calls before the function is used productively.

Further notes

The 'SAP*' user cannot be used for remote function calls on the target system.

For connecting to R/2 Systems:

- Use an R/2 destination to read the users with passwords. The actual communication uses CPI-C.
- Select 'Unencrypted password'

Notes on the transport

The maintenance of the RFC destination is not a part of the automatic Change and Transport System. Therefore the setting has to be made manually on all systems.

Select Model View for Central Administration

Activities

1. Open Transaction SCUA in the central system.
2. Enter the distribution model you want to use.
3. Save the distribution model.
   The information is automatically forwarded to the receiving systems.

Set Distribution Parameters for Fields

Requirements

You must have already selected and saved a distribution model.

The information is automatically forwarded to the receiver systems.

Activities

In a centrally-maintained user administration individual fields may have to be maintained centrally, others locally and others also locally but with automatic return distribution.

Carry out the steps below:

1. By selecting **Field selection** a list of fields is displayed, whose distribution parameters you can define.
2. Define the distribution parameters for the fields.
   Page down to display any hidden fields.
   The other registry cards contain the parameters for other groups. The fields in the registry cards are defined the same as the fields in registry cards for user administration.
3. Save the distribution parameters. They will be automatically forwarded to the receiver systems.

Transfer Users and Company Addresses from New Systems

Requirements

You must have selected and saved a distribution model.

The information will automatically be forwarded to the receiver systems. You have added a new system to the model view that already contains user master records.

Activities

In a first step, the company addresses are synchronized. Copy the company addresses from the child systems to the central system and distribute them to all other child systems.

The user master records are then copied to the central system.

1. To do this:
   The systems included in the distribution model are displayed in the tree structure. The systems marked as **new** may also contain user master data that has not been included in the central user administration.
2. Place the cursor on a system and choose **Copy users**. The following registry cards are displayed:
   - **New users**
     These users are not yet included in the central user administration. By selecting "Copy users" you can copy the marked user to the central user administration. All the user parameters, such as address, logon data, profiles and roles will be copied. From now on, the user is maintained in the central system.

- **Identical Users**
  This concerns different users with the same user identification.

- **Users already maintained centrally**
  These users already have the same name in the central user administration. By selecting 'Copy users' you can transfer the profiles and roles of the marked users to the central user administration. From now on, the user is maintained centrally.

- **Different Users**
  These users already have different IDs in the central user administration. They cannot be copied at this moment.
  In the local system copy these users to the correct central user name or correct the user name in the user address so that the name can be copied in the next step.

Time Sheet and HR in Distributed Systems

The Time Sheet is a cross application tool which you can use to record employee time data.

It provides information on the hours worked for the following components:

- Controlling (CO): Activity allocation
- Human Resources (HR): Attendances/absences and wage types
- Materials Management (MM-SRV): Service entry
- Plant Maintenance (PM)/Customer Service(CS): Confirmations
- Project System (PS): Confirmations

Scenario

You should implement this scenario if Human Resources is run in a separate system.

As time sheet data is closely related to Logistics operative data, the Time Sheet is implemented in the current Logistics system.

Supported Releases

All relevant components must have at least release status 4 A.

Preparation

Depending on the scope of functions available to you, which is determined by the extent to which you integrate the Time Sheet and Human Resources, you can implement this scenario in two ways:

- Narrow Coupling
- Loose Coupling

Distributing the Required Master Data

For time data to be entered in the time sheet, certain master data must be transferred from the HR system to the Time Sheet system.

Basic personal data (employee's name and organizational assignment) is distributed by the Actions (0000), Organizational Assignment (000), Personal Data (0002), and Payroll Status (0003) infotypes.

If you want to use default values, the default values for personal data must be available in the time sheet. The Time Sheet Defaults infotype (03) is distributed for this purpose.

Requirements

All of the relevant master data is distributed using the ALE business process Master Data Distribution.

Master data must be distributed to the Logistics system, as this is the system to which the Time Sheet is assigned.

Distributing External Services Data (MM-SRV)

If you record data for the External Services Management component (MM-SRV) in the Time Sheet, the vendor data must be provided.

If you use the HR Time Sheet Defaults infotype (03), the vendor data must be distributed to the HR system for validation.

Requirements

The vendor data is distributed using the ALE business process Proposal for Distribution Model: Customer and Vendor Masters. You must enter the HR system as the target system in the distribution model.

Maintaining the Distribution Model

To ensure communication between MM-SRV and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries: - Client: MM-SRV system

- Server: HR system
- Object: PurchaseOrder
- Method: GetDetail

The object method belongs to the object BUS202 Purchase Order

- Client: MM-SRV system
- Server: HR system
- Object: Service
- Method: ServiceGetDetail

The object method belongs to the object BUS00 Activity.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Transporting Tables

You must use the transport system to copy the following tables from Human Resources to the Time Sheet:

T82S	T0	T0P	T28B	T03
T00P	T82Z	T	T2T	T2Z
T00P	T0W	T82A	T4S	T4T

Recommendation

Enter the entire Customizing (cross-application) and then transport the data to all the relevant systems.

To ensure that all the relevant tables are copied, you can also transport all tables beginning with T* and table T00P.

Narrow Coupling

If you use a narrow coupling, the Time Sheet system accesses the HR system syncronously.

This affects the distribution of the Time Sheet in that the time data overviews are created directly from the HR system, for example, or that the checks are always carried out remotely in the HR system.
The transfer of data entered in the Time Sheet to the HR system is an exceptional case, where the transfer is always asynchronous.

For a better system performance, you are advised to use a Loose Coupling.

Accessing Overviews of Time Data in the HR system

When you call time data overviews in the Time Sheet, they are created synchronously in the HR system and stored in a buffer table in the Time Sheet system. This enables you to display the time data overviews in the Time Sheet.

Requirements

In Customizing for Distribution (ALE), you must have maintained the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTimeOverview
- Method: Get (Determine an employee's time overview)

The object method belongs to the object BUS703 Employee Time Overview.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Recording Attendance/Absence

Time data is recorded in the Time Sheet either with clock times, or directly as a number of attendance or absence hours.

If time data is recorded with clock times, the system determines attendance or absence hours according to the employee's daily work schedule.

The time data is a validated synchronously in the HR system.

Requirements

In Customizing for Distribution (ALE), you must have maintained the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTManagerExtAttAbs
- Method: Check (Check attendance/absence without account assignment)

The object method belongs to object BUS70 Manager for External Attendances/Absences.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Further notes

You can also record time data for Logistics with clock times but without specifying an attendance or absence type. The system calculates the difference in hours between the start and end time in this case. Work breaks scheduled in HR are not taken into account in distributed systems, however.

Recording Time Data as EE Remuneration Information

If you enter wage types when you record time data in the time sheet, records are created in the Employee Remuneration Information infotype (200) when the data is transferred to SAP Human Resources.

Different Payment

You can enter information on a different payment in the Time Sheet. You need to validate the following entries in the HR system:

- Pay scale group and level
- Bonus type and value
- Positions

The checks are performed synchronously in the HR system.

Requirements

In Customizing for Distribution (ALE), you must have maintained the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: EmployeeTimeValSpec
- Method: Check (Check different payment)
- Method: GetCurrency (Determine currency)

The object method belongs to the objekt BUS706 Employee Time Valuation Specifications

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Global Checks Against Data in HR System

The system checks for collisions for time data existing in the HR system and simulates quota deduction.

The checks are performed before the time data is transferred to the HR system.

Collision Check

The system checks whether records already exist in the HR system for the same period as the time data recorded in the time sheet.

Simulation of Quota Deduction

The system checks whether there is sufficient remaining quota in the HR system for the attendances and absences recorded in the time sheet.

Requirements

In Customizing for Distribution (ALE), you must have maintained the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTManagerExtAttAbs
- Method: CheckCollision (Collision checks)
- Method: CheckQuota (Quota deduction check)

The object method belongs to object BUS70 Manager for External Attendances/Absences.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Transferring Time Data Entered to HR

Time data recorded in the Time Sheet can be transferred to SAP Human Resources.

The transfer is asynchronous. The IDoc outbound processing is triggered automatically when you save the time data in the Time Sheet.

The time data is saved to the HR interface tables PTEX2000 (attendances and absences) or PTEX200 (employee remuneration information).

Report RPTEXTPT (External Transfer -> Human Resources) reads the time data from the interface tables and creates records in the Attendances (2002), Absences (200), or Employee Remuneration Information (200) infotypes.

Requirements

In Customizing for Distribution (ALE), you must have maintained the Basic Settings.

To ensure the transfer of time data from the interface tables to the infotypes, you must perform the **Define External Application for Integration with Time Management** step in Customizing for Personnel Time Management.

Maintaining the Distribution Model

To ensure communication between the Time Sheet and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

Transferring Attendances and Absences

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTManagerExtAttAbs

- Method: InsertWithCostAssignment (Insert attendance/absence with cost assignment)

The object method belongs to object BUS70 Manager for External Attendances/Absences

Transferring Employee Remuneration Information

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTMgrExtRemunSpec
- Method: InsertWithCostAssignment (Insert external employee remuneration information with cost assignment)

Settings in the HR System

Schedule report RPTEXTPT (External Transfer -> Human Resources) periodically in the HR system.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Displaying Follow-on Document in HR

After the time data recorded in the time sheet has been transferred to the HR system and the respective records created in the infotypes, you can display the time sheet data in the HR system.

To do this, switch from the display of follow-on documents in the Time Sheet system to the HR system. First, the status of the relevant records is displayed. You can then branch from here to the infotype records.

The HR system is called synchronously.

Requirements

In Customizing for Distribution (ALE), you must have maintained the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTManagerExtTimeSpec

Method: Display (Display external data in the infotype)

- Method: GetStatus (Status of record in the interface table)

The object method belongs to the object BUS700 Manager for External Personnel Time Specifications

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Recording Travel Expenses

You can enter trip costs in the Time Sheet. The Time Sheet system calls the trip costs accounting system, where a data record is created.

You can then display the data record that was created in the trip costs accounting system in the Time Sheet. The Time Sheet system calls the trip costs accounting system at the same time.

Requirements

In Customizing for Distribution (ALE), you must maintain the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: Trip costs accounting system
- Object: EmployeeTrip
- Method: CreateInteractive (Create a trip online (document entry))
- Method: ChangeInteractive (Change a trip online)
- Method: GetStatus (Specify the status of a trip)

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Loose Coupling

If you use a loose coupling, the required data is first distributed from the HR system to the Time Sheet system. Checks are carried out mainly in the Time Sheet system.
In certain situations, the data from the HR system is also accessed synchronously. If, for example, the time data overviews could not be distributed to the Time Sheet system, they are created by a synchronous call from the HR system.

Time data entered in the Time Sheet is always transfered asynchronously.

For better system performance, you are recommended to use a loose coupling.

Distributing Time Data Overviews

The distribution of time data overviews provides the Time Sheet with guide values, which simplify time data maintenance.

Time data overviews can be distributed asynchronously, or by synchronous access of the time data overviews in HR.

Asynchronous Distribution

You can trigger asynchronous distribution using the report RPTIMEOVERVIEW_REPLICATE (Trigger Distribution of Employee's Time Data Overview). The report can be executed in the HR system (push method) or in the Time Sheet system (pull method).

Time data overviews are created and then transferred to the Time Sheet system by an IDoc. In the Time Sheet, the data is stored in the tables PTIMEOV and PTIMEOV2.

If you want to delete time data overviews in the target system, use the report RPTIMEOVERVIEW_DELREPLICA (Delete Employee's Time Data overview in the target system).

Synchronous Access of Time Data Overviews in HR

When time data overviews are called in the Time Sheet, the system first checks whether tables PTIMEOV and PTIMEOV2 are filled. If they are not, the time data is created synchronously in the HR system and stored in a buffer table in the Time Sheet system. The overviews are therefore available to you when you maintain time data.

Requirements

In Customizing for Distribution (ALE), you must maintain the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTimeOverview
  Method: Replicate (Trigger distribution of employees' time overview)

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTimeOverview
- Method: Get (Determine employee's time overview)

- Client: HR system
- Server: Logistics system (Time Sheet)
- Object: PTimeOverview
- Method: DeleteReplica (Delete employees' distributed time overview)

- Client: HR system
- Server: Logistics system (Time Sheet)
- Object: PTimeOverview
- Method: SaveReplica (Distribute employees' time overview)

The object method belongs to the object BUS703 Employee Time Overview.

Settings in the Logistics System (Time Sheet)

If you choose the pull method, schedule the report RPTIMEOVERVIEW_REPLICATE (Trigger Employee's Time Data Overview) in the Time Sheet system.

Settings in the HR System

If you choose the push method, schedule the report RPTIMEOVERVIEW_REPLICATE (Trigger Employee's Time Data Overview) in the HR system.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Recording Attendances/Absences

You record time data in the Time Sheet with clock times or as a number of attendance or absence hours.

If you record data with clock times, the system determines attendance or absence hours according to the employee's daily work schedule. The system carries out a synchronous check of the time data in the HR system.

If you record data as a number of attendance or absence hours, the time sheet system performs the check locally in the Time Sheet system. The time data overviews must have been distributed in this case. If they are not distributed, the check is performed synchronously in the HR system.

Requirements

In Customizing for Distribution (ALE), you must maintain the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTManagerExtAttAbs
- Method: Check (Check attendance/absence without account assignment)

The object method belongs to object BUS70 Manager for External Attendances/Absences.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technicl Consistency step.

Further notes

You can also record time data for Logistics with clock times but without entering an attendance or absence type. In this case, the system calculates the difference between the start and end time. The breaks scheduled in HR are not taken into account in distributed systems, however.

Recording Time Data as EE Remuneration Information

If you assigned wage types when entering time data in the Time Sheet, records are generated in the Employee Remuneration Info infotype (200) on transfer of the data to SAP Human Resources.

The data entered is checked synchronously in the HR system.

Requirements

In Customizing for Distribution (ALE), you must maintain the Basic settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

Client: Logistics system (Time sheet) -
Server: HR system

- Object: PTMgrExtRemunSpec
- Method: Check (Check external employee remuneration information without account assignment)

The object method belongs to the object BUS702 Manager for External Employee Remuneration Specifications.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Different Payment

You can enter information on a different payment in the Time Sheet. You must check the following entries in the HR system in this case:

- Pay scale group and pay scale type
- Bonus type and value
- Positions

The checks are performed synchronously in the HR system.

Requirements

In Customizing for Distribution (ALE), you must maintain the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must erform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: EmployeeTimeValSpec
- Method: CheckWageGroupLevel (Check pay scale group/level)

The object method belongs to the object BUS706 Employee Personnel Time Valuation Specifications

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Global Checks Against Data in the HR System

The system checks for collisions for time data existing in the HR system and simulates quota deduction.

The checks are performed before the time data is transferred to the HR system.

Collision Check

The system checks whether records already exist in the HR system for the same period as the time data recorded in the time sheet.

Simulation of Quota Deduction

The system checks whether there is sufficient remaining quota in the HR system for the attendances and absences recorded in the time sheet.

Requirements

In Customizing for Distribution (ALE), you must have maintained the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTManagerExtAttAbs
- Method: CheckCollision (Collision checks)
- Method: CheckQuota (Quota deduction check)

The object method belongs to object BUS70 Manager for External Attendances/Absences.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Further notes

Transferring Time Data Entered to HR

Time data recorded in the Time Sheet can be transferred to SAP Human Resources.

The transfer is asynchronous. The IDoc outbound processing is triggered automatically when you save the time data in the Time Sheet.

The time data is saved to the HR interface tables PTEX2000 (attendances and absences) or PTEX200 (employee remuneration information).

Report RPTEXTPT (External Transfer -> Human Resources) reads the time data from the interface tables and creates records in the Attendances (2002), Absences (200), or Employee Remuneration Information (200) infotypes.

Requirements

In Customizing for Distribution (ALE), you must have maintained the Basic Settings.

To ensure the transfer of time data from the interface tables to the infotypes, you must perform the **Define External Application for Integration with Time Management** step in Customizing for Personnel Time Management.

Maintaining the Distribution Model

To ensure communication between the Time Sheet and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

Transferring Attendances and Absences

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTManagerExtAttAbs
- Method: InsertWithCostAssignment (Insert attendance/absence with cost assignment)

The object method belongs to object BUS70 Manager for External Attendances/Absences

Transferring Employee Remuneration Information

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTMgrExtRemunSpec
- Method: InsertWithCostAssignment (Insert external employee remuneration information with cost assignment)

Settings in the HR System

Schedule report RPTEXTPT (External Transfer -> Human Resources) periodically in the HR system.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Further notes

Displaying Follow-on Document in HR

After the time data recorded in the time sheet has been transferred to the HR system and the respective records created in the infotypes, you can display the time sheet data in the HR system.

To do this, switch from the display of follow-on documents in the Time Sheet system to the HR system. First, the status of the relevant records is displayed. You can then branch from here to the infotype records.

The HR system is called synchronously.

Requirements

In Customizing for Distribution (ALE), you must have maintained the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: HR system
- Object: PTManagerExtTimeSpec
- Method: Display (Display external data in the infotype)
- Method: GetStatus (Status of record in the interface table)

The object method belongs to the object BUS700 Manager for External Personnel Time Specifications

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Recording Travel Expenses

You can enter trip costs in the Time Sheet. The Time Sheet system calls the trip costs accounting system, where a data record is created.

You can then display the data record that was created in the trip costs accounting system in the Time Sheet. The Time Sheet system calls the trip costs accounting system at the same time.

Requirements

In Customizing for Distribution (ALE), you must maintain the Basic Settings.

Maintaining the Distribution Model

To ensure communication between the Time Sheet system and the HR system, you must perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: Logistics system (Time Sheet)
- Server: Trip costs accounting system

- Object: EmployeeTrip
- Method: CreateInteractive (Create a trip online (document entry))
- Method: ChangeInteractive (Change a trip online)
- Method: GetStatus (Specify the status of a trip)

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Check Technical Consistency step.

Time Sheet and External Time Recording

The SAP Time Sheet allows you to implement an external application for data entry. To do this, you must set up this ALE business process in the distribution model.

Supplying the Time Sheet with External Time Data

You can use this ALE business process to transfer time data that was recorded in an external system or external application to the SAP Time Sheet. You record the time data in the external system or external application with working time attributes.

After the data is transferred to the Time Sheet, it is saved to the database table CATSDB. Based on the working time attributes you enter, the data is transferred to the relevant target components (HR, CO, MM, PM/CS, or PS), where it is available for further processing.

Transfer of Time Data to Time Sheet

You can insert data from external applications or systems into the SAP Time Sheet, or change or delete the data, using one of three methods:

Requirements

In Customizing for Distribution (ALE), you must maintain the Sending and Receiving Systems.

Maintaining the Distribution Model

To ensure communication between the external application and the SAP Time Sheet, you must maintain the distribution model.

Inserting Time Data

To insert time data from an external application into the Time Sheet, perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: External system
- Server: SAP Time Sheet
- Object: CATimeSheetManager (Time Sheet manager)

- Method: Insert (Insert records)

The method is based on the message type CATS_INSERT and belongs to the object BUS7024.

Changing Time Data from the External Application

To change time data in the Time Sheet that was changed in the external system, perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: External system
- Server: SAP Time Sheet
- Object: CATimeSheetManager (Time Sheet manager)
- Method: Change (Change records)

The method is based on the message type CATS_CHANGE and belongs to the object BUS7024.

Deleting Time Data from the External Application

To delete time data from external applications from the Time Sheet, perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: External system
- Server: SAP Time Sheet
- Object: CATimeSheetManager (Time Sheet manager)
- Method: Delete (Delete records)

The method is based on the message type CATS_DELETE and belongs to the object BUS7024.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Partner Profiles and Time of Processing step.

Using the Worklist

You can use the SAP Time Sheet worklist in an external application or external system.

Requirements

In Customizing for Distribution (ALE), you must maintain the Basic Settings.

Activities

Maintaining the Distribution Model

To ensure communication between the external system and the SAP Time Sheet, you must maintain the distribution model.

To display an employee's time sheet worklist in the external application, perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: SAP Time Sheet
- Server: External system
- Objekt: EmployeeCATimeSheet (Employee time sheet)
- Method: GetWorkList (Read worklist)

The method belongs to the object BUS702.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Generate Partner Profiles step.

Select Data

You can select Time Sheet data from an external application according to personnel number and date.

Requirements

In Customizing for Distribution (ALE), you must maintain the Basic Settings.

Activities

Maintaining the Distribution Model

To ensure communication between the external system or external application and the SAP Time Sheet, you must maintain the distribution model.

To select employee data from the SAP Time Sheet according to personnel number and date, perform the Maintain Distribution Model step. Choose *Create method* and make the following entries:

- Client: SAP Time Sheet
- Server: External system
- Objekt: CATimeSheetRecord (Time Sheet record)
- Methode: GetList (List of records)

The method belongs to the object TIMESHREC.

Checking Consistency

In Customizing for Distribution (ALE), check for consistency by performing the Generate Partner Profiles step.

Transfer Master Data to External System

If you have already created master data in the SAP System, you can use it to check time data before it is transferred, or display it in the external system. You can transfer the necessary master data using the following two methods:

1. Using the Interface Toolbox transaction (PU 2)
   A delta supply of master data to the external system occurs. You can schedule the relevant reports periodically so that the external system is provided with the latest data.
2. Master data distribution using IDocs
   All HR master data is transferred to the external system. You must maintain the ALE distribution model. For more information, see Set Up "Distribution of HR Master Records and Organizational Data"

Further notes

For more information on the Interface Toolbox, see the SAP Library. Choose HR-Human Resources -> HR Tools -> Interface Toolbox.

Distribution of Banks

In this section you make the setting for the distribution of the bank master data and the banks.

Make Settings for Distributing Bank Master Data

In these activities, you make the settings for distributing bank master data.

These settings are necessary if you wish to process bank master data and the related company addresses in any of the systems of an SAP system group.

The ALE business process allows for all changes to bank master data to be made via a consolidation system. The local systems send all the changes to the consolidation system, and the consolidation system sends the changes back to all the local systems. The banks can also be processed in the consolidation system.

The address from the central address management is distributed together with the bank. The address data from central address management must be processed before the banks in the target system.

Note

You can only distribute the bank master data of banks whose bank keys have been set by the bank number or external assignment.

Requirements

You have set up the same country-specific checks in all systems. You do this in Customizing under *General Settings -> Set Countries ->* Set Country-Specific Checks.

Activities

Determine a system in which you can make all cross-system settings, if possible.

Carry out the following activates:

1. Logical Systems
   Define all systems that are involved in the distribution.
2. Maintain Distribution Model
   In this activity you make your entries via *Add BAPI*:
   You copy the following additional data from the local system to the consolidation system:
   - Object name: Bank
   - Method: Create Method: Change
   - Object name: AdressOrg
   - Method: SaveReplica

   You copy the following additional data from the consolidation system to all other systems:
   - Object name: Bank
   - Method: SaveReplica
   - Object name: AdressOrg
   - Method: SaveReplica
3. Generate Partner Profiles

Determine the point at which the data should be exchanged between the systems.

4. Specify **one** consolidation system.
   If you do not enter a consolidation system, or you enter more than one, the banks are not distributed, they are only saved locally.

Distribute Banks

In this step you can distribute the banks you created in one of the systems of a system group to the other systems.

Further notes

For more information on this subject, refer to the documentation on report RFBANK_ALE.

Information Systems

This section contains information on the settings for exchanging data with information systems.

Logistics Information Systems

This section contains information about the distribution of information systems.

Cumulative Data Transfer

When aggregated data is exchanged the information is summarized and transported in information structures. It is no longer possible to access single documents in the receiving system.

Activities

If you have opted for aggregated data exchange, proceed as follows:

- Determine the information structure to be used in cumulative data exchange.
- Remember that the characteristic areas between the logistics systems must be mutually exclusive, otherwise data will be overwritten in all directions.
- This is possible, for example, if you:
- Include the logical system in the information structure;

- Carry out derivation using the corresponding standard formula in the SAP Standard System.
- The information structure must be identical in each of the participating systems.
- Afterwards, generate the message type for the information structure. Follow the instructions in the IMG of the Logistics Information Services, section Application Link Enabling (ALE). (Logistics general -> Logistics Information System -> Scheduling -> Functions -> Application Link Enabling (ALE)).
- LIPxxx (xxx = number of information structure, for example, LIP096) is assigned as the name of the message type.
- The IDoc type used is **SOPGEN0**.
- The message type must be identical in each of the participating distributed systems.
- Specifications in the transmitting systems:
- Determine the copy plan version that is used internally.
- Schedule the "info structure upload" as a periodic
- background job (for example, once a day). You can do this via: **Logistics -> Central functions -> Distribution**, followed by the menu option **Applications -> Logistics information system -> Info structure upload**.
- Furthermore, you must define the model, the partner profiles, and so on.

Standard tasks

To ensure that work items are generated should an error arise, you must assign the following standard task to positions or workflow organizational units.

Standard task: ID code Description

SOPGEN_ErrorSOPGEN Outbound error

Further notes

For more information on the precise steps involved, refer to the Implementation Guides of the Logistics information systems and of Sales and Operations Planning.

Inventory Information System

In this section, the settings are described which must be maintained for Inventory Controlling if distribution is to be carried out.

Requirements

The definition of the updates groups decides whether a logistics document is statistically relevant or not. You require settings in the Implementation Guide of the Logistics Information System. You must make these settings there.

Activities

The Customizing in this book is to be carried out for the message type **INVCON**.

The following data must be distributed for this scenario to all participating systems:

master data

- material master
- cost centers

Control data

Object	Description
V_T00	company code (core view)
V_TGSB	business area
V_T00O	global company code
V_TGSBG	global business area
V_TKA0	controlling area
V_T00W	plant/branch (core view) plant - company code allocation (via valuation area)
V_TSPA	division
V_T00L	storage locations
V_T002	languages
V_T00	country definition
V_CURC	currency codes
V_T006D	dimensions for units of measurement
V_T006I	ISO codes for units of measurement
V023	material group
V024D	coordinator
T34	material type

Standard tasks

To ensure that workitems are generated for error processing should an error occur, you must assign the following standard task to positions or workflow organizational units.

Standard task: ID code	Description
INVCON_Error	INVCON Inbound error

Purchasing Information System

In this section, the settings are described which must be maintained for the Purchasing Information System if distribution is to be carried out.

Requirements

The definition of the update groups determines whether a logistics document is statistically relevant or not. You require settings in the Implementation Guide of the Logistics Information System. You must make these settings there.

Activities

The ALE Customizing for this scenario is to be carried out for the message type **EKSEKS**.

The following data must be distributed for this scenario to all participating systems:

master data

- material master
- supplier master

control data

Object ID	Description
V_T00	company code (core view)
V_T00O	global company code
V_T00W	plant/branch (core view)
V_T024E	purchasing organization
V_024	purchasing group
	plant - company code allocation

(via valuation area)

V_TSPA	division
V_T00L	storage locations
V_T002	languages
V_T00	country definition
V_CURC	currency codes
V_T006D	dimensions for units of measurement
V_T006I	ISO codes for units of measurement
V023	material group
V024D	MRP controller
V_T63	item category (T63)

Standard tasks

To ensure that workitems are generated for error processing should an error occur, you must assign the following standard task to positions or workflow organizational units.

Standard task:ID code	Description
EKSEKS_Error	EKSEKS Inbound error

Sales and Distribution Information System

In this section, the settings are described which must be maintained for the Sales Information System if distribution is to be carried out.

Requirements

The definition of the update groups determines whether a logistics document is statistically relevant or not. You require settings in the Implementation Guide of the Logistics Information System. You must make these settings there.

Activities

Customizing in this book is to be carried out for the following message types:

Message type	Note
SISCSO	create / change sales order
SISINV	create / change invoice
SISDEL	create / change delivery

The following data must be distributed for this scenario to all participating systems:

Master data

- material master
- customer master record

Control data

Object	Description
V_T00	company code (core view)
V_T00O	global company code
V_T00W	plant/branch (core view) valuation level plant - company code allocation (via valuation area)
V_TVKO	sales organization
V_TVTW	distribution channel
V_TSPA	division
V_TVBUR	sales offices
V_TVKGR	sales group
V_TVST	shipping point
V_T002	languages
V_T00	country definition
V_CURC	currency codes
V_T006D	dimensions for units of measurement
V_T006I	ISO codes for units of measurement
V023	material group

Standard tasks

To ensure that workitems are generated for error processing should an error arise, you must assign the following standard task to positions or workflow organizational units.

Standard task: ID code	Description
SISCSO_Error	SISCSO Inbound error
SISDEL_Error	SISDEL Inbound error
SISINV_Error	SISINV Inbound error

Logistics

In this section you can find out which settings you have to make for ALE business processes involving the R/3 Component, Logsitics (LO) and one or more other Components, such as HR, LO or AC or even external components (EXT).

Master Data Distribution

In this section you can find out which settings are required to distribute logistics master data between R/3 Systems.

For details about the settings see Master Data Distribution.

Distribution of Work Breakdown Structure

You use this step to make the settings required for work breakdown structure (WBS) distribution.

These settings area required if you want to create WBSs in a (master) system and distribute it to a number of (receiver) systems.

The ALE business process ensures that a WBS created and saved in a master system is automatically created in one or more receiver systems too.

You can use controlling areas and the project profile as filters to control whether the WBS is distributed when you save it and in which receiver system it is created.

Activities

Determine a system in which you want to make all the cross-system settings.

- Maintain logical systems
  Determine all the systems to be included in the distribution.

- Maintain distribution model
  Define the master and receiver systems and choose the filter objects.

  Object name: WorkBreakdownStructure
  Method: SaveReplica

- Generate partner agreements
  Determine the time at which the data is to be exchanged between systems.

- Activate object types in inbox/outbox
  In the inbox and outbox, activate the serialized distribution using object types.

  Object type: BUS204

Archiving Recommendations

WBSs are only archived in the master system. They are deleted in the receiver systems as soon as you set the deletion indicator in the master system and save this change to the receiver system.

The "deletion flag" status must have been transferred to all the receiver systems before you activate the internal deletion indicator in the master system.

Further notes

A WBS created in a master system and distributed to a receiver system can only be overwritten in the receiver system with data from the same master system.

If you are using more than one system as master systems, we recommend you define different project number ranges for each system. You can use an additional locking indicator to prevent the same project number in another system.

For more information, go the Project System IMG and read Define project coding for project.

Integrated Distributed PDM Solution (ID PDM)

The standard system supports ALE functions for distributing master data. As of Release 4.0, the *Integrated Distributed Product Data Management* (ID PDM) solution gives you more control over the distribution of master data for product data management (PDM).

These steps allow you to define settings for distributing *ID PDM* data by field groups.

Distribution process

During the design and development phase of a product, master data (for example, material master records, bills of material, and documents) is created in its own SAP system. At first, this data is created and changed, but is not yet ready to be distributed to other systems. At a certain stage in this process, the data is needed in an ERP/MRP system, too. At this point, the data is automatically transferred to the ERP/MRP system.

Alternatively, you can transfer data to the ID PDM system from an ERP/MRP system.

Distribution process

The status of an object determines its processing status for transfer to another system. If the object is still in preparation, the Distribution lock status indicator prevents its data from being distributed.

Distributed data is stored redundantly. You can use change authorizations to control whether the source system or the target system currently has the authorization to change an object.

You use profiles to distribute and monitor changes.

You can distribute the change authorization for an object type (for example, material) between your systems.

Scope of distributed data

This option is supported for the following objects:

- Materials
- Simple material BOMs
  (Variants, alternatives, plant allocations, and material variants are **not** distributed.) You **cannot** distribute the following data:
- Long texts

BOM components (materials, documents, or classes)

- Documents
- Simple document structures
- Classes
- Characteristics
- Dependencies

Note:
The change master record is not linked to this distribution mechanism in Release 4.0. You can only use the standard distribution functions to distribute change master records.

Distribution of object links

When you distribute an object: Linked objects are **not** distributed, to avoid transferring too much data at once **Links** to other objects are distributed
Links to objects that do not exist in the target system are ignored. However, these links become active when you distribute the linked object.

Example:

Material M-, classified in material class C-, is distributed to system MRP-0. Class C does not exist in system MRP-0. The link between material M- and class C- does not become active in system MRP-0 until you distribute class C-.

You can distribute objects that are linked to classes manually.

- **Classes**

  You can use report program RCCLDIHI to distribute a complete class hierarchy, including all classes, characteristics, and characteristic values. You can also distribute classification data, in order to transfer the links between classes in the hierarchy.

Change Authorizations

If you want to use PDM functions in a standalone SAP system, perform these steps to define settings for change authorizations.

To define which system has the authorization to change distributed data, you use a change authorization profile.

Authorization to change the following objects is distributed per object:

- Classes
- Characteristics
- Dependencies

Authorization to change the following objects is distributed per field group of the object:

- Materials
- Bills of material
  Material BOMs
- Document structures

Note:

Documents are not included in this list, because the document status allows you to distribute documents by field groups.

Display Objects with Change Authorization

In this step, you display the object types that can be distributed between SAP systems if you are using a standalone PDM system.

You cannot define other object types for distribution.

Standard settings

The standard system supports distribution for the following object types:

Object type	Business object
Material master records	BUS00
Material BOMs	MAST
Document structures	BUS08
Classes	BUS003
Characteristics	BUS088
Dependencies	BUS089

Activities

You cannot change the entries in the standard system.

Further notes

To define change authorizations for these object types, perform the following steps:

- Maintain profile names for change authorizations
- Allocate profiles to system and field group
- Define sequence of change profiles
  You must perform this step for the following object types:
- Materials
- Material BOMs
  Document structures

Maintain Profile Names for Change Authorization

In this step, you define the profile names for change authorizations.

You use profiles to distribute change authorizations between different systems.

If change authorization for an object is defined per object, you can only create one profile for the object.

Requirements

The object types that can be distributed are predefined in the standard system.

Activities

To define a profile name for change authorization:

1. Select the object type for which you want to define change authorization. You can use the possible entries function to list the object types that are defined for ID PDM distribution in the standard system, and select one.
2. Enter a name and description for your profile.
3. Save your profile.

You can create more than one profile for object types where change authorization is distributed by field group. This applies to the following object types:

- Materials (business object) BUS00
- Material BOMs (business object) MAST
- Document structures (business object) BUS08

Further notes

If you have defined more than one profile for an object type, perform the following steps next:

- Maintain profile assignment in system and field groups
- Object Status
- Specify sequence of change profile
  You must perform this step for the following object types:
- Materials
  Material BOMs
- Document structures

Maintain profile assignment in system and field groups

In this step, you assign your profiles to individual systems.

The options you have for assigning profiles depend on the object type:

- If field groups are defined for change authorizations for an object type, you can assign the profiles for different ALE systems to the field groups. Field groups are defined internally, so you cannot define your own (to include customer-specific fields, for example).
- Field groups are defined for the following object types:
- Material
- Material BOM
- Document structure
- If change authorization can only be distributed for the entire object, you can define the change authorization either for the entire object or not at all.

Example

In the source system, status 0 (released) is defined as follows in Customizing for the material master, step *Define material statuses*:

- The *Distribution lock* indicator is not selected
- Profile: KFREI (released for engineering/design) is allocated This profile controls change authorization for the basic data of a material.

In the source system, you are processing a material that has a change authorization. If you set status 0 (released), then save your material all of the basic data of the material is distributed, including the status. From this point, you can no longer change the basic data of the material in the source system. The change authorization for the basic data has been transferred to the target system.

Requirements

Profiles exist for the object types.

The logical systems on which the data is distributed are define in step Define logical system.

Activities

To assign the change authorization for certain field groups to a profile:

1. Enter the object type of the objects that you want to distribute (for example, material master = business object BUS00).
2. Enter the profile name that you want to control the change authorization (for example, MAT0). The system finds the description that was defined in step "Define profile names for change authorization".
3. Enter a *counter*.
   If several change authorizations exist for an object type, the counter distinguished between them.
   The counter (together with the object type and profile name) is defined as a key field. This means that you must enter a profile, even if you only want to assign one profile for one object type to a system.
4. Select the logical system to which you want to assign change authorization.
5. Enter the field group.
   The object type determines what you can enter here:
   For objects that can only be distributed in their entirety, you can define one of the following settings for the system you select:
   - No change authorization
   - Full change authorization

   For objects that have change authorization defined per **field group**, display the possible field groups and select one.
   Make an entry for each field group. To define change authorization for several field groups, repeat this procedure for each field group.
   - If change authorization is already defined for an object and profile, you see this in the list.
   - To display the fields in a field group, place the cursor on the field group you require and choose *Field list*.
   - If you want to define change authorization for all field groups, choose *Select all* in the possible entries dialog box. The system creates an entry for each field group. The system you are working in is the default.
6. Confirm your entry for the field group. You see the description of the field groups.
7. Save your entry.

Once you have done this, you can assign the field groups to different systems.

Further notes

Perform step Define sequence of profiles for the following object types:

- Material
- Material BOM
- Document structure

Specify sequence of change profile

In this step, you define a sequence of profiles for each ALE system.

Perform this step for the object types that can have more than one profile:

- Materials

- Material BOMs
- Document structures

When you define a sequence of profiles for an ALE system, each profile can only be followed by a profile that restricts the fields available. This prevents you from assigning an authorization that allows more extensive changes in this ALE system once an object has a subsequent status.

If you want to allow more extensive changes, you must do one of the following:

- Distribute the object to another system, and assign a profile with more extensive change authorizations
- Ask your system administrator to change the object status or the profile in Customizing

Requirements

Before you can define sequences of profiles:

- Profiles for the object types must be defined
- The logical ALE systems for distributing the data must be defined

Activities

To define a sequence of profiles:

1. Enter the object type. You can enter either material master (business object BUS00) or material BOM (business object MAST).
2. Enter the ALE system for which you want to define the sequence.
3. In the *Sequence* field, enter the position of the profile in the sequence for this ALE system.
4. Enter a change authorization profile.
5. Save your entries.

Object Status

In this step, you specify the object statuses that trigger distribution of object data to other ALE systems.

You enter the following data for distributed objects:

- Distribution lock indicator (for all objects)
- Profile (for some objects)

Distribution lock

The distribution lock is read during distribution via a change pointer.

The processing status of an object determines when the object data is distributed for ID PDM. The *Distribution lock* indicator prevents data from being distributed.

- If the processing status of an object lifts the distribution lock, the entire object is automatically distributed to other ALE systems.

- From this point on, all further changes to the object are automatically distributed.

Profile

To prevent distributed data from being changed in different ALE systems at the same time, you define change authorizations. A profile determines how change authorizations for ID PDM are distributed and monitored.

In a profile, you specify that one system has the authorization to change certain fields, in an object with a certain status.

Define BOM status

In this step, you define:

- Which BOM statuses lock data for distribution to ALE systems for ID PDM The distribution lock is read during distribution via a change pointer.
- Which profile controls change authorizations in distributed ALE systems

History

When you create a bill of material, the BOM status does not allow distribution. If a change in status triggers automatic distribution, the BOM is distributed on the date of the last change, or on the valid-from date of the change number used to make the change.

Requirements

Before you can perform this step, you must define the settings for change authorizations in the following step: Change authorizations.

Activities

Define the following settings for distributing BOMs for ID PDM:

1. In the *Distribution lock* field, define whether BOMs with this status are distributed to ALE systems.
2. If you want a change authorization to control processing of BOMs with this status in ALE systems, enter a *Profile*.

Further notes

These settings must be the same in the source system and target system.

Define Material Status

In this step, you define:

- Whether the material status locks data for distribution for ID PDM The distribution lock is read during distribution via a change pointer.
- Which profile controls authorizations to change material data in distributed ALE systems

These settings only apply to the cross-plant material status that is defined in the basic data of the material master.

Requirements

Before you can perform this step, you must define the settings for change authorizations in the following step: Change authorizations.

Activities

Define the following settings for distributing materials for ID PDM:

1. In the *Distribution lock* field, define whether materials with this status are distributed to ALE systems.
2. If you want a change authorization to control processing of material data with this status in ALE systems, enter a *Profile*.

Further notes

These settings must be the same in the source system and target system.

Define document statuses

In this step, you define whether the document status locks distribution for ID PDM in ALE systems.

The status type defines the properties of a status. For example, it determines whether a document with a given processing status can be processed in **this** ALE system.

Activities

Make the following status settings for distributing documents for ID PDM:

1. In the *Distribution lock* field, you determine whether document data with this status is distributed to ALE systems.

The distribution lock is read during distribution via a change pointer.

2. If a document with a given processing status is **not** to be processed in this ALE system, select status type *Lock status*.

Further notes

You define these settings for each individual ALE system.

Define class status

In this step, you define:

- Whether the class status locks data for distribution for ID PDM
- Which profile controls authorizations to change class data in distributed ALE systems

You can use report program RCCLDIHI to distribute a complete class hierarchy, including all classes, characteristics, and characteristic values.

Requirements

Before you can perform this step, you must define the settings for change authorizations in the following step: Change authorizations.

Activities

Define the following settings for distributing class data for ID PDM:

1. In the *Distribution lock* field, define whether classes with this status are distributed to ALE systems. The distribution lock is read during distribution via a change pointer.
2. If you want a change authorization to control processing of classes with this status in ALE systems, enter a *Profile*.

Further notes

These settings must be the same in the source system and target system.

Define characteristic statuses

In this step, you define:

- Whether the characteristic status locks data for distribution for ID PDM
- Which profile controls authorizations to change characteristics data in distributed ALE systems

You can use report program RCCLDIHI to distribute a complete class hierarchy, including all classes, characteristics, and characteristic values.

Requirements

Before you can perform this step, you must define the settings for change authorizations in the following step: Change authorizations.

Activities

Define the following settings for distributing characteristics for ID PDM:

1. In the *Distribution lock* field, define whether characteristics with this status are distributed to ALE systems.
   The distribution lock is read during distribution via a change pointer.
2. If you want a change authorization to control processing of characteristics with this status in ALE systems, enter a *Profile*.

Further notes

These settings must be the same in the source system and target system.

Define status for dependencies

In this work step you determine whether the status of dependency locks distribution in ALE systems for ID PDM.

Activities

You set in the field *distribution lock* whether you want the data of the dependencies to be distributed in ALE systems with the chosen status.
The distribution lock is read by the change indicator during distribution.

Further notes

The settings in the course and target systems must be identical.

Define statuses for change master records

In this step you determine whether the status of the change master record locks distribution in ALE systems for ID PDM.

Activities

You set in the field *distribution lock* whether you want the data of the change master record to be distributed in ALE systems with the chosen status. The distribution lock is read by the change indicator during distribution.

Further notes

The settings in the course and target systems must be identical.

Field Groups

In this step, you define field groups for the object types that can be distributed in field groups. You use these field groups in the profiles for distributing and monitoring change authorizations.

You can distribute the following object types in field groups:

- Materials

Field groups are defined internally in the SAP system and cannot be changed.

- Bills of material

  Default field groups are defined in the standard system. You only need to perform the following steps if you want to define different field groups for your company.

Note:
All of your distributed ALE systems must have the same field groups.

Field Groups for Object Lists

In this step, you define the field groups for distributing bills of material.

You can distribute the following BOM categories:

- Material BOM
- Document structure

All fields in the BOM header are in field group HEADER.

Define field groups

In this step, you define the field groups for distributing the items in material BOMs and document structures.

Standard settings

Default field groups are defined in the standard system. Fields are grouped according to function, for example:

- DESCRIPT (description)
- EFFECTIV (validity)
- QUANTITY (quantity data)

Activities

To create a new field group:

1. Choose *New entries*.
2. Enter a key for your *field group*.
   This key is not language-dependent.
3. Enter a language-dependent description in your logon language.
4. Save your entries.

Further notes

To assign fields to your new field groups, perform the following step: Assign fields.

Assign fields

In this step, you assign fields to a field group.
If you do not assign a field to a field group, you cannot make an entry in the field. You can only assign each field to one field group, to ensure consistency.

In the standard system:

- You can assign any field to a field group, provided that the field can be changed in ALE systems. For example, if a field is for display only, you cannot assign the field to a field group.
- There are internal field groups for fields that are functionally interdependent. The following internal groups are defined:
- <CLASS> for class data
- <DOC_KEY> for fields in the document key
- <HEADER> for fields in the BOM header
- <VARSIZE> for variable-size item data

Example

The following fields are assigned to field group EFFECTIV (validity):

- AENNR (change number)
- DATUV (valid-from date)

Requirements

Before you can use company-specific field groups to control change authorizations, you must perform the following step: Define field groups.

Standard settings

In the standard system, fields are assigned to the default field groups according to function.

Activities

To assign a field to a field group:

1. Choose *New entries*.
2. Use the possible entries function to select the field you want to assign. The list of possible entries includes customer fields.
3. Enter your field group.
4. Save your entries.

Proposal for distribution model: Customer and vendor masters

The *vendor master* and *customer master*, and the *contact person* use central address management (ZAV).

Separate message categories (ADRMAS, ADR2MAS, ADR3MAS, see below) are assigned to *addresses* in the ALE environment, so that these can be distributed as independent objects.

Contact persons are not distributed separately. They are distributed as part of the customer master.

In the text below, the vendor master and customer master are also described as *master object*.
Regarding distribution, note that:

1. Address objects are processed before the master object in the target system. This ensures that the address data already exists when the master object is created, and that the master object is created with full address data. This would not be absolutely essential from the point of view of the master object, as the master object could be created with incomplete master data (the address data in the CAM tables is in part the same as that in the master object tables), but operative applications may need the full address data.
2. The address object and master object are sent to the same target systems. This ensures that address objects are not distributed to target systems in which the related master objects are not known.

Processing of address objects before the master object in a target system is achieved by *serialization*. This must be maintained for the message category of the address object and the message category of the master objects. Serialization ensures that a separate control message is sent to the recipient if the IDocs, created for the related message categories by a certain point in time in the sending system, are transferred to the target system successfully. The recipient function for the control message in the target system ensures that the IDocs that have built up by the starting date are posted in the message category sequence specified. *Notes:*

1. Serialization groups have been created for the standard message categories for customers (DEBMAS, DEBCOR), vendors (CREMAS, CRECOR) and address objects (ADRMAS, ADR2MAS, ADR3MAS). During serialization group maintenance, you must ensure that the address objects are distributed before the master objects. Because addresses are distributed using different types (see below), you must ensure that addresses with type are distributed before addresses with type 3, and these are distributed before addresses with type 2.

2. In the receiving system, you define inbound processing for each sending system for the message categories of a serialization group.

3. To use serialization, the IDocs must be parked in the sending or receiving system. It does not make sense to forward the IDocs directly. You maintain the relevant settings for this in the partner profiles.

You send the address and master objects to the same system by making the relevant settings in the *distribution model*. Before the distribution model is maintained, the objects to be distributed must be known.
Make use of the opportunity to set a default for distribution using automatic generation of distribution.
This default ensures that all entries are made that are necessary for the distribution of master objects and the addresses assigned to them in the ALE distribution model.

For generation of the distribution model, you must take the following points into consideration:

- For the generated distribution to be visible in the distribution model, you must enter a name for the model view. You can then find the distribution generated in the distribution model under this name.
- The logical system names of the systems between which data is distributed must be entered so that the partner relationship can be defined in the distribution model.
- For distribution of master data, you must enter the relevant message categories (the message categories supplied are CREMAS and CRECOR for the vendor master and DEBMAS and DEBCOR for the customer master). A default for the customer or vendor distribution and related addresses is then generated.

For a better understanding of the generated distribution model, bear in mind the following information:
Central address management differentiates between 3 address types:

- *Address type* : Addresses of companies and organizations (-> message category ADRMAS)
- *Address type 2*: (New private) addresses of people (-> message category ADR2MAS)
- *Adress type 3*: Addresses of people in companies (-> message category ADR3MAS)

The *main address* of a customer or vendor has address type . The *address of a contact person* had address type 3. For a contact person, you are able to maintain a different business address (address type) or a private address. The *private address* has either address type (if it is an address that already existed before the address data was converted to CAM; also referred to here as an "old" private address) or address type 2 (all contact person private addresses that are created after the conversion to CAM; also referred to here as a "new" private addresses).
A *method* (SaveReplica) for distributing the address data of the particular type is available for each address type.
The message categories on which the methods are based are:

- ADRMAS for addresses with type
- ADR2MAS for addresses with type 2 - ADR3MAS for addresses with type 3

You can use the filter objects assigned to these methods to define criteria for whether an address is distributed via this message link. Filter objects can be logically linked to each other via *filter groups*. An "or"-link exists between various filter groups. Within a filter group, the filter objects are connected by "and"-links.

The following filter groups and related filter objects must be maintained for addresses with address type :
For each message category of a customer/vendor, a filter group must be created for the company address. This filter group must contain the following filter objects:

- Semantic meaning of the address
- Object type of the object owner (customer or vendor)

- Object ID of the object owner
  (As a dependency is defined for the object ID between the method SaveReplica and the standard message category of the customer/vendor, you enter the message category of the customer/vendor here).

For each message category of the customer, a filter group for the different business address and the "old" private address is to be created for each contact person. This filter group must contain the following objects:

- Semantic meaning of the address
- Object type of the object owner (contact person)
- Object type of the object to which the contact person references (customer)
- ID of the referenced object.
  (As a dependency is defined for the object ID between the method SaveReplica and the standard message category of customer, you enter the message category of the customer here.)

The following filter groups and related filter objects are to be maintained for addresses with type 2:

For each message category of a customer, a filter group is to be created for the "new" private address for the contact person. This filter group must contain the following filter objects:

- Semantic meaning of the address
- Object type of the object owner (contact person)
- Object type of the object which the contact person references (customer)
- ID of the referenced object
  (As a dependency is defined for the object ID between the method SaveReplica and the standard message category of the customer, you enter the message category of the customer here.)

The following filter groups and related filter objects are to be maintained for addresses with type 3:
For each message category of a customer, a filter group is to be created for the contact person address for the contact person. This filter group must contain the following filter objects:

- Semantic meaning of the address
- Object type of the object owner (contact person)
- Object type of the object a level above the contact person (customer)
- ID of this higher-level object
  (As a dependency is defined for the object ID between the method SaveReplica and the standard message category of the customer, you enter the message category of the customer here.)

Further notes

For details on carrying out the above-mentioned serialization, see the step Data Serialization for Sending and Receiving in Customizing for ALE.

For details on maintaining the above-mentioned distribution model, see the step Maintain Distribution Model in Customizing for ALE.

As this may lead to the creation of a further default for distribution that needs to be maintained, the default is not transported.
It is possible to transport the distribution model in the step "Maintain Distribution Model".

Logistics <-> Logistics This section contains ALE business processes in which Logistics data is exchanged between systems.

Sales and Operations Planning

This IMG section describes the settings which must be defined for distribution of Sales and Operations Planning data.

Requirements

- The information structures of SOP must have been created.
- The message types in SOP must have been defined for the information structures.

Activities

To make settings in SOP, from the IMG initial screen, choose **Production -> Sales and Operations Planning -> Functions ->** Generate message type.

Here is the procedure (listed as main points):

- In the Implementation Guide of the application in question, specify the information structure in which planning is to occur. An example information structure, S096, is provided with the standard SAP System.
- Please remember in this case that simultaneous planning is implemented in several systems by using separate planning key figures for each system.
- The information structure must be exactly the same in each of the distributed systems participating in the scenario.
- Generate the message type for the information structure. LIPxxx is assigned as the name for the message type (where xxx is the number of the information structure).
- The message type must be identical in each of the distributed systems participating in SOP.
- When you generate a planning type (= maintenance screen, planning table) for the information structure, pay attention to the following:
- Define the fields which can be maintained in the system in question as input fields; - Define the fields which cannot be maintained in the system as entry fields.
- Example: ZZ_PLANT is the planning type for a remote system, ZZ_CENTER the planning type for a central system.
- In every system, the filtering of IDoc fields must be set so that only the key figure fields which can be maintained in the respective system are passed on to other planning systems. The key figure fields planned in other systems must be hidden.
- Filtering occurs via ALE field conversion.
- The key figure fields which cannot be maintained must be set to "/".
- To determine the relationships between of IDoc fields and application fields, execute the function Maintain IDoc type in the chapter **Enhancements ->IDoc types**.
- Enter the message type and, in the **Environment** menu, choose the menu option **IDoc type/application fields**.

- For distribution, you must define the model, the partner profiles and so on.
- Customizing in this book should be carried out for the message types **LIPxxx**.

For this scenario, the following data must be distributed to all participating systems:

Master Data

- Material master (core data)
- Product group master (in material master)

Control data

Description	Object
Company code	V_T00
Plant	T00W
Fiscal year variant	T009
Units of measurement	T006*
Language	T002
Sales organization	V_TVKO
Distribution channel	V_TVTW
Division	V_TSPA

Standard tasks

To ensure that work items are generated should an error occur, the following standard task must be assigned to items or to workflow organizational units.

Standard task: ID code	Description
SOPGEN_Error	SOPGEN Inbound error

Production Program Reporting

This section describes the settings which must be made for reporting on *Cross-system planning situation*. You can use this business process if you have created a material in several systems and you want to run a cross-system report on the current production planning situation of this material.
For more information about this business process and the required refer to the section Production planning -> Master production scheduling in "ALE Introduction and Overview".

Activities

Define the ALE settings for partner profiles using message type **PRODPL** with IDoc type **SYNCHRON**.

Master Data and Control Data Distribution

You have created the material master of the material in question in all the participating systems.

Further notes

You must define the partner profiles even though no IDoc is being sent.

Product Costing

This section describes the settings you must maintain for the distribution of the costing results cost component split.

Activities

Customizing needs to be carried out for message type **COPCPA**.

The following data must be distributed to all participating systems:

Master data

- Material master (accounting view and costing view)

Control data

Object ID	Description
OMWC	C MM-IV Separate material valuation
V_00K_K	Account determination for Valuation areas
V_02K	Account category reference
V_CK0	Costing type
V_CK03	Costing variants
V_CK0	Valuation variants
V_CK6	Date control
V_CK24	Transfer control
V_T00W	Plants
V_T006D	Dimensions for units of measurement
V_T006I	ISO codes for units of measurement

Standard Tasks

Maintain assignments for the following standard task:

Standard task	Description
00002	COPCPA_Error

Further notes

You can find further information in the Implementation Guide under **Controlling -> Product cost controlling -> Product cost planning**.

Stock Transfer Between Distributed Systems

In this section of the IMG, the settings necessary for the scenario **Transfer between distributed systems** are outlined.

The Customizing and the processing of master data are discussed.

Consistency checking

The function in this chapter checks the consistency of your settings. We recommend that you make use of this consistency checking when you make the relevant settings.

Execute the function in the purchasing system. This allows you to check whether the settings between the systems are correctly maintained for the message types that are required. Check the application consistency for the sending system and the 'ORDERS' message.

To perform the consistency check, you have to create a variant of the RBDMMSD report.

The check tests the settings for the 'Stock transfer between distributed systems' scenario and the 'Separate sales' scenario. For that reason, you can ignore the warning message that no variant for report RBDSDMM exists. This variant only tests the settings for the 'Separate sales' scenario.

If you double-click on one of the lines of the consistency check log, you will enter the corresponding Customizing transaction and you can make the necessary settings there.

Before you can do this, it is necessary that you have maintained the **partner profiles** in all the relevant systems.

Partner profiles

The partner profile settings can be generated from the customer distribution model. Please see the section entitled Communication in this IMG.

The message types are as follows:

Message type	**Meaning**	**Input & output parameters**
ORDERS	purchase order	output purchasing system and input shipping system
ORDCHG	purchase order change	output purchasing system and input shipping system
ORDRSP	order acknowledgement	output shipping system and input purchasing system
DESADV	shipping notification	output shipping system and input purchasing system
INVOIC	invoice	output shipping system and input purchasing system

The intermediate document type **ORDERS0** or **ORDERS02** must be set in both cases when setting the output parameters.

Example

- In this scenario, the purchasing system in system A should procure goods via purchase orders in system B. The purchasing system sees the shipping system as a vendor; the shipping system sees the purchasing system as a customer.
- The messages which go from system A to system B are: purchase order and purchase order change;
- The messages which come back are: order confirmation, shipping notification and billing document. It is not strictly necessary for the - shipping notification to be returned.

Maintaining the customer distribution model

You should use **customer** or **vendor** as the filter object

when maintaining the customer distribution model with the PC Tool. For

numeric values, specify the number with leading zeroes.

Settings in the purchasing system

Message control

MM Customizing

- The message control has to be set up for the outgoing messages (purchase order, purchase order change).
- The standard uses the **NEU** output type.
- Proceed as follows to set up the message control:
- The NEU output type is defined in client 000. Copy the NEU output type - to other clients if necessary.
- The RMBEF message determination schema must be assigned for purchase orders.
- The NEU message must be allocated to the RMBEF schema.

You can find more information on setting up message control in this IMG in the section called Messages -> Output control in the **Purchasing** book.

Shipping notification input

To ensure that the shipping notification can be posted via ALE, you must use a confirmation control key in purchasing.

For more detailed information on this, please refer to the Purchasing Implementation Guide, chapter Shipping notification -> Set up confirmation control.

Invoice verification

For incoming invoices, the following must be set up:

- which company code and
- which document type and default control key (program parameters) are to be used in the document. Please refer to the Implementation Guide, section Invoice verification -> EDI in the chapter on materials management.

Error processing

To ensure that work items are generated for error processing should an error arise, the standard tasks listed below must be assigned to positions or workflow organizational units.

Standard task: ID code	**Description**
ORDRSP_Error	ORDRSP inbound error
DESADV Error	DESADV inbound error

INVOIC_MM_Err	INVOIC inbound error MM

You can find more information on this in the menu: Error handling

Settings in the shipping system

Message control

SD Customizing
Message control must be set up correspondingly for the outbound messages (order response, shipping notification and billing document). You can find information on this subject in the Implementation Guide: Sales and Distribution -> Basic functions -> Messages -> Message determination -> Message default via condition technique.

Assignment to sales area

The sales area must be determined for incoming sales orders (purchase orders). A description of how to set this up is given in the Sales and Distribution Implementation Guide Electronic Data Interchange -> EDI messages. Choose **Configuration EDI** (transaction VOED) in the popup and then choose the menu function **Partner -> Application -> Customer/vendor**.

The reassignment of partner numbers is not necessary in 3.0, since you can store your own number with the partner in the customer master or in the vendor master. You can find more information on this in the section called **Master data for purchasing and shipping**.

Processing of warnings

When an order arrives you can make settings which determine the system's response to certain errors. In the Sales and Distribution chapter of the Implementation Guide, Electronic Data Interchange -> EDI messages, choose **Define exception processing** (transaction SMME).

Error processing

To ensure that work items are generated for error processing should an error arise, the standard tasks listed below must be assigned to positions or workflow organizational units.

Standard task: ID code	Description
ORDERS_Error	ORDRSP inbound error
ORDCHG_Error	ORDCHG inbound error

Master data for purchasing and shipping

Business partners

- Create the customer "purchasing" and the vendor "shipping". The customer must exist in the shipping system, and the vendor in the purchasing system
- For the customer "purchasing", specify "shipping" as the "separate number for partner". (View: 'purchasing', field: 'Account w. customer').
- For the vendor "shipping", specify "purchasing" as the "separate number for partner". (View: 'correspondence', field: 'Account w. vendor').

Purchasing information record

- The material number of the partner must be maintained in the purchasing system, even if the material numbers in the two systems are identical.
- You make sure of this by creating a purchasing information record in the purchasing system.
- Alternatively this can be maintained in the sales information record.

Messages conditions record

- Purchasing system
  You must create a messages conditions record for the purchase order for the NEU output type. You use the following key combination to do this: 'document type / purchasing organization / vendor'.
  Specify the following parameters for the messages conditions record:
- Document type: 'NB'
- Transmission medium for message: 'A' (ALE)
- Other settings: as required
  The messages conditions record is created in the menu: **Logistics -> Materials management -> Purchasing -> Master data -> Messages -> Purchase order -> Create**.
- Shipping system
  You must create messages conditions records for the following document types:
- . Sales document: Output type BA00
- 2. Shipping: Output type LAVA
- 3. Invoice: Output type RD00
  You can use the following key combination for these output types: 'Sales organization / customer number'.
  Specify the following parameters for the messages conditions record:
  Transmission medium for message: 'A' (ALE)
  The messages conditions record is created in the menu: **Logistics -> Sales/distribution -> Master data -> Messages**

Conversion of text keys for purchase order texts / order texts

The text keys used in purchasing are different from those used in sales. If the purchase order texts are also to be copied over in a purchase order, then the text keys have to be converted. This is done using the Conversion. For the purchase order (ORDERS) and the purchase order change (ORDCHG) the conversions have to be performed for the document header text and for the document line item text. Create one conversion rule for the document header (segment EEDKT) and one for the line item (segment EEDPT). For the receiver field **TDID** use the allocation rule **GROUP** with the sender field **TDID** and specify the following conversions:

For the header segment (EEDKT)

from	**to** F0	000
F02	0002	
F03	0003	
F04	0004	
F0	00	
F06	002	

F07	003
F08	004
F09	00
F	006
F2	300
F3	008
F	009
F6	000

For the line item segment (EEDPT):

from	**to**	
F0		0002
F02		0007
F03		000
F04		0004

After doing the rule maintenance you have to assign the conversion rules to the **ORDERS** and **ORDCHG** message types. Specify for each of these the sender and receiver systems and also the segment types and the conversion rules you created for these.

Customer enhancements

The following options are available for customer enhancements:

Application	**Message type**	**Customer Exit**	**User Exit**
Purchasing		MM06E00	
Invoice verification			FEDI000
Sales	ORDERS	VEDA000	LVEDAF0U
	ORDCHG		LVEDBF0U
	ORDRSP	SDEDI00	
Shipping	DESADV	LVED2FZZ	
Billing	INVOIC	LVEDF00	

Separate Sales and Shipping

This section of the IMG contains a description of the settings required for the **Separate sales** scenario in connection with **Transfer between distributed systems**.

Only those settings required in addition to the scenario **Transfer between distributed systems** are included.

Consistency Check

The function in this section checks the consistency of your settings. We recommend that you make use of the consistency check when you make your settings.

Execute the function in the sales system. This allows you to check whether the settings between the systems are correctly maintained for the required message types. Check the application consistency for the delivery system and the 'ORDERS' message.

To perform the consistency check, you have to create a variant for the RBDMMSD and RBDSDMM reports.

If you double-click on a line in the consistency check log, you will enter the corresponding Customizing transaction and you can make the necessary settings here.

Before you can do this, you have maintained the **partner profiles** in all the relevant systems.

Example

In this scenario, purchase orders should be created automatically when

In this scenario, purchase orders should be created automatically when sales orders are created in the remote sales system, and these purchase orders should be sent to another shipping system.

Both third-party orders (delivery from the other shipping system directly to the customer) and standard orders (delivery to the remote sales system) are supported.

The purchase order is then created automatically if the ALE indicator is maintained in the item category. This is the case for the item categories that are supplied by SAP as the standard for distribution.

Examples of item categories in the standard system are:

- For third-party orders **ALES**
- For standard purchase orders **ALEN**.

You can also set the ALE indicator for your own item categories. You do this in the Implementation Guide in the section Sales and Distribution -> Sales -> Sales documents -> Sales document item -> Define item category.

The decentral sales system can invoice the customer when the shipping notification has been sent from the shipping system to the sales system. If the shipping notification does not get sent (because of the Customizing settings), then customer does not get invoiced until the internal invoice has been sent.

Customizing in Remote Sales System

Determining Purchase Order Dates

So that the purchase order can be created automatically, the purchasing organization used, the purchasing group and order type must be maintained. You will need to maintain the vendor only if you allocate just one shipping system to the sales system.

This is done in the sales organization maintenance. For more information on this, please refer to the Implementation Guide: Corporate structure -> Definition -> Sales and Distribution -> Create sales organization.

Starting Billing (only for the third party case ALES)

So that billing in the remote system is carried out after the delivery by the shipping system, shipping notification must be sent from the shipping system to the remote sales system. In inbound processing, a goods receipt must be created automatically for the purchase order.

To make this possible, the plant, the storage location and the movement type for the goods receipt is determined for each sales organization. That is also carried out in sales organization maintenance

If you want the goods receipt to initiate billing, you must make settings for the pair "order type; position type" so that the billing quantity is equal to the goods receipt minus the quantity already invoiced. For more information on this, please refer to the Implementation Guide of Sales and Distribution in the section: Invoicing -> Invoices -> Define document flow for invoices. If you perform the function, choose **Copy control: Sales document according to invoice** in the pop-up window.

Message Control

The forwarding of the order confirmation to the customer can be set up via the message control. You use the message type BA00 to do this. In this case, the confirmation is only dispatched in the standard system if all the schedule lines of the sales order have been confirmed by the shipping system.

Error Processing

If errors occur during the automatic creation of purchase orders or changing of purchase orders, a work item is generated.

The standard tasks listed below must be assigned to positions or workflow organizational units.

Standard task: ID code	Description
SD_PO_Err	Error: Purchase order not created
SD_PO_ChgErr	Error: Purchase order not changed

Settings in Remote Purchasing System

If you want to assign more than one shipping system to the sales system, there must be purchasing information records present in the master data of the purchasing system. For each material you can decide on a shipping system by allocating a fixed vendor (= shipping system) to a material master record.

By using a Customer Exit in the SDALE00 enhancement, it is possible to allow several vendors for a material.

Settings in Central Sales and Shipping System

Message Control

MM Customizing

For a third-party deal, the remote sales system can obtain information on the delivery to customers via a shipping notification. To do this, set up message control for the delivery in the shipping system in such a way that the shipping notification is sent to the sold-to party, instead of to the ship-to party.

The following are used as message types:

Message	Message type
Shipping notification	LALE(to sold-to party)

Master Data and Control Data

For this scenario, the following master data must be distributed to all participating systems:

- Material master
- Customer master record

Purchasing: Distributed Contracts

In this section of the IMG, the settings are described which must be maintained for purchasing if contracts are to be distributed.

Consistency checking

The function in this chapter checks the consistency of your settings.

We recommend that you make use of this consistency checking when you make the relevant settings.

Execute the function in the purchasing system. This allows you to check whether the settings between the systems are correctly maintained for the message types that are required. Check the application consististency for the decentral sales systems and the 'BLAORD' and 'BLAOCH' messages.

If you double-click on one of the lines of the consistency check log, you will enter the corresponding Customizing transaction and you can make the necessary settings there. Before you can do this, it is necessary that you have maintained **partner profiles** in all the relevant systems.

Settings which must be made in the application so that distribution can be carried out are described in the MM release notes and in the IMG for Purchasing.

Make the following settings:

1. Use a new contract category for the distributed contracts. Contract distribution is controlled via the contract category, that is, the contract category in the customer model determines the systems to which contracts with a certain contract category are distributed (Specify document types and number ranges).

2. During contract distribution, you will have to coordinate the number ranges (Specify document types and number ranges):

   - in every remote system, the number range for external number assignment must be set up for every contract category affecting distribution in such a way that it includes the number ranges for both the internal and external number assignment of the central system.

   - in the central purchasing system, the number range for the local release orders must be maintained for every contract category affecting distribution.

3. Contract distribution in the central system is carried out via message control:

   - use message type VNEU for contract distribution. Message type VNEU is defined in client 000. Copy message type VNEU into other clients, if necessary.

   - So that message VNEU is proposed via message determination during contract entry, message determination procedure RMBEV must be assigned for contracts.

   - The VNEU message has to be assigned to the RMBEV schema. The assignment is defined in client 000. Copy the assignment to the corresponding clients where necessary.

4. Also create a message condition record for message type VNEU with the key combination "Output determination in Purchasing: document type".
   Enter the following parameters for the message condition record:
   1. Document type = contract type relevant to distribution
   2. Transmission medium of message = 'A' (ALE)
   3. Shipping date = '4' (immediately)

   The message condition record is created in the menu function **Logistics -> Materials management -> Purchasing -> Master data -> Messages -> Outline agreement -> Create**.

5. For the following message types you have create partner profiles for this scenario:

Mess. type	Comment		Cent.Purch Dec.Purch.
BLAORD	Create contract		(output) (input)
BLAOCH	Change contract		(output) (input)
BLAREL	Communicate rel.orders	(input)	(output)

6. If you made the settings yourself, you can check the consistency of the control data in the central system for the message types BLAORD and BLAOCH. Refer to the ALE Implementation Guide: Communication -> Check consistency against the customer model.

For this scenario, the following data must be distributed to all participating systems:

Master data

- material master
- vendor master

Control data

Description	Object
Company code	V_T00
Purchasing organization	V_T024E
Purchasing group	V_024
Contract type	OMEF
Incoterms	V_INC
Terms of payment	V_T02
Shipping instructions	V027A
Tax indicator	FTXP

Standard tasks

In the remote systems, maintain the assignments for the following standard tasks:

Standard task	Description
BLAORD_Error	
BLAOCH_Error	

In the central system, maintain the assignments for the standard task: BLAREL_Error

Customer enhancements

The customer enhancements in Purchasing are implemented as customer exits. To find out exactly how to use each customer exit, please refer to the documentation of the component in question.

The following customer exits are available:

- Contract distribution (message type BLAORD/BLAOCH)
- Outbound processing
  Customer exit '00' in enhancement 'MM06E00' for entering data in the extension type in the control record of the Intermediate Document.
  Customer exit '002' in enhancement 'MM06E00' for entering data in the data segments in the IDoc.

- Inbound processing customer exits '00', '002', '003' in enhancement 'MM06E002' for the evaluation and import of IDoc data.

- Distribution of release order documentation (message type BLAREL)
- Outbound processing

  Customer exit '00' in enhancement 'MM06E00' for entering data in the extension type in the control record of the Intermediate Document.

  Customer exit '003' in enhancement 'MM06E00' for entering data in the data segments in the IDoc.

- Inbound Processing

  Customer exit '004' in enhancement 'MM06E00' for the evaluation and import of IDoc data.

Further notes

If contracts are created with a purchasing organization which has no plants assigned to it (possible in central purchasing), then error message 06 794 might be issued: 'There is no work that could release from the contract item'.

You can control what type of message (warning or error) is issued or whether a message is to appear at all in the Implementation Guide Materials management -> Purchasing -> Environment data -> Determine attributes of the system messages.

Logistics <-> Logistics - Information Systems

This section contains ALE business processes in which data is exchanged between Logsitics information systems and Logistics systems.

Cumulative Data Transfer

When aggregated data is exchanged the information is summarized and transported in information structures. It is no longer possible to access single documents in the receiving system.

Activities

If you have opted for aggregated data exchange, proceed as follows:

- Determine the information structure to be used in cumulative data exchange.

- Remember that the characteristic areas between the logistics systems must be mutually exclusive, otherwise data will be overwritten in all directions.

- This is possible, for example, if you:

- Include the logical system in the information structure;

- Carry out derivation using the corresponding standard formula in the SAP Standard System.

- The information structure must be identical in each of the participating systems.
- Afterwards, generate the message type for the information structure. Follow the instructions in the IMG of the Logistics Information Services, section Application Link Enabling (ALE). (Logistics general -> Logistics Information System -> Scheduling -> Functions -> Application Link Enabling (ALE)).

- LIPxxx (xxx = number of information structure, for example, LIP096) is assigned as the name of the message type.
- The IDoc type used is **SOPGEN0**.
- The message type must be identical in each of the participating distributed systems.
- Specifications in the transmitting systems:
- Determine the copy plan version that is used internally.
- Schedule the "info structure upload" as a periodic
- background job (for example, once a day). You can do this via: **Logistics -> Central functions -> Distribution**, followed by the menu option **Applications -> Logistics information system -> Info structure upload**.
- Furthermore, you must define the model, the partner profiles, and so on.

Standard tasks

To ensure that work items are generated should an error arise, you must assign the following standard task to positions or workflow organizational units.

Standard task: ID code Description

SOPGEN_ErrorSOPGEN Outbound error

Further notes

For more information on the precise steps involved, refer to the Implementation Guides of the Logistics information systems and of Sales and Operations Planning.

Inventory Information System

In this section, the settings are described which must be maintained for Inventory Controlling if distribution is to be carried out.

Requirements

The definition of the updates groups decides whether a logistics document is statistically relevant or not. You require settings in the Implementation Guide of the Logistics Information System. You must make these settings there.

Activities

The Customizing in this book is to be carried out for the message type **INVCON**.
The following data must be distributed for this scenario to all participating systems:

master data

- material master
- cost centers

Control data

Object	Description
V_T00	company code (core view)
V_TGSB	business area
V_T00O	global company code
V_TGSBG	global business area
V_TKA0	controlling area
V_T00W	plant/branch (core view) plant - company code allocation (via valuation area)
V_TSPA	division
V_T00L	storage locations
V_T002	languages
V_T00	country definition
V_CURC	currency codes
V_T006D	dimensions for units of measurement
V_T006I	ISO codes for units of measurement
V023	material group
V024D	coordinator
T34	material type

Standard tasks

To ensure that workitems are generated for error processing should an error occur, you must assign the following standard task to positions or workflow organizational units.

Standard task: ID code	Description
INVCON_Error	INVCON Inbound error

Purchasing Information System

In this section, the settings are described which must be maintained for the Purchasing Information System if distribution is to be carried out.

Requirements

The definition of the update groups determines whether a logistics document is statistically relevant or not. You require settings in the Implementation Guide of the Logistics Information System. You must make these settings there.

Activities

The ALE Customizing for this scenario is to be carried out for the message type **EKSEKS**.

The following data must be distributed for this scenario to all participating systems:

master data

- material master

- supplier master
  control data

Object ID	Description
V_T00	company code (core view)
V_T00O	global company code
V_T00W	plant/branch (core view)
V_T024E	purchasing organization
V_024	purchasing group
	plant - company code allocation

(via valuation area)

V_TSPA	division
V_T00L	storage locations
V_T002	languages
V_T00	country definition
V_CURC	currency codes
V_T006D	dimensions for units of measurement
V_T006I	ISO codes for units of measurement
V023	material group
V024D	MRP controller
V_T63	item category (T63)

Standard tasks

To ensure that workitems are generated for error processing should an error occur, you must assign the following standard task to positions or workflow organizational units.

Standard task:ID code	Description
EKSEKS_Error	EKSEKS Inbound error

Sales and Distribution Information System

In this section, the settings are described which must be maintained for the Sales Information System if distribution is to be carried out.

Requirements

The definition of the update groups determines whether a logistics document is statistically relevant or not. You require settings in the Implementation Guide of the Logistics Information System. You must make these settings there.

Activities

Customizing in this book is to be carried out for the following message types:

Message type	Note
SISCSO	create / change sales order
SISINV	create / change invoice
SISDEL	create / change delivery

The following data must be distributed for this scenario to all participating systems:

Master data

- material master
- customer master record

Control data

Object	Description
V_T00	company code (core view)
V_T00O	global company code
V_T00W	plant/branch (core view)
	valuation level plant - company code allocation (via valuation area)
V_TVKO	sales organization
V_TVTW	distribution channel
V_TSPA	division
V_TVBUR	sales offices
V_TVKGR	sales group
V_TVST	shipping point
V_T002	languages
V_T00	country definition
V_CURC	currency codes
V_T006D	dimensions for units of measurement
V_T006I	ISO codes for units of measurement
V023	material group

Standard tasks

To ensure that workitems are generated for error processing should an error arise, you must assign the following standard task to positions or workflow organizational units.

Standard task: ID code	Description
SISCSO_Error	SISCSO Inbound error
SISDEL_Error	SISDEL Inbound error
SISINV_Error	SISINV Inbound error

LO <-> HR

This step contains the ALE business processes in which logistics and human resources data is exchanged between systems.

Set Business Event Billing

This section contains a description of the settings required for the **Billing business events** scenario.

Maintenance of the distribution model

In order to ensure communication between the systems during distribution, you must enter the following using *Add Method* when you maintain the distribution model:

- Client: HR System
- Server: required Sales and Distribution (SD) system

- Object : ItCustBillingDoc
- Object Type: VBRK
- Method : CreateMultiple

- Object : ItCustBillingDoc
- Object type: VBRK
- Method : GetList

- Object : ItCustBillingDoc
- Object type: VBRK
- Method : Cancel

- Object: PaymentCardServices
- Object type: BUS606
- Method: Checknumber

Partner profile

You can generate partner profile settings from the distribution model. For more information on this, see Generate Partner Profiles in the Implementation Guide.

HR Customizing

Carry out the steps in the Billing section in Customizing for Training and Event Management.

Master Data for the HR System

To carry out billing in Training and Event Management, the SD organizational data **sales organization, distribution channel, and division** must be distributed.

In addition, the **sales document type, billing document type, item category, condition type**, and the **account assignment group 'material'** must be distributed.

Further notes

For further information on this ALE Business Process, see the Application Help for Training and Event Management under "ALE Business Processes in Training and Event Management" -> "Billing Business Events".

Business Event Attendees: Set Up Customer

This section contains a description of the settings required for the **Business event attendee: customer** scenario.

Customer master data

In this scenario, you use ALE to determine the RFC destination of the LO System from the distribution model for reading customer master data. The data is transferred synchronously by RFC, and no IDocs are transmitted.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must choose *Add method* in the Maintain Distribution Model step to make the following entries:

- Client: The HR System
- Server: The required Logistics System
- Object: Customer
- Object type: KNA
- Method: CheckExistence

You cannot use filter objects. There is usually little point in converting field contents. All existing segments must be transferred. Otherwise, incomplete data is transferred to the HR System.

Settings in customer distribution model

When specifying the object method, you must define HR as the sending system and LO as the receiving system. This defines the required communication flow between the two systems.

If no customer distribution model has been maintained, access is local. See also: Master Data Distribution.

Further notes

For more information on this ALE business process, call the "Application help" for Training and Event Management and choose "ALE business processes in Training and Event Management" -> "Business Event Attendee: Customer".

Business Event Attendees: Set Contact Persons

This section contains a description of the settings required for the **Business event attendee: contact person** scenario.

Contact person

In this scenario, you use ALE to determine the RFC destination of the LO System from the distribution model for reading contact person data. The data is transferred synchronously using RFC, and no IDocs are transmitted.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must choose *Add method* in the Maintain Distribution Model step to make the following entries:

- Client: The HR System
- Server: The required Logistics System
- Object: BusPartnerEmployee
- Object type: BUS00600

- Method: CheckExistence

You cannot use filter objects. There is usually little point in converting field contents. All existing segments must be transferred. Otherwise, incomplete data is transferred to the HR System.

Settings in customer distribution model

When specifying the object method, you must define HR as the sending system and LO as the receiving system. This defines the required communication flow between the two systems.

If no customer distribution model has been maintained, access is local.

Further notes

For more information on this ALE business process, call the "Application help" for Training and Event Management and choose "ALE business processes in Training and Event Management" -> "Business event attendee: contact person".

Set Up Material as Resource in Training and Event Management

This section contains a description of the settings required for the **Material as a Resource in Training and Event Management** scenario.

Material master data

In this scenario, you use ALE to determine the RFC destination of the LO System from the distribution model for reading the material master data. The data is transferred synchronously by RFC for reading material master data.

Material can be ordered for training and events. According to the availability of material an order request will be generated. In shared systems data will be sent by IDOCs.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must choose *Add method* in the Maintain Distribution Model step to make the following entries:

- Client: the HR system
- Server: the required Logistics system
- Object: material
- Method: CheckExistence

There is no provision for the use of filter objects. In general, it is not a good idea to convert field contents. All existing segments must be transferred. Otherwise, incomplete data is transferred to the HR System.

Settings in customer distribution model

When specifying the object method, you must define HR as the sending system and LO as the receiving system. This is necessary for the communication flow between the two systems.

If no customer distribution model has been maintained, access is local. See also Master Data Distribution.

HR Customizing

Call Customizing for Training and Event Management, and perform the steps included in the Materials Management section.

Further notes

For further information on this ALE Business Process, see the Application Help under ALE Business Processes in Training and Event Management -> Material order.

Set Up Confirmations from PP/PI/PM/CS/PS

This section explains the settings that are required for the **Transfer Logistics Confirmations to Human Resources (HR)** scenario.

Procedure

For more information on the general procedure for integration with Logistics, see the **Plant Data Collection** section of the Implementation Guide (IMG) for Personnel Time Management. Only the details concerning distributed systems are described in this section.

Procedure in Logistics: Sender System

Report CORUHRTR reads confirmations in the Logistics system and puts them in intermediate documents (IDocs).

Procedure in Human Resources (HR): Receiver System

When IDocs are recieved, input processing is triggered automatically. Input processing writes the data from the IDoc either in interface table LSHR or in EVHR. Assignment takes place depending on the record type sent with the IDoc. If an assignment cannot be made because of incorrect data records, the records can be corrected from the Time Management work list.

When processing work time events from table EVHR, time pairs are formed from which the duration (length of time) of the activities is determined.

Pair formation is also carried out in Logistics, however, the individual employee work schedules are not taken into consideration. The resulting difference is then calculated in SAP Time Management and then transferred to each Logistics system.

Maintaining the Distribution Model

To ensure communication between the systems during distribution, the following entries must be made in the *Insert method* step in the Maintain Distribution Model section of the IMG for Distribution (ALE).

- Client: Logistics system (required)
- Server: HR system
- Object: TimeMgtConfirmation
- Method: Post

The object method is based on Report Type HRCNF and belongs to Object BUS7003.

Avoid using filter objects or converting field contents. All existing segments must be transferred otherwise the information transferred to the HR system is incomplete.

Partner Profiles

You can generate partner profiles from the distribution model. Refer to the Generate Partner Profiles step in the IMG for Distribution (ALE).

In addition, you must distribute the model to the partner system. To do so choose, *Maintain distribution mode -> Edit -> Model view -> Distribute*.

After the model is distributed, you have to Generate Partner Profiles in the **Partner system**.

Settings in the Logistics System

Logistics Customizing

Carry out the following steps in the *Confirmations* section in each of the Logistics systems in Customizing.

- Make sure the indicator *No HR Update* is not activated in the *Define Parameters* step.
- Confirmations in Logistics are transferred by Report CORUHRTR to HR. To set up an automatic transfer, plan a batch input session in the **Set Process Time for the Confirmations Process** step.
- If specific confirmations from the **Production Planning - Process Industry** (PP/PI) are to be transferred, a maximum of six possible activity types must be determined for the five activity types in Incentive Wages. Make the settings in the *Define standard value key* step. To edit this step, choose **Production -> Basic Data -> Work Center -> General Data -> Standard Value**.

Settings in HR System

HR Customizing

Make the following settings in Customizing for Personnel Time Management in the Plant Data Collection section of IMG.

Carry out the appropriate steps depending on whether you want work time events or work durations to be transferred.

Work Time Events from Logistics

- Carry out the Process Work Time Events step.
- If the work time events posted are processed in Incentive Wages, then carry out the activities in the *Transfer of Data to Incentive Wages* step.
- If the corrected actual times should be automatically transferred to Logistics, then carry out the Process Work Time Events step and schedule the report RPTIST00.

Working Time Durations from Logistics

Confirmations of this type can be posted as attendances or as time tickets in Incentive Wages. Maintain the following steps in their applicable sections:

- Transfer Confirmations as Attendances
- Transfer Confirmations to Incentive Wages

Error Handling

If errors occur during the batch input session run during HR input processing, you can correct them from the *Time Management Pool* in SAP Time Managment.

Master Data for Logistics

In order to transfer confirmations, you must also have employee-related data from Logistics transferred to HR. In the Master Data Distribution section (Link to a separate HR section) of the IMG for Distribution (ALE), you can access further information regarding the way in the Logistics system retrieves corresponding employee data from HR.

- Infotypes 0000 and 000 are required to validate the **personnel number**.

- Infotype 000 is required to **Validate personnel number** and **Confirm personnel number from ID number**.

Control Data for Logistics

In order for person-related confirmations to be recorded in Logistics and transferred to the HR system, several of the control tables must be identical in both systems. How the required control tables are created and distributed for a report type is described in the Synchronization of Control Data section of the IMG for Distribution (ALE).

Therefore, the content of the following HR tables should be copied to Logistics:

The **Incentive Wages: Wage Types Permitted for Each TT Type** (V_T703K) table is required for validation of wage type.

The content of the table is normally copied using the transfer transaction.

Further notes

Supported Release Status

- Logistics 4.0 and HR 4.0:
  Proceed as described above.
- Logistics 3 and HR 4.0:
  Use the scenario described in the 3 system to transfer confirmations to HR. In Release 3, only work time durations can be transferred. The transfer of work time events is not supported.

Release Upgrade

As of Release 4.0A, you should complete the following reports **before** distributing the system to avoid extensive runtimes.

- Remaining data from the old interface table AFRUHR must be edited for work time durations. To do so, carry out the following reports:
- *Read interface file and create session* (RPWI 000)
- *Integration with Logistics: Reorganize interface file* (RPWI 4000)
- The TEVEN_MORE table must be completed with data from the AFRU Table for work time events. To do so, carry out Report *HR-TIM: KK2 carry out TEVEN_MORE AFRU* (RPU 40A7).

Daily Work Schedule at Logistics Work Center

This step explains the settings required for the **Set Daily Work Schedule for Logistics Work Center** ALE business process.

Requirements

The systems must be set up in the Prepare Sending and Receiving Systems section of the ALE Implementation Guide.

Standard settings

- Maintenance of distribution model You cannot use filter objects.

- Control data for Logistics System
  Human Resource (HR) daily work schedules are reported on in the Logistics System using replicated Customizing data.

Activities

To ensure that **daily work schedules** and **break schedules** can be read in the Logistics System, the following control tables must be identical in both systems:

- 'Daily Work Schedule' (V_T0A)
- 'Work Break Schedule' (V_T0P)

Table contents are normally copied using the transport system.

Availability of Employees in Logistics

This step describes the settings required for the **Set Availability of Employees in Logistics** ALE business process.

Requirements

You need to have maintained the Basic Settings in Customizing for Distribution (ALE).

Standard settings

Filter objects cannot be used. Converting field contents is rarely useful. You must always ensure that all available segments are transferred. If this is not the case, incomplete information is transferred to the HR System.

- Settings in the Logistics and HR Systems Special settings are not required in either system.

- Master data for the Logistics System
  The SAP system automatically distributes the HR master data of the HR System to the Logistics System.

Recommendation

Partner profile settings can be generated from the distribution model. See the Prepare Sending and Receiving Systems step in the Implementation Guide.

Activities

To ensure communication between the external system and R/3 Personnel Time Management, you must perform the Maintain Distribution Model step to make the following entries using the add method function:

- Client: Required Logistics system

- Server: HR system

- Object: TimeAvailSchedule
- Method: Build

Qualifications and Requirements Profiles in Logistics

In this section, the settings required for the **Set qualifications and requirements profiles in Logistics** ALE business process are explained.

Requirements

If you want to use this ALE business process, the organization model must be distributed.

Settings can be made in the **Prepare Sender and Receiver Systems** in the ALE IMG.

Recommendation

If you require further information on the distribution of HR organizational data and HR master data, see the Master Data Distribution section.

Activities

If you want to set **qualifications and requirements profiles in Logistics**, the listed HR object types and infotypes must be distributed as follows:

- Qualification: Object type Q, Infotype 000, 00
- Requirements profile: Object type QP, Infotype 000, 00

Set Work Center Integration

In this step, settings required for the **Set work center integration** ALE business process are explained.

Requirements

Settings can be made in the **Prepare Sender and Receiver Systems** chapter of the ALE IMG.

Recommendation

For more information on distributing HR organizational data and HR master data, refer to the Master Data Distribution section of the Implementation Guide (IMG).

Activities

Settings in Logistics and Human Resources

To integrate work centers, the listed HR object type and HR infotypes must be distributed as follows:

Work center: object type A, infotype 000, 00

To create an HR work center in Logistics, use internal number ranges for the **RP-PLAN** number range object.

When you create number ranges, make sure that the numbers in the two systems are different. Overlapping numbers are overwritten when data is reproduced because data is distributed to both systems using this interface.

Settings are made for the **$$$** subgroup. You can restrict the subgroup to the active plan version defined previously and object type **A** (work center).

Example for plan version "0" and object type "A":

Human Resources System:

Subgroup 0 A

From number	To number	Number level
0000000	7000000	0000000

Logistics System:

Subgroup 0 A

From number	To number	Number level
700000	99999999	700000

Assignment of Employees in Logistics

In this section, the settings required for the **Assign employees in Logistics** ALE business process are explained.

Requirements

If you want to use this ALE business process, the organization model must be distributed.

Settings can be made in the **Prepare Sender and Receiver Systems** chapter of the ALE IMG.

Recommendation

If you require further information on distributing HR organizational data and HR master data, see the Master Data Distribution section.

Activities

If you want to assign persons in Logistics, the HR object type and infotypes must be distributed as follows:

Personnel number: Object type P, Infotype 0000, 000, 0002, 0003

Create Sales Personnel in HR

The sales employee (SD) can be administered as an employee in Human Resources (HR). In this case they are specially assigned (in HR) to a sales organization a sales group and a sales office. If the HR and SD components are being operated on different systems, the data of the sales employee will be edited in the HR system and replicated in the SD system via Master data distribution where it will be available for (local) evaluations.

Requirements

The relevant sales organizations, sales groups and sales offices (Customizing data) must exist in the HR system.

Activities

Ensure that the following infotypes are replicated from the HR system to the SD system using master data distribution:

- *Actions* (0000) ,
- *Organizational Assignment* (000) ,
- *Personal Data* (0002) ,
- *Payroll Status* (0003) ,
- *Addresses* (0006) ,
- *Bank Details* (0009) ,
- *Communication* (00) , - *Sales Data* (0900).

Set Partner Functions PM/QM/CS

In order to access specific partner types in PM/SM/QM, HR master data and HR organizational data must be distributed from the HR System to the PM/SM/QM System.

You must set up the distribution of the listed HR object types and HR infotypes for the following partner types in PM/SM/QM:

Organizational unit: Object type O, infotype 000
Position: Object type S, infotype 000
Personnel number: Object type P, infotype 0000, 000, 0002, 0003

If you require further information on the distribution of HR organizational data and HR master data, please refer to the section entitled Master Data Distribution.

Set Partner Functions for SD

In order to access specific partner types in SD, HR master data and HR organizational data must be distributed from the HR System to the SD System.

You must set up the distribution of the listed HR object types and HR infotypes for the following partner types in SD:

Organizational unit: Object type O, infotype 000
Position: Object type S, infotype 000
Personnel number: Object type P, infotype 0000, 0001, 0002, 0003

If you require further information on the distribution of HR organizational data and HR master data, please refer to the section entitled Master Data Distribution.

Logistics <-> Accounting

This section contains the ALE business processes in which Logistics data and Accounting data is exchanged between systems.

Distributed Credit Management

Distributed Credit Management

The system supports an ALE business process in which several local SD systems carry out active credit management against a central FI system.

An **A/R summary** is created in the FI system for this purpose. This contains a summary of all the credit information on a credit account (in a control area) necessary for the credit check in SD.

A program which you start periodically creates this A/R summary and sends it to the local SD systems based on the ALE customer distribution model. (Methods from the Business Object Repository are used for this). The data is received there and stored in the database. The checks called locally then do not run against the database (which is merely a mirror image of the local activities) but instead against the A/R summary and thus against all the open items. If the A/R summary is outdated, you can determine the current data in the FI system using a Remote Function Call.

For system performance reasons, it may make sense to run the SD credit check against this A/R summary even in a non-distributed system, as this way repeated reading of the open items is exchanged for repeated reading of the result of such an inquiry.

Data determined from the A/R summary in this way can be integrated in line layout variants in the credit overview. This makes it possible for the system to identify those credit accounts for which the credit check will report an error with the next incoming orders.

Requirements

You have a central system on which FI runs and one or more systems on which SD runs locally. One of the following conditions must also be met:

1. The local SD systems must have separate credit control areas; there must not be any multiple assignments.

2. Different customers must be assigned to each of the local SD systems; there must not be any multiple assignments.

3. The credit checks in the local SD systems may only be run for FI data (such as statistical credit limit checks without open credit values from SD, dunning levels, etc.).

ALE Customizing should be complete. You will find the specifications for maintaining the distribution model in the following section.
Maintaining the distribution model

- Object name: DebtorCreditAccount (customer credit account)
- Methods:
- ReplicateStatus (replicate credit status)
- GetOldestOpenItem (determine oldest open item)
- GetHighestDunningLevel (determine highest dunning level)
- GetOpenItemsStructure (determine open item structure)
- GetDetail (determine master data)

Maintaining partner profiles

- Message type: cresta
- IDoc type (base type): cresta0

Activities

1. Maintain table T000CM in the system in which central FI runs as follows.
   In the Financial Accounting Implementation Guide, go to Accounts Receivable and Accounts Payable and choose Credit Management -> Credit Control Account -> Define Preliminary Settings for Credit Management.
   Select the *Create A/R summary* field.
   You can find more information in the F help for the respective fields.

2. Maintain tables T000CM and T69F in all systems in which local SD runs as follows:
   In the Financial Accounting Implementation Guide, go to Accounts Receivable and Accounts Payable and choose Credit Management -> Credit Control Account -> Define Preliminary Settings for Credit Management.
   Leave the *Create A/R summary* field blank.
   Select the *Read A/R summary* field.
   You can find more information in the F help for the respective fields.

3. In the Sales and Distribution Implementation Guide, choose Basic Functions -> Credit Management/Risk Management -> Credit Management -> Define Automatic Credit Control.
   There maintain the Financial Accounting/old A/R summary checks. You can find more information in the F help.

Further notes

You distribute the A/R summary using program RFCMCRCV. You can find more information in the program documentation.

Set up Material Price Dispatch

Use

Distribution of Material Prices using Application Link Enabling (ALE)

Activities

Set up your system as described in the ALE installation procedure. This procedure can be found under *SAP Library -> SAP ERP Central Components -> Scenarios in Applications -> ALE/EDI Business Processes -> IDoc Interface: EDI Application Scenarios (BC-SRV-EDI) -> ALE Scenario: Material Master Distribution.*

Complete the following steps:

- Set up the client
- Define a logical system name for the client
- Specify the technical communication parameters

To send stock material prices, and the prices for sales order stock and project stock, you must create a distribution model for each stock type:

In the Implementation Guide, choose *SAP Web Application Server -> Application Link Enabling (ALE) -> Modeling and Implementing Business Procedures -> Maintain Distribution Model and Distribute Views*

- Choose *Create Model View*
- Enter a technical name (for example, SENDPRICE) and a description.
- Define a sender and receiver
- Position the cursor on the model view and choose *Add BAPI*
- Enter the sender and receiver system, and enter **MaterialValuation** as object and **PriceChange** as method.
- Save the distribution model

Create two more model views with objects **ValSalesOrdStock** and **ValProjectStock**, each with method **PriceChange**.

Complete the remaining steps for the ALE implementation:

- Generate partner profiles in sending system
- Distribute distribution model

- Generate partner profiles in receiving system

Once you have created the distribution models for sending material prices, you need to maintain the receiver settings in the receiving systems.

Here, you need to define the following for each valuation area:

- Whether price changes allowed if stock already exists.
  If price changes are allowed, the system creates a revaluation posting using transaction MR2.
- A threshold percentage value for relative price increases, after which a warning message will be issued.
- A threshold percentage value for relative price reductions, after which a warning message will be issued.
- A threshold percentage value for relative price increases, after which an error message will be issued. In this case, the price changes will not be accepted by the system.
- A threshold percentage value for relative price reductions, after which an error message will be issued. In this case, the price changes will not be accepted by the system.

Logistics <-> External Systems

This sections contains the ALE business processes in which Logistics data is exchanged between an R/3 System and a non-SAP system.

External Transportation Planning Systems

In the following IMG activities you configure all system parameters that are necessary for installing communication between the SAP R/3 system and one or more external transportation planning systems.

When creating a shipment in the R/3 system for normal business processes (transaction VT0), the deliveries that are planned for the shipment are selected. This process is normally undertaken manually.

If you are using an external system for transportation planning a record is selected from the deliveries in the R/3 system that are to be transported and sent to the planning system over the interface. There the deliveries are combined according to certain optimization criteria. The shipments that have been created are confirmed in the R/3 system via the interface, which then leads to the creation of the shipment documents.

In order to update documents correctly you need to synchronize the master data between both systems (e.g. customer adddress, goods issue times).
Creating and changing shipments takes place in the transportation planning system. Any other processing steps for the shipment (such as printing papers, registering the start of the transportation) take place in normal document processing in the R/3 system.

Note

Communication with external transportation planning systems is realised by ALE technology, whereby the messages to be transmitted are sent using asynchronous RFC. The logical mapping of a system takes place

over the transportation planning point and there must be a unique relationship between an external transportation planning system and a transportation planning point.

Activities

Execute the following activities in order to implement the communication with an external transportation planning system and to activate the transmission mechanism in the R/3 system:

1. Define a logical non-SAP system
   Definition of external planning system

2. Define RFC destination
   Definition of technical transmission path and destination for the communication.

3. Maintain mapping of non-SAP system to messages
   Here the messages to be transmitted (e.g. transmit delivery or shipment) are mapped to the non-SAP system defined in this step.

4. Port definition
   Determining the ALE port where the communication takes place.

5. Maintain partner profile
   Determining ALE partner profile where technical ALE parameters are maintained for individual messages for the logical non-SAP system (partner).

6. Maintain transportation planning points for external systems
   In this IMG activity an external transportation planning system is mapped to a transportation planning point.

7. Maintain material accumulation for routes
   In this IMG activity you can define which of the delivery items should be sent to the transportation planning system. It is possible to send only shipment relevant items and to cumulate the items according to predefined freight codes.

8. Maintain planning restrictions for routes
   If goods are to be sent beyond the planning area of an external system, you can use this IMG activity to define the planning borders and replacement procedures for departure or destination locations in individual routes.

9. Maintain message control for outbound deliveries
   You can initiate the transmission of delivery documents to the external system using message control. In this IMG activity you can maintain the necessary message types and procedures. You must define a separate message type for each external system.

10. Maintain change control for master data
    Transmitting changed master data can take place automatically using change control (only for customer and vendor masters). This IMG activity allows you to activate change control.

Define Logical Non-SAP Systems

In this IMG activity you can define the description and long text for the logical non-SAP system (here an external transportation planning system)

Note

Please note that maintaining the logical system is client-independent.

Example

If you wish to connect the external planning system ABC from producer SUPERTRANS as the first planning system, your entry will proceed as follows:

TPS_ABC00 Transportation planning system ABC

Additional Information

You can find additional information for maintaining logical systems in the chapter Cross-Application Components - Distribution (ALE):

Maintain logical systems

Define RFC Destination

In this IMG activity you can define the technical parameters for RFC transmission to be used for connecting to a non-SAP system. Normally an external transportation planning system is connected via a TCP/IP link.

Activities

1. Copy a new entry under the category TCP/IP links, which has the name of your logical system as an RFC destination.
2. Complete the technical specifications via link category, activation type and Gateway.
3. Test the link using the "Link test" function.

Further Information

You can find additional information about the RFC destination in the chapter Cross-Application Components - Distribution (ALE):

RFC-Define RFC destination

Maintain Allocation of Non-SAP System to ALE Output

In this IMG activity you can determine which ALE output types can be sent/received to your external transportation planning system. This mapping is necessary to allow further processing of the necessary output in the ALE functions.

You need to maintain output mapping both for the SAP system and the external transportation planning system. You need to specify outbound output for the SAP system and inbound output for the planning system.

The following output is sent by SAP to a planning system (outbound output):

- TPSDLS Transmit delivery document

- TPSLOC Transmit location master data
- SHIPPL Declare shipment status
- STATUS Status notification

The following output is sent from an external planning system to SAP (inbound output):

- SHIPPL Transmit shipment document
- STATUS Status notification

Activities

1. Enter the logical name of your SAP client in the logical system field.
   You will find additional information in the chapter on Cross Application Components Distribution (ALE):
   Assign logical system to client
2. Enter the customer distribution model. You can choose the name (e.g. TPS) which represents a grouping for your output mappings.
3. Add the previously defined outbound output (TPSDLS, TPSLOC, SHIPPL, STATUS).
4. Save your entries.
5. Return to the initial screen and specify the name of your external logical system.
6. You can use the same customer distribution model for the inbox.
7. Add the previously defined inbound output for your SAP client's logical system (SHIPPL, STATUS).
8. Save your entries.

Additional Information

You can find additional information for mapping ALE output in chapter Cross Application Components - Distribution (ALE):
Maintain customer distribution model directly.

Maintain ALE Port Definition

You can use this IMG activity to assign the logical system defined for your transportation planning system to an RFC port, which allows you to transmit output to a logical system.

Normally transportation planning systems can be connected using the transaction-based RFC. Add a port and allocate this to the logical system that you have defined.

Further Information

You can find additional information on port definitions in the chapter Cross-Application Components - Distribution (ALE):

Define port

Maintain ALE Partner Profiles

In this IMG activity you have to maintain the inbound and outbound parameters for the ALE communication partner transportation planning system. The name of the parameter is the name of the logical system that you defined, partner type is 'LS'.

Important Note

Enter the following output categories and IDocs in the 'outbound parameter':

Output category	IDoc
TPSDLS	TPSDLS0
TPSLOC	TPSLOC0
SHIPPL	TPSSHT0
STATUS	SYSTAT0

Enter the following output categories, IDocs and process codes in the 'inbound parameter':

Output category	IDoc	Process code
SHIPPL	TPSSHT0	SHIP
STATUS	SYSTAT0	STA

Further Information

You can find additional information on partner profiles in the chapter Cross-Application Components - Distribution (ALE):
Maintain partner profile

Maintain Transportation Planning Point for External Systems

There is a unique mapping between a transportation planning point and an external transportation planning system, i.e. one planning point is assigned to exactly one planning system (whereas a logical system can be assigned to several transportation planning points).

In this IMG activity, control and communication parameters are set for a transportation planning position in its linked planning system:

- Partner category and partner name of the planning system
- Message category for message control
- External number range for the shipment documents generated by the planning system
- Whether an externally generated shipment document can be changed or not
- Shipment status, where an externally planned shipment can be set to "not changeable" for the planning system
- Filter mode for sending status messages to the transportation planning system
- Text ID for shipping texts

Prerequisites

- The external transportation system must be defined as a logical system.
- You must set up an external shipment number range for the document numbers generated by the planning system.
- If an external system is assigned to a transportation planning point, you must maintain the partner category, partner number, external number range and shipment changeability fields together. None of the fields may remain blank.
- If you require that message processing for the planning system takes place while using message control (recommended setting), then you must configure your own message category for your planning system.

Activities

1. Enter partner category 'LS' and the name of the logical system of your transportation planning system as the partner number for the transportation planning point.
2. Enter the required external number range.
3. Set whether the shipment can be changed for the externally generated shipment documents. By switching this function off you can ensure that there are no inconsistencies between the shipment documents in the SAP system and those in your planning system.
4. If you wish to use message control for the communication, enter the message categories to be used by your planning system.
5. You can enter the required status, if you wish to send a message to the planning system at a certain shipment status (e.g. loading begun), to say that this shipment can no longer be re-planned.
6. If you wish to confirm the shipment messages in the planning system, whether they are incorrect or successful, set the required error mode.
7. Enter up to three text IDs for shipping texts which you would like to transmit with the planned deliveries to your planning system (e.g. shipping instructions).
8. Save the settings.

Maintain Materials Cumulation for Routes

In order to plan shipments it is not always necessary to know all the details of the material / delivery items that are to be transported. For example, it is often irrelevant to know whether two delivery items are made up of 00 litres of red and 00 litres of green paint and sufficient to know that 000 litres of paint need to be planned as shipment goods. Similar circumstances exist in the batch handling area where different batches of one material are divided up between several delivery items.

Delivery items can be combined together according to different criteria in order to provide a better overview and to reduce the volume of data to be transmitted.

- Combining or deleting delivery items depending on how transportable they are.
- Combining items with the same freight codes.

You can configure the combination (accumulation) for each combination of transportation planning point and route separately in the maintenance transaction. However they can also be configured together for one transportation planning point.

Both accumulation procedures have the following effects:

- Reducing transportable materials:

Activating this function by clicking on the relevant table field affects:

- the accumulation of a material's batch items in each header item
- the accumulation of a material's product selections in each header item
- Deletion of text and value items - Deletion of BOM items not relevant to movement. - Cumulation according to freight code:

A Maintain freight code sets and freight codes can be allocated to the combination of transportation planning point and route.

- It is not possible to determine the freight code set as this has to be predefined for the transportation/route combination. In this way the freight code can be determined together with the material freight group from the material master. The items in a delivery are cumulated according to freight code, whereby the material category is only represented in the message by its freight code. The quantities are still available in weight and volume specifications but no longer as number of pieces, etc.

If both accumulation procedures are activated, the accumulation according to shipment relevant items is executed before the freight code - related accumulation.

In this IMG activity you can maintain the planning restriction with the following resources:

- Maintain individual entries in material accumulation for the transportation planning point or a combination of transportation planning point and route.
- Enter route areas in the table (mass transaction)
- Copy route areas in the table if transportation planning point has changed (mass transaction)

Activities

- Maintain material accumulation

  a) Select the transportation planning point to be processed.

  b) If you wish to maintain the accumulation for a route, enter the route. If you wish to maintain the accumulation for all the shipments in the transportation planning point, leave the route field blank.

  c) If you wish to activate the accumulation according to freight code, enter the required freight code set. If you do not enter a freight code set, the accumulation will be deactivated.

  d) If you wish to activate a shipment relevant accumulation, click on the relevant button.

- Enter route areas in the table (mass transaction)

  Entering route areas is appropriate if you wish to carry out the same material accumulation for several routes. In the selection screen enter a transportation planning point and the routes for which you would like to add entries in the table. For each new entry you can configure a freight code set and

activate the shipment relevance. You can use a switch to select whether existing entries for the transportation planning point should remain or be overwritten.

- Copy route areas with changes to transportation planning point (mass transaction) Copying route areas is appropriate if you have several planning systems with the same material accumulation defaults and you just wish to copy the defaults. Specify the transportation planning point and the routes whose entries you would like to copy. You also need to specify to which transportation planning point the entries should be copied. You can use a switch to select whether existing entries for the transportation planning point / route should remain or be overwritten.

Maintain Planning Restriction for Routes

There are cases in which the whole shipment run is not determined by a transportation planning system for individual deliveries. If a company sends deliveries both inland and overseas it is feasible that you will need to use a planning system in order to optimize planning for the inland shipment on roads, but that shipment documents need to be generated manually using system transactions for the overseas transportation (sea routes). In this case, the transportation planning system has to be notified that the destination location abroad is not the definitive one. Instead this will be another location, to which automatic planning will be carried out (for example, the departure harbor or a border location). Similar situations can arise for purchase orders sent from shipping points outside the planning area of a transportation planning system.

In planning restrictions, you can determine which substitution procedure should be used to find a substitution location for the shipping and / or destination location of the delivery separately for each combination of transportation planning system and route.

A substitution procedure is composed of a sequence of conditions, which are checked one after the other until a valid substitution for the departure or destination has been found. Once the system has found a substitute, it changes the times specified for the location.

For example: Substitute Location for Subsequent Leg Planning

The "German Roads" planning system is used for the "North America to Hamburg" route for planning subsequent legs. Therefore, the delivery's departure point in North America, that is, outside the planning area, needs to be substituted with a suitable starting point. The following are suitable condition sequences that the determination procedure should process in sequence until it has found a substitution:

1. End of last main leg:
   If there is one or more main leg for the delivery, the system uses the destination location of the last main leg as the starting point for planning. The transportation end date is used as the journey date of the shipment.
2. End of the delivery route:
   The system uses the destination point of the delivery route, if there is one, as the starting point of planning. The departure time is determined using the delivery date and the travel time of the subsequent leg.
3. Defined points
   The system uses points defined in Customizing and the system does not determine a departure time.
4. No substitution

In this activity, you can maintain planning restrictions using the following steps:

- Maintain individual entries and substitution procedures in the table
- Insert route areas to the table (mass transaction)

- Copy route areas in the table under "Changing Transportation Planning Point (mass transaction)

Activities

- Maintain individual entries directly in the table:
  Enter the transportation planning point and the route you want to restrict in the table. Maintain the required substitution procedures and transportation connection points for the start and end of planning. Enter the required travel times for the preliminary, main and subsequent legs. The total travel time must be equal to or less than the total transit time of the route.
  You must always enter the travel times in days with two decimal places. This means that you can only specify them down to minutes. The maximum value is 99 days. Use the possible entries help to enter time values in days, hours and minutes. Because of the limited number of decimal places, you will have to allow for imprecise minute calculations.

- Maintain the substitution procedure
  Choose a substitution procedure that you want to maintain or create a new one. Maintain the condition sequence for the procedure so that it meets your requirements. You can use the existing conditions and you can also create your own. You can also use your own determination routines to substitute the location (see below).

- Enter route areas in the table (mass transaction):
  It is useful to enter route areas if you want to restrict the planning for a large number of routes that are set up according to a certain procedure.

- On the selection screen, enter a transportation planning point and a route for which you want to add entries. For the departure and destination point for each new entry, specify which substitution procedure and which defined transportation connection point should be used. You can also specify the travel times for preliminary, main and subsequent legs but only if their total exceeds the total transit time. You can also choose whether to keep or overwrite existing entries for the transportation planning point / route.
- Copy route areas with changes to transportation planning point (mass transaction): You should copy the route areas if you have several planning systems with the same planning area, for example, and you just want to copy the planning restrictions. Enter a transportation planning point and a route on the selection screen whose entries you want to copy. You must also specify for which transportation planning point you want to copy the entries. You can choose whether to keep or overwrite existing entries for the new transportation planning point / route.

Maintain Output Control for Delivery Transfers

This IMG activity allows you to configure output control for transferring the deliveries to be planned to a transportation planning system.

Configuring output control is necessary for delivery documents which have undergone shipment-relevant changes since their first transfer to the planning system. It allows them to be automatically retransferred with the changed data.

Output type 'TPSO' and output procedure 'V0TPS' are available as copy templates in the SAP standard system for connecting external transportation planning systems.

Prerequisites

In order to activate output control correctly an output type needs to be assigned to a transportation planning point.

Activities

- Copy output type 'TPSO' with dependent entries to a new output type for your transportation planning system. Set the transmission medium to '8' and the dispatch time to '3' or '4'.

- Call up the configuration for the processing programs.
  Copy the processing program for output type 'TPSO' to your newly set-up output type. Save the configuration.

- Go to the configuration for the output procedures.
  Carry out the configurations that have been executed in the template procedure 'V0TPS' for output type 'TPSO' for your own output type in the required procedure. Please use the 'Shipping Output' procedure as a standard. The requirement should be set to '40'. **Note**

If you only use one transportation planning procedure to which all deliveries should be transferred, you can leave the field for output procedure requirements empty. This means that a delivery is automatically transferred to your planning system immediately after being added. Otherwise you will have to call up transaction VT6 explicitly in order to transfer a delivery for the first time.

Further Information

You can find additional information on maintaining output in Sales and distribution - Basic Functions - Output determination:

Maintain output types

Maintain output determination procedure

Activate Change Management for Master Data

In this IMG activity you can activate the change management for master data. Master data (customer and vendor masters) are automatically earmarked for transmission in activated change control, in case you have already transmitted to an external transportation planning system with transaction VT60.

Note

Change control means that the changes that need to be transmitted in order to maintain consistent data are automatically earmarked. The changed master data document is however only transmitted once the function 'Analyse change pointers' has been called up (application menu path: Logistics - Central functions - Distribution - Periodic work - Analyse change pointers, transaction BD2). To trigger it off, enter message type 'TPSLOC'.

Restrictions

Master data is only automatically transferred for customer and vendor masters. Transportation connection points, shipping points and plants are not joined to the change interface. This data must be manually transmitted with transaction VT60 in activated change control.

Activities

Activate change control for output category 'TPSLOC'.

Save your settings.

Additional Information

You can find additional information on change control in the chapter on Cross-Application Components - Distribution (ALE):

Activate change pointer for message types

External Product Planning Optimization

Scenario Configure "External Optimization of Production Planning"

This step describes the settings required for the ALE business process **External Optimization of Production Planning**.

Example

You use the Production Optimization Interface (POI) to send data via ALE to an external optimization system (data download). There the data is optimized and transferred back to the SAP R/3 System (data upload).

You can select planned orders, production orders, or even work centers. The respective data is transferred to the external optimization program and optimized. Then the results of optimization are transferred back.

The optimization program can create, change, or delete planned or production orders as a result of optimization. It may also change quantities or dates.

To ensure that the interface functions properly, you must make various settings:

ALE Settings

Before sending data to the external optimization system, you must define the **logical system** and the **communication** in the chapter **Distribution (ALE)**.

Enter the external optimization system as the logical system.

For more detailed information, refer to the section

Set up logical system

The communication parameters determine

- RFC destination
- Port
- IDocs
- Customer distribution model
- Partner profile
- Reduction of IDocs

For more detailed information, refer to **Distribution (ALE)** under *Modelling and Implementing Business Processes, Master Data Distribution, Specify Data for Distribution*.

Planning Settings

You can use POI to exchange transaction and master data.

In order to exchange transaction data, such as planned, production, or process orders, various settings must exist:

- Scheduling type
  The scheduling type specifies how the SAP R/3 System carries out scheduling and which values are transferred to the external optimization system. For more detailed information, refer to the section Specify scheduling type.

- Scheduling level
  The interface only works with capacity requirements at the detailed scheduling level. The parameters for adjusting dates are also valid for the scheduling that is triggered by the optimization system.
  For more detailed information, refer to the section Define scheduling levels.

- Production scheduler group
  For more detailed information, refer to the section
  Set up production scheduler group

- Task list selection
  The method for selecting task lists should agree with the external optimization system if the selected task list is significant for production optimization. For more detailed information, refer to the section Select (task list) automatically.

- Detailed planning parameters

- Planned orders
  The scheduling indicator together with the specification of a scheduling horizon indicates that lead time scheduling is carried out in the R/3 System. Only once scheduling is carried out can you exchange capacity requirements between the R/3 System and the external optimization system.

- Production orders and process orders
  The scheduling type is important in this case. The scheduling type determines the order dates that are transferred to the optimization system. All other parameters should also agree with the external optimization system.
  For more detailed information, refer to the sections:
  Planned Order Control Parameters
  Production Order Control Parameters
  Process Order Control Parameters

Parameters for Data Exchange: SAP R/3 -> External Optimization System

You use these parameters to specify which data can be selected and transferred to the external optimization system. The following parameters are important for the transfer of data:

- Task list usage
  The task list usage specifies which task lists are used for the external system. Only task lists with the specified usage are selected and sent to the external optimization system. For example, a task list can be used in production or in plant maintenance.

- Task list status
  Here you limit task list selection further by specifying the status of task lists. Only task lists with the specified status are sent to the external optimization system. The status indicates the current

processing status of a task list. For example, a task list may still be in the creation phase or it can be released.

- Bill of material usage

  Here you specify which bills of material are sent to the external optimization system. Only bills of material with the specified usage are selected and sent to the optimization system. The bill of material usage specifies the areas of an enterprise in which the bill of material is used. For example, it can be used in engineering and design or in production.

- Bill of material status

  Here you limit bill of material selection further by specifying the status of bills of material. Only bills of material with the specified status are sent to the external optimization system.

  The status indicates the current processing status of a bill of material, for example: Active bill of material: The bill of material can be exploded in requirements planning and released for the planned order, for example.

  Inactive bill of material: You cannot carry out the processing options mentioned above.

- Planned order search by work centers

  Here you specify which method is used to select planned orders for the specified work centers.

  Choose a method and set the appropriate indicator:

- **V:** Selection by materials in whose production version one of the specified work centers appears. All planned orders for these materials are selected.

- **B:** Selection of all capacity requirements of the capacity for the selected work center. Work centers for the capacity requirements are selected.

- **P:** Selection of all task lists in which at least one operation is processed at the specified work center. Then all materials produced by these task lists are selected. All planned orders for these materials are selected.

  For more detailed information about carrying out these settings, refer to the section Production Optimization Interface

Configure Warehouse Management

You can link the Warehouse Management system (LE-WM) to various external systems, such as warehouse control units (WCU) or fork-lift systems. The ALE interface is available for communication with these systems. Its functionality is embedded in LE-WM. The following functions are supported through this interface:

Link SAP System to an external system

- Send transfer orders
- Release reference number
- Send cancellation request for transfer orders
- Send system inventory records

Link external system to SAP System

- Report transfer orders (storage bins determined by external system)
- Confirm transfer orders
- Report "Cancellation of transfer order"
- Move storage unit

- Create/cancel transfer requirements
- Verify inventory count data
- Block storage bins
- Send general information text

The data is transmitted in the form of intermediate documents (IDOCs). In the Warehouse Management system, the transmission data is set up in the form of IDOCs, the external system is determined, and the ALE interface is called up so that the data can be sent to the system found.

Requirements

This link is based on an asynchronous Remote Function Call (aRFC). The data is placed into intermediate storage when it is passed from LE-WM to the external system, or it is sent directly to the partner system, or transmitted as soon as a certain buffer size has been reached. On the receiving side of the external system the data must be received by a Remote Function Call. The external system is responsible for receiving and sending the received data.

When the data is sent from the external system to LE-WM, the external system is responsible for sending the data (queue technique) and for placing the data into intermediate storage. Here, too, the data is transmitted via Remote Function Call.

Activities

1. Install the required basis components for the interfaces ALE and RFC.
2. Warehouse view
3. Communication

In the following section, the required activities for setting up the communication are listed in detail:
. *Warehouse view*

In order to link the Warehouse Management System (MM-WM) to non-SAP systems, certain settings must be made in the application MM-WM.

There are general points which must be considered independently of whether the link is from MM-WM to the non-SAP system or vice versa from the non-SAP system to MM-WM. These activities are listed as follows.

Standard settings

- In warehouse number **00** in the SAP standard system, no communication interface is activated.
- The following message types are provided in the standard system:

Message type	Description
WMTORD	Transport orders
WMRREF	Reference number release
WMCATO	Cancellation request/Cancel transport orders
WMINVE	System inventory record and confirmation Actual inventory count date
WMTOCO	Confirm transport orders
WMSUMO	Move storage unit
WMTREQ	Generate/cancel transfer requirements

WMBBIN | Block storage bins
WMINFO | General information text

Notes

To link MM-WM to a non-SAP system, a range of control tables must be maintained. However to link a non-SAP system to MM-WM it is not necessary to make settings in the Warehouse Management System.

Activities

1. Activate the ALE interface for the warehouse number within which one or more non- SAP systems are to be linked.
2. The WM transactions relevant for the interface to the non-SAP system are identified by means of a message type.
   If you would like to define your own transactions for this interface, define a new message type for each transaction.
   Communication "R/3 -> External system"

To activate the interface from the Warehouse Management System (MM-WM) to an external system, various settings must be made.

Firstly, in MM-WM you define when this linkage is necessary and to which external systems the interface data should be transferred. After you have decided on the activation of the interface, you determine the structure and contents of the transferred data.

If the warehouse management data is not sufficient to clearly define the interface to an external system, or if this interface requires specially fine controls, variants must be used for this purpose.

Examples

- You have an automatic storage type to which you wish to transfer the data for all stock placements and stock removals.
  You define the storage type **00** for all stock placements and removals and define the external system **WM_SUB_00** that is to receive the data. Inventory differences are not considered as the external system does not require information on the warehouse stocks.

  Examples of entries in table *interface control*:

WhN	SrcTy.	DestTy.	MTy	CrNo	Inact.	Rec.system	Variant
00	***	***	7	0	x		
00	***	***	72	0	x		
00	***	00	0	0		WM_SUB_00	
00	00	***	0	0		WM_SUB_00	

- You have one automatic and one manual storage type. This manual storage type, however, is controlled by an automatic fork-lift system. The two storage types are managed by two different systems, that is, the data must be transferred to two different external systems dependent on the storage type.

You define both storage types for all stock placements and stock removals and assign the relevant external systems to the respective storage types. In this way you determine how the interface should function for stock transfers between the two storage types, that is, whether this is possible at all, and, if so, to which system the data must be transferred (in the example, both systems are affected by this).

WhN	SrcTy.	DestTy.	MTy	CrNo	Inact.	Rec.system	Variant
00	***	***	7	0	x		
00	***	***	72	0	x		
00	00	002	0	0		WM_SUB_00	
00	00	002	0			WM_SUB_002	
00	002	00	0	0		WM_SUB_002	
00	002	00	0			WM_SUB_00	
00	***	00	0	0		WM_SUB_00	
00	00	***	0	0		WM_SUB_00	
00	***	002	0	0		WM_SUB_002	
00	002	***	0	0		WM_SUB_002	

- You have only one automatic storage type to which you wish to transfer the data, but the stock placement from production is handled differently by the warehouse control unit (WCU) as all the other stock placements (additional data may also have to be transferred to the WCU).

You define the storage type **00** for all stock placements and removals and determine the external system **WM_SUB_00** that should receive the data. The movement type for the stock placement from production is included in the control table and assigned to a variant.

WhN	SrcTy.	DestTy.	MTy	CrNo	Inact.	Rec.system	Variant
00	***	***	7	0	x		
00	***	***	72	0	x		
00	***	00	0	0		WM_SUB_00	
00	***	00	26	0		WM_SUB_00	E0 Produktion

WhN	SrcTy.	DestTy.	MTy	CrNo	Inact.	Rec.system	Variant
00	00	***	0	0		WM_SUB_00	

If you wish to define the structure of the data for stock placement from production, you can assign your own function module to the variant **E0** to set up the IDOC.

WhN	Mess.	Ty.	Variant	Inact	Function module
00	WMCATO	***			L_IDOC_CREATE_WMTOID0

WhN	Mess.	Ty.	Variant	Inact	Function module
00	WMCATO	E0	Production		Z_IDOC_CREATE_WMTOID0

Requirements

The interface to the external system must be activated in the relevant warehouse number.

Standard settings

- In the SAP standard system, no variants are defined.
- In the interface control, the link for the storage type **00** is defined. The movement types (inventory differences) **7** and **72** are set to inactive.

- The following function modules for the IDOC structure are provided in the standard:

Message type	Function module
WMTORD	L_IDOC_CREATE_WMTOID0
WMRREF	L_IDOC_CREATE_WMRRID0
WMCATO	L_IDOC_CREATE_WMCAID0
WMINVE	L_IDOC_CREATE_WMIVID0

Activities

1. A WM transaction (message type) can be further subdivided by means of a variant. A transport order, for example, is not always clearly identifiable for an external system. Using the variant, you can describe in the movement, for example, whether it is a stock transfer or a posting change. This variant is transferred to the external system by means of the message variant of an IDOC. The variant can also influence the interface control and the IDOC-processing.
   If you wish to use this function, define your variants.

2. Define all external systems to which the WM data should be transferred as logical systems. A logical system is also called a receiving system and will be used in the ALE layer for partner profile as a partner number. For more information on this maintenance, refer to the Implementation Guide of the ALE interface Set up logical systems.
   For documentation purposes you can assign individual message types to the defined logical systems. The filter objects do not have to be maintained for the individual message types. For more information on the subject "Create message types", refer to the Implementation Guide for the ALE interface Maintain distribution model.

3. Determine when the interface should be activated, that is, for which storage types and WM movements the transport order data should be sent to the individual external systems. Define also a receiving system and if necessary a variant. You can explicitly exclude certain storage types or WM movements for this interface by setting an entry to inactive. When maintaining the interface you must keep to a particular sequence:

   a) In the first step all entries set to inactive should be included.

   b) If several storage types are defined generically, you must first define the relationship between these storage types.

   c) Afterwards, the generic entries can be included.

   You can find more information on activation of the interface from the documentation in the individual fields of this table.

4. The structure of the transfer data in the form of IDOCs occurs in MM-WM with the function modules which are assigned to the message types.
   If you wish to modify the structure of the IDOCs, we recommend that you write your own function module for this purpose. You must then assign this function module to the relevant message type. This is also true for new or your own message types. Within a message type, different function modules can be defined for each variant. If you use variants, but do not need variant-related control of the function modules, you must create the table entry with a generic variant.

. *Communication*

In order to ensure that the link to the external system is fully maintained, the part of communication between the SAP System and the external system must be considered. These settings are made via the ALE interface, that is, the technical part of the link, the communication, is embedded in the ALE layer and is used by the individual applications.

The following describes the individual settings that are necessary for the communication if the SAP standard is to be used.

If you make changes such as new message types, new processing function modules or new standard tasks for error processing, these changes must also be considered in the ALE-interface. Information about this can be found in the Implementation Guide under **Distribution (ALE)**.

Activities

1. Communication "R/3 -> External system"
2. Communication "External system -> R/3"
3. Error processing

The following section lists the required activities for customizing the communication process:

. **Communication "R/3 -> External system"**

To ensure that the data in the Warehouse Management system structured in the form of IDOCs is transferred to the defined external system, various settings must be made at the ALE level for this part of the communication. The necessary activities are described below.

Activities

1. The external system must be defined as the receiving system for the technical side of the link. Define the RFC destination for the individual external systems via the TCP/IP connections.

2. In order to send messages to external systems, a port definition is required at the ALE level. In the port definition you define the relationship between the logical name of the receiving system (non-SAP system and its technical definition as an RFC destination. Maintain the port for the asynchronous RFC. You will find more information on this maintenance in the Implementation Guide for the ALE interface, chapter Port definition.

3. For each of the receiving systems (external systems), define the partner profile. Use the indicator **LS** for partner type. Using the transmission parameters, define all message types which are relevant for the receiving system. If you use variants, then you must maintain the partner profile within a message type for all variants. In the partner profile you define the IDOC type (Intermediate Document Type) with which the data of a message type is sent. The following message types and Intermediate Document Types are provided in the SAP standard for transmission:

Message type	Intermediate Document Type
WMTORD	WMTOID0 - Transfer orders
WMRREF	WMRRID0 - Reference number release
WMCATO	WMCAID0 - Transfer order cancellation request
WMINVE	WMIVID0 - System inventory record

Please note the following when maintaining the partner profile for transmission:

- You can immediately pass on the IDOC to the application or process several IDOCs together later.
- Define the appropriate port for a message type.
- We recommend that you activate the syntax check, especially for your own message types and Intermediate Document Types.
- Define either an organizational unit or a plan position as message recipient for error processing. Maintain the recipient in the partner definition or in the transmission parameters for each message type/ message variant (see also error processing) Do not maintain message control as it is not relevant for this interface.

Further notes

You will find more information on this maintenance in the Implementation Guide for the ALE interface in chapter Maintain partner profile.

4. **Communication "External system -> R/3"**

To ensure that the data sent from the external system is received and can be processed in the SAP System, various settings must be made at ALE level for the communication section. The necessary activities are described below.

Standard settings

In the SAP standard system a transaction code is defined for each message type:

Transaction code	Message type	
WMT	WMTORD	Transfer orders
WMCA	WMCATO	Cancel transfer orders
WMI	WMINVE	Confirm actual inventory count date
WMTO	WMTOCO	Confirm transfer orders
WMSU	WMSUMO	Move storage unit
WMTR	WMTREQ	Generate/cancel transport requests
WMBB	WMBBIN	Block storage bins
WMIN	WMINFO	General information text

The individual transaction codes are defined with version **6**, This means that the processing of the IDOCs is controlled directly via the function module; processing via Workflow or WorkItem is not provided for in the SAP standard system (the WorkItem is only used for error processing).

Activities

1. Entry of messages into the SAP System is controlled by a transaction code, which is assigned to a message type in the partner profile for an external system. Using the transaction code you determine how to control which application, that is, which function module is called up for processing an IDOC after it is received from the ALE level and how the processing takes place. In the entry partner profile the transaction code is assigned to a message type.

   If you wish to use your own transaction codes, these must be defined and the entry methods, that is the relevant processing function modules must be assigned. To do this, use the ALE functions Maintain transaction code entry and Assign entry methods. Define the partner profiles for the individual send systems (external systems). Use the description **LS** as partner type. Using the entry parameter, define all message types which are sent from this send system to MM-WM. Entry processing can also be controlled separately within a message type via the message variant. If you use the interface to an external system for several warehouse numbers, you can use the message variant to define entry by warehouse number. To do this the message variant for each warehouse number must also be transferred when the IDOC is sent from the external system. The following must be noted for maintenance of the transmission partner profile:

   - For processing, use the description to process incoming data immediately, or description **2** and **3** for batch processing.
   - Define the appropriate transaction code for a message type.
   - We recommend that you activate the syntax check.
   - As message recipient, you define either an organizational unit or a plan position. You maintain the recipient in the partner definition or in the entry parameters for each message type/message variant (see also error processing).

   Do not maintain message control, as it is not relevant for this interface.

Further notes

You will find more information on this maintenance in the Implementation Guide for the ALE interface Maintain partner profile.

2. **Error processing**

If an error should arise during processing of the data which was transferred from the external system to the <DS:GLOS.warehouse_ management system>Warehouse Management System (MM-WM), certain users must be informed. In case of an error a WorkItem is created per IDOC and this WorkItem is place in the inbox (Mail) of the relevant user.
In the SAP standard tasks are defined for error processing. The standard tasks must be linked to the relevant users using an organizational unit, so that this user is informed about any errors which arise, via a WorkItem.

Standard settings

The following standard tasks are provided to deal with ALE errors:

- *For technical errors*
- ErrorProcInb - ALE/EDI: Error processing (Inbox) (TS00008068)
- ErrorProcOut - ALE/EDI: Error processing (Outbox) (TS00007989)
- *For syntax errors*
- SynErrorInb - ALE/EDI: Syntax error (Inbox) (TS00008074)
- SynErrorOut - ALE/EDI: Syntax error (Outbox) (TS00008070)

In the Warehouse Mangement system, the following standard tasks exist for error processing:

- WMBBIN_ERROR - Error: storage bins blocked (TS00008047)
- WMCATO_ERROR - Error: Cancel TO (TS00007968)
- WMINFO_ERROR - Information (TS00008032)
- WMINVE_ERROR - Error: Actual inventory count date (TS00007970)
- WMMBXY_ERROR - Error: Goods movements (TS00008009)
- WMSUMO_ERROR - Error: Move storage unit (TS00008036)
- WMTOCO_ERROR - Error: Confirm TO (TS00007972)
- WMTORD_ERROR - Error: Transfer orders (TS0000803)
- WMTREQ_ERROR - Error: Transport requirements (TS00008077)
- WMCUST_ERROR - Error: customer message (TS00008049)

Activities

1. In the first step, you must define an organizational unit for error processing. You define the individual plan positions within the organizational unit. You can create one or more plan positions. If, for example, you are defining responsibility for error processing for several warehouse numbers, you must define a plan position for each warehouse number. If you wish to have the responsibility within a warehouse number organized by function, you will need several plan positions. The user responsible, as the regular, is assigned to the individual plan positions.
2. After the plan positions are defined, they must be linked to the standard tasks. The following standard tasks must be considered:
   - Standard tasks for the errors at ALE level.
   - Standard tasks for application errors.

Assign the standard tasks relevant to you to the individual plan positions.

To determine which standard task, which plan position or organizational unit is activated in an error, use role assignment in the standard task. In the existing standard tasks, a special standard role is defined which permits assignments to take place via the partner profile. In the partner profile you can assign organizational units or plan positions in the following ways:

- You are assigning in the partner definition. Therefore all responsibility for error processing lies with an organizational unit or a plan position for an external system.
- You define the assignment for the individual message types. Therefore you can assign individual plan positions per message type, that is, error processing is assigned to different plan positions or users according to function.
- Within a message type you define the assignment for individual message variants. So, for example, error processing can be carried out by warehouse number, if several warehouse numbers communicate with an external system.

3. So that the respective error message is placed in the inbox, a workitem for the defined standard tasks must be started from an event. As soon as the IDOC in the inbox has been processed or is error-free after posting, the respective workitem is also completed by an event. These events are supplied with the standard version, but they must be activated explicitly. After you have defined the plan positions and have linked the standard tasks to the plan positions, activate the event link. For more information on this activation, refer to the Implementation Guide of the ALE interface Activate event link.

Further notes

You can find more information on this subject in the Implementation Guide for the ALE interface, chapter Error processing.

Further notes

If the standard interface has been modified, that is, you are using your own message types, your own processing function modules or your own standard tasks for error recovery, you must take these changed into account in the ALE interface. For more information on this subject, refer to the Implementation Guide Distribution (ALE). In particular, refer to the section on User Exits / Developments in the Implementation Guide.

The SAP system communicates with the external systems via the standard interface aRFC. For information regarding which computer types this interface can be used with and how the communication takes place from a technical point of view, refer to the SAP information brochures.

Refer also to the documentation of the communication interface and the general documentation on the ALE interface.

Human Resources

These are the customizing settings you must make in order to maintain a central Human Resources (HR) system as a distributed SAP component.

The scenarios enable you to distribute data between a central HR system, and Accounting (AC) and Logistics (LO) using Application
Link Enabling (ALE). Please note that ALE does not enable data distribution between separate HR systems. For ALE to function, the HR system must be centralized. Then, you can ensure data distribution with LO and AC.

Auto-Customizing

The Auto-Customizing report enables you to configure automatically the necessary customizing settings for these scenarios. This is a straightforward way to initialize ALE. Note that in order to use this report you can only have two distributed systems, and/or a subsystem for KK.

Distribution of customizing data

This is the minimal customizing data that must be distributed:

- Company code: T00, T00I, T00J, T00O, T00Z
- Business area: TGSB, TGSBG, TGSBT
- Controlling area: TKA00, TKA0, TKA02
- Plant: T00W, T00K
- Countries: T00, T00T, T00S, T00P
- Currency: TCURC, TCURX, TCURV, TCURS, T00R, TCURF, TCURT, TCURW, TCURR

(You will find other customizing data that must be distributed documented in the relevant scenarios.)

This data must be identical in the distributed systems. You can either maintain it by hand or use an ALE-supported transport mechanism to replicate the data.

Distribution of master data

You must distribute the following master data, if you wish to use it for Possible Entries help:

- HR to non-HR system -HR master data
- Non-HR to HR system
- Cost centers
- Activity type
- Internal order
- Project

Filters for accounting systems

The central HR system can communicate with one or more AC systems. The filters you use depend on the BAPI you use, and are either company code (COMP_CODE) or controlling area (CO_AREA).

Restrictions for accounting systems

When using Funds Management and Wages in the Construction Industry, only the coupling of central HR with central AC is supported. *Restrictions for checks and posting of account assignments*

Checks of the HR account assignments are performed by the coding block which is called by HR and runs in the respective AC system.

In this system, master data must be available for all account assignment fields entered, and the accounting document must be posted in the AC system.

Thus the coding block can check only those account assignments which exist in the AC system. If AC and LO run integrated, the account assignments will include the LO account assignments. If AC and LO run separately, only those account assignments that exist in the AC system can be checked and posted.

Possible Entries help restrictions

Possible Entries (F4) help in the HR system is only available for the replicated account assignments.

Auto-Customizing

Auto-Customizing Report

If you work with two distributed systems (one HR and one non-HR), you can use this report to automatically maintain the customizing settings required for the ALE scenarios listed below.

If you have more than two distributed systems, use this report as an example of how to maintain the customizing settings required for the ALE scenarios.

This report makes the ALE setting that is required for distributing HR master data to the non-HR system. The ALE setting is also made for cost centers so that they can be distributed to the HR System.

In test mode, the report outputs a list of selected scenarios. If the test flag is not set, the report adds the object methods and message types that do not exist yet in accordance with table T77ALE_DEF.

Requirements

Filter objects must be maintained manually.

Master Data Distribution

In this section, you make the required settings for the distribution of certain HR Master Data between R/3 Systems.

Set Distribution of Cost Centers

Set up 'Distribute Cost Center' scenario

You must distribute the cost center into the HR system. See Setting up Master Data Distribution for more information.

Distribute HR Master Data

You must distribute HR master data. To see which settings you must make for distributing master data, see Master Data Distribution. .

For further information about distributing HR master data using ALE, see the following documentation: HR: ALE Distribution of HR Master Data.

Customer Enhancements

This section includes customer enhancements (user exits and BADIs) for ALE in HR.

Customer Enhancement (User Exit): ALE Functions in HR

This step enables you to implement the following user exits for the RHALE00 enhancement:

- EXIT_SAPLRHA0_00: HR-CA: ALE Outbound Processing With Receiver Enhancement
- EXIT_SAPLRHA0_002: HR-CA: Export Parameters for ALE Inbound Processing IDOC_INPUT_HRMD
- EXIT_SAPLRHA0_003: HR-CA: Import Parameters for ALE Inbound Processing IDOC_INPUT_HRMD
- EXIT_SAPLRHA0_004: HR-CA: ALE Outbound Processing: Control Record
- EXIT_SAPLRHA0_00: HR-CA: ALE Inbound Processing: Check Object

- EXIT_SAPLRHA0_006: HR-CA: ALE Outbound Processing: Check Object - EXIT_SAPLRHAL_00: HR-CA: ALE Outbound Processing: Change IDoc
- EXIT_SAPLRHAL_002: HR-CA: ALE Inbound Processing: Change Infotype Data
- EXIT_SAPLRHAL_003: HR-CA: ALE Outbound Processing: Convert Infotype / Segment
- EXIT_SAPLRHAL_004: HR-CA: ALE Inbound Processing: Convert Segment / Infotype

If you want to implement one of these user exits, you must first create a project and then assign the required user exit to the project. You then create coding for the user exit, and activate the project.

Before you create a project, you are strongly recommended to read the documentation on *enhancing SAP transactions*, which you can access by calling this customizing activity and choosing *Help -> Application help*.

If you require general information on user exits, access the SAP Library and choose *BC Changing the SAP Standard*. You can also access specific information on each user exit after you have assigned it to your project.

Warning

Do not perform this activity unless both of the following conditions have been met:

- SAP standard processes do not meet your requirements.
- You have good ABAP programming skills.

Activities

First, create a project.

1. Enter a name for your project.
2. Choose *Enhancement -> Create*.
3. Enter a short text for your project, and choose *Save*.

Assign the user exit to your project.

4. Choose *Components*.
5. Enter the name of the user exit you want to implement.
6. If you want to display detailed information on this user exit, choose *SAP documentation*.
7. Choose *Save*.
8. Choose *Back*.

Now change the coding.

9. Choose *Enhancement components*.
10. Choose *Change*.
11. Choose the user exit for which you want to enter new coding.
12. Choose include zxpbco0.

The system requires you to create this include. You can then enter your new coding.

Activate your project.

13. Go back to the initial screen, and choose *Activate project*.

BAdI: Inbound Processing for HR Master Data

HRALE00INBOUND_IDCO

Business Add-In in inbound processing for HR master data (used in the function module *IDOC_INPUT_HRMD*).

Two methods are available:

- The *PROCESS_IDOC* method enables you to write or change the IDoc in full or in part. This method is accessed after customer exit SAPLRHA0_003 if it returns an initial *idoc_processed_flag*. The entire IDoc is written to the *idoc_data* (data records) and *idoc_status* (status records) parameters, and can be changed as required. The *idoc_processed_flag* parameter enables you to determine whether normal inbound processing takes place (value is initial) or not (value is 'X').
- *SET_EXPORT_PARAMETERS* enables you to set the output parameters of the function module *IDOC_INPUT_HRMD*. This method is accessed before customer exit SAPLRHA0_002.

BAdI: Check/Additional Processing of Object in Inbound Processing

The *CHECK_OBJECT* method of this Business Add-In enables checks to be performed for an HR object in the RH_IDOC_OBJECTS_SAVE inbound function module. The method is accessed after customer exit SAPLRHA0_00.

If the *SKIP_OBJECT* exception is triggered, the object is locked for further processing, that is, it cannot be written to ALE inbound processing. In this instance, an error message must be returned to the *PROTOKOL_MESSAGE* variable. This error message is used to create an IDoc status record during further processing. A message of type 'W' or 'I' results in a record with status 2 (incompletely booked); other types result in a record with status (not booked).

This method can also be used to update further data for objects to be written.

BAdI: Customer-Defined Inbound Processing

HRALE00SPLIT_INBOUND

SAP-internal inbound processing for HR master data:

The system determines which HR objects should be removed from standard processing because no data structures exist for them in the receiving system. Irrespective of the type of receiving system, you can further process these HR objects.

For instance, receiving system CRM or EBP: personal data must be represented by an own data model because database tables for personal data are not available in these systems. Furthermore, a business partner must be created and be included in the organizational structure analogous to the person in HR.

Two methods are available:

- *select_objects* can be used to select objects for which inbound processing is performed in a way that deviates from the standard system. The objects are selected in accordance with the plan version, object type, and object ID parameters.
- *process_selected_objects* can be used to write the objects selected this way.

Execution

When the *select_objects* method is used, the *select_plvar*, *select_otype*, and *select_objid* selection tables are filled. The lines in these tables of the *rnge_plvar*, ... type are structures with *sign*, *option*, *low*, and *high* fields. For more information, see the section on selection tables in the SAP Library.

When the *process_selected_objects* method is used, the system writes the data filtered from the IDoc in accordance with the criteria defined in *select_objects*. The data is transferred to four tables:

t_plogi

The EPLOGI segments are collected in this table.

t_porig

The EPORIG segments are collected in this table.

t_pityp

The EPITYP segments are collected in this table.

t_pnnnn

The EPnnnn and EPADnn segments are collected in this table. The IDoc data is copied to the *sdata* field of the line structure. The application interprets the data. If an EQnnnn segment exists for infotypes, the data from this segment is written to the *sdata* field with an offset of 000. The structures subordinate to the segments are stored in DDIC using the same name.

The method is only called if the tables are not empty.

For information on the structure of IDocs of message type HRMD_A, see note 3408 in the Online Service System.

Error handling

Errors that occur when *process_selected_objects* is processed must be returned to the *t_errors* table so that IDoc status records can be generated. The line type of this table is *hrale_err*. The fields in this structure must be filled as follows:

repid

Name of implementation.

routid

Name of subroutine in which the error occurred.

segfld

Name of field that causes the error.

segnum

Number of the *EPLOGI* segment that belongs to the data record that causes the error. This number is included in the *segnum* component of the line in the *t_plogi* table determined on the basis of the plan version, object type, and object ID.

msgid

Message class.

msgty

Message type. A message of type 'W' or 'I' results in a record with status 2 (incompletely written). Other types result in a record with status (not written). Once inbound processing is complete, the IDoc is assigned the minimal status resulting from all of the errors that occurred during processing.

msgno

Message number.

msgv...msgv4

Message variables.

Example

Organizational units 666 to 999 must not be written. If an IDoc contains such an object, the IDoc is assigned status 2 (incompletely written) if a serious error did not occur when the remaining records were processed.

In *select_objects*, the *select_otype* table is filled with the select_otype-sign = 'I' select_otype-option = 'EQ' select_otype-low = 'O' line. The select_objid-sign = 'I' select_objid-option = 'BT' select_objid-low = '666' and select_objid-high = '999' line is written in the *select_objid* table.

In *process_selected_objects*, the required error message of type 'W' or 'I' is returned to the *t_errors* table.

BAdI: Fine Tuning of Original System Mechanism

HRALE00ORIGSYSTEM

Business Add-In for Original System Mechanism The
following methods are available:

- *otype_has_original* enables you to determine the object types for which the original system mechanism is active.

- *write_chgptr_for_replica* enables you to determine that change pointers are also written for individual infotypes of replications.
- *save_data_for_original* allows originals to be overwritten in ALE inbound processing.

Execution

The otype_has_original method includes the *otypes_with_orig* parameter, to which a table is written for object types supported in the standard system by the original system mechanism. This table can be manipulated as required. Note, however, that this does not override the status of the ALE-REPLI and ALE-REPPA switches in T77S0. This means, for example, that even if object type 'P' has been added, the original system mechanism is not active for employees unless ALE-REPPA has been set.

If the *WRITE_CHANGEPOINTER* exception is triggered in the write_chgptr_for_replica method, change pointers are written for the object determined by the *plvar*, *otype*, and *objid* parameters and for infotype *infty*, subtype *subty*.
The supplied example coding facilitates change pointers to replicated positions (object type 'S') for infotype 007 Vacancy. This method does not affect objects that exist as originals, or for which the original system mechanism is inactive.

In the standard system, objects that exist as originals in the current system are skipped in ALE inbound processing. This is documented by an appropriate IDoc status record. If the *DO_NOT_SAVE_NO_MESSAGE* exception is triggered in the save_data_for_original method, status record documentation is not generated. If the *SAVE_OBJECT* exception is triggered, the data of the current IDoc is saved for the current object, even though the object exists as an original. The IDoc data is written to tables *t_hrobjorig*, *t_hrobjinfty*, and *t_hrobjsdata*, which contain IDoc segments *EPORIG*, *EPITYP*, and *EPnnnn*. In ALE inbound processing, the method is accessed for an object determined by the *plvar*, *otype*, and *objid* parameters if the object exists as an original and is not locked. For safety's sake, you should only use the option of reading originals in update mode. This is the case if the value of the *opera* parameter is 'U'. If a status message needs to be created to record the fact that standard system behaviour has been overridden, a corresponding line must be appended to transferred table *t_protocol*. To create a status 2 record, message type 'W' or 'I' must be selected. The method is only accessed for objects that exist as originals. Changes to specified IDoc data only affect current inbound processing. Apart from any status messages that may have been generated, the IDoc on the database remains unchanged.
The supplied example coding ensures that infotype 007 Vacancy is written for positions that exist as originals (object type 'S'). If the IDoc contains a record of infotype 007, all other records are removed from the IDoc data and the SAVE_OBJECT exception is triggered. This is recorded in the IDoc.

Example

In the 'Distributed HR Master Data' scenario, infotype 007 Vacancy is maintained for positions in operational systems, even though they include the positions as replications. If the example coding for the *write_chgptr_for_replica* method is written to the operational systems, change pointers are written if a vacancy is created or delimited. To facilitate reading the changes to the corporate system, the example coding of the *save_data_for_original* method must be written to the corporate system.

Activities

After calling up the IMG activity, a dialog box appears, in which you can enter a name for the implementation.

If you have already made other implementations for this BAdI, another dialog box appears, in which the existing implementations are displayed. In this case, choose *Create*, and proceed as follows:

1. In the dialog box, enter a name for the BAdI implementation in the *Implementation* field, and choose *Create*.
   The screen for creating BAdI implementations is now displayed.
2. Enter a short text for the implementation in the *Short text for implementation* field.
3. From the tab index, choose *Interface*.
   The *Name of implemented class* field is already filled on the tab page, as a class name was automatically assigned to the implementation when you named it.
4. Save your entries, and assign the implementation to a development class.
5. Place the cursor on the method, and double-click to enter method processing.
6. Enter the code for the implementation between the statements `method <Interface name> ~ <Name of method>` and `endmethod`.
7. Save and implement your code. Return to the *Edit Implementation* screen.
8. Save the entries on the *Edit Implementation* screen.
   Note: You can also create an implementation, and then activate it at a later time. In such a case, end the processing stage at this point.
9. Choose *Activate*

The code you stored in the method will be run when the application program is executed.

BAdI: Outbound Processing HR Master Data

HRALE00OUTBOUND_IDOC

Business Add-In in output processing for HR Master Data (used in the function module **RH_MASTER_IDOC_DISTRIBUTE_HRMD**).

The following methods are available:

- FILTER_VALUES_SET allows you to set the filter values for generic filtering.
- IDOC_DATA_FOR_RECEIVER_MODIFY allows you to process the IDoc data depending on the recipient.

Set Transfer of HR Master Data from External Systems

This section explains the settings that are necessary for the scenario **Transfer of HR master data from external systems**. You can find information on the business background in the section **HR master data from external systems** in "Application Help".

Procedure

The employee master data entered in an external system is stored as a sequential file in IDoc format. The external system starts the SAP System (for example, by means of a script) by using the C program **startrfc** and transmits the path, the name and the logical identifier of the
IDoc as well as the name of the EDI function module EDI_DATA_INCOMING to EDI inbound processing. EDI inbound processing opens the file and processes the
IDoc. Once the file has been successfully transferred to the SAP System, it is then deleted.

Procedure in EDI:

In order to process the IDoc in HR, you have to call the HR function module
IDOC_INPUT_HRSM_HIRE. The processing status of this IDoc is logged in EDI.

Procedure in HR:

1. The HR function module IDOC_INPUT_HRSM_HIRE writes the data to interface tables.
2. Depending on the Customizing settings, further processing of the data is triggered or you have to manually start it via the work list.
3. The processing of the data leads to personnel numbers being allocated in the HR system. These personnel numbers are sent back to the external system as an IDoc.
4. The processing status of the data is logged in the interface.

Customizing Distribution (ALE)

In order to ensure that the IDoc is imported and processed, you have to make the following settings:

1. Maintain logical systems

In this step you define logical systems for your external systems.

2. Maintain distribution model

In this step, include the following entries via **Create message type**:

- Sender/Client: external logical system
- Recipient/Server: HR System
- Message type: HRSM_A

- Sender/Client: HR System
- Recipient/Server: external logical system
- Message type: HRSM_B

3. Define port

In this step, define the following file ports:

a) File port for the import of HR master data

b) Data port for the export of allocated personnel numbers. Click on the pushbutton **Outbound file** and enter a path name and a function module in order to generate a file name.

4. Maintain partner profiles

In this step you set up the inbound and outbound parameters for the logical systems involved:

a) Declare the following outbound parameters for the external system.

- Partner type: LS
- Message type: HRSM_B
- Recipient port: Port für Export der vergebenen Personalnummern
- Output mode: Immediate transfer of IDocs Do not start subsystem
- Basic type: HRSM_B0

b) Declare the following inbound parameters for the HR system:

- Partner type: LS
- Message type: HRSM_A
- Process code: HRSM
- Processing: Immediate processing **Further notes**

Latest supported HR System release: 4 A

Set Up Distributed Organizational Management

If you want to set up **distributed Organizational Management**, you must

- Activate distributed Organizational Management (by doing so, you determine that the original system of objects is also written)
- Register an original system for objects that already exist
- Determine the direction of the relationships of the original objects, in the case of relationships between original and replica objects
- You can maintain the direction of a relationship with an original object however you want. Change pointers are written and data is distributed.
- A relationship not involving an original object can also be maintained however you want, this, however, is only local. Change pointers are not written and distribution is therefore not possible.

Activities

1. Activate Distributed Organizational Management in the step **Activate Distributed Organizational Management**, using an X.

2. In the step **Register Objects**, determine, for those organizational objects that already exist in your system, which system is the original system. If it is the current system for all objects, start the program directly (*Program -> Execute* or using function key F8). A list of all the relevant objects appears. By deselecting individual objects, you can remove them from the list. Restart the report.

   If the current system is not to be the original system for all objects, make your selection from the selection criteria offered at the beginning. If another system is to be the original system for organizational objects, start this system and execute this program for these objects.

   For further information, see Help -> Application help.

3. In the step **Distributable Relationship Directions**, enter the relationship directions that are to belong to the original. In the first column, enter the relationship type and in the second column, the relationship direction (A or B). Entry A002 is delivered.

4. In the step, **Distributable Relationships between Original and Replication**, enter the relationship direction of those combinations of objects that are to determine the original relationship direction. In the first column enter the relationship direction, in the second, enter the first object type and in the third column, enter the second object type. The relationship direction is automatically displayed in the fourth column. An object combination O - O is delivered for the relationship direction A 002.

5. For changes to replications, you can **Activate/Deactivate Dialog Boxes** in the last step. These dialog boxes are deactivated in the standard system. You can activate them using the value X. These dialog boxes warn that no change pointers will be written for changes to replications.

Distributed HR Master Data

Distributed HR Master Data

You can use Organizational Management and Personnel Administration in separate systems and integrate the two components at the same time.

Activities

1. Perform the **ALE: Original System Active for HR Data** step to determine that the original system is also written for HR data.

   To do so, enter the value 'X'.

2. Perform the **ALE: Inbound Processing With Integration** step to activate integration in ALE inbound processing.

Organizational Management (OM) and Personnel Administration (PA) are integrated using data from Organizational Management. If you want to activate integration in inbound processing, OM data must be distributed. If distribution is effected for PA data only, integration does not occur.

To do so, enter the value 'X'.

3. Perform the **ALE: Dialog Box for HR Data** step to determine whether the system outputs a warning dialog box when replications are changed.

   The value 'X' activates such dialog boxes.

Serialize HR Master Data

Use

IDocs are sent sequentially and in the order that they were created. In the target system, however, they can arrive in a different order. There is therefore a danger of a new IDoc "overtaking" an old one, causing new data to be posted before the old data in the older IDoc. Since the old data is posted later, it overwrites the new data.

You can prevent the system from posting outdated data by setting up automatic serialization. This ensures that IDocs are posted in the order in which they were written and sent.

Activities

To ensure that IDocs are serialized, you must set the serialization flag in both the sending system and the recipient system.

1. In the **Serialize HR Master Data in ALE Outbound Processing** step in your sending system, set the serialization flag for each recipient.
2. Then, in the **Serialize HR Master Data in ALE Inbound Processing** step in your recipient system, set the serialization flag for each sender.

Filter HR Master Data Generically

Use

Using generic filtering of HR master data you can send IDocs to different recipients, depending on the data in the IDoc. To do this, you can define up to two filter criteria according to your requirements, and use them to filter the data.

You can use filter criteria from the SAP standard (for example company code), or you can define your own (for example, first letter of last name).

Requirements

The BAdI Outbound Processing HR Master Data (HRALE00OUTBOUND_IDOC) must be implemented.

Activities

1. In the **Filter for Distribution of HR Master Data** step, define a filter criterium.
2. If required, define another filter criterium in the **Filter 2 for Distribution of HR Master Data** step.
3. Define the filters as ALE object types.
4. Assign the filters to the notification type HRMD_A.
5. Using the BAdI HRALE00OUTBOUND_IDOC, specify the values for filter and filter 2.
6. Add the filters to the distribution model.

Example

The following example lists the steps that allow you to filter according to the last name and company code of an employee: BAdI Interface IF_EX_HRALE00OUTBOUND_IDOC

HR <-> LO

This step contains the ALE business processes in which logistics and human resources data is exchanged between systems.

Set Business Event Billing

This section contains a description of the settings required for the **Billing business events** scenario.

Maintenance of the distribution model

In order to ensure communication between the systems during distribution, you must enter the following using *Add Method* when you maintain the distribution model:

- Client: HR System
- Server: required Sales and Distribution (SD) system

- Object : ItCustBillingDoc
- Object Type: VBRK
- Method : CreateMultiple

- Object : ItCustBillingDoc
- Object type: VBRK
- Method : GetList

- Object : ItCustBillingDoc
- Object type: VBRK
- Method : Cancel

- Object: PaymentCardServices

- Object type: BUS606
- Method: Checknumber

Partner profile

You can generate partner profile settings from the distribution model. For more information on this, see Generate Partner Profiles in the Implementation Guide.

HR Customizing

Carry out the steps in the Billing section in Customizing for Training and Event Management.

Master Data for the HR System

To carry out billing in Training and Event Management, the SD organizational data **sales organization, distribution channel, and division** must be distributed.

In addition, the **sales document type, billing document type, item category, condition type**, and the **account assignment group 'material'** must be distributed.

Further notes

For further information on this ALE Business Process, see the Application Help for Training and Event Management under "ALE Business Processes in Training and Event Management" -> "Billing Business Events".

Business Event Attendees: Set Up Customer

This section contains a description of the settings required for the **Business event attendee: customer** scenario.

Customer master data

In this scenario, you use ALE to determine the RFC destination of the LO System from the distribution model for reading customer master data. The data is transferred synchronously by RFC, and no IDocs are transmitted.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must choose *Add method* in the Maintain Distribution Model step to make the following entries:

- Client: The HR System
- Server: The required Logistics System
- Object: Customer
- Object type: KNA
- Method: CheckExistence

You cannot use filter objects. There is usually little point in converting field contents. All existing segments must be transferred. Otherwise, incomplete data is transferred to the HR System.

Settings in customer distribution model

When specifying the object method, you must define HR as the sending system and LO as the receiving system. This defines the required communication flow between the two systems.
If no customer distribution model has been maintained, access is local. See also: Master Data Distribution.

Further notes

For more information on this ALE business process, call the "Application help" for Training and Event Management and choose "ALE business processes in Training and Event Management" -> "Business Event Attendee: Customer".

Business Event Attendees: Set Contact Persons

This section contains a description of the settings required for the **Business event attendee: contact person** scenario.

Contact person

In this scenario, you use ALE to determine the RFC destination of the LO System from the distribution model for reading contact person data. The data is transferred synchronously using RFC, and no IDocs are transmitted.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must choose *Add method* in the Maintain Distribution Model step to make the following entries:

- Client: The HR System
- Server: The required Logistics System
- Object: BusPartnerEmployee
- Object type: BUS00600
- Method: CheckExistence

You cannot use filter objects. There is usually little point in converting field contents. All existing segments must be transferred. Otherwise, incomplete data is transferred to the HR System.

Settings in customer distribution model

When specifying the object method, you must define HR as the sending system and LO as the receiving system. This defines the required communication flow between the two systems.

If no customer distribution model has been maintained, access is local.

Further notes

For more information on this ALE business process, call the "Application help" for Training and Event Management and choose "ALE business processes in Training and Event Management" -> "Business event attendee: contact person".

Set Up Material as Resource in Training and Event Management

This section contains a description of the settings required for the **Material as a Resource in Training and Event Management** scenario.

Material master data

In this scenario, you use ALE to determine the RFC destination of the LO System from the distribution model for reading the material master data. The data is transferred synchronously by RFC for reading material master data.

Material can be ordered for training and events. According to the availability of material an order request will be generated. In shared systems data will be sent by IDOCs.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must choose *Add method* in the Maintain Distribution Model step to make the following entries:

- Client: the HR system
- Server: the required Logistics system
- Object: material
- Method: CheckExistence

There is no provision for the use of filter objects. In general, it is not a good idea to convert field contents. All existing segments must be transferred. Otherwise, incomplete data is transferred to the HR System.

Settings in customer distribution model

When specifying the object method, you must define HR as the sending system and LO as the receiving system. This is necessary for the communication flow between the two systems.

If no customer distribution model has been maintained, access is local. See also Master Data Distribution.

HR Customizing

Call Customizing for Training and Event Management, and perform the steps included in the Materials Management section.

Further notes

For further information on this ALE Business Process, see the Application Help under ALE Business Processes in Training and Event Management -> Material order.

Set Up Confirmations from PP/PI/PM/CS/PS

This section explains the settings that are required for the **Transfer Logistics Confirmations to Human Resources (HR)** scenario.

Procedure

For more information on the general procedure for integration with Logistics, see the **Plant Data Collection** section of the Implementation Guide (IMG) for Personnel Time Management. Only the details concerning distributed systems are described in this section.

Procedure in Logistics: Sender System

Report CORUHRTR reads confirmations in the Logistics system and puts them in intermediate documents (IDocs).

Procedure in Human Resources (HR): Receiver System

When IDocs are recieved, input processing is triggered automatically. Input processing writes the data from the IDoc either in interface table LSHR or in EVHR. Assignment takes place depending on the record type sent with the IDoc. If an assignment cannot be made because of incorrect data records, the records can be corrected from the Time Management work list.

When processing work time events from table EVHR, time pairs are formed from which the duration (length of time) of the activities is determined.

Pair formation is also carried out in Logistics, however, the individual employee work schedules are not taken into consideration. The resulting difference is then calculated in SAP Time Management and then transferred to each Logistics system.

Maintaining the Distribution Model

To ensure communication between the systems during distribution, the following entries must be made in the *Insert method* step in the Maintain Distribution Model section of the IMG for Distribution (ALE).

- Client: Logistics system (required)
- Server: HR system
- Object: TimeMgtConfirmation
- Method: Post

The object method is based on Report Type HRCNF and belongs to Object BUS7003.

Avoid using filter objects or converting field contents. All existing segments must be transferred otherwise the information transferred to the HR system is incomplete.

Partner Profiles

You can generate partner profiles from the distribution model. Refer to the Generate Partner Profiles step in the IMG for Distribution (ALE).

In addition, you must distribute the model to the partner system. To do so choose, *Maintain distribution mode -> Edit -> Model view -> Distribute*.

After the model is distributed, you have to Generate Partner Profiles in the **Partner system**.

Settings in the Logistics System

Logistics Customizing

Carry out the following steps in the *Confirmations* section in each of the Logistics systems in Customizing.

- Make sure the indicator *No HR Update* is not activated in the *Define Parameters* step.
- Confirmations in Logistics are transferred by Report CORUHRTR to HR. To set up an automatic transfer, plan a batch input session in the **Set Process Time for the Confirmations Process** step.
- If specific confirmations from the **Production Planning - Process Industry** (PP/PI) are to be transferred, a maximum of six possible activity types must be determined for the five activity types in Incentive Wages. Make the settings in the *Define standard value key* step. To edit this step, choose **Production -> Basic Data -> Work Center -> General Data -> Standard Value**.

Settings in HR System

HR Customizing

Make the following settings in Customizing for Personnel Time Management in the Plant Data Collection section of IMG.

Carry out the appropriate steps depending on whether you want work time events or work durations to be transferred.

Work Time Events from Logistics

- Carry out the Process Work Time Events step.
- If the work time events posted are processed in Incentive Wages, then carry out the activities in the *Transfer of Data to Incentive Wages* step.
- If the corrected actual times should be automatically transferred to Logistics, then carry out the Process Work Time Events step and schedule the report RPTIST00.

Working Time Durations from Logistics

Confirmations of this type can be posted as attendances or as time tickets in Incentive Wages. Maintain the following steps in their applicable sections:

- Transfer Confirmations as Attendances
- Transfer Confirmations to Incentive Wages

Error Handling

If errors occur during the batch input session run during HR input processing, you can correct them from the *Time Management Pool* in SAP Time Managment.

Master Data for Logistics

In order to transfer confirmations, you must also have employee-related data from Logistics transferred to HR. In the Master Data Distribution section (Link to a separate HR section) of the IMG for Distribution (ALE), you can access further information regarding the way in the Logistics system retrieves corresponding employee data from HR.

- Infotypes 0000 and 000 are required to validate the **personnel number**.
- Infotype 000 is required to **Validate personnel number** and **Confirm personnel number from ID number**.

Control Data for Logistics

In order for person-related confirmations to be recorded in Logistics and transferred to the HR system, several of the control tables must be identical in both systems. How the required control tables are created and distributed for a report type is described in the Synchronization of Control Data section of the IMG for Distribution (ALE).

Therefore, the content of the following HR tables should be copied to Logistics:

The **Incentive Wages: Wage Types Permitted for Each TT Type** (V_T703K) table is required for validation of wage type.

The content of the table is normally copied using the transfer transaction.

Further notes

Supported Release Status

- Logistics 4.0 and HR 4.0:
  Proceed as described above.

- Logistics 3 and HR 4.0:
  Use the scenario described in the 3 system to transfer confirmations to HR. In Release 3, only work time durations can be transferred. The transfer of work time events is not supported.

Release Upgrade

As of Release 4.0A, you should complete the following reports **before** distributing the system to avoid extensive runtimes.

- Remaining data from the old interface table AFRUHR must be edited for work time durations. To do so, carry out the following reports:
- *Read interface file and create session* (RPWI 000)
- *Integration with Logistics: Reorganize interface file* (RPWI 4000)
- The TEVEN_MORE table must be completed with data from the AFRU Table for work time events. To do so, carry out Report *HR-TIM: KK2 carry out TEVEN_MORE AFRU* (RPU 40A7).

Daily Work Schedule at Logistics Work Center

This step explains the settings required for the **Set Daily Work Schedule for Logistics Work Center** ALE business process.

Requirements

The systems must be set up in the Prepare Sending and Receiving Systems section of the ALE Implementation Guide.

Standard settings

- Maintenance of distribution model You cannot use filter objects.

- Control data for Logistics System
  Human Resource (HR) daily work schedules are reported on in the Logistics System using replicated Customizing data.

Activities

To ensure that **daily work schedules** and **break schedules** can be read in the Logistics System, the following control tables must be identical in both systems:

- 'Daily Work Schedule' (V_T0A) -
  'Work Break Schedule' (V_T0P)

Table contents are normally copied using the transport system.

Availability of Employees in Logistics

This step describes the settings required for the **Set Availability of Employees in Logistics** ALE business process.

Requirements

You need to have maintained the Basic Settings in Customizing for Distribution (ALE).

Standard settings

Filter objects cannot be used. Converting field contents is rarely useful. You must always ensure that all available segments are transferred. If this is not the case, incomplete information is transferred to the HR System.

- Settings in the Logistics and HR Systems Special settings are not required in either system.
- Master data for the Logistics System
  The SAP system automatically distributes the HR master data of the HR System to the Logistics System.

Recommendation

Partner profile settings can be generated from the distribution model. See the Prepare Sending and Receiving Systems step in the Implementation Guide.

Activities

To ensure communication between the external system and R/3 Personnel Time Management, you must perform the Maintain Distribution Model step to make the following entries using the add method function:

- Client: Required Logistics system
- Server: HR system
- Object: TimeAvailSchedule
- Method: Build

Qualifications and Requirements Profiles in Logistics

In this section, the settings required for the **Set qualifications and requirements profiles in Logistics** ALE business process are explained.

Requirements

If you want to use this ALE business process, the organization model must be distributed.

Settings can be made in the **Prepare Sender and Receiver Systems** in the ALE IMG.

Recommendation

If you require further information on the distribution of HR organizational data and HR master data, see the Master Data Distribution section.

Activities

If you want to set **qualifications and requirements profiles in Logistics**, the listed HR object types and infotypes must be distributed as follows:

- Qualification: Object type Q, Infotype 000, 00
- Requirements profile: Object type QP, Infotype 000, 00

Set Work Center Integration

In this step, settings required for the **Set work center integration** ALE business process are explained.

Requirements

Settings can be made in the **Prepare Sender and Receiver Systems** chapter of the ALE IMG.

Recommendation

For more information on distributing HR organizational data and HR master data, refer to the Master Data Distribution section of the Implementation Guide (IMG).

Activities

Settings in Logistics and Human Resources

To integrate work centers, the listed HR object type and HR infotypes must be distributed as follows:

Work center: object type A, infotype 000, 00

To create an HR work center in Logistics, use internal number ranges for the **RP-PLAN** number range object.

When you create number ranges, make sure that the numbers in the two systems are different. Overlapping numbers are overwritten when data is reproduced because data is distributed to both systems using this interface.

Settings are made for the **$$$** subgroup. You can restrict the subgroup to the active plan version defined previously and object type **A** (work center).

Example for plan version "0" and object type "A":

Human Resources System:

Subgroup 0 A

From number	To number	Number level
0000000	7000000	0000000

Logistics System:

Subgroup 0 A

From number	To number	Number level
700000	99999999	700000

Assignment of Employees in Logistics

In this section, the settings required for the **Assign employees in Logistics** ALE business process are explained.

Requirements

If you want to use this ALE business process, the organization model must be distributed.

Settings can be made in the **Prepare Sender and Receiver Systems** chapter of the ALE IMG.

Recommendation

If you require further information on distributing HR organizational data and HR master data, see the Master Data Distribution section.

Activities

If you want to assign persons in Logistics, the HR object type and infotypes must be distributed as follows:

Personnel number: Object type P, Infotype 0000, 000, 0002, 0003

Create Sales Personnel in HR

The sales employee (SD) can be administered as an employee in Human Resources (HR). In this case they are specially assigned (in HR) to a sales organization a sales group and a sales office. If the HR and SD components are being operated on different systems, the data of the sales employee will be edited in the HR system and replicated in the SD system via Master data distribution where it will be available for (local) evaluations.

Requirements

The relevant sales organizations, sales groups and sales offices (Customizing data) must exist in the HR system.

Activities

Ensure that the following infotypes are replicated from the HR system to the SD system using master data distribution:

- *Actions* (0000) ,
- *Organizational Assignment* (000) ,

- *Personal Data* (0002) ,
- *Payroll Status* (0003) ,
- *Addresses* (0006) ,
- *Bank Details* (0009) ,
- *Communication* (00) , - *Sales Data* (0900).

Set Partner Functions PM/QM/CS

In order to access specific partner types in PM/SM/QM, HR master data and HR organizational data must be distributed from the HR System to the PM/SM/QM System.

You must set up the distribution of the listed HR object types and HR infotypes for the following partner types in PM/SM/QM:

Organizational unit: Object type O, infotype 000
Position: Object type S, infotype 000
Personnel number: Object type P, infotype 0000, 000, 0002, 0003

If you require further information on the distribution of HR organizational data and HR master data, please refer to the section entitled Master Data Distribution.

Set Partner Functions for SD

In order to access specific partner types in SD, HR master data and HR organizational data must be distributed from the HR System to the SD System.

You must set up the distribution of the listed HR object types and HR infotypes for the following partner types in SD:

Organizational unit: Object type O, infotype 000
Position: Object type S, infotype 000
Personnel number: Object type P, infotype 0000, 000, 0002, 0003

If you require further information on the distribution of HR organizational data and HR master data, please refer to the section entitled Master Data Distribution.

HR <-> AC

This step contains the ALE business processes in which data is exchanged between the Accounting (AC) and Human Resources (HR) components.

Coding Block

The coding block is an Accounting service. When posting transactions are effected, it can be used to enter account assignments whose validity is then checked.

The manner in which the coding block occurs in posting transactions never changes (subscreen). In the HR application, this is the case for time recording, travel expenses, master data, and construction pay. The following fields are available:

- Company code
- Business area
- Cost center - Order
- Cost object
- Activity type
- Funds center
- Commitment item
- Fund
- Sales order and item
- WBS element
- Network and operation number

The checks performed for the coding block are integrated with the cost distribution infotypes (0027 in Payroll, and 08 in Organizational Management). The following account assignments are possible:

- Company code and/or controlling area
- Cost center
- Order
- WBS element
- Funds center
- Fund

Additional account assignments can be checked locally, or in an Accounting system via synchronous remote access. This system must include master data for all of the account assignment fields entered.

Distribution Model Maintenance

To ensure communication between systems for validation purposes, you must call the Maintain Distribution Model step and enter the following for **Add Method**:

- Client: HR System

- Server: Accounting System
- Object: AcctngServices
- Method: CheckAccountAssignment
- Filter object: Company code

An entry in the distribution model ensures that account assignments can be checked in the Accounting System for all HR transactions that use the coding block. If account assignments in the Accounting System can be replicated in the HR System (that is, cost centers, internal orders, and WBS elements), you are advised to set up the Local Validation for Coding Block function. If a line item includes an account assignment that cannot be checked locally, the entire line item is checked in the Accounting System. Checks are also performed remotely if you do not configure the local check function for coding blocks.

Prerequisites

If you want to use the company code filter object in the distribution model, customizing data for the company code must be replicated in the HR System.
All master data for which the input help function is required to display valid values must be replicated in the HR System. WBS elements must also be replicated so that they can be entered in an HR System.

Local validation for coding block

If an HR System and AC System are both involved in a scenario, additional account assignments are usually validated synchronously in the AC System.

As an alternative, you can perform this step so that additional account assignments are validated locally in the HR System.

The local validation is to be regarded as more of an existence check. It is not possible to validate CO completely in the local validation since not all account assignment objects can be replicated in the HR system. For this reason, no other account assignment objects or properties for these objects can be derived, and no dependencies between account assignment objects can be checked. Complete validation can only be performed in the AC system since this is the only place where all account assignment objects exist. Therefore, if you want to ensure that the dependencies between account assignment objects are validated and additional information and properties of the entered objects are derived during the document entry, deactivate the local validation for these objects.

Also note that a complete CO validation is always performed when the document is forwarded to the AC system at the latest. Local validation is generally only performed when the document is entered.

Requirements

A scenario in which an HR and AC System are involved must be maintained.

Local validations are possible for account assignments (company code, business area, G/L account, cost center, and so on) that are entered in table TCOBFIELDS with an entry in the F_CHECK column.

Activities

1. Use table TCOBFIELDS to determine which account assignments can be validated locally.
2. Use the table included in this step to enter the account assignments for which local validation is required, and select the appropriate field. The **company code** and **G/L account** assignments must always be entered.

Further notes

The system only performs local validations if all of the account assignments can be validated locally for each line item (that is, if they have all been entered here). If an account assignment cannot be validated, all of the account assignments for the line item in question are validated synchronously in the AC System.

Remote Check (Status of HR and AC: 4 Minimum)

All of the information contained in Coding Block applies without exception.

Remote Check (Status of HR: 4 Minimum, Status of AC: 4 Maximum)

The information contained in Coding Block applies with one exception. Multiple account assignments with cost centers, orders, or WBS elements cannot be effected in cost distribution infotypes. Account assignments are possible for funds and funds centers in addition to cost centers, orders, and WBS elements.

Set Remuneration Statement

This scenario uses Financial Accounting (FI) functions to create bank payment orders for HR data.

Procedure

In the HR system, payroll, trip costs accounting or master data results are used to create payment orders for employees.
In addition to payment orders for employees, the system can also create payment orders for health insurance funds.

FI payment programs sort payment orders,and either create bank transfers for a data carrier or print cheques.
The FI payment programs create the bank transfers and cheque printouts in the HR system using the country-specific reports **RFFOxx_U** (xx = country indicator). To find the reports, choose **Human resources** --> **Payroll** --> **Payroll** --> **Bank transfer**.

Printing numbered cheques with remuneration forms (USA and Canada only)

If you specify the payment method **cheque** in the data exchange program, the system also saves the remuneration statement and trip costs form.
The system then selects and prints all payment orders with the payment method **cheque** as well as the respective form.

Prerequisite

To use the FI payment program in HR, the following data must be available in both distributed systems (FI, HR):

- Company code
- Payment method
- Banks
- House banks

Customizing

You are not required to make any settings in Customizing.

Set Activity Allocation for Time Management

This step explains the settings required for the **Activity allocation in Time Management** scenario.

Partner profiles

The settings for partner profiles can be generated from the distribution model. For more information, see Generate partner profiles in the Implementation Guide.

Maintaining the distribution model

To enable communication between the systems during distribution, you must make the following entries in the Maintain distribution model step using *Create method*:

- Enter the following objects and methods:

  a) Object: AcctngActivityAlloc Method: Post

  b) Object: AcctngActivityAlloc Method: Check

  c) Object: AcctngServices
  Method: CheckAccountAssignment

- Enter the following client and server for the objects and methods:
- Client: HR system
- Server: the required CO system

The object method AcctngActivityAlloc.Post is based on the message ACC_ACT_ALLOC and belongs to the object BUS600.

The object method AcctngActivityAlloc.Check also belongs to the object BUS600. The method AcctngServices.CheckAccountAssignment belongs to the object BUS600.

Use the following filter objects:

- CO_AREA controlling area for BUS 600
- COMP_CODE company code for BUS 600

Settings in HR system

HR Customizing

Work through the steps in the section Entry of Specifications for Activity Allocation in Customizing for Time Management. Check the data that has been entered. In the step Schedule data transfer to activity allocation, schedule the report *Transfer Additional Data for Activitiy Allocation to Accounting* (RPTPDOC 0).

Settings in Controlling system

No special settings are required.

Error processing

If errors occur when the activity allocation documents are posted, you can analyze the errors by choosing *Time Management -> Administration -> Environment -> Activity Allocation*.

Master data for the HR system

The prerequisite for **activity allocation in Time Management** is that the cost center, activity types, and WBS elements have been distributed.

Further notes

Supported releases:

Both the Logistics system and the HR system must have a Release 4.0 status.

Posting of Payroll Results to Accounting

Set Up 'HR and Accounting from Release 4.0A' Scenario

This section specifies the settings for the scenario *Reporting for Posting Payroll Results to Accounting* (also known as *Posting to Accounting*) when Human Resources (HR) and Accounting (AC) are in different systems, but both higher than 4.0 A.

Requirements

The following AC tables have been replicated in the HR system:

- Document types (T003)
- Line item texts (T03)

You maintain the settings for posting to Accounting in the Implementation Guide (IMG) for *Payroll* under *Payroll* <country> -> *Reporting for Posting to Accounting*.

Procedure

For general information on the posting to accounting procedure, refer to the SAP Library under *Human Resources -> Payroll* -> <country> -> *Subsequent Activities -> Posting to Accounting*.
The following describes special procedures for distributed systems.

I. Procedure in the HR system: Sending system (server)

In posting to accounting, payroll results information relevant to posting is evaluated, collected, summarized and then posted to accounting. In the case of distributed systems, read, write and validation procedures are carried out by the accounting system across applications. The HR system can therefore check the receiving system's distribution model prior to each cross application procedure.

1. When documents are created, the system uses BAPIs to read data synchronously.
2. The following occurs when document posting is initiated:
   a) Document data is checked against accounting data via synchronous BAPIs.
   b) The ALE layer is used to transfer each document asynchronously to the receiving system.

II. Procedure in the AC system: Receiving system (client)

3. Data is posted to the AC system.

Maintaining the distribution model

To enable communication between distributed systems, specify the appropriate method in ALE Customizing for the objects of the following tables. To do so, choose *Basis -> Application Link Enabling (ALE) -> Modelling and Implementing Business Processes -> Maintain Distribution Model and Distribute Views*.

Enter the HR System as the sending system/client and the AC System as the receiving system/server for the following objects and methods:

Object name	Method	Description
AcctngEmployeeExpnses	Check G/L account postings; account determination and cross-company code (The receiving system account determination and	Checks documents containing regular account determination for transactions. for this method performs calculates value-added tax)

Partner profiles

The partner profiles setting is generated in the distribution model. For more information, refer to the section 'Generate partner profiles' in this Implementation Guide.

Maintaining RFC destination for special method calls

To be able to display the accounting documents for previously posted posting documents in the posting run overview for *posting to accounting*, you must assign an RFC destination in the HR System for the method *DocumentDisplay* (display accounting documents) of the *AcctngServices* object type. (Note: This functionality is only available across systems as of Release 4 A

To be able to include the associated source documents (posting documents) in the display screen of posted accounting documents, you must assign an RFC destination in the AC System for the method *Display_Acc* (display source documents) of the *PayrollAccDocument* object type. (Note: This functionality is only available across systems as of Release 4A.)

Enter the necessary settings in ALE Customizing (by choosing *Basis -> Application Link Enabling (ALE) -> Sending and Receiving Systems -> Systems in Network -> Synchronous Processing ->* Determine RFC Destinations for Method Calls*).*

'HR Rel. 4.0A and Acctg Release Earlier than 4.0' Scenario

This step explains the settings required for the scenario *Reporting of Payroll Results for Posting to Accounting*, known also as *posting to Accounting* if Human Resources (HR) is in an R/3 System with a release in or above 4.0A and Accounting (AC) in an R/3 System in a release lower than 4.0A, or in an R/2 System.

For information on the procedure for posting to Accounting in previous releases, refer to the SAP Library, under *Payroll* -> country -> *Subsequent Activities -> Posting to Accounting -> Steps in Posting to Accounting -> Posting in Previous Releases*. This also provides information on the functions that are available in the system constellations described and what restrictions apply.

The following outlines the **posting procedure** in previous releases with reference to the relevant settings in Customizing. The procedure distinguishes between two variants (A and B).

- If Payroll is in Release 3G or higher, but below 4.0A, you can use either variant A or B for posting to Accounting.
- If Payroll is in a release lower than 3G, you must use variant B.

Prerequisites for Both Variants

- All Accounting components are located in a central system.
- In Customizing, under *Payroll ->* <country> *-> Reporting for Posting Payroll Results to Accounting -> Special Scenarios -> Posting in Previous Releases -> Set Up Export to R/2 System or R/3 System <4.0* , you have specified the company code that is in an AC System with a lower release than 4.0.
- Accounting master data used in this scenario must be distributed in the HR system (for example, cost centers to which you want to assign accounts).

Variant A

The following procedure applies if your Payroll application is in Release 3G or higher, but lower than 4.0A, and if you want to use ALE in this scenario.

I. Procedure in the HR System: Sending System (Variant A)

1. If you have carried out the step *Create Posting Run* (Report RPCIPE00), the posting-relevant information is written to a TemSe file.

2. Run the report *Interface Payroll/Accounting EXPORT* (report RPCIPX00).

   - This creates a master IDoc in the HR System.

   - The system uses data entered in the distribution model to determine which logical system should receive the IDoc.

   - The ALE layer is used to transfer the data to the receiving system automatically.

II. Procedure in the AC System: Receiving System (Variant A)

Inbound processing of the IDoc received takes place automatically. The system uses data from the received IDoc to create a TemSe file.

3. Run the report *Interface Payroll /Accounting IMPORT* (report RPCIPI00). The Accounting System uses data stored in the TemSe file to create posting documents. From the data in the TemSe file, the AC System creates batch input sessions for the transaction *Post document* (FB0) and, if necessary, for the transaction *Repost primary costs* (KB).

4. Post the documents to Accounting by starting the batch input session.

Maintaining the Customer Distribution Model (Variant A)

To enable communication between distributed systems, you must make the following entries in Customizing for ALE, under *Basis -> Distribution (ALE) -> Modeling and Implementing Business Processes -> Maintain Distribution Model -> Add Method* :

Sender:	HR System
Receiver:	AC System
Message type:	HRPAYP
Standard task:	HRPAYP_ERROR

This procedure does not use filter objects. You do not need to convert field objects or to filter segments.

Partner profiles (Variant A)

The settings for the partner profiles can be generated from the distribution system. For more information, refer to the step Generate Partner Profiles in this Implementation Guide.

Further notes

(For Variant A)

- The TemSe objects created via this ALE scenario are not defined as application objects. For this reason, the system does not update links between TemSe objects and IDocs.

- The ALE scenario does not support serialization.

- In line with the requirement that AC master data must be available in the HR System, the following restriction applies to ALE scenarios: Not all account assignment objects can be distributed using ALE.

Variant B

The following procedure applies if your Accounting System has a lower release than 4.0, and you want to post using file transfer.

I. Procedure in the HR System: Sending System (Variant B)

1. If you have carried out the step *Create Posting Run* (Report RPCIPE00), the information relevant for posting is written to a TemSe file.
2. Run report *Interface Payroll /Accounting EXPORT* (RPCIPX00). This creates another TemSe file.
3. Run report RPCIPT00 for Posting to Accounting. This creates a file on either the presentation or application server.

II. Procedure in the AC System: Receiving System (Variant B)

4. Run the report RPCIPT00. The AC System creates a new TemSe file.
5. Run the report *Interface Payroll/Accounting IMPORT* (report RPCIPI00). The AC System creates batch input sessions from the TemSe file for the transaction *Post document* (FB0) and, if necessary, for the transaction *Repost primary costs* (KB).
6. Post the payroll results by processing the batch input sessions.

Further notes

(for both variants)

If you use an HR System with release 4.0A or higher, and you want to carry out posting in the constellations described here, you cannot use the symbolic accounts in the standard system becasue from release 4.0A, the codes for symbolic accounts have four instead of two characters. In the constellations described here, only the last two characters are posted to the AC System. This is addressed in an HR system upgrade to release 4.0A or higher, but is not reflected in the sample Customizing of a new HR System in release 4.0A or higher.

For Release 4.0A, the length of the codes for employee groupings for account determination (Feature PPMOD) was changed. The code for employee grouping for account determination, which, from Release 4.0A, is stored in table T2EM, is now composed of three characters instead of one. Consequently, there are different codes in the HR and AC Systems. The key **23** for employee grouping for account determination in the HR System appears as in the AC System (only the first character is considered).

The assignment of symbolic accounts in HR to accounts in Accounting usually takes place in table T030 in the AC System. If you want to carry out cost planning in the AC System for the constellations described in this step using report RPCIPE00, you must make entries in the table T030 in both HR and AC Systems.

'HR Rel.earlier than 4.0A and Acctg Rel. from 4.0A' scenario

In this step, you make the settings for the scenario *Reporting for Posting Payroll Results to Accounting* (known also as *posting to Accounting*) if Human Resources (HR) is in an R/3 System lower than 4.0A or in a R/2 System, and Accounting (AC) in an R/3 System in Release 4.0A or higher.

For information on the procedure for posting to Accounting in previous releases, refer to the SAP Library, under *Payroll* -> country -> *Subsequent Activities -> Posting to Accounting -> Steps in Posting to Accounting -> Posting in Previous Releases*

The following outlines the **posting procedure** in previous releases with reference to the relevant settings in Customizing. The process distinguishes between two variants (A and B):

- If Payroll is in Release 3G or higher, but below 4.0A, you can use either variant A or B for posting to Accounting.
- If Payroll is in a release lower than 3G, you must use variant B.

Prerequisites for Both Variants

- All Accounting components are located in a central accounting system.
- Accounting master data used in this scenario must be distributed in the HR system (for example, cost centers to which you want to assign accounts).

Variant A

The following procedure applies if your Payroll application is in Release 3G or higher, but lower than 4.0A, and if you want to use ALE in this scenario.

I. Procedure in the HR System: Sending System (Variant A)

1. Run the report RPCALx0 using schema x00. This transfers relevant posting information to a TemSe file.
2. Run the report *Interface Payroll / Accounting EXPORT* (RPCIPX 00).
   - This creates a master IDoc in the HR System.
   - The system uses data entered in the distribution model to determine which logical system should receive the IDoc.
   - The ALE layer is used to transfer automatically the data to the receiving system.

II. Procedure in the AC System: Receiving System (Variant A)

Inbound processing of the IDoc received takes place automatically. The system uses data from the received IDoc to create a TemSe file.

3. Run the report *Interface Payroll /Accounting IMPORT* (RPCIPI00). The Accounting System uses data stored in the TemSe file to create posting documents.
4. Post the documents to Accounting

Maintaining the Customer Distribution Model (Variant A)

To enable communication between distributed systems, you must make the following entries in Customizing under *Basis -> Maintain Distribution Model -> Add Method.*

Sender:		HR System
Receiver:		AC System
Message type:	HRPAYP	
Standard task:	HRPAYP_ERROR	

This procedure does not use filter objects. You do not need to convert field objects or to filter segments.

Partner profiles (Variant A)

The settings for the partner profiles can be generated from the distribution system. For more information, refer to the step Generate Partner Profiles in this Implementation Guide.

Further notes

(For Variant A)

- The TemSe objects created via this ALE scenario are not defined as application objects. For this reason, the system does not update links between TemSe objects and IDocs.
- The ALE scenario does not support serialization.
- In line with the requirement that AC master data must be available in the HR System, the following restriction applies to ALE scenarios: Not all account assignment objects can be distributed using ALE.

Variant B

The following procedure applies if your Payroll application is in a release before 4.0A, and you have not maintained the distribution model.

I. Procedure in the HR System: Sending System (Variant B)

1. Run report RPCALC x0 using schema x00. This transfers information relevant to posting to a TemSe file.
2. Run report *Interface Payroll /Accounting EXPORT* (RPCIPX00). This creates another TemSe file.
3. Run report RPCIPT00 for Posting to Accounting. This creates a file on either the presentation or application server.

II. Procedure in the AC System: Receiving System (Variant B)

4. Run report RPCIPT00. The AC system creates a TemSe file.
5. Run the report <lsInterface Payroll / Accounting IMPORT (RPCIPI00). The AC system uses data in the TemSe file to create posting documents.
6. Post the payroll results to Accounting.

Further notes

For Release 4.0A, the naming convention for symbolic accounts was changed. The code that identifies an account, which is stored in the table T030, is now composed of four characters instead of two. This means that in the constellations described in this step, there are different keys in the HR and AC Systems. The code in the AC System is composed of the two character country grouping and the two character code in the HR System. For example, if the code of a symbolic account is **3** in the HR System, the code for the same account in the AC System for the country grouping Germany is **03.**

For Release 4.0A, the naming convention for the employee grouping for account determination (Feature PPMOD) was changed. The code for the employee grouping for account determination , which from Release 4.0A is stored in the table T2EM, is now composed of three characters instead of one. This means that in the constellations described in this step, there are different codes in the HR and AC Systems. The code for the employee grouping for account determination becomes **__** in the HR System (single character code from the HR System plus two spaces).

Set Up Data Medium Exchange for Payroll Results

In this ALE business process, you use the payment medium programs from Financial Accounting (FI), to process HR payments.

In HR, employee or third-party payments are created from the payroll results or directly from the master data.

The preliminary program data medium exchange reads the data relevant to transfer from the payroll results, which is stored as payment data on the database. The payment medium programs process this data, and from this create the payment medium (checks, files in DME format, and so on).

Start the payment medium programs in HR, to avoid a flow of data between the systems.

Prerequisites

As the data relevant to payment is processed locally, it is not necessary to take various release statuses into account.

Preparations

Make the Customizing settings for preliminary program data medium exchange.

The payee company code, banks, house banks, house bank accounts and payment methods Customizing must also be in your HR system.

In addition, make the Customizing settings for the payment medium program in Financial Accounting.

Further notes

On printing the prenumbered check, in some countries it is possible to print the employee´s remuneration statement onto the check form. To do this, the pre-program data medium exchange generates the remuneration form, which is then processed by the Financial Accounting check printing program. In this case, ALE specific settings are not necessary as the programs involved also run locally in HR.

See SAP Library for Payroll to find out which countries this function is available for.

Set Third Party Remittance

The SAP system passes information from HR to FI for remitting payments to third parties. The results of an evaluation run are transferred from a sequential file to the appropriate table in the system. The **Posting run** provides financial posting information. This information is passed to FI and states which HR creditor is paid with the appropriate vendor and due date. Then the **Reconciliation run** provides a reconciliation on processed and paid remittances. Finally, the **Acknowledgement run** is executed after the information has been sent to the financial department from HR to identify all those remittances that have been paid. You can also simply undo an evaluation run with no consequences to the system.

Prerequisites

For general information on setting up an ALE business process, please see Basic Settings and Communication sections of the Implementation Guide.

For information on configuring third-party remittances, please see the Third-Party Remittance section of the Implementation Guide.

Activities

Maintaining the distribution model

These settings are only required if you do not want to replicate your creditors. If you have chosen to replicate your creditors, please ensure that they are replicated.

To guarantee communication between the distributed systems, the following entries must be made in the Maintain distribution model step using *Add Method*:

- Client: the required FI/CO system
- Server: the HR system
- Object: CREDITOR
- Method: GETDETAIL

The use of filter objects is not permitted.

Set Pre-notification

In this business process, you use Financial Accounting (FI) functions within the Human Resources (HR) system to execute prenotifications for new bank details.

Prerequisites

To set up prenotifications in your system, please refer to the Set up prenotifications step in the Implementation Guide.

In order to implement the FI and HR prenotification programs, both applications (FI and HR) must include the following data:

- Payment method
- Banks

Activities

You do not have to make any settings in Customizing to execute prenotifications.

Further notes

No data is exchanged between the FI and HR applications.

Set Creditors from HR Master Data

Requirements

A requirement for this distribution scenario is the distribution of personnel master data from a human resources system to an FI system.

Activities

Section Master data distribution (Link to separate HR chapter) in the ALE-IMG contains an explanation of how the FI system is supplied with relevant employee data from the HR system.

The HR infotypes needed in the FI system are:

- Personnel Events (Information type 0000)
- Organizational Assignment (Information type 000)
- Personal Data (Information type 0002) - Accounting Status (Information type 0003) - Addresses (Information type 0006, Subtype)
- Bank Details (Information type 0009, Subtype 0 or 2)

In the FI system, the vendor master records can then be created, changed or locked using the report RPRAPA00.

Transfer Personnel Cost Planning to Accounting

In this section of the Implementation Guide (IMG), you find out which settings are required for transferring Personnel Cost Planning results to CO when they are in distributed systems.

Configure Scenario 'HR or Accounting With Release Earlier Than 4 A'

This section explains which settings you need to maintain for the scenario *Transferring Personnel Cost Planning Results to CO* when the Personnel Cost Planning component and the Controlling component are in different systems. Here we assume that at least one system is release 4 A.

Process

The Personnel Cost Planning online documentation describes the general integration with CO process.

For information on how to set up the integration between the Personnel Cost Planning component and the Controlling component when they are not in distributed systems, see Set Up Integration With Controlling in the Compensation Management Implementation Guide.

The following describes the integration set up when they are in distributed systems.

In distributed systems, all the read, write and validation checks take place in the CO system, therefore, before each cross-system operation, the HR system determines the recipient system based on your entries in the distribution model.

Functions in the HR System

1. Release a plan scenario for CO. As a result of this, the system defines the appropriate fiscal year.

Functions in the CO System

2. The transfer of the planned personnel costs for a released plan scenario is started.

3. The system formats the time-dependent personnel costs to fit into the corresponding CO periods and sends them synchronously via RFC (no IDoc is sent) and posts them in the CO System.

Maintaining the Distribution Model

To ensure the communication flow between the two systems, you need to specify a message type and/or an object complete with method when you maintain the distribution model.

The sending and receiving system assignment is as follows:

- Sender: CO System
- Receiver: HR System

Message type	Meaning
HRCPRQ	Personnel Cost Planning - Request from CO to HR for data transfer

SAP does not support the use of filter objects.

- Client: HR System - Server: CO System

Object name	Method	Meaning
ControllingArea	GetPeriod	Determine posting period from fiscal year; Controls the fiscal years involved when a plan is released

If your CO System is release 3 or lower, do not make the settings for the **ControllingArea** object.

Partner Profiles

You can generate the partner profiles from the distribution model. For information on how to do this, read the docuementation on Generating Partner Profiles in this implementation guide.

The following message types have been defined:

Message Type	Meaning
HRCPRQ	Personnel Cost Planning - Request from CO to HR

This message type has the following partner profiles:

- Outbound: Central Accounting (CO)
- Inbound: ------

In the CO system for the HR partner system, define the outbound parameters for the message type HRCPRQ. Use the basis IDoc type SYNCHRON. You do not have to define any parameters for the message type in the HR system.

Settings in the CO System

Master Data for the HR System

To transfer Personnel Cost Planning results, you must distribute the following master data from CO:

- Cost centers
- Cost elements (validation and possible entries)

The **Master Data Distribution** section in the ALE IMG explains how to send the relevant CO master data from the CO system to the HR system.

Control Data for the HR System

To release a Personnel Cost Planning plan scenario, you must determine the fiscal year variant. If the CO system has a lower release than 4.0, you must transfer the customizing data for the fiscal year variant into the HR system. In this instance, you cannot maintain the object method *ControllingArea.Getperiod* in the distribution model. The table contents are normally copied by the transport system. **Activities**

1. Check to see whether the communication flow for the logical message type HRCPRQ and the method GETPERIOD for the object CONTROLLINGAREA has been maintained in your customer distribution model
2. Check to see whether a partner profile has been defined for the message type
3. Make sure that the necessary CO master data has been distributed to the HR System

Further notes

The following releases are supported:

- CO System 4.0/4 - HR System 4.0/4:
  Use the above documentation in this instance
- CO System 3 - HR System 4.0/4:
  Use the 3 Personnel Cost Planning scenario documentation. Make sure you take the special features with regards the fiscal year variant into account.

Szenario 'HR und RW mit Release ab 4A' einstellen

This section explains which settings you need to maintain for the scenario **Transferring Personnel Cost Planning Results to CO** when the Personnel Cost Planning component and the Controlling component are in different systems but both are of release 4A or higher.

Process

The Personnel Cost Planning online documentation describes the general integration with CO process.

For information on how to set up the integration between the Personnel Cost Planning component and the Controlling component when they are not in distributed systems, see Set Up Integration with Controlling in the Compensation Management Implementation Guide.
The following describes the integration set up when they are in distributed systems.

Functions in the HR System: Sender System (Server)

When you release a plan scenario and transfer the personnel cost planning results to Controlling, the system adjusts the time-related personnel costs to fit in the corresponding CO periods. The system then posts the results to CO. In distributed systems, all the read, write and validation checks take place in the CO system, therfore, before each cross-system operation, the HR system determines the recipient system based on your entries in the distribtion model.

1. Once you have released the plan scenario and the system has formatted the personnel costs into periods, the system then uses a BAPI to read the different types of data in the CO system.
2. As soon as the posting of the planning data has been triggered, the following takes place:

a) The system validates the posting data against the CO data using a synchronous BAPI.

b) The system transfers the data to the recipient system asynchronously via the ALE layer.

Functions in the CO System: Recipient System (Client)

3. The system posts the data in the CO system.

Maintaining the Distribution Model

To ensure the communication flow between the two systems, you need to specify a message type and/or an object complete with method when you maintain the distribution model. Enter the following as the sender and recipient system:

o Sender/Client: HR System o
Recipient/Server: CO System

Object Name	Method	Meaning
ControllingArea	GetPeriod	Determines posting period from fiscal year; controls the fiscal years involved when a plan is released
ControllingArea	GetPeriodLimits	Determines validity periods for the posting periods
PlanDataTransferCO	GetSourceInfos	Determines the CO posting parameter
PlanDataTransferCO	CheckPrimaryCosts	Validates the Personnel Cost Planning posting data in CO
PlanDataTransferCO	PostPrimaryCosts	Posts the Personnel Cost Planning data in CO

The following message types are used:

Object Method	Message Type
PlanDataTransferCO.PostPrimaryCosts	PDTCO_POSTPRIMARY

You can use the controlling area as a filter object.

Partner Profiles

You can generate the partner profiles from the distribution model. For information on how to do this, read the documentation on Generating Partner Profiles in this implementation guide.

Settings in the CO System

Master Data for the HR System

To transfer Personnel Cost Planning results, you must distribute the following master data from CO:

- Cost centers
- Cost elements (validation and possible entries)

The **Master Data Distribution** section in the ALE IMG explains how to send the relevant CO master data from the CO system to the HR system.

Activities

1. Check to see whether the communication flow for the objects **ControllingArea** and **PlanDataTransferCO** for the methods given have been maintained in your customer distribution model.
2. Make sure that the necessary CO master data has been distributed into the HR system.

Read Market Value of Awards From Treasury

This section is concerned with the settings you must maintain for the *Awards: Security Prices* scenario if the *Compensation Management* and *Treasury* components are run in two different systems.

This integration supports the process of granting or exercising awards. The system uses *Treasury* to determine the current security prices, which it then stores for the appropriate award grant record or award exercise record in *Compensation Management*.

Maintain the Distribution Model

Choose the Maintain Distribution Model and Distribute Views step, and enter the following:

Sender/client: HR System

Receiver/server: RW System

Object name	Method	
FinancialProduct Treasury)	*GetList*	(determines the securities in
FinancialProduct exchanges)	*GetDetail*	(determines a security's
SecurityPrice security)	*GetDetail*	(determines the price of a

Settings in the HR System

Assign Award Attributes

Access the Implementation Guide (IMG) for *Compensation Management*, choose the *Assign Attributes for Awards* step, and assign a security ID number, an exchange, and a price type to each award.

The system determines current security ID numbers, exchanges, and price types from the AC System using BAPIs.

Settings in the AC System

No additional settings are necessary here for this scenario.

Set Activity Allocation for Training & Event Management

This section contains a description of the settings required for the **Internal Activity Allocation in Training and Event Management** scenario.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must maintain the following entries in the Maintain Distribution Model step by choosing *Add method*:

- Client: The HR System
- Server: The required Accounting (CO) System

- Object: AcctngActivityAlloc
- Method: Post

- Object: AcctngActivityAlloc
- Method: Check

- Object: ControllingDocument
- Method: GetDetail

Partner profiles

You can generate partner profile settings from the distribution model. For more information on this, see Generate Partner Profiles in the Implementation Guide.

HR Customizing

Carry out the steps in the Activity Allocation section of Customizing for Training and Event Management.

Master data for the HR System

If you want to perform activity allocation in Training and Event Management, the **cost centers** and **activity types** must be distributed.

Further notes

For more information on this ALE business process, call the "Application help" for Training and Event Management and choose "ALE business processes in Training and Event Management" -> "Activity allocation in Training and Event Management".

Set Cost Transfer Posting for Training and Event Management

This section contains a description of the settings required for the **Cost Transfer Posting in Training and Event Management** scenario.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must make the following entries in the Maintain Distribution Model step by choosing *Add method*:

- Client: The HR System
- Server: The required Accounting (CO) System

- Object: AcctngPrimaryCosts
- Method: Post

- Object: AcctngPrimaryCosts
- Method: Check

- Object: ControllingDocument
- Method: FindDetails

Partner profiles

You can generate partner profile settings from the distribution model. For more information on this, see Generate Partner Profiles in the Implementation Guide.

HR Customizing

Perform the steps in Cost Transfer Posting in Customizing for Training and Event Management.

Master data for the HR System

To perform a cost transfer posting in Training and Event Management, the **cost centers** and **cost elements** must be distributed.

Further notes

For more information on this ALE business process, call the "Application help" for Training and Event Management and choose "ALE business processes in Training and Event Management" -> "Cost transfer posting in Training and Event Management".

Set Payment Method and Bank Information

Payment methods and bank details are stored in the HR master records. These should be used for making payments to employees or applicants. In connection with this ALE business process, you thus require the relevant payment methods and bank master records for employees and applicants in the HR system.

Requirements

To process payments using payment programs, the payment methods have to be set up in the HR system under customer settings (Customizing).

Activities

Create the necessary bank master records in the HR system.

HR Payroll: Construction Industry

Construction industry functions as an interface to Accounting (AC) within the HR component **Payroll Construction Industry**.

The construction site is not created as an object in HR, but has to be created in Accounting (AC). A construction site can be created as:

- PSP-Element
- Network
- Order
- Cost object
- Customer order

The construction site will be assigned additional information in HR such as the beginning and end of construction, head of construction, hazardous collective wage rate bracket, and so on. The construction site can be accessed using the function module **RP_GET_BAUSTELLE** as an interface.

Requirements

In order to insert the <zh)Payroll Construction Industry component in distributed systems, the following prerequisites must be given:

Construction site

- If the construction site is created as a **PSP element** or as an **Internal order**, a replica of the data can be made using the distribution model. In this case, it is possible to filter according to the company code.
- If construction sites are created as networks, cost objects or as an order with another order type, AC and HR can only be operated separately if the construction sites also exist in the HR system. In this case, it is not possible to filter according to company code or controlling area.

The construction sites must therefore exist in both systems (AC and HR). Otherwise it is not possible to offer input help (F4-Help) when selecting a construction site in an input template.

Supported Release Statuses

The AC system and HR system must have Release 4A or higher.

Activities

No settings must be made in Customizing.

HR <-> External Systems

This section contains ALE business processes in which data is exchanged between the components Personnel Management (HR) and external systems (non-SAP systems).

Connection with an External Payroll System

Payroll Outsourcing functionality allows you to compile master data or payroll data in the SAP system to submit to a third-party service provider in an electronic format. The Outsourcing solution available in the United States and Canada provides a generic interface which writes data into an IDoc (Intermediate Document) for transport to a third-party system. In order to transport data into and out of the SAP system, you must set up a logical system, partner definition, and outsourcing ports.

If you have built your own payroll interface, using the Interface Toolbox, for example, you can use the Import section of this scenario. The Export section applies only to the transport of IDocs.

For more information regarding outsourcing, refer to the SAP Library, Human Resources -> PY Payroll -> PY-US United States Payroll or PY-CA Canada Payroll -> Outsourcing.

Export Payroll Data

The generic interface for exporting payroll and master data is available in the United States and Canada. The interface writes the pertinent data to an IDoc which is passed to the ALE layer for export.

For more information regarding the outsourcing export process and setup, refer to the SAP Library, Human Resources -> PY Payroll -> PY-US United States Payroll or PY-CA Canada Payroll -> Outsourcing.

Import Payroll Data

When importing wage types from an external system, the payroll results are stored in the interface tables T8B, T8D and T8E. The data, that must be started with a special import schema, is finally written in the payroll result Rx in cluster PCL2 using the payroll driver RPCALCX0. SAP supplies the XINF schema as an example.

The import is made using the Insert Outsourcer method of the business object BUS7023 ManagerExtPayroll.

Prerequisites

You must have prepared the Sending and Receiving Systems in Customizing the distribution (ALE).

Maintain Distribution Model

To guarantee communication between the external systems and SAP Payroll, you must make the following entries, using *Insert method* in the step Maintain Distribution Model :

- Client: the external system
- Server: the HR system
- Object: ManagerExtPayroll
- Method: Insert Outsourcer
  The method is based on the message type MANAGEREXTPAYROLL_INSERTOUT.

Under Maintain Partner Profile Manually , you define the *Trigger using background program* in the input parameters. In the input parameters, under message type, choose **BAPP** *BAPI-Inbound Collective* as the process code.

Other settings can have a very negative effect on the performance.

Settings in the HR System

- You must have made the basic settings for the payroll driver RPCALCx0.
- You must have copied and modified the import schema.
- You must have created and modified the wage types.

For further information on this procedure, see the ALE business process library.

Connection of External Time Recording System using CC

An external time recording system can be connected to SAP Time Management using the Plant Data Collection: Employee Times and Expenditures interface (HR-PDC).

To allow employees to enter their own time data at a time recording terminal, certain data from the SAP system must be transferred to the time recording system. This transfer is called a download.

At specific recording terminals, personnel time events or employee expenditures (external wage types, cafeteria data or service station data) is entered by the employees themselves.

Finally, the data that now exists in the time recording system is uploaded to the SAP system. This process is called an upload.

In the following step, you learn how to maintain the distribution model and which settings have to be made when customizing Personnel Time Management in the Implementation Guide (IMG).

Activities

Settings in the HR System

The following settings must be made in Customizing for Personnel Time Management -> Personnel Time Events -> General Settings:

- Specify Communication Parameters
- Create Number Range for Time Events and Account Assignment Data
- Specify Personnel Time Event Type Groupings
- Set Groupings for Connections to the Subsystem

Further notes

For more business-related information, see the SAP Library. Choose HR -> PT - Time Management -> Personnel Time Events.

Processing Personnel Time Events

To record personnel time events at an external time recording system, data from the SAP system must first be downloaded to the external time recording system.

The data is then used for checking purposes and display functions.

After the personnel time events are recorded by employees, they are uploaded to the SAP system and then processed further in SAP Time Management.

The data exchange takes place via asynchronous BAPIs. IDocs are either sent or received for each method.

Requirements

Maintain the Basic Settings in Customizing for Distribution (ALE).

Activities

Downloads

Maintain Distribution Model

To enable communication between the time recording systems and SAP Time Management, the following entries must be made in the

Add method activity in the Maintain Distribution Model step:

- Client: HR System
- Server: External time recording system
- Interface Type: RCVPMINIMD
- Method: receiveMiniMasterData (HR-PDC: Download HR Mini-Master) The method is based on the message type HRCCDNPERSO.

- Client: HR System
- Server: External time recording system
- Interface Type: RCVPEVTTGR
- Method: receiveTEventTypeGrp (HR-PDC: Download Time Event Type Groupings The method is based on the message type HRCCDNTEVGR.

- Client: HR System
- Server: External time recording system
- Interface Type: RCVPEVTREC (Reeiver for Check Data to Record Time Events)

For the executed downloads below, the corresponding methods for the interface type RCVPEVTREC must also take place in the distribution model.

Download	Method	Message Type
Cost Centers	receiveCostCenter	HRCCDNCOSTC
Internal Orders	receiveInternalOrder	HRCCDNINORD
Projects (WBS Elements)	receiveWBSElement	HRCCDNWBSEL
Attendane/Absence Reasons	receiveAttAbsReason	HRCCDNATTAB
Employee Balances	receivePTBalance	HRCCDNBALAN
Objects (such as Positions)	receivePObject	HRCCDNOBJID
Upload Request	requestPEvent	HRCCREQUPTEVEN

The name of each IDoc type corresponds its related message type, with the number 0 added.

Settings in the HR System

Carry out the steps in the Personnel Time Events section of the IMG for Personnel Time Management.

Upload

The upload of personnel time events takes place when the upload request is downloaded. The actual upload then takes place from the external time recording system.

Maintain the Distribution Model

Make the following entries in the *Add method* activity in the Maintain Distribution Model step:

- Client: External time recording system
- Server: HR System
- Objekt: PTManagerExtPEvent
- Method: Insert

The object method belongs to the Business Object BUS704 (Manager for External Time Events Recording) for the upload and includes the message type HRCCUPTEVEN.

Consistency Check

Perform a consistency check in the Check Technical Consistency in the Customizing section of the IMG for Distribution (ALE).

Processing Employee Expenditures (External Wage Types)

To record employee expenditures at an external recording system, data from the SAP System must first be downloaded to the external recording system.

The data is used there for performing checks.

After employees record their expenditures, the data is uploaded to the SAP System and processed further in SAP Time Management.

The data exchange takes place via asynchronous BAPIs. IDocs are either sent or received for each method.

Requirements

Maintain the Basic Settings in the Customizing step in the Implementation Guide (IMG) for Distribution (ALE).

Activities

Downloads

Maintaining the Distribution Model

To ensure communication between the recording system and SAP Time Management, the following entries must be made in the *Insert method* step in the Maintain Distribution Model section of the IMG for Personnel Time Management.

- Client: HR System
- Server: External time recording system
- Interface type: RCVPMINIMD
- Method: receiveMiniMasterData (HR-PDC: Download HR Mini-Master) The method is based on the message type HRCCDNPERSO.

- Client: HR System
- Server: External time recording system
- Interface type: RCVPEVTTGR
- Method: receiveTEventTypeGrp (HR-PDC: Download Time Event Type Groupings) This method is based on the message type HRCCDNTEVGR.

- Client: HR System
- Server: External recording system
- Interface type: RCVPEXPREC Receiver for Check Data to Record Employee Expenditures

The corresponding methods must also be entered for the executed downloads listed below in the interface type RCVPEXPREC in the distribution model:

Download	**Method**	**Message Type**
Perm. Employee Expenditures	receivePExpenses	HRCCDNEXTWT
Upload Request	requestPExpenses	HRCCREQUPEXTWT

The indicators for each IDoc type correspond to their message types, with the number 0 added to each.

Settings in the HR System

Carry out the Customizing steps in the Employee Expenditures section of the IMG for Personnel Time Management.

Uploads

Uploading personnel time events is triggered by downloading the upload request. The actual upload then takes place in the external time recording system.

Maintaining the Distribution Model

The following entries must be made in the Maintain Distribution Model section in the *Insert method* step:

- Client: External time recording system
- Server: HR System
- Object: PTManagerExtPEvent
- Method: Insert

This object method belongs to the Object BUS704 Manager for External Time Recording for the Upload and contains the message type HRCCUPEXTWT.

Consistency Checks

Perform a consistency check in the Customizing step Check Technical Consistency step in the IMG for Distribution (ALE).

Supply SAP Time Management with External Time Data

You can use this ALE business process to transfer time data and data on operative planned working times which was recorded in an external system to the SAP HR system.

In the external system, time data exists as durations (such as 8 hours) or as time intervals (such as 7:00 a.m. to 4:00 p.m.).

After the data is transferred to the HR System, it is stored in the *Attendances* (2002), *Absences* (200), or *Substitutions* (2003) infotype. The infotype data records are processed in SAP Time Management by time evaluation, which generates time wage types. These time wage types can be transferred and used in SAP Payroll, where the monetary valuation of the wage types takes place.

This business process can also be used for quota accrual and quota deduction, for example.

Transfer Master Data to External System

The required master data is transferred from the HR System to the external system using the Interface Toolbox (Transaction PU2) or with the ALE Business Process Set Up Distribution of HR Master Records and Org. Data.

The applicable reports can be scheduled periodically so that the external system is provided with the most current data.

Further notes

For more information on the Interface Toolbox, see the SAP Library under Human Resources -> HR tools -> Interface Toolbox.

Checking Time Data

Before external time data is transferred, you can perform certain plausibility checks in the Attendances infotype (2002) or the Absences infotype (200).

Pay scale groups and levels entered are checked in the HR system as to whether they are permitted for the corresponding employees. The activity allocation check confirms if the activity types entered are available in the system. The cost assignment check confirms if the account assignment objects are available in the system.

In addition, you can also perform collision checks. Data records that are to be transferred to the HR system are checked to see that they will not overlap (collide) with data existing in the infotypes 2002 and 200 in the HR system.

By simulating quota deduction, you can check if enough remaining quota is available.

Requirements

Maintain the Customizing steps for Basic Settings in the Implementation Guide (IMG) for Distribution (ALE).

Activities

Maintaining the Distribution Model

To ensure communication between the external recording system and SAP Time Management, make the following entries in the Customizing step Maintain Distribution Model in the Implementation Guide (IMG) for Distribution (ALE).

- Client: External system
- Server: HR System
- Object: PTManagerExtAttAbs
- Method: Check (Check Attendance/Absence without Account Assignment)
- Method: CheckWithActivityAllocation (Check Attendance/Absence with Activity Allocation)
- Method: CheckWithCostAssignment (Check Attendance/Absence with Cost Assignment)
- Method: CheckCollision (Check Collisions)
- Method: CheckQuota (Checks Quota Deduction)

These methods belong to the object BUS70 Manager for External Attendances/Absences.

Settings in the HR System

Settings in External Time Recording Systems

Consistency Checks

Perform a consistency check in the Customizing step Check Technical Consistency step in the IMG for Distribution (ALE).

Transfer Time Data to HR System

External time data is stored in the interface tables PTEX2000 and PTEXDIR by the data transfer.

In addition, the data is read by the report RPTEXTPT (Transfer External Data -> Time Management)

from the file PTEX2000 and stored as *attendances/absences* in the Attendances (2002) or Absences (200) infotypes.

Time wage types are created during time management in SAP HR Time Management. SAP HR Payroll can import these data records and monetarily valuated them.

Requirements

You must first maintain the Customizing steps for Basic Settings in the Implementation Guide (IMG) for Distribution (ALE).

To ensure the transfer of the time data from the interface table to the infotypes, you must carry out the Define External Application for Integration with Personnel Time Management step in Customizing.

Activities

Maintain the distribution model

To ensure communication between the external system and SAP HR Time Management, make the following entries in the Maintain Distribution Model step in the IMG for Distribution (ALE):

- Client: External system
- Server: HR System
- Object: PTManagerExtAttAbs
- Method: Insert (Insert Attendance/Absence without Account Assignment)
- Method: InsertWithActivityAllocation (Insert Attendance/Absence with Activity Allocation)
- Method: InsertWithCostAssignment (Insert Attendance/Absence with Account Assignment)

These methods reference the message types ATT_ABS, ATT_ABS_WITH_ACTIVITY, ATT_ABS_WITH_COST and belong to the object BUS70 Manager for External Attendances/Absences.

Settings in the HR System

Schedule the report RPTEXTPT periodically, so that the data from the interface table PTEX2000 are created as records in the infotypes 2002 or 200.

External system settings
Consistency check

Perform a consistency check in the Customizing step Check Technical Consistency in the IMG for Distribution (ALE).

Transfer of Operative Planned Working Times to the HR System

When operative planned working times are transferred, they are stored in the interface tables PTEX2003GEN, PTEX2003SPEC, and PTEXDIR.

The data is then read from tables PTEX2003GEN and PTEX2003SPEC by report RPTEXTPT (Transfer External Data -> Human Resources) and is created as *Substitutions* in the *Substitutions* infotype (2003).

Requirements

You must have maintained the Basic Settings in Customizing for the distribution.

To guarantee the transfer of the operative planned working times from the interface tables to the infotype, you must perform the step Define External Application for Integration with Personnel Time Management in Customizing for Personnel Time Management.

Activities

Maintain distribution model

To guarantee communication between the external system and SAP Personnel Time Management, you must use *Insert method* to make the following entries in the step Maintain Distribution Model:

- Client: External System
- Server: HR System
- Object: PTMgrExtWorkSched
- Method: InsertWithCostAssignment (Insert Operative Planned Working Time (with Cost Assignment))

The methods relate to the message type WORKSCHED_WITH_COST and belong to object BUS703 (Manager for Operative Planned Working Times).

Settings in the HR System

Schedule report RPTEXTPT periodically so that the data from the interface tables PTEX2003GEN and PTEX2003SPEC is created regularly as data records in infotype 2003.

Settings in the external recording system

Check consistency

Perform a consistency check in the step Check Technical Consistency in Customizing for the distribution (ALE).

Supply SAP Human Resources with External Time Wage Types

This ALE business process transfers external time wage types to the HR System.

Time data is recorded and processed by an external system to the point where time wage types are already generated.

The external time wage types are stored as data records in the EE Remuneration infotype (200) after the data is transferred. These data records can be imported by Payroll and then monetarily valuated.

Transferring this type of external time data to the HR system, however, does not fully utilize the extensive functionality of Time Management. For example, quota accrual and quota deduction can not take place.

Transfer Master Data to External System

The required master data is transferred from the HR System to the external system using the Interface Toolbox (Transaction PU2) or with the ALE Business Process Set Up Distribution of HR Master Records and Org. Data.

The applicable reports can be scheduled periodically so that the external system is provided with the most current data.

Further notes

For more information on the Interface Toolbox, see the SAP Library under Human Resources -> HR tools -> Interface Toolbox.

Check External Wage Types

Before transferring time wage types you can perform plausibility checks in the EE Remuneration Info infotype (200).

For example, pay scale groups and levels entered are checked in the HR system to see if they are permitted for the corresponding employees. The activity allocation check confirms if the activity types entered are available in the system. The cost assignment check confirms if the account assignment objects are available.

Requirements

Maintain the Customizing steps for Basic Settings in the Implementation Guide (IMG) for Distribution (ALE).

Activities

Maintaining Distribution Models

To ensure communication between the time recording systems and SAP Time Management, make the following entries in the Customizing step Maintain Distribution Model in the IMG for Distribution (ALE):

- Client: External system
- Server: HR System
- Object: PTMgrExtRemunSpec
- Method: Check (Check External EE Remuneration Info without Account Assignment)

- Method: CheckWithActivityAllocation (Check External EE Remuneration Info with Activity Allocation)
- Method: CheckWithCostAssignment (Check External EE Remuneration with Cost Assignment)

These methods belong to the object BUS702 Manager for External EE Remuneration Info.

Consistency Check

Perform a consistency check in the Customizing step Check Technical Consistency in the IMG for Distribution (ALE).

Transfer External Wage Types to HR System

External time wage types are stored in the interface tables PTEX200 and PTEXDIR during the transfer.

The data is then read from the interface table PTEX200 by the report RPTEXTPT (Transfer External Data -> Time Management)

and stored in the *EE Remuneration Info* infotype (200). SAP HR Payroll then imports the data records and monetarily valuates them.

Requirements

Maintain the Customizing steps for Basic Settings in the Implementation Guide (IMG) for Distribution (ALE). To ensure the transfer of the time data from the interface table to the
infotypes, you must carry out the Define External Application for Integration with Personnel Time Management step in Customizing.

Activities

Maintain the distribution model

To ensure communication between the time recording systems and SAP HR Time Management, make the following entries in the Customizing step Maintain Distribution Model in the IMG for Distribution (ALE):

- Client: External system
- Server: HR System
- Object: PTMgrExtRemunSpec
- Method: Insert (Insert External EE Remuneration Info in Table without Account Assignment)
- Method: InsertWithActivityAllocation (Insert External EE Remuneration Info in Table with Activity Allocation)
- Method: InsertWithCostAssignment (Insert External EE Remuneration Info with Cost Assignment)

These methods reference the message types REM_SPEC, REM_SPEC_WITH_ACTIVITY, REM_SPEC_WITH_COST and belong to the object BUS702 Manager for External Remuneration Specifications

Settings in the HR system

External recording systems settings

Consistency checks

Perform a consistency check in the Customizng step Check Technical Consistency in the IMG for Distribution (ALE).

Accounting

In this section you can find out which settings you have to make for ALE business processes involving the R/3 Components Accounting (AC) and one or more other components, such as HR or LO or AC.

Generating the Distribution Model Using Templates

For the following Accounting business processes you can generate the entire distribution model using the template *ACC-CENTRAL*:

- Master data entry in the central system
- Reporting in the central system
- Document entry in decentralized systems

The communication parameters for the areas below are in this model:

- Cost center accounting
- Internal orders
- Profit center accounting
- General ledger
- Distributed credit management

You can use a wizard to create the model view.

Further Notes

You can use the template *ACC-CENTRAL* more than once to create a *star relationship* between a central system and several decentralized systems.

Templates for other business processes in Accounting are not yet provided in the standard delivery, but they can be created manually.

To use a template to create a model view, in Customizing choose *Basis Components -> Distribution (ALE) -> Modeling and Implementing Business Processes -> Maintain Distribution Model*.

Master Data Distribution

This section contains the settings required to distribute Accounting master data between systems.

For technical information see the ALE IMG under Master Data Distribution.

Distribution of Internal Orders

This IMG activity describes the settings required for internal order distribution.

These settings required for creating internal orders in a (master) system and distributing to any other (receiver) systems.

The ALE business process enables you to create an internal order in the master system, and creates it automatically in one or more receiver systems when you save it.

You can specify whether the internal order is distributed when you save it and in which receiver system it is created. To do this, use the controlling area and order type filter objects.

Activities

Specify a system in which you can use all cross-system settings where possible. Then complete the necessary activities in the Implementation Guide (IMG) for ALE, under **Distribution (ALE)**:

- Set up logical systems
  Specify all the systems involved in the distribution.

- Maintain distribution model
  Define the master and receiver systems and then choose the filter objects.

  Object name: InternalOrder
  Method: SaveReplica

- Generate partner profiles
  Specify the time at which the exchange of data between the systems is to take place.

Archiving recommendations

You can only archive internal orders in the master system. Internal orders are deleted in the receiver system as soon as the status "Deletion indicator" is transferred to the receiver system from the master system.

You need to guarantee that the "deletion flag" status was transferred to all receiver systems, before the internal deletion indicator is activated in the master system.

Therefore, ensure that you choose a long enough residence time.

Further notes

An internal order (that you created in the master system and distributed to the receiver system) can only be overwritten in the receiver system with data from the same master system.

If you use several systems as master system, it is recommended that you define different order number ranges for each one.

For further information, see the IMG for Overhead Cost Controlling: Maintain number ranges for orders.

Distribution of Work Breakdown Structure

You use this step to make the settings required for work breakdown structure (WBS) distribution.

These settings area required if you want to create WBSs in a (master) system and distribute it to a number of (receiver) systems.

The ALE business process ensures that a WBS created and saved in a master system is automatically created in one or more receiver systems too.

You can use controlling areas and the project profile as filters to control whether the WBS is distributed when you save it and in which receiver system it is created.

Activities

Determine a system in which you want to make all the cross-system settings.

- Maintain logical systems
  Determine all the systems to be included in the distribution.

- Maintain distribution model
  Define the master and receiver systems and choose the filter objects.

  Object name: WorkBreakdownStructure
  Method: SaveReplica

- Generate partner agreements
  Determine the time at which the data is to be exchanged between systems.

- Activate object types in inbox/outbox
  In the inbox and outbox, activate the serialized distribution using object types.

  Object type: BUS204

Archiving Recommendations

WBSs are only archived in the master system. They are deleted in the receiver systems as soon as you set the deletion indicator in the master system and save this change to the receiver system.

The "deletion flag" status must have been transferred to all the receiver systems before you activate the internal deletion indicator in the master system.

Further notes

A WBS created in a master system and distributed to a receiver system can only be overwritten in the receiver system with data from the same master system.

If you are using more than one system as master systems, we recommend you define different project number ranges for each system. You can use an additional locking indicator to prevent the same project number in another system.

For more information, go the Project System IMG and read Define project coding for project.

Proposal for distribution model: Customer and vendor masters

The *vendor master* and *customer master*, and the *contact person* use central address management (ZAV).

Separate message categories (ADRMAS, ADR2MAS, ADR3MAS, see below) are assigned to *addresses* in the ALE environment, so that these can be distributed as independent objects.

Contact persons are not distributed separately. They are distributed as part of the customer master.

In the text below, the vendor master and customer master are also described as *master object*.

Regarding distribution, note that:

1. Address objects are processed before the master object in the target system. This ensures that the address data already exists when the master object is created, and that the master object is created with full address data. This would not be absolutely essential from the point of view of the master object, as the master object could be created with incomplete master data (the address data in the CAM tables is in part the same as that in the master object tables), but operative applications may need the full address data.

2. The address object and master object are sent to the same target systems. This ensures that address objects are not distributed to target systems in which the related master objects are not known.

Processing of address objects before the master object in a target system is achieved by *serialization*. This must be maintained for the message category of the address object and the message category of the master objects. Serialization ensures that a separate control message is sent to the recipient if the IDocs, created for the related message categories by a certain point in time in the sending system, are transferred to the target system successfully. The recipient function for the control message in the target system ensures that the IDocs that have built up by the starting date are posted in the message category sequence specified. *Notes:*

1. Serialization groups have been created for the standard message categories for customers (DEBMAS, DEBCOR), vendors (CREMAS, CRECOR) and address objects (ADRMAS, ADR2MAS, ADR3MAS). During serialization group maintenance, you must ensure that the address objects are distributed before the master objects. Because addresses are distributed using different types (see below), you must ensure that addresses with type are distributed before addresses with type 3, and these are distributed before addresses with type 2.

2. In the receiving system, you define inbound processing for each sending system for the message categories of a serialization group.

3. To use serialization, the IDocs must be parked in the sending or receiving system. It does not make sense to forward the IDocs directly. You maintain the relevant settings for this in the partner profiles.

You send the address and master objects to the same system by making the relevant settings in the *distribution model*. Before the distribution model is maintained, the objects to be distributed must be known.
Make use of the opportunity to set a default for distribution using automatic generation of distribution.

This default ensures that all entries are made that are necessary for the distribution of master objects and the addresses assigned to them in the ALE distribution model.

For generation of the distribution model, you must take the following points into consideration:

- For the generated distribution to be visible in the distribution model, you must enter a name for the model view. You can then find the distribution generated in the distribution model under this name.
- The logical system names of the systems between which data is distributed must be entered so that the partner relationship can be defined in the distribution model.
- For distribution of master data, you must enter the relevant message categories (the message categories supplied are CREMAS and CRECOR for the vendor master and DEBMAS and DEBCOR for the customer master). A default for the customer or vendor distribution and related addresses is then generated.

For a better understanding of the generated distribution model, bear in mind the following information:
Central address management differentiates between 3 address types:

- *Address type* : Addresses of companies and organizations (-> message category ADRMAS)
- *Address type 2*: (New private) addresses of people (-> message category ADR2MAS)
- *Adress type 3*: Addresses of people in companies (-> message category ADR3MAS)

The *main address* of a customer or vendor has address type . The *address of a contact person* had address type 3. For a contact person, you are able to maintain a different business address (address type) or a private address. The *private address* has either address type (if it is an address that already existed before the address data was converted to CAM; also referred to here as an "old" private address) or address type 2 (all contact person private addresses that are created after the conversion to CAM; also referred to here as a "new" private addresses).
A *method* (SaveReplica) for distributing the address data of the particular type is available for each address type.
The message categories on which the methods are based are:

- ADRMAS for addresses with type
- ADR2MAS for addresses with type 2 - ADR3MAS for addresses with type 3

You can use the filter objects assigned to these methods to define criteria for whether an address is distributed via this message link. Filter objects can be logically linked to each other via *filter groups*. An "or"-link exists between various filter groups. Within a filter group, the filter objects are connected by "and"-links.

The following filter groups and related filter objects must be maintained for addresses with address type :
For each message category of a customer/vendor, a filter group must be created for the company address. This filter group must contain the following filter objects:

- Semantic meaning of the address
- Object type of the object owner (customer or vendor)
- Object ID of the object owner
  (As a dependency is defined for the object ID between the method SaveReplica and the standard message category of the customer/vendor, you enter the message category of the customer/vendor here).

For each message category of the customer, a filter group for the different business address and the "old" private address is to be created for each contact person. This filter group must contain the following objects:

- Semantic meaning of the address

- Object type of the object owner (contact person)
- Object type of the object to which the contact person references (customer) - ID of the referenced object.
  (As a dependency is defined for the object ID between the method SaveReplica and the standard message category of customer, you enter the message category of the customer here.)

The following filter groups and related filter objects are to be maintained for addresses with type 2:

For each message category of a customer, a filter group is to be created for the "new" private address for the contact person. This filter group must contain the following filter objects:

- Semantic meaning of the address
- Object type of the object owner (contact person)
- Object type of the object which the contact person references (customer)
- ID of the referenced object
  (As a dependency is defined for the object ID between the method SaveReplica and the standard message category of the customer, you enter the message category of the customer here.)

The following filter groups and related filter objects are to be maintained for addresses with type 3:
For each message category of a customer, a filter group is to be created for the contact person address for the contact person. This filter group must contain the following filter objects:

- Semantic meaning of the address
- Object type of the object owner (contact person)
- Object type of the object a level above the contact person (customer)
- ID of this higher-level object
  (As a dependency is defined for the object ID between the method SaveReplica and the standard message category of the customer, you enter the message category of the customer here.)

Further notes

For details on carrying out the above-mentioned serialization, see the step Data Serialization for Sending and Receiving in Customizing for ALE.

For details on maintaining the above-mentioned distribution model, see the step Maintain Distribution Model in Customizing for ALE.

As this may lead to the creation of a further default for distribution that needs to be maintained, the default is not transported.
It is possible to transport the distribution model in the step "Maintain Distribution Model".

AC <-> AC

This section contains ALE business processes in which Accounting data is exchanged between different R/3 Systems.

Special Ledger

In this section, you will be given information on how to set up the Special Purpose Ledger in a distributed environment.

For more detailed information on the SL module (Special Purpose Ledger), please refer to the Implementation Guide under: Financial **Accounting -> Special Purpose Ledger**.

If you want to distribute a ledger to a customer-specific SL table, please carry out the following steps:

- The customer-specific SL table and the ledger are created in the central system.
- The table for assignments between SL ledgers and the ALE IDoc type must be updated. You do this using the transaction GAL.
- The structure of the customer-specific SL table and that of the corresponding ledger, and also the new entries in the assignment table must be distributed from the central system to all remote systems. You can do this via the transport system, for example.
- Export and import programs for the ALE IDocs must be generated in all systems. You do this using the transaction GAL2.
- In all remote systems, you must assign an export ledger to the ledger. You do this in the ledger maintenance.
- In every remote system, an export rollup must be defined for the ledger. You do this via the menu path: **Accounting -> Financial accounting -> Special purpose ledger -> Periodic processing -> Rollup -> Create**.

Customizing object in the distributed special purpose ledger environment

The following customizing objects are relevant to distribution in SL.

Transport object	Description
GLX_LEDGERFI	GLX: Change ledger

Partner profiles in the central SL system

For the following message types, inbound partner profiles must be maintained for every remote SL system.

Message type	Description
GLROLL	IDoc type for GLX rollups

Partner profiles in the remote SL system

For the following message types, outbound partner profiles must be maintained for the central SL system.

Message type	Description
GLROLL	IDoc type for GLX rollups

Determining the areas of responsibility for workflows on the basis of errors in the distribution environment

- Determining areas of responsibility in the central SL system Maintain allocations for the following standard tasks.

Standard task: ID code	Description
GLROLL_Error	GLROLL error received

Further notes

You must maintain a ledger number as filter object (RLDNR) for the message type GLROLL in the customer distribution model.

For more information about this scenario, choose Financial accounting -> Special ledger -> Tools -> Distribution (ALE) in the implementation guide of the special ledgers.

Consolidation

This section contains notes on setting up the distribution of consolidation data. The ALE distribution in the consolidation uses a periodic extract from FI, sent in an IDOC.

Activities

1. The data transfer must be set up in the consolidation on the sending system. This is done in the Financial Accounting -> Preparation for consolidation -> General specifications -> Scope of consolidation and data transfer -> Set up periodic extract from additional ledger of the Implementation Guide.
   - Set the 'Actual data' radio button to '**FI extract**'.
   - Click on the '**Details of actual**' button.
   - Set the 'Data transfer' radio button to '**IDOC**'.
2. Maintain output partner profiles on the sending system for the '**LCROLL** message type for the receiver system.
3. The data transfer has to be set up for each distributed company in the receiver system. This is done in the Financial accounting -> Consolidation -> Master Data -> Companies -> Maintain companies section of the Implementation Guide.
   - Set the 'Data transfer' field to have the value '**P**' (periodic extract FI).
   - Click on the pushbutton '**Extras data transfer**'.
   - Set the 'Import financial reporting data' radio button to '**IDOC**'.
4. Maintain input partner profiles on the receiver system for the '**LCROLL** message type with the process code '**LCRO**' for the sending system.
5. Maintain the allocation for the standard task **LCROLL_Error** (LCROLL input error) for the specification of the responsibilities for the Workflow error processing. This is done in the Error handling section of the ALE Implementation Guide.

Synchronizing the application customizing

The currency and the ledger must be consistent on the systems of the distributed company.

Further notes

In order to send the consolidation data, the following transaction must be periodically executed: menu option **Accounting -> Financial accounting -> General ledger -> Periodic work -> Year end closing -> Draw up balance sheet**. The '**Extract to FI-LC**' field has to be filled with a value.

You must maintain a company as filter object (RCOMP) for the message type LCROLL in the customer distribution model.

Profitability Analysis

This section describes the settings you have to make in ALE Customizing for profitability analysis, if data is to be distributed.

Requirements

- You have set up the sending and receiving systems in ALE Customizing.
- The structure of the operating concern (attributes and value fields) must be the same in all participating systems.
- You must have generated the message types for each operating concern in Customizing for the CO-PA application using Generate/update message type. These message types must be identical in all the CO-PA distributed systems. It is best to carry out the settings for the last two steps in the central system and transport them to the decentralized systems.

Note: For information about ALE settings in the CO-PA application see the IMG section Controlling -> Sales and Profits Controlling -> Tools -> Distributed Profitability Analysis.

Activities

Maintenance of the Distribution Model

You maintain the distribution model in Maintain Distribution Model.

- Create the message type 'CPxxxx' (xxxx = operating concern) for a model view for the costing-based profitability analysis and CODCMT (CO document) for the account-based profitability analysis.
- You can create filters to restrict the attributes distributed.

The following filter object types are provided:

- Operating concern
- Sales organization
- Plan version
- Plan/actual indicator
- Currency type

In costing-based profitability analysis you can create your own filters using other fixed attributes:

a) From the R/3 menu choose 'Tools -> Business Framework -> ALE -> Development'.

b) Choose 'IDoc -> ALE objects -> Define' to define an ALE object type.

- In table 'CE0xxxx (xxxx = operating concern) enter the table name in the column 'Table Name' and the field name in the column 'Field Name'.
- Assign this defined ALE object type to the message type by choosing 'IDoc -> ALE objects -> Assign to message type'. In the columns enter: Field Name: Field name of attribute
  Segment type: EKEFXA (CO-PA IDoc: fixed fields)

No.:
Field Name: Field name of attribute

- Define the partner profiles in Generate Partner Profiles

Master Data to be distributed:

- Material master (core data)
- Customer master record (core data)
- Results of product costing

Customizing data

Object	**Description**
V_T00	Company code (core view)
V_T00O	Global company code
V_TGSB	Business area
V_TGSBG	Global business area
V_TKA0	Controlling area
V_TKEB2	Operating concern
	Characteristic of the operating concern (characteristic/key figure structure) **()**
	Derivation structure + rules **()**
V_T00W	Plant/branch (core view)
	Valuation level
	Valuation area
	Assign plant - company code (via valuation area)
V_TVKO	Sales organization
V_TVTW	Distribution channel
V_TSPA	Division
V_TVBUR	Sales offices
V_TVKGR	Sales groups
V_T002	Languages
V_T00	Country definition
V_CURC	Currency codes
V_T006D	Dimensions for units of measurement
V_T006I	ISO codes for units of measurement

Planning version

Fiscal year variant

Invoice category (TVFK)

() This customizing data must be transported separately, not using customizing data synchronization like other data.

Error Handling

So that work items are generated for error handling, the standard task below must be assigned to positions or to workflow organizational units.

Standard task:

ID code	Name
COPAGN_Error	COPAGN input error

Other Settings

Make other settings in Customizing for Profitability Analysis. See section Distributed Profitability Analysis (ALE).

Set distributed cash management

This section gives you an overview of the activities required to set up distributed Cash Management systems.

Activities

First of all, make the cross-application Customizing settings followed by the application-specific Customizing settings for distributed Cash Management.

In the IMG, you make the cross-application Customizing settings under **Cross-Application Components -> Distribution (ALE)**.

You make the application-specific Customizing settings under **Treasury -> Cash Management -> Tools -> Distributed Cash Management**.

Further notes

Treasury Workstation

Distributed Cash Management forms the basis for the **Treasury Workstation**. The Treasury Workstation receives the TR-CM data from the sending TR-CM systems via distributed Cash management, and returns data to the sending systems in the form of FI documents.

In order to set up a complete Treasury Workstation, you also need to make ALE settings in Financial Accounting .

Distribution of Financial Accounting Data

This section describes the settings that have to be made to distribute financial accounting systems.

These settings must also be made to exchange financial accounting data between logistics systems and a central accounting system.

The following activities must be carried out:

- Initialise transaction figures rollup
- Maintain clearing accounts for decentralized systems
- Set posting keys for transfer postings
- Set account conversion

Notes on settings in financial accounting

For further information on settings in financial accounting refer to the IMG: **Financial Accounting**.

If a company code is to be distributed, keep in mind that:

- Presently no data from funds management can be distributed.
- Central financial accounting systems are not updated by transactions in decentralized systems.

Document Number Assignment

If a document type assigned with an external number is used in the central system to post line items from the decentralized system, the document is posted under the same number as in the decentralized system.

Keep in mind the following:

- The number range interval in the central system can only be used to transfer line items via ALE, not for further FI postings in the central system.
- The transaction figures rollup must be posted with a document type assigned with an internal number because no document number can be forwarded from the sender system.
- The number range interval of the decentralized system must be included in the relevant number range interval of the central system.
- The number ranges must be mutually exclusive between all the systems.

Transporting Customizing Data

Certain settings for financial accounting must be synchronized across all the systems. The easiest way to do this is to make the Customizing settings on the central system and then distribute them to all the participating systems.

A decentralized financial accounting system is supplied with the initial Customizing data via the transport system.

To compile the transport requests for the decentralized financial accounting systems, choose in Customizing **Enterprise Structure -> Maintain Structure -> Definition -> Financial Accounting -> Define, Copy, Delete, Check Company Code**.

Notes for Implementing an R/2 RF

Control data per line item must not be forwarded to the central system.

If no migration server is being used, the global company code must be the same as the company code in R/2.

Flagging the Accounts for Transferring Line Items

General Ledger Accounts

General ledger accounts to be transferred to the central system must be explicitly flagged.

This setting can only be made in the decentralized systems of distributed financial accounting.

Refer to the section "Distribution in Accounting" in the "ALE Introduction and Overview".

For all general ledger accounts to be transferred per line item to the central system, set the

Account Managed in External System indicator in the master data maintenance. In the *SAP Easy Access* menu, choose *Accounting -> Financial Accounting -> General Ledger -> Master Data -> G/L Accounts -> Individual Processing -> In Company Code*.

Customizing Objects in Distributed Financial Accounting

The following Customizing objects are used in a distributed financial accounting environment.

Transport Object	Description
V_00O_B	Assign cross-system co. cde -> chart of accts
V_00_B	Company code global data
V_00_L	Tax base line
V_00_M	Cash discount base
V_00_O	Company code assignment -> global company code
V_T00_O	Cross-system company codes
V_T00_S	Company code assignment ->Chart of accts
V_T880	Group company
V_T00A	Additional local currencies for company code
V_TGSB	Business areas
V_TGSBG	Cross-system business areas
V_T004	list of all charts of accounts
V_00_U	Assignment of company code -> Fiscal year variant
V_00_V	Foreign currency translation for tax items
F03	Document types
V_00B	Country field checks
V_GSB_B	Assignment of business area -> Global business area
V_T00	Company code
V_T00	Country global parameters
OCCI	Versions for consolidation integration
F09	Fiscal year variants
V_T009Y	Shortened fiscal years
V_T02	Terms of payment
FSL	Posting keys

Maintaining Partner Profiles

- Partner Profiles in the Central Financial Accounting System.
  Inbound partner profiles must be defined for the following message types in each decentralized financial accounting system:

Message Type	Description
FIDCMT	Line items in FI documents

FIROLL	Rollup of delta transaction figures for general ledger accounts
FIDCCH	Change in FI document

- Partner Profiles in the Decentralized Financial Accounting System
  Outbound partner profiles must be defined for the following message types in the central financial accounting system:

Message Type	Description
FIDCMT	Line items in FI documents
FIROLL	Rollup of delta transaction figures for general ledger accounts
FIDCCH	Change in FI document

Defining Responsibilities for Workflows Generated from Errors in the Distributed Environment

If problems arise in financial accounting in the distributed environment, workflows are generated. In this step you can define the persons responsible for handling the errors.

For further information see the section **Error handling**.

- Specifying Responsibilities in the Central Financial Accounting System Define the assignments for the standard tasks below:

Standard Task: Code	Description
FIDCMT_Error	FIDCMT Inbound error
FIROLL_Error	FIROLL Outbound error
FIDCCH_Error	FIDCCH Inbound error

Further notes

If you have not already done so, you must set up the **global company codes** and **global business areas** for distributing financial accounting. For further information refer to the section Global Organizational Units in this IMG.

You must define a company code as the filter object (BUKRS) for the message types FIDCMT, FIROLL and FIDCCH in the distribution model.

Initialize rollups for monthly debits and credits

A rollup of transaction figures has to be performed before the general ledgers can be coupled.

If there are additional local currencies in use, an export ledger must be assigned to the ledgers used for these currencies.

Activities

Execute the function. This must be done on all decentralized systems.

Maintain clearing accounts for decentralized systems

For each sender system a clearing account has to be maintained on the central system for the financial accounting.

This setting is required only on the central system of the distributed financial accounting. You must maintain the allocation between the sender system, specified

by the logical system identifier, and the clearing account, specified by the chart of accounts and account number.

Activities

- Execute the function

  Specify the decentral systems (sender sys.) with the associated chart of accounts and the account number (target a/c) of the clearing account.

Set Posting Keys for Transfer Postings

In order for the transfered postings to be updated in the central FI system, the posting keys for transfer postings into the general ledger (transaction **GLU**)have to be entered in the central system.

Standard settings

Posting keys are already set in the standard.

Activities

If you want to use other posting keys than those set in the standard, then execute the function and enter the posting keys you require.

Further notes

The posting keys entered are independent of the chart of accounts.

Set account conversion

In this section you can maintain conversions between general ledger accounts for the distributed financial accounting.

This setting is required only on the decentral systems of the distributed financial accounting.

Depending on the recipient system and on the chart of accounts of that recipient system, a different account number may be specified for each general ledger account, which is specified by chart of accounts and account number. In this way it is possible to have different account numbers in the sender and recipient systems.

Account numbers on the sender system are assigned a new key when an intermediate document is created for the rollup of transaction figures or the line items of an FI document.

This conversion is ignored when master data are sent via ALE for general ledger accounts.

Activities

1. Execute the function
2. Specify the chart of accounts in the sending decentral system and the target chart of accounts in the target system (central financial accounting system) between which the conversion should take place.
3. Specify which account in the decentral system (send-a/c) should be converted into which account in the central system (target-a/c).

Check Application Consistency

After completing the settings for the distributed financial accounting, you should check the consistency of your settings in this section. You must perform this check in the decentralized systems. Remember to check that the settings for the message types FIDCMT and FIROLL are present. You should also check the consistency of the control data for the message type FIROLL.

Execute the function in the decentral system to check if the settings between the system for the required message types have been defined correctly. Check the application consistency for the central accounting system and the 'FIOROLL' message.

If you double-click on a line in the consistencs check log, you branch to the corresponding Customizing transaction where you can make the required settings.

Asset Accounting Settings

This section contains information on maintaining the distribution model for intercompany asset transfers between systems.

Standard settings

Generally, ALE (application link enabling) is not set up especially for Asset Accounting. Instead, ALE is used by Asset Accounting when ALE processes are used in Financial Accounting. When that is the case, then cross-company company codes and business areas already exist. Therefore, you normally do not have take any extra steps in Asset Accounting.

Activities

If you do not plan to integrate the intercompany asset transfer in an existing model view, follow this procedure:

1. Create a model view.
2. Select a model view and choose the "Insert method" function.
3. Enter a sender and receiver (that is, each logical system).
4. Enter "AcctngAssetTransfer" as object name, and "AcqPost" as method.

Further notes

It is **not** possible to define the distribution by choosing a message type when you use this ALE distribution. This means that you can only enter the method, **not** the message type.

Allowed filter objects are the company code and business area. This means it is also possible to distribute an asset posting so that one company code is distributed to several SAP installations. When you use this option, the business area defines the given installation. An intercompany transfer between systems can take place between two business areas within a company code.

Cost Center Accounting

In this activity, you make settings required for distribution in Cost Center Accounting.

There is a difference between settings for distribution method one (centralized Cost Center Accounting), and those for method two (decentralized Cost Center Accounting).

Consistency Check

The function in this section carries out a consistency check of the settings made here. We recommend you use this consistency check to make the relevant settings.

Execute the function in the decentralized systems. Then you can check whether the settings between the systems for the required message types have been correctly maintained.

Double-click on a line in the consistency check log to make the required settings.

You must have maintained the partner profiles in all the systems.

Notes on Overhead Cost Controlling

You make Overhead Cost Controlling settings in Customizing, under Controlling.

The following settings are required to distribute a controlling area:

- The distribution method must be defined in the controlling area for the basic data in the "Distribution method" field. You can choose between distribution method one or two.
- The logical system name of the central controlling system must be defined in the controlling area for the basic data in the "Logical system" field. The logical system name is defined in the installation and in the client settings. (In IMG under:
  Basis Components
  Distribution (ALE)
  Sending and Receiving Systems
  Logical Systems
  Assign Logical System to a Client
- If you use distribution method two, you also assign all cost centers to a master system, which is the logical system for the cost center.
- If you want to use the profit center accounting, read section Distribution scenarios ->
  Profit Center Accounting
- If you want to use profitablitity analysis, read section **Distribution scenarios -> Profitablitity Analysis**.

Synchronization of settings using the transport system

Some settings for overhead cost controlling need to be in all systems in the same form.

The easiest way to ensure this, is by doing your customizing in a centralized system, and then distributing the data to all systems affected.

The transport system is normally used for the first time that decentralized controlling is provided with customizing data.

For information on compiling the transport orders for decentralized controlling systems, see the Implementation Guide (IMG), under the section on Controlling -> General Controlling -> Productive Start Preparation -> Transport System Settings.

Individual setting synchronization

If you do not make the settings for overhead cost controlling centrally in a Customizing system, but individually in each of the affected systems, then ensure that they all contain the following data in the same form:

- Data for all controlling areas:
- Currencies
- Charts of accounts
- Attributes for the controlling area: Basic data
- Distribution method
- Logical system
- Currency type
- Currency
- Chart of accounts
- Fiscal year variant
- Standard hierarchy for cost centers
- Activated reconciliation ledger indicator
- Attributes of the controlling area: Control indicators
- Cost Center Accounting activated
- Indicator for all currencies
- Indicator for company code validation

Assignment of controlling area - company code

Assignments between controlling areas and company codes can only be maintained centrally and distributed, if the assignments between local and global company codes match.

Otherwise, you need to make the assignments individually in each system.

The concept of global company codes is explained in Customizing, under the following path:
Predefined ALE Business Processes
Accounting
Financial Accounting

Notes on Distributing Plan Prices

Plan prices for the cost center/activity type combination are distributed using the "COACTV" message category. Before you do this, you need to activate the integration for each planning version used and fiscal year.
To do this in the menu Cost Center Accounting, choose Planning
-> Planning aids -> Integration active in

For distribution method one, you need to activate the integration in the centralized system. For method two, you need activate integration in both the centralized and the decentralized systems.

Notes on Distributing the Reconciliation Ledger

When Cost Center Accounting is distributed, you also need to distribute the reconciliation ledger.

If centralized Cost Center Accounting is used in a system other than the centralized general ledger, then you also need to make some more settings in Customizing in addition to the setting for the message flow between decentralized and centralized cost accounting. This is for the distribution of the reconciliation ledger.

- The "RCLROL" message dispatch (from decentralized and centralized Cost Center Accounting to the centralized general ledger) must also be inserted in your distribution model with the company code filter object.
- You need to maintain these two message flows in the communication parameters.

- There is a restriction, whereby reconciliation postings can only be made on company code level.

Distribution Method One: Partner profiles

Partner profiles in the centralized cost accounting system

In the centralized cost accounting system, you need to maintain outbound partner profiles for each decentralized cost accounting system.

Message type	Meaning
COSMAS	Cost centers
COELEM	Cost elements
COAMAS	Activity types
COGRP	Cost center groups
COGRP2	Cost element groups
COGRP	Activity type groups
COCOKA	Control data object/cost element
COACTV	Prices for cost center/activity type
(RCLROL	Roll-up reconciliation ledger if the centralized system for the controlling area and the company code are different)

You need to maintain the inbound partner profiles for the each decentralized cost accounting system for the following message types:

Message type	Meaning
COSFET	Requesting cost centers
COAFET	Requesting activity types
CODCMT	CO document
RCLROL	Roll-up reconciliation ledger
(RCLROL	Roll-up reconciliation ledger,

	in the centralized system for the company code if the centralized system for the controlling area and the company code are different)

Partner profiles in the decentralized cost accounting system

In each decentralized cost accounting system, you need to maintain outbound partner profiles for the centralized cost accounting system for the following message types:

Message type	Meaning
COSFET	Requesting cost centers
COAFET	Requesting activity types
CODCMT	CO-Beleg
RCLROL	Roll-up reconciliation ledger
(RCLROL	Roll-Up reconciliation ledger in the centralized system for the company code if the centralized system for the controlling area and the company code are different).

You need to maintain inbound partner profiles for the centralized cost accounting system for the following message types:

Message type	Meaning
COSMAS	Cost centers
COELEM	Cost elements
COAMAS	Activity types
COGRP	Cost center groups
COGRP2	Cost element groups
COGRP	Activity type groups
COCOKA	Control data object/cost element
COACTV	Prices for cost center/activity type
(RCLROL	Roll-up reconciliation ledger, if the centralized system for the controlling area and the company code are different).

Note

The COSCOR (cost centers (core)) and COACOR (activity types (core) message types are obsolete, and should not be used any more. Under no circumstances should they be used with the ZH>COSMAS (cost centers) and COAMAS (activity types) message types.

Distribution Method Two: Partner profiles

Partner profiles in the centralized cost accounting system

You need to maintain outbound partner profiles for each decentralized cost accounting system for the following message types:

Message type	Meaning
COSMAS	Cost centers
COELEM	Cost elements
COAMAS	Activity types

COGRP	Cost center groups
COGRP2	Cost element groups
COGRP	Activity type groups
COCOKA	Control data object/cost element
COACTV	Prices for cost center/activity type
CODCMT	CO document
(RCLROL	Roll-up reconciliation ledger if the centralized system for the controlling area and the company code are different).

You need to maintain the inbound partner profiles for each decentralized cost accounting system for the following message types:

Message type	**Meaning**
COSFET	Requesting cost centers
COAFET	Requesting activity types
COCOKA	Control data object/cost element
COACTV	Prices for cost center/activity type
COTOTL	Totals records
CODCMT	CO document
RCLROL	Roll-up reconciliation ledger
(RCLROL	Roll-up reconciliation ledger, in the centralized system of the company code, if the centralized system for the controlling area and the company code are different).

Partner profiles in the decentralized cost accounting system

In each decentralized cost accounting system, you need to maintain outgoing partner profiles for the centralized cost accounting system for the following message types:

Message type	**Meaning**
COSFET	Requesting cost centers
COAFET	Requesting activity types
COCOKA	Control data object/cost element
COACTV	Prices for cost center/activity type
COTOTL	Totals records
CODCMT	CO document
RCLROL	Roll-up reconciliation ledger
(RCLROL	Roll-up reconciliation ledger, in the centralized system for the company code, if the centralized system for the controlling area and the company code are different).

You need to maintain outgoing partner profiles for the centralized cost accounting system for the following message types:

Message type	Meaning
COSMAS	Cost centers
COELEM	Cost elements
COAMAS	Activity types
COGRP	Cost center groups
COGRP2	Cost element groups
COGRP	Activity type groups
COCOKA	Control data object/cost element
COACTV	Prices for cost center/activity type
CODCMT	CO document
(RCLROL	Roll-up reconciliation ledger, if the centralized system for the controlling area and the company code are different).

Note

The COSCOR (cost centers (core)) and COACOR (activity types (core)) message types are obsolete and should no longer be used. Under no circumstances should they be used with the COSMAS (cost centers) and COAMAS (activity types) message types.

Error handling

Specifying responsibilities for workflow error processing in the distribution environment.

Workflows are created to problems in cost accounting in the distribution environment. You need to specify employees who are responsible for the errors. You can use ALE-customizing for maintenance: Basis Components

Distribution (ALE)

Error Handling

Distribution Method One:

Specifying responsibility in the centralized cost accounting system Maintain assignments for the following standard tasks:

Standard task: Identifier	Name
COSFET_Error	COSFET Inbound error
COAFET_Error	COAFET Inbound error
CODCMT_Error	CODCMT Inbound error
RCLROL_Error	RCLROL Inbound error

Specifying responsibility in the decentralized system

Maintain assignments for the following standard tasks:

Standard task: Identifier	Name
COSMAS_Error	COSMAS Inbound error
COELEM_Error	COELEM Inbound error
COAMAS_Error	COAMAS Inbound error
COGRP_Error	COGRP Inbound error
COGRP2_Error	COGRP2 Inbound error
COGRP_Error	COGRP Inbound error
COCOKA_Error	COCOKA Inbound error
COACTV_Error	COACTV Inbound error

Distribution Method Two:

Specifying responsibility in the centralized cost accounting system Maintain assignments for the following standard tasks:

Standard task: Identifier	Name
COSFET_Error	COSFET Inbound error
COAFET_Error	COAFET Inbound error
COTOTL_error	COTOTL Inbound error
COCOKA_Error	COCOKA Inbound error
COACTV_Error	COACTV Inbound error
CODCMT_Error	CODCMT Inbound error
RCLROL_Error	RCLROL Inbound error

Specifying responsibility in the decentralized system Maintain assignments for the following standard tasks:

Standard task: Identifier	Name
COSMAS_Error	COSMAS Inbound error
COELEM_Error	COELEM Inbound error
COAMAS_Error	COAMAS Inbound error
COGRP_Error	COGRP Inbound error
COGRP2_Error	COGRP Inbound error
COGRP_Error	COGRP Inbound error
COCOKA_Error	COCOKA Inbound error
COACTV_Error	COACTV Inbound error
CODCMT_Error	CODCMT Inbound error

Note

In the distribution model, you must maintain a company code or a controlling area as a filter object for the "RCLROL" message type.

Check consistency

After you have made the settings for distributed Cost Center Accounting, you can check the settings for consistency (see Set up Communication , Partner Profiles, and Check Model Settings).

Activity-Based Costing

In this section you make the settings required for distribution in **Activity-Based Costing**.

Settings are different for distribution method (central activity-based costing) and for distribution method 2 (decentralized activity-based costing).

Activities

To distribute a controlling area, the settings required are:

Maintain ALE Settings in Controlling Area

- Enter the logical system name of the central controlling system in the field *Logical system*.
  The name of the logical system is set in the system installation and entered in the client settings.
  In Customizing select *Basis Components -> Distribution (ALE) -> Sending and Receiving Systems -> Logical Systems -> Assign Logical System to Client*.
- When you make the ALE settings in the controlling area, enter the distribution method in the field *Distribution method*. You can select distribution method 0 or 02.
- If you use distribution method 2, you assign all the business processes to one master system - the logical system of the business process.
  You enter the master system of the business process in its master data. In Customizing choose *Controlling -> Activity-Based Costing -> Master Data ->Business Processes -> Maintain Business Processes.*

Check Consistency

Once you have made the settings for distributing activity-based costing, you can check the consistency of the settings (see **Communication**, **Check Partner Profiles and Model Settings**).

Carry out the consistency check in the decentralized systems so that you can check that the settings for the required message types are correct.

If you double-click on a line in the log of the consistency check, you can make the Customizing settings.

The prerequisite is that you have defined the partner profiles in all the relevant systems (siehe **Maintain Partner Profiles**).

Note

When you are working with distributed activity-based costing (ALE) and transport settings for the controlling area into a production system, before you export the data make sure that the logical system valid for the target system has already been entered in the controlling area. This avoid inconsistencies occurring in the target system.

Synchronization of Settings via the Transport System

Some general Controlling settings must be the same in all systems.

You can make sure of this by carrying out Customizing in one central system and then distributing the data to the other systems.

The initial Customizing data is usually loaded into decentralized Controlling using the Transport system.

For information about creating transport requests for decentralized Controlling systems see the IMG section *Controlling -> Controlling General -> Production Start-Up Preparation -> Transport System Settings*.

Synchronization of Individual Settings

If you are not making General Controlling settings on one central Customizing system, but separately in each participating system, make sure that the following data is the same in all the systems.

- Cross-Controlling Area Data:
- Currencies
- Charts of accounts
- Attributes of the controlling area: basic data
- Distribution method
- Logical system
- Currency type
- Currency
- Chart of accounts
- Fiscal year variant
- Business process - standard hierarchy
- Indicator reconciliation ledger active
- Attribute of the controlling area: control indicator
- Activity-Based Costing active
- Indicator all currencies
- Indicator company code validation

Assignment controlling area - company code

Assignments of controlling areas to company codes can only be maintained centrally and distributed, if the assignments between local and global company codes are the same in all systems.

Otherwise the assignments must be carried out separately in each system.

For information about the concept of the global company code, see Distribution of Financial Accounting Data .

Further notes

For further information about distributing Activity-Based Costing see the SAP Library:
CA - Cross-Application Components
Business Framework Architecture ALE Business Process Library (CA-BFA-ABL)
ALE Business Process Library Accounting
Accounting <-> Accounting Activity-Based Costing.

Set distribution of profit center data (ALE)

In this activity, you specify for the controlling areas which method you want to use to distribute Profit Center Accounting data.

The system also shows you which central controlling systems and, where appropriate, which master data maintenance systems the controlling areas are assigned to.

The function is useful for setting the distribution methods for some or all controlling areas from a central position. Alternatively, the distribution method setting can be made in Customizing for Profit Center Accounting, under Maintain controlling area settings. Here, settings can only ever be made for one controlling area at a time.

AC <-> LO This section contains ALE business processes in which Accounting data and Logistics data is exchanged between R/3 Systems.

Distributed Credit Management

Distributed Credit Management

The system supports an ALE business process in which several local SD systems carry out active credit management against a central FI system.

An **A/R summary** is created in the FI system for this purpose. This contains a summary of all the credit information on a credit account (in a control area) necessary for the credit check in SD.

A program which you start periodically creates this A/R summary and sends it to the local SD systems based on the ALE customer distribution model. (Methods from the Business Object Repository are used for this). The data is received there and stored in the database. The checks called locally then do not run against the database (which is merely a mirror image of the local activities) but instead against the A/R summary and thus against all the open items. If the A/R summary is outdated, you can determine the current data in the FI system using a Remote Function Call.

For system performance reasons, it may make sense to run the SD credit check against this A/R summary even in a non-distributed system, as this way repeated reading of the open items is exchanged for repeated reading of the result of such an inquiry.

Data determined from the A/R summary in this way can be integrated in line layout variants in the credit overview. This makes it possible for the system to identify those credit accounts for which the credit check will report an error with the next incoming orders.

Requirements

You have a central system on which FI runs and one or more systems on which SD runs locally. One of the following conditions must also be met:

1. The local SD systems must have separate credit control areas; there must not be any multiple assignments.

2. Different customers must be assigned to each of the local SD systems; there must not be any multiple assignments.

3. The credit checks in the local SD systems may only be run for FI data (such as statistical credit limit checks without open credit values from SD, dunning levels, etc.).

ALE Customizing should be complete. You will find the specifications for maintaining the distribution model in the following section.

Maintaining the distribution model

- Object name: DebtorCreditAccount (customer credit account)
- Methods:
- ReplicateStatus (replicate credit status)
- GetOldestOpenItem (determine oldest open item)
- GetHighestDunningLevel (determine highest dunning level)
- GetOpenItemsStructure (determine open item structure)
- GetDetail (determine master data)

Maintaining partner profiles

- Message type: cresta
- IDoc type (base type): cresta0

Activities

1. Maintain table T000CM in the system in which central FI runs as follows.
   In the Financial Accounting Implementation Guide, go to Accounts Receivable and Accounts Payable and choose Credit Management -> Credit Control Account -> Define Preliminary Settings for Credit Management.
   Select the *Create A/R summary* field.
   You can find more information in the F help for the respective fields.

2. Maintain tables T000CM and T69F in all systems in which local SD runs as follows:
   In the Financial Accounting Implementation Guide, go to Accounts Receivable and Accounts Payable and choose Credit Management -> Credit Control Account -> Define Preliminary Settings for Credit Management.
   Leave the *Create A/R summary* field blank. Select the *Read A/R summary* field.
   You can find more information in the F help for the respective fields.

3. In the Sales and Distribution Implementation Guide, choose Basic Functions -> Credit Management/Risk Management -> Credit Management -> Define Automatic Credit Control.
   There maintain the Financial Accounting/old A/R summary checks. You can find more information in the F help.

Further notes

You distribute the A/R summary using program RFCMCRCV. You can find more information in the program documentation.

Set up Material Price Dispatch

Use

Distribution of Material Prices using Application Link Enabling (ALE)

Activities

Set up your system as described in the ALE installation procedure. This procedure can be found under *SAP Library -> SAP ERP Central Components -> Scenarios in Applications -> ALE/EDI Business Processes -> IDoc Interface: EDI Application Scenarios (BC-SRV-EDI) -> ALE Scenario: Material Master Distribution.*

Complete the following steps:

- Set up the client
- Define a logical system name for the client
- Specify the technical communication parameters

To send stock material prices, and the prices for sales order stock and project stock, you must create a distribution model for each stock type:

In the Implementation Guide, choose *SAP Web Application Server -> Application Link Enabling (ALE) -> Modeling and Implementing Business Procedures -> Maintain Distribution Model and Distribute Views*

- Choose *Create Model View*
- Enter a technical name (for example, SENDPRICE) and a description.
- Define a sender and receiver
- Position the cursor on the model view and choose *Add BAPI*
- Enter the sender and receiver system, and enter **MaterialValuation** as object and **PriceChange** as method.
- Save the distribution model

Create two more model views with objects **ValSalesOrdStock** and **ValProjectStock**, each with method **PriceChange**.

Complete the remaining steps for the ALE implementation:

- Generate partner profiles in sending system
- Distribute distribution model
- Generate partner profiles in receiving system

Once you have created the distribution models for sending material prices, you need to maintain the receiver settings in the receiving systems.

Here, you need to define the following for each valuation area:

- Whether price changes allowed if stock already exists.
  If price changes are allowed, the system creates a revaluation posting using transaction MR2.
- A threshold percentage value for relative price increases, after which a warning message will be issued.
- A threshold percentage value for relative price reductions, after which a warning message will be issued.
- A threshold percentage value for relative price increases, after which an error message will be issued. In this case, the price changes will not be accepted by the system.
- A threshold percentage value for relative price reductions, after which an error message will be issued. In this case, the price changes will not be accepted by the system.

AC <-> HR

This step contains the ALE business processes in which data is exchanged between the Accounting (AC) and Human Resources (HR) components.

Coding Block

The coding block is an Accounting service. When posting transactions are effected, it can be used to enter account assignments whose validity is then checked.
The manner in which the coding block occurs in posting transactions never changes (subscreen). In the HR application, this is the case for time recording, travel expenses, master data, and construction pay. The following fields are available:

- Company code
- Business area
- Cost center - Order
- Cost object
- Activity type - Funds center
- Commitment item
- Fund
- Sales order and item
- WBS element
- Network and operation number

The checks performed for the coding block are integrated with the cost distribution infotypes (0027 in Payroll, and 08 in Organizational Management). The following account assignments are possible:

- Company code and/or controlling area
- Cost center

- Order
- WBS element
- Funds center
- Fund

Additional account assignments can be checked locally, or in an Accounting system via synchronous remote access. This system must include master data for all of the account assignment fields entered.

Distribution Model Maintenance

To ensure communication between systems for validation purposes, you must call the Maintain Distribution Model step and enter the following for **Add Method**:

- Client: HR System
- Server: Accounting System
- Object: AcctngServices
- Method: CheckAccountAssignment
- Filter object: Company code

An entry in the distribution model ensures that account assignments can be checked in the Accounting System for all HR transactions that use the coding block. If account assignments in the Accounting System can be replicated in the HR System (that is, cost centers, internal orders, and WBS elements), you are advised to set up the Local Validation for Coding Block function. If a line item includes an account assignment that cannot be checked locally, the entire line item is checked in the Accounting System. Checks are also performed remotely if you do not configure the local check function for coding blocks.

Prerequisites

If you want to use the company code filter object in the distribution model, customizing data for the company code must be replicated in the HR System.

All master data for which the input help function is required to display valid values must be replicated in the HR System. WBS elements must also be replicated so that they can be entered in an HR System.

Local validation for coding block

If an HR System and AC System are both involved in a scenario, additional account assignments are usually validated synchronously in the AC System.

As an alternative, you can perform this step so that additional account assignments are validated locally in the HR System.

The local validation is to be regarded as more of an existence check. It is not possible to validate CO completely in the local validation since not all account assignment objects can be replicated in the HR system. For this reason, no other account assignment objects or properties for these objects can be derived, and no dependencies between account assignment objects can be checked. Complete validation can only be performed in the AC system since this is the only place where all account assignment objects exist. Therefore, if you want to ensure that the dependencies between account assignment objects are validated

and additional information and properties of the entered objects are derived during the document entry, deactivate the local validation for these objects.

Also note that a complete CO validation is always performed when the document is forwarded to the AC system at the latest. Local validation is generally only performed when the document is entered.

Requirements

A scenario in which an HR and AC System are involved must be maintained.

Local validations are possible for account assignments (company code, business area, G/L account, cost center, and so on) that are entered in table TCOBFIELDS with an entry in the F_CHECK column.

Activities

1. Use table TCOBFIELDS to determine which account assignments can be validated locally.
2. Use the table included in this step to enter the account assignments for which local validation is required, and select the appropriate field. The **company code** and **G/L account** assignments must always be entered.

Further notes

The system only performs local validations if all of the account assignments can be validated locally for each line item (that is, if they have all been entered here). If an account assignment cannot be validated, all of the account assignments for the line item in question are validated synchronously in the AC System.

Remote Check (Status of HR and AC: 4 Minimum)

All of the information contained in Coding Block applies without exception.

Remote Check (Status of HR: 4 Minimum, Status of AC: 4 Maximum)

The information contained in Coding Block applies with one exception. Multiple account assignments with cost centers, orders, or WBS elements cannot be effected in cost distribution infotypes. Account assignments are possible for funds and funds centers in addition to cost centers, orders, and WBS elements.

Set Remuneration Statement

This scenario uses Financial Accounting (FI) functions to create bank payment orders for HR data.

Procedure

In the HR system, payroll, trip costs accounting or master data results are used to create payment orders for employees.

In addition to payment orders for employees, the system can also create payment orders for health insurance funds.

FI payment programs sort payment orders,and either create bank transfers for a data carrier or print cheques.

The FI payment programs create the bank transfers and cheque printouts in the HR system using the country-specific reports **RFFOxx_U** (xx = country indicator). To find the reports, choose **Human resources** --> **Payroll** --> **Payroll** --> **Bank transfer**.

Printing numbered cheques with remuneration forms (USA and Canada only)

If you specify the payment method **cheque** in the data exchange program, the system also saves the remuneration statement and trip costs form.

The system then selects and prints all payment orders with the payment method **cheque** as well as the respective form.

Prerequisite

To use the FI payment program in HR, the following data must be available in both distributed systems (FI, HR):

- Company code
- Payment method
- Banks
- House banks

Customizing

You are not required to make any settings in Customizing.

Set Activity Allocation for Time Management

This step explains the settings required for the **Activity allocation in Time Management** scenario.

Partner profiles

The settings for partner profiles can be generated from the distribution model. For more information, see Generate partner profiles in the Implementation Guide.

Maintaining the distribution model

To enable communication between the systems during distribution, you must make the following entries in the Maintain distribution model step using *Create method*:

- Enter the following objects and methods:

a) Object: AcctngActivityAlloc Method:
Post

b) Object: AcctngActivityAlloc Method:
Check

c) Object: AcctngServices
Method: CheckAccountAssignment

- Enter the following client and server for the objects and methods:
- Client: HR system
- Server: the required CO system

The object method AcctngActivityAlloc.Post is based on the message ACC_ACT_ALLOC and belongs to the object BUS600.

The object method AcctngActivityAlloc.Check also belongs to the object BUS600. The method AcctngServices.CheckAccountAssignment belongs to the object BUS600.

Use the following filter objects:

- CO_AREA controlling area for BUS 600
- COMP_CODE company code for BUS 600

Settings in HR system

HR Customizing
Work through the steps in the section Entry of Specifications for Activity Allocation in Customizing for Time Management. Check the data that has been entered. In the step Schedule data transfer to activity allocation, schedule the report *Transfer Additional Data for Activitiy Allocation to Accounting* (RPTPDOC 0).

Settings in Controlling system

No special settings are required.

Error processing

If errors occur when the activity allocation documents are posted, you can analyze the errors by choosing *Time Management -> Administration -> Environment -> Activity Allocation*.

Master data for the HR system

The prerequisite for **activity allocation in Time Management** is that the cost center, activity types, and WBS elements have been distributed.

Further notes

Supported releases:

Both the Logistics system and the HR system must have a Release 4.0 status.

Posting of Payroll Results to Accounting
Set Up 'HR and Accounting from Release 4.0A' Scenario

This section specifies the settings for the scenario *Reporting for Posting Payroll Results to Accounting* (also known as *Posting to Accounting*) when Human Resources (HR) and Accounting (AC) are in different systems, but both higher than 4.0 A.

Requirements

The following AC tables have been replicated in the HR system:

- Document types (T003)
- Line item texts (T03)

You maintain the settings for posting to Accounting in the Implementation Guide (IMG) for *Payroll* under *Payroll* <country> -> *Reporting for Posting to Accounting*.

Procedure

For general information on the posting to accounting procedure, refer to the SAP Library under *Human Resources -> Payroll* -> <country> -> *Subsequent Activities -> Posting to Accounting*.
The following describes special procedures for distributed systems.

I. Procedure in the HR system: Sending system (server)

In posting to accounting, payroll results information relevant to posting is evaluated, collected, summarized and then posted to accounting. In the case of distributed systems, read, write and validation procedures are carried out by the accounting system across applications. The HR system can therefore check the receiving system's distribution model prior to each cross application procedure.

1. When documents are created, the system uses BAPIs to read data synchronously.
2. The following occurs when document posting is initiated:
   a) Document data is checked against accounting data via synchronous BAPIs.
   b) The ALE layer is used to transfer each document asynchronously to the receiving system.

II. Procedure in the AC system: Receiving system (client)

3. Data is posted to the AC system.

Maintaining the distribution model

To enable communication between distributed systems, specify the appropriate method in ALE Customizing for the objects of the following tables. To do so, choose *Basis -> Application Link Enabling (ALE) -> Modelling and Implementing Business Processes -> Maintain Distribution Model and Distribute Views*.

Enter the HR System as the sending system/client and the AC System as the receiving system/server for the following objects and methods:

Object name	Method	Description

You can use the company code as a filter object.

Enter the AC System as the sending system/client and the HR System as the receiving system/server for the following objects and methods:

Object name	Method	Description
PayrollAccDocument	Display_Acc	Display Accounting Document

Partner profiles

The partner profiles setting is generated in the distribution model. For more information, refer to the section 'Generate partner profiles' in this Implementation Guide.

Maintaining RFC destination for special method calls

To be able to display the accounting documents for previously posted posting documents in the posting run overview for *posting to accounting*, you must assign an RFC destination in the HR System for the method *DocumentDisplay* (display accounting documents) of the *AcctngServices* object type. (Note: This functionality is only available across systems as of Release 4 A

To be able to include the associated source documents (posting documents) in the display screen of posted accounting documents, you must assign an RFC destination in the AC System for the method *Display_Acc* (display source documents) of the *PayrollAccDocument* object type. (Note: This functionality is only available across systems as of Release 4A.)

Enter the necessary settings in ALE Customizing (by choosing *Basis -> Application Link Enabling (ALE) -> Sending and Receiving Systems -> Systems in Network -> Synchronous Processing ->* Determine RFC Destinations for Method Calls*).*

'HR Rel. 4.0A and Acctg Release Earlier than 4.0' Scenario

This step explains the settings required for the scenario *Reporting of Payroll Results for Posting to Accounting*, known also as *posting to Accounting* if Human Resources (HR) is in an R/3 System with a release in or above 4.0A and Accounting (AC) in an R/3 System in a release lower than 4.0A, or in an R/2 System.

For information on the procedure for posting to Accounting in previous releases, refer to the SAP Library, under *Payroll* -> country -> *Subsequent Activities -> Posting to Accounting -> Steps in Posting to Accounting -> Posting in Previous Releases*. This also provides information on the functions that are available in the system constellations described and what restrictions apply.

The following outlines the **posting procedure** in previous releases with reference to the relevant settings in Customizing. The procedure distinguishes between two variants (A and B).

- If Payroll is in Release 3G or higher, but below 4.0A, you can use either variant A or B for posting to Accounting.
- If Payroll is in a release lower than 3G, you must use variant B.

Prerequisites for Both Variants

- All Accounting components are located in a central system.
- In Customizing, under *Payroll ->* <country> -> *Reporting for Posting Payroll Results to Accounting -> Special Scenarios -> Posting in Previous Releases -> Set Up Export to R/2 System or R/3 System <4.0* , you have specified the company code that is in an AC System with a lower release than 4.0.
- Accounting master data used in this scenario must be distributed in the HR system (for example, cost centers to which you want to assign accounts).

Variant A

The following procedure applies if your Payroll application is in Release 3G or higher, but lower than 4.0A, and if you want to use ALE in this scenario.

I. Procedure in the HR System: Sending System (Variant A)

1. If you have carried out the step *Create Posting Run* (Report RPCIPE00), the posting-relevant information is written to a TemSe file.
2. Run the report *Interface Payroll/Accounting EXPORT* (report RPCIPX00).
   - This creates a master IDoc in the HR System.
   - The system uses data entered in the distribution model to determine which logical system should receive the IDoc.
   - The ALE layer is used to transfer the data to the receiving system automatically.

II. Procedure in the AC System: Receiving System (Variant A)

Inbound processing of the IDoc received takes place automatically. The system uses data from the received IDoc to create a TemSe file.

3. Run the report *Interface Payroll /Accounting IMPORT* (report RPCIPI00). The Accounting System uses data stored in the TemSe file to create posting documents. From the data in the TemSe file, the AC System creates batch input sessions for the transaction *Post document* (FB0) and, if necessary, for the transaction *Repost primary costs* (KB).
4. Post the documents to Accounting by starting the batch input session.

Maintaining the Customer Distribution Model (Variant A)

To enable communication between distributed systems, you must make the following entries in Customizing for ALE, under *Basis -> Distribution (ALE) -> Modeling and Implementing Business Processes -> Maintain Distribution Model -> Add Method* :

Sender:	HR System
Receiver:	AC System
Message type:	HRPAYP
Standard task:	HRPAYP_ERROR

This procedure does not use filter objects. You do not need to convert field objects or to filter segments.

Partner profiles (Variant A)

The settings for the partner profiles can be generated from the distribution system. For more information, refer to the step Generate Partner Profiles in this Implementation Guide.

Further notes

(For Variant A)

- The TemSe objects created via this ALE scenario are not defined as application objects. For this reason, the system does not update links between TemSe objects and IDocs.

- The ALE scenario does not support serialization.
- In line with the requirement that AC master data must be available in the HR System, the following restriction applies to ALE scenarios: Not all account assignment objects can be distributed using ALE.

Variant B

The following procedure applies if your Accounting System has a lower release than 4.0, and you want to post using file transfer.

I. Procedure in the HR System: Sending System (Variant B)

1. If you have carried out the step *Create Posting Run* (Report RPCIPE00), the information relevant for posting is written to a TemSe file.
2. Run report *Interface Payroll /Accounting EXPORT* (RPCIPX00). This creates another TemSe file.
3. Run report RPCIPT00 for Posting to Accounting. This creates a file on either the presentation or application server.

II. Procedure in the AC System: Receiving System (Variant B)

4. Run the report RPCIPT00. The AC System creates a new TemSe file.
5. Run the report *Interface Payroll/Accounting IMPORT* (report RPCIPI00). The AC System creates batch input sessions from the TemSe file for the transaction *Post document* (FB0) and, if necessary, for the transaction *Repost primary costs* (KB).
6. Post the payroll results by processing the batch input sessions.

Further notes

(for both variants)

If you use an HR System with release 4.0A or higher, and you want to carry out posting in the constellations described here, you cannot use the symbolic accounts in the standard system becasue from release 4.0A, the codes for symbolic accounts have four instead of two characters. In the constellations described here, only the last two characters are posted to the AC System. This is addressed in an HR system upgrade to release 4.0A or higher, but is not reflected in the sample Customizing of a new HR System in release 4.0A or higher.

For Release 4.0A, the length of the codes for employee groupings for account determination (Feature PPMOD) was changed. The code for employee grouping for account determination, which, from Release 4.0A, is stored in table T2EM, is now composed of three characters instead of one. Consequently, there are different codes in the HR and AC Systems. The key **23** for employee grouping for account determination in the HR System appears as in the AC System (only the first character is considered).

The assignment of symbolic accounts in HR to accounts in Accounting usually takes place in table T030 in the AC System. If you want to carry out cost planning in the AC System for the constellations described in this step using report RPCIPE00, you must make entries in the table T030 in both HR and AC Systems.

'HR Rel.earlier than 4.0A and Acctg Rel. from 4.0A' scenario

In this step, you make the settings for the scenario *Reporting for Posting Payroll Results to*

Accounting (known also as *posting to Accounting*) if Human Resources (HR) is in an R/3 System lower than 4.0A or in a R/2 System, and Accounting (AC) in an R/3 System in Release 4.0A or higher.

For information on the procedure for posting to Accounting in previous releases, refer to the SAP Library, under *Payroll* -> country -> *Subsequent Activities -> Posting to Accounting -> Steps in Posting to Accounting -> Posting in Previous Releases*
The following outlines the **posting procedure** in previous releases with reference to the relevant settings in Customizing. The process distinguishes between two variants (A and B):

- If Payroll is in Release 3G or higher, but below 4.0A, you can use either variant A or B for posting to Accounting.
- If Payroll is in a release lower than 3G, you must use variant B.

Prerequisites for Both Variants

- All Accounting components are located in a central accounting system.
- Accounting master data used in this scenario must be distributed in the HR system (for example, cost centers to which you want to assign accounts).

Variant A

The following procedure applies if your Payroll application is in Release 3G or higher, but lower than 4.0A, and if you want to use ALE in this scenario.

I. Procedure in the HR System: Sending System (Variant A)

1. Run the report RPCALx0 using schema x00. This transfers relevant posting information to a TemSe file.
2. Run the report *Interface Payroll / Accounting EXPORT* (RPCIPX 00).
   - This creates a master IDoc in the HR System.
   - The system uses data entered in the distribution model to determine which logical system should receive the IDoc.
   - The ALE layer is used to transfer automatically the data to the receiving system.

II. Procedure in the AC System: Receiving System (Variant A)

Inbound processing of the IDoc received takes place automatically. The system uses data from the received IDoc to create a TemSe file.

3. Run the report *Interface Payroll /Accounting IMPORT* (RPCIPI00). The Accounting System uses data stored in the TemSe file to create posting documents.
4. Post the documents to Accounting

Maintaining the Customer Distribution Model (Variant A)

To enable communication between distributed systems, you must make the following entries in Customizing under *Basis -> Maintain Distribution Model -> Add Method*.

Sender:		HR System
Receiver:		AC System
Message type:	HRPAYP	
Standard task:	HRPAYP_ERROR	

This procedure does not use filter objects. You do not need to convert field objects or to filter segments.

Partner profiles (Variant A)

The settings for the partner profiles can be generated from the distribution system. For more information, refer to the step Generate Partner Profiles in this Implementation Guide.

Further notes

(For Variant A)

- The TemSe objects created via this ALE scenario are not defined as application objects. For this reason, the system does not update links between TemSe objects and IDocs.
- The ALE scenario does not support serialization.
- In line with the requirement that AC master data must be available in the HR System, the following restriction applies to ALE scenarios: Not all account assignment objects can be distributed using ALE.

Variant B

The following procedure applies if your Payroll application is in a release before 4.0A, and you have not maintained the distribution model.

I. Procedure in the HR System: Sending System (Variant B)

1. Run report RPCALC x0 using schema x00. This transfers information relevant to posting to a TemSe file.
2. Run report *Interface Payroll /Accounting EXPORT* (RPCIPX00). This creates another TemSe file.
3. Run report RPCIPT00 for Posting to Accounting. This creates a file on either the presentation or application server.

II. Procedure in the AC System: Receiving System (Variant B)

4. Run report RPCIPT00. The AC system creates a TemSe file.
5. Run the report <lsInterface Payroll / Accounting IMPORT (RPCIPI00). The AC system uses data in the TemSe file to create posting documents.
6. Post the payroll results to Accounting.

Further notes

For Release 4.0A, the naming convention for symbolic accounts was changed. The code that identifies an account, which is stored in the table T030, is now composed of four characters instead of two. This means that in the constellations described in this step, there are different keys in the HR and AC Systems. The code in the AC System is composed of the two character country grouping and the two character code in the HR System. For example, if the code of a symbolic account is **3** in the HR System, the code for the same account in the AC System for the country grouping Germany is **03.**

For Release 4.0A, the naming convention for the employee grouping for account determination (Feature PPMOD) was changed. The code for the employee grouping for account determination , which from Release 4.0A is stored in the table T2EM, is now composed of three characters instead of one. This means that in the constellations described in this step, there are different codes in the HR and AC Systems.

The code for the employee grouping for account determination becomes __ in the HR System (single character code from the HR System plus two spaces).

Set Up Data Medium Exchange for Payroll Results

In this ALE business process, you use the payment medium programs from Financial Accounting (FI), to process HR payments.

In HR, employee or third-party payments are created from the payroll results or directly from the master data.

The preliminary program data medium exchange reads the data relevant to transfer from the payroll results, which is stored as payment data on the database. The payment medium programs process this data, and from this create the payment medium (checks, files in DME format, and so on).

Start the payment medium programs in HR, to avoid a flow of data between the systems.

Prerequisites

As the data relevant to payment is processed locally, it is not necessary to take various release statuses into account.

Preparations

Make the Customizing settings for preliminary program data medium exchange.

The payee company code, banks, house banks, house bank accounts and payment methods Customizing must also be in your HR system.

In addition, make the Customizing settings for the payment medium program in Financial Accounting.

Further notes

On printing the prenumbered check, in some countries it is possible to print the employee´s remuneration statement onto the check form. To do this, the pre-program data medium exchange generates the remuneration form, which is then processed by the Financial Accounting check printing program. In this case, ALE specific settings are not necessary as the programs involved also run locally in HR.

See SAP Library for Payroll to find out which countries this function is available for.

Set Third Party Remittance

The SAP system passes information from HR to FI for remitting payments to third parties. The results of an evaluation run are transferred from a sequential file to the appropriate table in the system. The **Posting run** provides financial posting information. This information is passed to FI and states which HR creditor is paid with the appropriate vendor and due date. Then the **Reconciliation run** provides a reconciliation on processed and paid remittances. Finally, the **Acknowledgement run** is executed after the information has been sent to the financial department from HR to identify all those remittances that have been paid. You can also simply undo an evaluation run with no consequences to the system.

Prerequisites

For general information on setting up an ALE business process, please see Basic Settings and Communication sections of the Implementation Guide.

For information on configuring third-party remittances, please see the Third-Party Remittance section of the Implementation Guide.

Activities

Maintaining the distribution model

These settings are only required if you do not want to replicate your creditors. If you have chosen to replicate your creditors, please ensure that they are replicated.

To guarantee communication between the distributed systems, the following entries must be made in the Maintain distribution model step using *Add Method*:

- Client: the required FI/CO system
- Server: the HR system
- Object: CREDITOR
- Method: GETDETAIL

The use of filter objects is not permitted.

Set Prenotification

In this business process, you use Financial Accounting (FI) functions within the Human Resources (HR) system to execute prenotifications for new bank details.

Prerequisites

To set up prenotifications in your system, please refer to the Set up prenotifications step in the Implementation Guide.

In order to implement the FI and HR prenotification programs, both applications (FI and HR) must include the following data:

- Payment method
- Banks

Activities

You do not have to make any settings in Customizing to execute prenotifications.

Further notes

No data is exchanged between the FI and HR applications.

Set Creditors from HR Master Data

Requirements

A requirement for this distribution scenario is the distribution of personnel master data from a human resources system to an FI system.

Activities

Section Master data distribution (Link to separate HR chapter) in the ALE-IMG contains an explanation of how the FI system is supplied with relevant employee data from the HR system.

The HR infotypes needed in the FI system are:

- Personnel Events (Information type 0000)
- Organizational Assignment (Information type 000)
- Personal Data (Information type 0002) - Accounting Status (Information type 0003) - Addresses (Information type 0006, Subtype)
- Bank Details (Information type 0009, Subtype 0 or 2)

In the FI system, the vendor master records can then be created, changed or locked using the report RPRAPA00.

Transfer Personnel Cost Planning to Accounting

In this section of the Implementation Guide (IMG), you find out which settings are required for transferring Personnel Cost Planning results to CO when they are in distributed systems.

Configure Scenario 'HR or Accounting With Release Earlier Than 4 A'

This section explains which settings you need to maintain for the scenario *Transferring Personnel Cost Planning Results to CO* when the Personnel Cost Planning component and the Controlling component are in different systems. Here we assume that at least one system is release 4 A.

Process

The Personnel Cost Planning online documentation describes the general integration with CO process.

For information on how to set up the integration between the Personnel Cost Planning component and the Controlling component when they are not in distributed systems, see Set Up Integration With Controlling in the Compensation Management Implementation Guide.

The following describes the integration set up when they are in distributed systems.

In distributed systems, all the read, write and validation checks take place in the CO system, therefore, before each cross-system operation, the HR system determines the recipient system based on your entries in the distribution model.

Functions in the HR System

1. Release a plan scenario for CO. As a result of this, the system defines the appropriate fiscal year.

Functions in the CO System

2. The transfer of the planned personnel costs for a released plan scenario is started.
3. The system formats the time-dependent personnel costs to fit into the corresponding CO periods and sends them synchronously via RFC (no IDoc is sent) and posts them in the CO System.

Maintaining the Distribution Model

To ensure the communication flow between the two systems, you need to specify a message type and/or an object complete with method when you maintain the distribution model.

The sending and receiving system assignment is as follows:

- Sender: CO System
- Receiver: HR System

Message type	Meaning
HRCPRQ	Personnel Cost Planning - Request from CO to HR for data transfer

SAP does not support the use of filter objects.

- Client: HR System - Server: CO System

Object name	Method	Meaning
ControllingArea	GetPeriod	Determine posting period from fiscal year; Controls the fiscal years involved when a plan is released

If your CO System is release 3 or lower, do not make the settings for the **ControllingArea** object.

Partner Profiles

You can generate the partner profiles from the distribution model. For information on how to do this, read the docuementation on Generating Partner Profiles in this implementation guide.

The following message types have been defined:

Message Type	Meaning
HRCPRQ	Personnel Cost Planning - Request from CO to HR

This message type has the following partner profiles:

- Outbound: Central Accounting (CO)
- Inbound: ------

In the CO system for the HR partner system, define the outbound parameters for the message type HRCPRQ. Use the basis IDoc type SYNCHRON. You do not have to define any parameters for the message type in the HR system.

Settings in the CO System

Master Data for the HR System

To transfer Personnel Cost Planning results, you must distribute the following master data from CO:

- Cost centers
- Cost elements (validation and possible entries)

The **Master Data Distribution** section in the ALE IMG explains how to send the relevant CO master data from the CO system to the HR system.

Control Data for the HR System

To release a Personnel Cost Planning plan scenario, you must determine the fiscal year variant. If the CO system has a lower release than 4.0, you must transfer the customizing data for the fiscal year variant into the HR system. In this instance, you cannot maintain the object method *ControllingArea.Getperiod* in the distribution model. The table contents are normally copied by the transport system. **Activities**

1. Check to see whether the communication flow for the logical message type HRCPRQ and the method GETPERIOD for the object CONTROLLINGAREA has been maintained in your customer distribution model
2. Check to see whether a partner profile has been defined for the message type
3. Make sure that the necessary CO master data has been distributed to the HR System

Further notes

The following releases are supported:

- CO System 4.0/4 - HR System 4.0/4:
  Use the above documentation in this instance
- CO System 3 - HR System 4.0/4:
  Use the 3 Personnel Cost Planning scenario documentation. Make sure you take the special features with regards the fiscal year variant into account.

Szenario 'HR und RW mit Release ab 4A' einstellen

This section explains which settings you need to maintain for the scenario **Transferring Personnel Cost Planning Results to CO** when the Personnel Cost Planning component and the Controlling component are in different systems but both are of release 4A or higher.

Process

The Personnel Cost Planning online documentation describes the general integration with CO process.

For information on how to set up the integration between the Personnel Cost Planning component and the Controlling component when they are not in distributed systems, see Set Up Integration with Controlling in the Compensation Management Implementation Guide.
The following describes the integration set up when they are in distributed systems.

Functions in the HR System: Sender System (Server)

When you release a plan scenario and transfer the personnel cost planning results to Controlling, the system adjusts the time-related personnel costs to fit in the corresponding CO periods. The system then posts the results to CO. In distributed systems, all the read, write and validation checks take place in the CO system, therfore, before each cross-system operation, the HR system determines the recipient system based on your entries in the distribtion model.

1. Once you have released the plan scenario and the system has formatted the personnel costs into periods, the system then uses a BAPI to read the different types of data in the CO system.
2. As soon as the posting of the planning data has been triggered, the following takes place:
   a) The system validates the posting data against the CO data using a synchronous BAPI.
   b) The system transfers the data to the recipient system asynchronously via the ALE layer.

Functions in the CO System: Recipient System (Client)

3. The system posts the data in the CO system.

Maintaining the Distribution Model

To ensure the communication flow between the two systems, you need to specify a message type and/or an object complete with method when you maintain the distribution model. Enter the following as the sender and recipient system:

o Sender/Client: HR System o
Recipient/Server: CO System

Object Name	**Method**	**Meaning**
ControllingArea	GetPeriod	Determines posting period from fiscal year; controls the fiscal years involved when a plan is released
ControllingArea	GetPeriodLimits	Determines validity periods for the posting periods
PlanDataTransferCO	GetSourceInfos	Determines the CO posting parameter
PlanDataTransferCO	CheckPrimaryCosts	Validates the Personnel Cost Planning posting data in CO
PlanDataTransferCO	PostPrimaryCosts	Posts the Personnel Cost Planning data in CO

The following message types are used:

Object Method	**Message Type**
PlanDataTransferCO.PostPrimaryCosts	PDTCO_POSTPRIMARY

You can use the controlling area as a filter object.

Partner Profiles

You can generate the partner profiles from the distribution model. For information on how to do this, read the documentation on Generating Partner Profiles in this implementation guide.

Settings in the CO System

Master Data for the HR System

To transfer Personnel Cost Planning results, you must distribute the following master data from CO:

- Cost centers
- Cost elements (validation and possible entries)

The **Master Data Distribution** section in the ALE IMG explains how to send the relevant CO master data from the CO system to the HR system.

Activities

1. Check to see whether the communication flow for the objects **ControllingArea** and **PlanDataTransferCO** for the methods given have been maintained in your customer distribution model.
2. Make sure that the necessary CO master data has been distributed into the HR system.

Read Market Value of Awards From Treasury

This section is concerned with the settings you must maintain for the *Awards: Security Prices* scenario if the *Compensation Management* and *Treasury* components are run in two different systems.

This integration supports the process of granting or exercising awards. The system uses *Treasury* to determine the current security prices, which it then stores for the appropriate award grant record or award exercise record in *Compensation Management*.

Maintain the Distribution Model

Choose the Maintain Distribution Model and Distribute Views step, and enter the following:

Sender/client: HR System

Receiver/server: RW System

Object name	Method	
FinancialProduct Treasury)	*GetList*	(determines the securities in
FinancialProduct exchanges)	*GetDetail*	(determines a security's
SecurityPrice security)	*GetDetail*	(determines the price of a

Settings in the HR System

Assign Award Attributes

Access the Implementation Guide (IMG) for *Compensation Management*, choose the *Assign Attributes for Awards* step, and assign a security ID number, an exchange, and a price type to each award.

The system determines current security ID numbers, exchanges, and price types from the AC System using BAPIs.

Settings in the AC System

No additional settings are necessary here for this scenario.

Set Activity Allocation for Training & Event Management

This section contains a description of the settings required for the **Internal Activity Allocation in Training and Event Management** scenario.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must maintain the following entries in the Maintain Distribution Model step by choosing *Add method*:

- Client: The HR System
- Server: The required Accounting (CO) System

- Object: AcctngActivityAlloc
- Method: Post

- Object: AcctngActivityAlloc
- Method: Check

- Object: ControllingDocument
- Method: GetDetail

Partner profiles

You can generate partner profile settings from the distribution model. For more information on this, see Generate Partner Profiles in the Implementation Guide.

HR Customizing

Carry out the steps in the Activity Allocation section of Customizing for Training and Event Management.

Master data for the HR System

If you want to perform activity allocation in Training and Event Management, the **cost centers** and **activity types** must be distributed.

Further notes

For more information on this ALE business process, call the "Application help" for Training and Event Management and choose "ALE business processes in Training and Event Management" -> "Activity allocation in Training and Event Management".

Set Cost Transfer Posting for Training and Event Management

This section contains a description of the settings required for the **Cost Transfer Posting in Training and Event Management** scenario.

Maintenance of the distribution model

To ensure communication between the systems during distribution, you must make the following entries in the Maintain Distribution Model step by choosing *Add method*:

- Client: The HR System
- Server: The required Accounting (CO) System

- Object: AcctngPrimaryCosts
- Method: Post

- Object: AcctngPrimaryCosts
- Method: Check

- Object: ControllingDocument
- Method: FindDetails

Partner profiles

You can generate partner profile settings from the distribution model. For more information on this, see Generate Partner Profiles in the Implementation Guide.

HR Customizing

Perform the steps in Cost Transfer Posting in Customizing for Training and Event Management.

Master data for the HR System

To perform a cost transfer posting in Training and Event Management, the **cost centers** and **cost elements** must be distributed.

Further notes

For more information on this ALE business process, call the "Application help" for Training and Event Management and choose "ALE business processes in Training and Event Management" -> "Cost transfer posting in Training and Event Management".

Set Payment Method and Bank Information

Payment methods and bank details are stored in the HR master records. These should be used for making payments to employees or applicants. In connection with this ALE business process, you thus require the relevant payment methods and bank master records for employees and applicants in the HR system.

Requirements

To process payments using payment programs, the payment methods have to be set up in the HR system under customer settings (Customizing).

Activities

Create the necessary bank master records in the HR system.

HR Payroll: Construction Industry

Construction industry functions as an interface to Accounting (AC) within the HR component **Payroll Construction Industry**.

The construction site is not created as an object in HR, but has to be created in Accounting (AC). A construction site can be created as:

- PSP-Element
- Network
- Order
- Cost object
- Customer order

The construction site will be assigned additional information in HR such as the beginning and end of construction, head of construction, hazardous collective wage rate bracket, and so on. The construction site can be accessed using the function module **RP_GET_BAUSTELLE** as an interface.

Requirements

In order to insert the <zh)Payroll Construction Industry component in distributed systems, the following prerequisites must be given:

Construction site

- If the construction site is created as a **PSP element** or as an **Internal order**, a replica of the data can be made using the distribution model. In this case, it is possible to filter according to the company code.
- If construction sites are created as networks, cost objects or as an order with another order type, AC and HR can only be operated separately if the construction sites also exist in the HR system. In this case, it is not possible to filter according to company code or controlling area.

The construction sites must therefore exist in both systems (AC and HR). Otherwise it is not possible to offer input help (F4-Help) when selecting a construction site in an input template.

Supported Release Statuses

The AC system and HR system must have Release 4A or higher.

Activities

No settings must be made in Customizing.