Employee Central Core Hybrid: Data and Process Distribution Details
Document Details

<table>
<thead>
<tr>
<th>Name</th>
<th>Audience</th>
<th>Version</th>
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<tr>
<td>Employee Central Core Hybrid: Data and Process Distribution Details</td>
<td>SuccessFactors Customers: IT and HR professionals;</td>
<td>1.0</td>
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<td></td>
<td>SuccessFactors Implementation Partners: Consultants, solution architects and project managers</td>
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Change Log

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<th>Author</th>
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<tr>
<td>1.0</td>
<td>08.04.2019</td>
<td>SAP SE</td>
<td>Initial version</td>
</tr>
<tr>
<td>1.1</td>
<td>14.05.2020</td>
<td>SAP SE</td>
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Supported Releases

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External Contribution

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<thead>
<tr>
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<tr>
<td>Author</td>
<td></td>
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Terminology

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>EC</td>
<td>Employee Central</td>
</tr>
<tr>
<td>ERP</td>
<td>SAP Enterprise Resource Planning often referred in the document pertains to SAP HCM on premise system</td>
</tr>
<tr>
<td>MDF</td>
<td>Meta Data Framework</td>
</tr>
<tr>
<td>RBP</td>
<td>Role Based Permissions</td>
</tr>
<tr>
<td>UI</td>
<td>User Interface</td>
</tr>
<tr>
<td>PA</td>
<td>Personnel Area</td>
</tr>
<tr>
<td>PSA</td>
<td>Personnel Subarea</td>
</tr>
</tbody>
</table>

The recommendations in this document are based on the functionality available up to SuccessFactors release mentioned above. Future functionality can impact recommendations provided by this document. We strive to keep these recommendations up-to-date, however, in case you find that recent new functionality have not yet been considered in the latest version of this document, please reach out to your Customer Success Manager / Partner Delivery Manager or send an email to: SAPSuccessFactorsIDPDoc@sap.com.

Implementation Design Principles (IDPs) are delivered by SAP for helping customers and implementation partners on how to choose the most appropriate strategy and solution architecture for SuccessFactors implementations. IDPs are compiled taking into consideration experience of past implementation projects and addressing frequent business requirements as well as real-life implementation challenges. They are intended to be in line with today’s and tomorrow’s product capabilities considering scalability and operational requirements and are continuously reviewed and updated as product functionality evolves.
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1 Abstract

This IDP provides functional and process guidance for distributing HR data & processes between Employee Central and SAP ERP HCM systems. It explains how to adapt existing ERP HCM processes to bring these to EC. Topics such as employee planned working time and compensation information are covered in detail. EC becomes the system of record for this data and ERP remains the backend system for time management, payroll and global benefits.

2 Introduction and problem statement

When implementing EC for becoming the system of record for HR transactions and data, the questions arises of which data and processes covered currently in the HCM ERP system can or should be brought into EC. High level guidance on the strategy for organizational data and employee masterdata distribution between EC and ERP has been given in the IDP document “Employee Central core-hybrid employee data and process distribution strategy”. This document focuses on more detailed aspects around employee data and processes. Questions such as the following will be answered:

- How should objects such as personnel area / subarea, employee group and subgroup be set up in EC? Which role do they play in the HR processes?
- Which HR actions / events should be managed out of EC? What happens with ERP dynamic actions and infogroups and additional actions?
- What are the dependencies between work schedules (planned working time) and employee basic pay and how can these be built in EC? How does the replication to ERP works?
- How to keep work schedules and wagetypes consistent in EC and ERP?
- How to deal with FTE, and work schedule percentage in EC and ERP.
- Which wagetypes (pay components) should be brought from ERP into EC?
- How to best define salary structures for white-collars and blue-collars in EC and ERP? How to deal with Tariff / collective agreements?
- What are the considerations for employee compensation related processes such as indirect valuation, pay scale progression and salary/pay scale increase?

2.1 Assumptions and restrictions

This document assumes that the management of attendances and absences as well as benefits management remain managed directly in ERP HCM (no migration of these processes to EC). This is also valid for the management of absences for the workforce with simpler time management requirements (“negative time management” workforce). Attendances and absences as well as benefits enrollments are leveraged with existing ERP solutions (such as ESS scenarios, PA30, WebGui etc).

Therefore, this document does not cover the deployment of EC Time Off, Time-Sheet nor EC Benefits. This document also does not cover the leverage of 3rd party time and benefits solutions.
3 Solution design

3.1 HR Enterprise structure, personnel structure and payroll area

In ERP HCM three very important structures define many of the grouping modifiers for different HR, time and payroll processes. The structures are:

- Personnel area & subarea (table T001P)
- Employee grouping (table T503)
- Payroll area (table T549A)

In EC, the equivalent structures do not impose per default the same level of detail for data dependencies as in ERP. For example, in ERP, a pay component might be valid for a single combination of personnel area and employee subgroup, while in EC the only restriction applied to pay components might be the country of employment. For core hybrid customers, the ERP structures still play a big role in the existing HR processes managed in ERP, requiring a compatible EC data model and integration with ERP.

This chapter focuses on how to set up EC foundation object, data model and integration in order to accommodate the HR criteria of these three ERP HR structures in EC.

3.1.1 Background on ERP HCM structures

3.1.1.1 Personnel area and subarea

In ERP HCM, as per original design (which can be verified in the classic ERP manuals such as HR0305), the personnel area represents a company-location and the subareas represent sections (ex: production, office, etc) within the location. Each personnel area exists uniquely in the system and is assigned to a single country (MOLGA), single Company Code (BUKRS) and to a single Address. One country, company code and address might be assigned to multiple Personnel areas. These details can be seen in table T500P.

The personnel subarea only exists in combination with the personnel area, as its value is not unique. These relationship details can be seen in table T001P.

The figure below shows a typical representation of the personnel structure (also exemplifying the relationship between the value IDs).

![Figure 1 – typical personnel area and subarea structure, as described in the HCM ERP manuals](image-url)

Some examples of data in ERP that depend on the Personnel area/subarea structure (table T001P):
• Grouping for Leave Types
• Grouping for absence and attendance types
• Grouping for Substitution/Availability Types
• Grouping for attendance and absence counting
• Grouping for Time Recording
• Grouping for Time Quota Types
• Grouping for premiums
• Grouping for Primary Wage Type and Wage Maintenance
• Grouping for Work Schedules
• Public Holiday Calendar
• Pay Scale Area (default)
• Pay scale type (default)
• Assignment of legal Person

3.1.1.2 Employee group & subgroup

The employee group & subgroup is used to define processes on employee level. Employee groups are a general classification of employees, for example: Active, Retiree, External. Employee sub-groups differentiate further employee categories, for example: Salaried Employee, Pay Scale Employee, hourly paid employee.

The employee group exists uniquely in the system (table T501) as well as the employee subgroup (table T503K). A combination of any group and subgroup can be assigned to a country (table T503Z) and one combination of group and subgroup can be assigned to multiple countries.

A classical representation of the employee group and subgroup structure in ERP can be seen in the figure below.

![Employee group and subgroup structure](image)

Figure 2 – typical employee group and subgroup structure, as described in the HCM ERP manuals

Some examples of data in ERP that depend on the employee grouping (table T503):

• Grouping of personnel calculation rules
• Grouping for primary wagetypes
• Employee category
• Grouping for collective agreement provision
• Grouping for Work Schedules
• Employment status
• Training status
• Grouping for Time Quota Types
• Participation in Incentive Wages

Comparing some of the data/process criteria which is defined by both structures above, some overlap becomes evident, such as:
• grouping for Work Schedules
• grouping for wage types

This overlap forms a “permissibility matrix” for certain groupings. One example is the wagetype permissibility grouping:

<table>
<thead>
<tr>
<th>EE subgroup / personnel subarea</th>
<th>EE subgroup 1</th>
<th>EE subgroup 2</th>
<th>EE subgroup 3</th>
<th>EE subgroup ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subarea 1</td>
<td>WT1, WT2, WT3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subarea 2</td>
<td>WT4, WT5, WT6</td>
<td>WT7, WT8, WT9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subarea 3</td>
<td>WT10, WT11, WT12</td>
<td>WT13, WT14, WT15</td>
<td>WT16, WT17, WT18</td>
<td></td>
</tr>
<tr>
<td>Subarea ...</td>
<td>WT19, WT20, WT21</td>
<td>WT22, WT23, WT24</td>
<td>WT25, WT26, WT27</td>
<td>WT28, WT29, WT30</td>
</tr>
</tbody>
</table>

*WT= wagetype

Considering the above matrix, it is important to define the grouping-dependent objects in EC in such a way that the same dependencies can be achieved, otherwise replication errors into ERP can occur. Consider the case an HR Admins enters a pay-component an employee in EC, and in turn the replication to ERP translated this pay component as an un-allowed wagetype for this employee subgroup.

3.1.1.3 Payroll area

The payroll area identifies a group of employees for which payroll will run at the same time. Each payroll area also determines the specific dates for which the payroll runs, the earliest payroll period for which retroactive accounting is possible, and the periods for which the payroll runs. A single payroll run is not able to process employees of different payroll periodicities together, therefore, a typical differentiation between payroll areas are: bi-weekly paid employees vs. monthly paid employees. Based on this example, payroll will run once for the bi-weekly employees and will run separately for the monthly paid employees.

There are no hard dependencies between payroll area, personnel area/subarea and employee group/subgroup, except for the country (Molga). The payroll area in ERP is defined in table TS49A, in which the payroll area code is the key field, and the country (Molga) is an attribute field. One country may contain several payroll areas.

The ERP feature (PE03) ABKRS exists for defaulting the payroll area in infotype 0001 based on company code, employee group/subgroup. This represents a defaulting only, and not a technical restriction/relationship between payroll area, company code and employee grouping.

Note that the only dependency between the three ERP structures described above is the country (Molga). The following sub chapter explains how the required ERP consistency can be achieved in EC, starting with the representation of the personnel structures.
3.1.2 Representation of the enterprise and personnel structures in EC

The sample standard mapping between EC and ERP values for the personnel structure are as follows:

<table>
<thead>
<tr>
<th>SAP ERP/EC PY</th>
<th>SuccessFactors EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel Area</td>
<td>Job Information – Location</td>
</tr>
<tr>
<td>Personnel Subarea</td>
<td>Job Information – Location</td>
</tr>
<tr>
<td>Employee Group</td>
<td>Job Information - Employee Class</td>
</tr>
<tr>
<td>Employee Sub group</td>
<td>Job Information - Employment Type</td>
</tr>
<tr>
<td>Payroll area</td>
<td>Compensation Information – Pay Group</td>
</tr>
</tbody>
</table>

Some challenges arise with this mapping:

- as per the standard data model in ERP, the Personnel Area represents a location while the subarea represents a sub-division (such as production / sales) in the same location. However, the EC-ERP integration sample mapping is in turn more suitable for cases in which the personnel subarea represents the location in ERP.
- Valid values of Employee Class and Employment Type for employees should be restricted per country of employment (as in ERP). However, the Employee class and Employment Type in EC are technically represented by "picklists" which do not allow for the setting up of EC associations (such as “by country” restriction).

Although the replication sample content recommends the above mappings, they cannot be generically applied “as is” to all system landscapes / projects. This is mainly because the meaning of Personnel Area and Subarea is not uniform across different customer ERP implementations. It is necessary to analyze the current structures at the given ERP implementation before deciding on the EC data design and integration.

The below sub-chapters offer a design recommendation based on the different common meanings Personnel Area and Subarea seen at ERP customers. The last sub-chapters present recommendations for the design of Employee Group/Subgroup and Payroll Area.

3.1.2.1 Personnel Subarea represents a location

Some customers have implemented personnel subarea as location. An example can be seen in the table below:

<table>
<thead>
<tr>
<th>Company Code</th>
<th>Personnel Area Code</th>
<th>P. Area description (text of T500P)</th>
<th>Address registered in Personnel Area table T500P</th>
<th>P. Subarea</th>
<th>P. Subarea text (location)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE01</td>
<td>DE01</td>
<td>Company AG Munich</td>
<td>Munich</td>
<td>0001</td>
<td>Munich</td>
</tr>
<tr>
<td>DE01</td>
<td>DE01</td>
<td>Company AG Munich</td>
<td>Munich</td>
<td>0002</td>
<td>Düsseldorf FO</td>
</tr>
<tr>
<td>DE01</td>
<td>DE01</td>
<td>Company AG Munich</td>
<td>Munich</td>
<td>0003</td>
<td>Köln HQ</td>
</tr>
<tr>
<td>DE01</td>
<td>DE01</td>
<td>Company AG Munich</td>
<td>Munich</td>
<td>0005</td>
<td>Köln Store</td>
</tr>
<tr>
<td>DE01</td>
<td>DE01</td>
<td>Company AG Munich</td>
<td>Munich</td>
<td>0006</td>
<td>Hamburg SR</td>
</tr>
<tr>
<td>DE02</td>
<td>DE02</td>
<td>Company SE &amp; Co. KG Köln</td>
<td>Köln</td>
<td>0001</td>
<td>Köln HQ</td>
</tr>
<tr>
<td>DE02</td>
<td>DE02</td>
<td>Company SE &amp; Co. KG Köln</td>
<td>Köln</td>
<td>HOME</td>
<td>Home office</td>
</tr>
<tr>
<td>DE03</td>
<td>DE03</td>
<td>Company GmbH</td>
<td>Düsseldorf</td>
<td>0001</td>
<td>Düsseldorf FO</td>
</tr>
<tr>
<td>DE04</td>
<td>DE04</td>
<td>Company 04 Köln</td>
<td>Köln</td>
<td>0001</td>
<td>Bremen Office</td>
</tr>
<tr>
<td>DE04</td>
<td>DE04</td>
<td>Company 04 Köln</td>
<td>Köln</td>
<td>0002</td>
<td>Cologne Office</td>
</tr>
</tbody>
</table>

The design in EC for such an ERP set-up would fit the standard recommendation of Personnel Area as Location and Personnel Subarea as Location. This works by concatenating the four characters of the Personnel Area with the four characters of the subarea into an EC Location Code. For example: location code DE01_0001 has description equals “Munich”. The disadvantage of this approach is the duplication of values in the dropdown list of Locations in EC. Consider the location “Köln HQ” in the above example: it may not be evident for the HR admin
which location to choose. In practice, the correct location code will depend on the Company Code/legal entity for which the employee will work.

3.1.2.2 Personnel Area represents a location

Personnel Area is associated to an address in ERP. Many customers have implemented following this standard approach. The table below shows an example.

<table>
<thead>
<tr>
<th>company code</th>
<th>Personnel Area</th>
<th>Personnel Area Text</th>
<th>Address registered in personnel area table T500P</th>
<th>P. Subarea</th>
<th>Subarea text (location)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE01</td>
<td>DE01</td>
<td>Company AG Munich</td>
<td>Munich</td>
<td>0001</td>
<td>Munich</td>
</tr>
<tr>
<td>DE01</td>
<td>DE02</td>
<td>Company AG Düsseldorf</td>
<td>Düsseldorf</td>
<td>0001</td>
<td>Düsseldorf FO</td>
</tr>
<tr>
<td>DE01</td>
<td>DE03</td>
<td>Company AG Köln</td>
<td>Köln</td>
<td>0001</td>
<td>Köln sales</td>
</tr>
<tr>
<td>DE01</td>
<td>DE03</td>
<td>Company AG Köln</td>
<td>Köln</td>
<td>0002</td>
<td>Köln production</td>
</tr>
<tr>
<td>DE01</td>
<td>DE06</td>
<td>Company AG Hamburg</td>
<td>Hamburg</td>
<td>0001</td>
<td>Hamburg SR</td>
</tr>
<tr>
<td>DE02</td>
<td>DE07</td>
<td>Company 02 Köln</td>
<td>Köln</td>
<td>0001</td>
<td>Köln sales</td>
</tr>
<tr>
<td>DE02</td>
<td>DE08</td>
<td>Company 02 Köln</td>
<td>Köln</td>
<td>HOME</td>
<td>Köln home office</td>
</tr>
<tr>
<td>DE03</td>
<td>DE09</td>
<td>Company 03</td>
<td>Düsseldorf</td>
<td>0001</td>
<td>Düsseldorf FO</td>
</tr>
<tr>
<td>DE04</td>
<td>DE10</td>
<td>Company 04</td>
<td>Bremen</td>
<td>0001</td>
<td>Bremen Office</td>
</tr>
<tr>
<td>DE04</td>
<td>DE11</td>
<td>Company 04</td>
<td>Köln</td>
<td>0002</td>
<td>Köln production</td>
</tr>
</tbody>
</table>

Having this kind of set up in ERP, the Location vs Personnel area and Subarea can be represented in EC as follows:

- the Personnel Area can be represented in EC as the Location foundation object. Attention is required not to assign more than one legal entity to a Location object in EC, as this combination is not allowed in ERP.
- the Personnel Subarea can be represented in EC via a custom MDF object. This object is to be associated to the Location (wrapper) object.
- in EC Job Info, a custom field is needed to represent the personnel subarea field (the new MDF object). A “field criteria” in the data model needs to be defined to make sure the filtering works based on associations between personnel area and subarea. For more info refer to this KBA: https://launchpad.support.sap.com/#/notes/2285593.

3.1.2.3 Personnel Area & Personnel Subarea represent other company-related structures without reference to location

If the values in the ERP implementation for personnel area and subarea do not represent a physical address nor a workplace, then it is not possible to map them to the EC Location field. For such a set-up custom objects to represent personnel area and subarea can be defined in EC (as MDF objects and then as custom fields in Job Information). The EC Location object can then be used independently as a pure workplace/location identifier without integration implications.

3.1.2.4 Representation of Employee Group & Subgroup in EC

To represent employee group and subgroup in EC, create MDF objects for each of them as follows:

- Associate object Employee Subgroup to object Employee Group
- Associate object Employee Group to object Legal Entity (or to multiple legal entities of a same country if required)
- Create custom fields in Job Information to store the Employee Group and Subgroup objects.
Use “field criteria” in the data model to define dependencies between these values. This must follow the same value dependencies existent in ERP (table T503Z), as otherwise replication errors may occur.

3.1.2.5 Representation of Payroll Area in EC

The standard EC Pay group field (equivalent to ERP Payroll Area) is present in the compensation information portlet/record, and it is technically an MDF object. Therefore, it is possible to create associations between the Pay Group MDF object, Legal entity and Employee group/subgroup to achieve the ERP required consistency. This allows for the Pay Group value to be automatically defaulted by the EC when hiring or transferring an employee. For setting up the defaulting logic in EC, the following has to be considered:

For HR events in which the pay group changes based on employee sub/group, an onChange rule in EC will work only if both Job Information and Compensation information are selected by the user during “Take Action”. For the cases where “Compensation Information” checkbox is not selected during “Take Action”, an “onSave” cross portlet rule should be implemented to update the pay group based on Employee group/subgroup changes.

3.2 Distributing HR events between EC and ERP

Most personnel actions require a chain of changes in the employee and employment data, some requiring also country-specific (or payroll specific) data changes. In ERP, a few concepts exist for covering the change sequencing, data consistency and data defaulting. These concepts are:

- Personnel actions and additional actions with the aid of info-groups
- Dynamic actions

In EC, the concept supporting HR actions is slightly different. In a core hybrid integration scenario, these concepts should match each other for allowing a consistent data maintenance. This chapter recaps the business processes around the HR actions in ERP and in EC explaining how these are orchestrated, and how subsequent activities can be completed in ERP after being initiated in EC.

3.2.1 HR Events in EC and in ERP

In EC, certain masterdata changes/data entry can only occur in the scope of an “HR Event”. Some examples of “events”:

- Hire/re-hire
- Job change
- Transfers
- Promotions
- Termination
- Managing global assignment / concurrent employment
- Leave of absences

On the other hand, certain EC masterdata changes will occur independently of HR events (usually ESS and workflow-relevant). Here some examples of such masterdata changes:

- Change family dependents data (even if payroll relevant)
- Change bank details
- Address changes
- Changes in Personal data

An Event is always part of an Event Reason. Event reasons are foundation objects. They contain a reference to an Event and the value of the employment status (active, terminated, retired, etc). The event reason once selected during a “take action” activity in EC, or once automatically derived (see “Event Derivation”, in EC Master Guide) determines the new employment status of the Job Information record. Event reasons can be freely
defined / created in EC Foundation Objects. Event types on the other hand, are delivered as part of the standard functionality in EC. It is possible to adjust the event types description, but it is not possible to add/remove events.

Upon completing an HR action, the “event” and “event reason” identifiers are stored in either or both “Job information” and “compensation information” records. This means that changes to the Job info and/or Compensation info record may be accompanied of a new HR event. Changes to other portlets will usually occur without a new event reason in the employee’s record.

The event reasons in job info and compensation info may differ. For example, when triggering a job change (in menu “take action” clicking on “Change Job and Compensation Info”), the user first should decide which information to change. It is then possible to change solely the “Compensation information”, and in this case, the new event reason will exist only in that portlet and not in job info.

The following business example illustrates the different employee actions and how they are stored in the data model:

- Employee is hired in January 2019.
- Employee receives a merit pay increase in March 2019, without any further job elements change.

The event reasons data records look as follows:

- In Job info record, a single record valid as of January 2019 exists: Event: hire
- In Compensation Info, two records exist:
  - First record: valid as of January 2019: Event: “hire”
  - Second record: valid as of March 2019: Event “pay change”

In ERP, the employee-status-changing events (hire, termination, leave of absence) are stored in infotype 0000. Non-status-changing events such as a change in compensation due to merit increase may be entered as an “additional action” having only infotype 0302 storing the event.

In ERP, only one status-changing-event can be performed in a single day for a given employment (PERNR). Multiple (non-status-changing) events can occur in the same day. In this case, the status-changing one (main event) will be stored in infotype 0000 and the remaining ones in infotype 0302.

The following use cases recap the correspondence between EC and ERP HR events:

- Change in address data, change in family dependents data, or any person-related data change (employment independent): no event reason in EC. Replication of data to ERP occurs without updating infotype 0000 and 0302.
• Change in job info: corresponding event (via BIB mapping) will be stored in infotype 0000 or 0302 depending on configuration in table T529A. If more than one event occurs in Job info at the same day, these will also be replicated as additional actions according to T529A. If one of these multiple single day events is a status changing event, it will be replicated as a main event (infotype 0000). Only a single status changing event can be replicated for a single day. This is a restriction in the data model in ERP, and not related with the EC replication.

• Change exclusively in the compensation info: this change will usually never be a status changing event. In the standard integration, these change reasons (which exist only in Compensation Information) are not replicated to ERP, however BAdIs enhancements are possible. In this case, the event should only be replicated to infotype 0302.

• Change affecting job info and compensation info: the event reason in both records should be identical in EC. This value will be replicated from Job Info into infotype 0000 and or 0302 (as required).

For more details on how the event replication occurs and how it should be set-up, please refer to the EC to ERP replication guide.

3.2.2 HR actions starting in EC and being completed in ERP

In EC, the transactions such as Hire, job change, termination, will guide the user regarding the portlets that need to be updated. Business rules can be implemented to guarantee data validation and subsequent updates to other portlets (in background mode).

In ERP, the concept of infogroups exists. The infogroup lists a chain of infotypes and operations (create, delete, delimit, etc) to be executed with that HR action. For example, during a termination it may be required, for a given group of employees (country, etc) to always delimit existing recurring additional payments infotype and create a new record for a severance infotype.

In fact, a chain of quite a few international and country specific infotype activities might be involved during an HR action. This is illustrated in figures 4 and 5.

Figure 4 – “Leaving” HR action in ERP
When the action is initiated in EC (and replicated to ERP) the existing infogroups will not be executed. Only the infotypes in the scope of the replication will be automatically updated. The question is then, how to allow for the completion of the infotype chain activities when the HR action is being initiated in EC. There are a few options:

When UI integration (mashups) is in scope:

- The user must know which activities to complete for the different employee groups and click on the “links” in the payroll portlet in EC (illustrated in figure 6). This will open the relevant infotype from ERP embedded in EC and the user can edit the data.

- Build “HR renewal roadmap forms” for the different events and build a custom UI integration between EC and the “roadmap”. The user would then click on a “link” in EC Payroll information, called “complete termination” or “complete job change” and would then be led to the Roadmap mash-up, as seen in figure 7.
Figure 7 – “HR Renewal Roadmap” functionality (the infotypes listed in the figure above are not a suggestion for the replication scope).

When the UI integration is not in scope:

- After the EC event replication took place, the user goes to transaction PA30, access the replicated event and click on “execute infogroup”, as seen in figure 8.

This will trigger the infogroup and the HR Admin will be guided thru the specific infotypes for data entry as usual. Regarding infogroup configuration: the infotypes which are now in the EC-ERP replication scope should be removed from the infogroup configuration, remaining only with the country and payroll specific infotypes. Infotype 0000, as well as all infotypes in the scope of the EC to ERP replication must to be blocked for manual data changes via PA30 (infogroup button execution in infotype 0000 should be allowed, but no data changes to the fields).

3.2.3 Dynamic Actions supported after EC to ERP replication setup

Certain employee masterdata changes do not require an HR event(action) in infotype 0000, however, they still require a set of dependent data fields to be changed /input in a certain order. For example, a company gives a grant of 200 Euros when an employee gets married. In ERP this would usually require a dynamic action to be set up upon the data change in infotype 21 (family dependents) to trigger the creation of an additional one-time payment (infotype 15). In EC apart from the cross-portlet business rules restrictions, the problem arises when
the target data of the “dynamic actions” resides in a country-specific infotype (and therefore not in EC scope/data model). Suppose the change in the marital status should trigger a country specific infotype change: in this case, EC will replicate the marital status change, however the dynamic action will not occur.

After EC go-live, certain Dynamic Actions scenarios will continue to work, while some will require adaptations.

### 3.2.3.1 Cases still covered with dynamic actions after EC go-live

Originating infotype is a “ERP-only” infotype. Example: HR user adds data to infotype 13 (Social Insurance Germany), upon Save, User is led to infotype 20 (DEUV data)

<table>
<thead>
<tr>
<th>Originating infotype</th>
<th>Action in originating infotype</th>
<th>Destination infotype</th>
<th>Action in destination infotype</th>
</tr>
</thead>
<tbody>
<tr>
<td>0013</td>
<td>Insert</td>
<td>0020</td>
<td>Insert record and default data based on specific employee data elements</td>
</tr>
</tbody>
</table>

### 3.2.3.2 Cases not covered with Dynamic Actions after EC go-live

These cases must be adapted to be covered within EC or with infogroups.

Originating infotype is infotype 0000. Example: when terminating an employee in Germany, an entry in the data exchange infotype (0700) must be added:

<table>
<thead>
<tr>
<th>Originating infotype</th>
<th>Action in originating infotype</th>
<th>Destination infotype</th>
<th>Action in destination infotype</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000</td>
<td>Insert</td>
<td>0700</td>
<td>Insert record and default data based on specific employee data elements</td>
</tr>
</tbody>
</table>

Solution: include this action as an infogroup step. Value defaulting (for the infotype 700 in the above example) can be achieved via Badis.

Originating infotype is in EC to ERP replication scope. Example: when changing the employee status to “married” in infotype 0002, the record for the spouse in infotype 0021 must be added

<table>
<thead>
<tr>
<th>Originating infotype</th>
<th>Action in originating infotype</th>
<th>Destination infotype</th>
<th>Action in destination infotype</th>
</tr>
</thead>
<tbody>
<tr>
<td>0002</td>
<td>Edit</td>
<td>0021</td>
<td>Insert record</td>
</tr>
</tbody>
</table>

Solution: since the data of both originating and destination infotypes are now mastered in EC, this process is to be covered in EC with business rules

### 3.2.4 Leave of absence and HR events

In ERP, absences which do not require an HR event (absences such as short-sickness or vacations, which do not affect the employment status of the employee) are managed without any actions in infotype 0000 and solely with absence infotypes such as 2001 and 80. These absences typically do not impose any employment contract change.
Other types of absences (in US “Leave of Absences”) such as sabbaticals, long-term illness and in some countries even maternity/parental leave may require the employee to remain as a contractual headcount, but not enrolled in payroll. These leaves often require a contractual change and, in any case, require an HR event changing the employee payroll status (the field P0000-STAT2 changes from 3 to 1, in ERP this determines employees who are active/inactive and who is selected for payroll) in infotype 0000.

In order to be sure which absence-types fall into which above category, it is advised to review the content of table T529A, the three status fields (STAT1, STAT2 and STAT3) and discuss with the implementing customer how the absences are currently handled. To be noticed that such absences are highly country-dependent, for example, maternity leave may be handled in both ways depending on the country.

The first set of absences (managed in infotype 2001) must be maintained directly in ERP, without the use of EC Time-Off (since Absence management in EC is out of scope of the core-hybrid approach). However, the second set of absences (the one handled via HR Events) must be managed in EC, so that EC remains the system of record for all HR events. It is then advisable to use the “EC Leave of Absence” functionality to manage these HR events. Although the Leave of Absence is a Time-Off functionality, it can be activated in configuration separately without the full deployment of EC Time-Off. Further details can be found in this KBA: https://launchpad.support.sap.com/#/notes/2577808

### 3.3 Data distribution strategy for planned working time and basic pay

This section explains the overall data distribution strategy for the planned working time and basic pay (represented in ERP by infotypes 0007 & 0008). This recommendation is based on two points:

1. either this data (represented in ERP by infotypes 0007 & 0008) must be entirely managed in EC or entirely managed in ERP. A partial data distribution is not recommended; reasons for this recommendation (which will become clear through this section) are data dependencies that bring complexity to business processes and integration.
2. from a product strategy perspective, EC is the new system of record for managing planned working time and compensation information (basic pay) and therefore it is the preferred option.

This document assumes EC is being implemented as a system of record for the above-mentioned data and processes. Further chapters will focus on how to design the data model in EC and required integration with ERP for an optimal setup.

### 3.4 Dependencies between planned working time and basic pay

In the context of “Core HR” data, the employee planned working time and basic pay form the very core. This set of data is the base for (and the last step before) time evaluation, payroll and several legal HR processes. Before going into the details of designing data and integration around employee planned working time and basic pay, it is important to understand how these concepts are built in ERP and the dependencies between them.

This chapter will assume some basic knowledge of infotype 0007 & 0008. For now, it is important to understand that:

- infotype 0007 holds the employee “work schedule rule ID” and planned working time
  - in the rest of this document, “work schedule rule” will be referred simply as “work schedule”
  - the planned working time is entered in the form of hours per day/week and may differ from the specification in the work schedule

- infotype 0008 holds three main sets for data:
  1. Capacity utilization (aka FTE) and working hours per period
  2. Pay-scale / salary structure assignment
3. Wagetypes and annual salary (if applicable): these are usually automatically calculated by a process called “indirect valuation” based on working hours / capacity utilization and salary tables / other variables.

Most changes in infotype 0007 will incur changes in points 1 & 3 above (in infotype 0008), while certain changes in infotype 0008 do not depend on (or do not require) a change in infotype 0007.

For example: the employee is becoming a part-time employee, via a contract change. In ERP the following steps are required:

- an action in infotype 0000,
- changes in infotype 0007 for reducing the working time,
- changes in infotype 0008, to determine the new number of working hours per period and the new base-salary (which normally should be reduced).

Although this type of contract change involves different system steps, upon starting the HR action, only a single manual data input is required in infotype 0007, as the new record in infotype 0008 will be proposed by the action and the new capacity utilization, hours per period and salary wagetypes will be automatically re-determined.

On the other hand, certain changes to infotype 0007 do not require a new record to infotype 0008. An example of such a change is when an employee is assigned a new work schedule, without changing to total working hours per payroll period (employee works originally works from Sunday to Tuesday and will start working from Thursday to Saturday instead). And finally, certain changes to infotype 0008 are completely independent of infotype 0007. An example is applying a salary increase to an employee or changing the employee pay-scale level.

The figure below exemplifies how data of infotype 0007 and 0008 may depend (or not) on each other:

**Figure 9: some HR actions will need to trigger changes in both infotypes 0007 & 0008, while some only in infotype 0008. In the figure, the horizontal lies represent the time splits of the infotypes 0007 and 0008.**

Considering the planned working time and basic pay will be managed in EC, all the required data, business logic and dependencies (including indirect valuation) must be moved into in EC, so that the replication can simply send the resulting values into ERP. The integration must be able to deal with the dependencies discussed above and either change just one or both infotypes as required in the correct order. For example, if reducing the employee working hours should cause a reduction in pay, then both these changes must be performed in EC (with consistency enforced by business rules) and only then the integration can take care of updating infotypes 0007 and 0008 accordingly. Partial data maintenance in EC is not allowed. An example of partial data maintenance would be managing the “header data” of infotype 0008 in EC and pay components (wagetypes) in ERP (or even managing pay components in EC and valuate them in ERP). This adds complexity to the data and requires infotype 0008 to be updated multiple times (by the replication and manually), making it easier for the data to go out of sync. Such non-standard scenarios are not further discussed in this document.

The recommended approach for integrating EC with infotype 0007 and 0008 can be visualized in the figure 10:
Figure 10: high level perspective of recommended integration between EC with infotype 0007 & 0008. The data marked in blue originates from EC “Job info”, the data marked in yellow originates from C “compensation info” and the data marked in green originates during replication runtime after infotype 0007 is processed.

The next chapters discuss how the data model, business logic and integration can be setup in EC to take care of planned working time and basic pay by looking into the following points:

- understanding the data related to employee work schedule and capacity utilization in both infotypes 0007 & 0008
- understanding the data related to employee work schedule and capacity utilization EC
- understanding how the data model in EC can be set up to accommodate integration requirements with ERP, considering:
  - employee FTE relevant for headcount reporting and planning
  - employee FTE relevant for compensation(payroll)

3.4.1 Work schedule rules and planned working time in ERP (infotype 0007)

Work schedule assignment and employee planned working time are defined in infotype 0007. The section called “working time” contains the following important fields:

- Employment percentage
- Actual Working hours per a given time interval
- Part-time indicator (yes, no field)
In the standard delivery, changing the employment percentage field (for example, for a part-time employee setting it to 50%) will automatically reduce the working hours (the system bases the calculation on the hours configured in the work schedule table T508A). Similarly, manually changing the working hours will automatically change the employment percentage.

The combination of the above fields plus the flexibility on configuring this infotype, work schedules, time evaluation and payroll driver lead to different ways customers actually use this infotype. For example:

- Customers can define at employee group/subgroup level, which working hours field is open for input (daily, weekly, monthly working hours), and use the corresponding “open” field to enter the employee working hours.
- Customers might also block all working hours field for input and deal only with the percentage field.

In addition, for representing part-time employees, two different work schedule approaches exist:

- Assign the employee a specific work schedule with less hours/real times and keep the employment percentage at 100%, while flagging the check-box “part-time employee”.
- Assign a full-time work schedule to the employee and reduce the employment percentage accordingly (also flagging the check-box “part-time employee”). In this case, the option “dynamic daily work schedule” becomes available.

Looking at the documentation of the field “Employment percent” (EMPCT), it reads: “This field indicates the employment percentage according to the work schedule. If you change the value in the field, the system adjusts the daily, weekly, periodic and annual hours automatically. Example: If the employment percentage is 100%, the employee works exactly as specified in the work schedule rule. If the employment percentage changes to 50%, the other hours fields in the Planned Working Time infotype (0007) are reduced to half their previous value.”

In other words, EMPCT has been designed as a factor by which the work schedule assigned to the employee (in IT0007-SCHKZ) is multiplied; the default value EMPCT=100% means that the work schedule assigned is not reduced for the employee, and it doesn’t mean that the FTE in the employee’s contract is 100%. Formally, EMPCT is only the “schedule assignment fraction”, not the employee’s FTE. In certain ERP customers, an exception to this rule might be in place and the field “employment percentage” in infotype 0007 can be used to represent the employee FTE under the specific following condition:

- Only “full-time-equivalent” work schedules are used for all employee population. This means that no specific work schedule is used to represent a simple part-time employee.
The following table exemplifies cases where EMPCT field can or not serve as the FTE value:

<table>
<thead>
<tr>
<th>Work schedule purpose</th>
<th>Daily / monthly working hours in Work schedule definition</th>
<th>Daily / monthly working hours in Infotype 0007</th>
<th>Employment percentage in Infotype 0007</th>
<th>Employment percentage in Infotype 0007 reflects common FTE definition</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Represent schedule of white-collar employee</td>
<td>8/40</td>
<td>8/40</td>
<td>100%</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Represent schedule of white-collar part-time employee</td>
<td>8/40</td>
<td>4/20</td>
<td>50%</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Represent schedule of a part-time white-collar employee</td>
<td>4/20</td>
<td>4/20</td>
<td>100%</td>
<td>no</td>
<td>The employment percentage shows 100%, while employee works and earns half of his / her peers in similar position</td>
</tr>
<tr>
<td>Represent schedule of an employee working on hazardous conditions (for which by definition, working hours are comparably smaller)</td>
<td>4/20</td>
<td>4/20</td>
<td>100%</td>
<td>yes</td>
<td>In this case, the position foresees a lower number of hours than “usual”. These could be due to legal reasons, union agreements, etc</td>
</tr>
<tr>
<td>Represent schedule of a tariff worker/employee</td>
<td>7,4/37</td>
<td>7,4/37</td>
<td>100%</td>
<td>yes</td>
<td>In this case, the position foresees a lower number of hours than “usual”. These could be due to legal reasons, union agreements, etc</td>
</tr>
</tbody>
</table>

Integration and EC setup recommendation for the FTE element will be given in further sub-chapters below. First it is necessary to review the related concepts existing in infotype 0008.

3.4.2 Capacity utilization and working hours per period (infotype 0008)

Relating to employee working-time and full-time-equivalence (FTE), two important fields in infotype 0008 exist: the capacity utilization (BSGRD) and the Working hours per payroll period (DIVGV). Here is a summary about the purpose of these two fields in infotype 0008 and some technical background about them:

1. Capacity utilization (BSGRD):

   In business terms, it represents the FTE agreed upon employee contract. The system documentation for this field reads: “The capacity utilization level defines which percentage of standard working time an employee works. Example: The standard weekly working time is 40 hours. Since the employee only works 20 hours per week, his/her capacity utilization level is 50%.”

   From a technical perspective:

   - This field can be defaulted (via feature DFINF) from IT0007-EMPCT, however this is not mandatory and might not be in place in many companies.
   - The Indirect Valuation of wagetypes (an automatism present in infotype 0008) has a functionality called “reduction rule” which allows defining at wagetype level an amount reduction behavior. This is useful for cases when the salary amounts are configured in the system for the 100% FTE and can be dynamized at employee level according to their actual FTE. One of the reduction rules, is to reduce the amounts based on the percentage in field BSGRD. Other reduction rules exist, which derive the reduction % from information in infotype 0007. In this case, changing the BSGRD field has no effect in the wagetypes. Note that reduction rules are not mandatory.
   - Salary range check in infotype 0008 (see tables T510N / T710) depends on the percentage of BSGRD. This is useful for non-pay scale employees and is related to compa-ratio and range penetration (which are important concepts in EC and in Compensation planning module)
Payroll might be configured to use the field BSGRD to pro-rate base salary, taxes and contributions. Especially, if amount reduction from indirect valuation is not used in infotype 0008.

2. Working hours per payroll period (DIVGV):
   It represents the effective number of hours the employee works in average in a payroll period. This field is more important for salaried employees (not hourly paid employees) as it serves for calculating the hourly rate for overtime. This is done for as in the following example: (hourly rate for overtime) = (monthly salary)/DIVGV. The field DIVGV can be derived from the information in Infotype 0007 (also via feature DFINF). For example, for a monthly-paid employee (in a monthly payroll area), the value in this field will be taken from field IT0007-MOSTD, while for a bi-weekly payroll employee (in a bi-weekly payroll area) there will be a calculation based on IT0007-WOSTD for deriving DIVGV.

In some situations, the information on these infotype 0008 fields will be identical to the “related” information in infotype 0007 fields (fields IT0007-EMPCT and IT0008-BSGRD will be identical and fields IT0007-MOSTD and IT0008-DIVGV will be identical). In other situations, these fields values will differ between the two infotypes. Fields MOSTD (monthly working hours) and DIVGV (working hours per (payroll) period) will differ more often (consider the example of a bi-weekly payroll employee), however EMPCT and BSGRD will also differ at times; the following chapter provides more background on this.

3.4.3 Determining which infotype field is used for deriving or storing the employee FTE

In the standard ERP HCM delivery, the FTE value according to the employee contract is represented by the capacity utilization field (BSGRD) in infotype 0008. The employment percentage in infotype 0007 is a mere technical construct which depends on work schedule configuration. It is therefore possible to have infotype 0007 employment percentage always at 100% (by working with time-specific work schedules only) and specify the part-time % in infotype 0008 field capacity utilization. However, the setup presented by the standard ERP delivery is not always the case in practice, and this is mostly due to the configuration flexibility of the ERP HCM solution. In certain implementations, infotype 0007 is used to represent the FTE by means of the employment percentage, and infotype 0008, field BSGRD is used as a way to manipulate the indirect valuation of wagetypes and will not accurately reflect the employee FTE’s contract value. For example, some customers might use the filed BSGRD to decrease or increase the employee’s salary temporarily (due to a change in the work condition) even if no contractual FTE change has been agreed. This is definitely not a best practice, as there are better ways of achieving this requirement, but it is the case at some installations.

Certain legal aspects also add complexity to the “FTE scenario”, for example:

- Early retirement programs (common in Germany and Austria): employees in this scenario will work for a period of 2 years 100% of their working hours and receive only 50% of the usual pay. After two years, the employees will work 0 hours and will still receive payments until they are finally retired.
- Sick-leave recovery: employees in this scenario will receive a minimum portion of their original salary (for example 60%) while working only 40% of the hours of a full-time equivalent.
- An employee with an active court case against the employer, might still receive pay for the duration of the court case even without working. The employer might consider the headcount/position as already vacant (FTE = 0) for subsequent processes such as recruiting.
- Other cases like the ones above could exist, however SAP does not offer a catalog listing them and how they are achievable in ERP.

Here is a summary of how the data might look like in infotypes 0007 & 0008 for the different cases discussed above:
In case dynamic work schedules are used:

<table>
<thead>
<tr>
<th>Use case</th>
<th>EMPCT</th>
<th>BSGRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal full-time employee</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Normal part-time employee</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Early retirement (phase 1)</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Early retirement (phase 2)</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Sick leave recovery (may depend on time management/payroll configuration)</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Other agreement between employer/employee</td>
<td>100%</td>
<td>120%</td>
</tr>
</tbody>
</table>

In case fixed work schedules are used:

<table>
<thead>
<tr>
<th>Use case</th>
<th>EMPCT</th>
<th>BSGRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal full-time employee</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Normal part-time employee</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Early retirement (phase 1)</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Early retirement (phase 2)</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Sick leave recovery (may depend on time management/payroll configuration)</td>
<td>100%</td>
<td>60%</td>
</tr>
<tr>
<td>Other agreement between employer/employee</td>
<td>100%</td>
<td>120%</td>
</tr>
</tbody>
</table>

In certain countries versions of the ERP HCM, when the part-time percentage plays a role in a given process, a switch/parameter might exist allowing for customers to choose which field (EMPCT or BSGRD) will be considered as the FTE relevant. This is the case, for example for the seniority pay scale jump for Italy. On the other hand, certain ERP functionality is more inclined to the BSGRD field: for example, ERP BW offers two standard FTE info-objects: 0R_PA_008 and 0HDCNT_FTE, which are based on BSGRD field only. Although the standard system design is more inclined to represent FTE with the BSGRD field, the actual situation will depend on the existing implementation in question.

3.4.4 Planned working time and FTE concept in EC

In EC, as of time of writing (release 1902) the standard data model (and standard business logic) follows the approach described below for the employee planned working time and FTE:

Data model:

- A standard field exists for storing the employee average weekly working hours in the job information record (technical field name: "standard-hours")
- For storing the planned full-time average weekly working hours, a standard field exists in each of these objects:
  - Position,
  - Job,
  - Location
- Legal Entity,
  forming a hierarchy for defining default working times
- A standard field exists for storing the work schedule code in the employee job information record (technical field name: work schedule code). The work schedule in EC has information such as: Average hours per day, week, month and year.
- A standard field exists for storing the employee contractual FTE in the job information record (technical field name: FTE). Unlike in ERP, the value in this field is a number instead of a percentage - 1.0 represents a full-time employee and can be configured to accept long precision values such as 0.94576 FTE)
Business logic: the HR admin must enter the field “average weekly working hours” (“standard-hours”) in the job information portlet to define employee actual working hours (as they would be in the contract). As soon as this is done, the value in the field “standard-hours” is compared by the system with the lowest level hierarchy of planned working time (position->Job->Location->Legal Entity, which is specified at the HRIS propagation xml). The result of this comparison (division) is stored in the field FTE. It is then possible to manually change the FTE value, and this change will not impact the value in “standard-hours”.

The assignment of a work schedule code to an employee plays no role in this process (although it is required to assign the work schedule code to the employee due to different reasons, such as integration). The system determines the FTE field value not by looking at the average hours specified in the work schedule configuration, but solely by looking at the “position->Job->Location->Legal Entity” standard hours (this is further described in the following KBA: https://launchpad.support.sap.com/#/notes/2498292).

Subsequently, certain EC standard functionality is then based on the value of the FTE field:

- “Occupied position count” in the position org chart:
  In the position org chart, each position shows: the number of FTE occupied / total planned FTE for the position. Certain position management features also depend on the value of this “rate”, such as the Automatic Update Of “To Be Hired” position status.

- Compa-ratio and range penetration: the determination of these figures is based on the standard FTE field.

The standard behavior described above can be influenced with limitations: it is possible to remove the field “standard-hours” from the data model and avoid the automatic determination of the FTE value (or implement new business logic to determine the FTE value based on custom working hours fields). However, it is not possible to configure the above-mentioned functionality that depends on the FTE field.

Following challenges arise with the standard system behavior and data model, whenever the ratio of planned working hours should differ from the payment rate:
On EC:

- If a part-time position is created by the employer (for example because of budget restrictions and not because a full-time employee wanted to turn into part-time), the standard working hours at the position will reflect a lower number of hours (ex: 20h weekly). Upon entering the effective working hours in the employee job information (for this position), the FTE will be calculated at 1.0 (as is a full-time employee). The compa-ratio and range penetration will be wrongly calculated (as 50% FTE would be expected for the same salary table).

- any business scenarios in which the work schedule does not follow the pay rate, such as early retirement, protected absences, etc (see cases listed in chapter “Determining which infotype field is used for deriving or storing the employee FTE”) due to both information being tied together in the same field (FTE).

On the integration with ERP HCM:

- pre-existing behavior in ERP HCM for infotype 0007 may require fields “EMPCT” (employment percent) to be replicated instead of the number of working hours.
- number of working hours (monthly, daily, etc) which must be replicated to infotype 0007 might differ between employee group, while such fields are not available in EC job info standard for replication. This is specially the case if Individual work schedules at 100% might be expected in infotype 0007.
- In a large number of existing installations (and varying per country within the same installation) the EMPCT and BSGRD field differ, requiring the EC integration to be able to handle the different scenarios.

3.4.5 Designing EC and ERP-integration for covering FTE and working time requirements

It is not possible to define a single solution which will can cover all integration requirements for the different existing ERP implementation approaches, however a few recommended options exist. The primary recommendation is to use the FTE standard field more as a compensation-related element rather than a work-schedule dependent field by following these steps:

- In EC:
  - remove the standard-hours dependency in EC from the field FTE and introduce custom fields in EC to represent daily, weekly, monthly and yearly working hours in job information.
- in the ERP integration:
  - map the standard FTE field to the capacity utilization in infotype 0008 (converting it to percentage field, by multiplying it by 100)
  - map the working hours fields to infotype 0007, which in turn automatically determines the employment percent (EMPCT) field based on the work schedule configuration.

The FTE field in job information will continue to serve as a base for functionality in EC Position Management, as this is a standard system behavior and cannot be influenced. However, the dependency with the work schedule will be removed by following the setup presented in this chapter. Certain exceptional cases will remain in a “grey area” for position management, such as employees in early retirement, or inactive employees still in enrolled in payroll. On the other hand, the compa-ratio and payroll calculation will be managed accurately for these cases.

This approach can be visualized in the figure below:
This approach requires the work schedule code to be entered in employee job information. For this, EC Time-off must be switched on, even if the implementation of Time-Off is not in scope. An alternative to not activating time-off in EC would be to create a custom MDF object and custom field in Job Information to represent the work schedule. The standard work schedule functionality in EC offers some advantages, such as a tool to find a work schedule that fits to the employee. It is also possible to continuously replicate work schedules from ERP into EC with a standard tool.

In the work schedule object, the working hours per day, week, month and year are defined. These values can be defaulted to the job information working hours custom fields upon work schedule selection. One of these fields (daily, weekly, monthly or yearly working hours) must be defined for user input. This can vary between work schedules or could always be the same field (for example: daily working hours). For figuring out which field should be open for input, one can look at how the feature WRKHR is defined in ERP. For example, if only the field “daily working hours” is allowed for input (under all circumstances), then only this field is needed in the job information in EC (as this is the only value relevant for the integration). On the other hand, for example if for a group of employees the weekly working hours is needed for input and for another group the daily working hours is needed, then it is required to define both daily and weekly fields in job information and via business rules define which one (based on work schedule configuration, or employee group configuration) is valid for input and which gets automatic calculated. The integration should then replicate both fields, and only the field which is relevant for input in ERP (via feature WRKHR) will take part in the data processing during replication.

Also, this integration approach takes care of multiple ways the work schedules might be setup in ERP. Consider the following examples, where specific work schedules are used for employees working “less hours”:

1. an employee works in a hazardous environment, and legally can only work 20 hours per week. From a legal point of view (and salary point of view) the FTE of this employee is 100% (requiring field BSGRD to be 100%). The Work schedule in ERP used for this purpose is a specific one for this kind of job, and therefore field EMPCT should be represented at 100%. This example can be seen in figure 15.
2. A white-collar part-time employee is assigned a specific work schedule of 20 hours per week. Therefore, the field EMPCT is expected at 50% and filed BSGRD is expected at 50%. This example can
Figure 16: part-time salaried employee. Work schedule configuration in ERP is: 20 hours per week. EMPCT is equal 100% even if part-time.

If for the same part-time employee, the work schedule in ERP would be configured to 40 hours weekly (the equivalent to a full-time), then the replication of the 20 hours per week would cause the EMPCT field to go to 50% as expected. Notice that the “part-time employee” indicator should be replicated from EC.

3. A white-collar part-time employee working four days a week with a specific work schedule. This example can be seen in figure 17:
4. A white-collar part-time employee working five days a week with a dynamic work schedule. For such cases, the employment percentage will be adjusted automatically (and the dynamic work schedule flag will be activated automatically in infotype 0007). This example can be seen in figure 18:
Since the overall design concept of the integration has been discussed, we can turn our attention to specific fields that are either present only in ERP or can be automatically determined:

- In infotype 0007:
  - “time management status” (ZTERF): this field should be defaulted from feature TMSTA during replication.
  - “part-time employee” indicator (TEILK): this field is more easily managed out of EC, with the standard field “is-fulltime-employee”. However, it is possible to automatically derive this value during replication via BAdI HRPAD00INFYBL, although this might not be easy for native part-time schedules.
  - “dynamic daily work schedule” (DYSCH): differently than the system behavior with PA30, during replication this field is not automatically switched on in case the EMPCT is set to less than 100%. This is due to the design of the decoupled framework class CL_HRPT_INFOTYPE_0007 and not a limitation of the EC replication. This field must then be automatically set via BAdI HRPAD00INFYBL.
  - “working week” (WWEEK): this field might be needed for payroll in some countries like USA. This field must then be automatically set via BAdI HRPAD00INFYBL.
  - All fields relevant for Belgium localization: the Belgium country version is deeply localized via infotype view 0107. It may be required to define the Belgium fields in EC data model and allow for replication.

- In infotype 0008:
  - Working hours per period: this field will be automatically calculated during replication based on data in infotype 0007. Whenever the working hours in infotype 0007 change, the replication must trigger also a time split in infotype 0008 for this to happen. This is the usual behavior since the effective dated change in job information will cause this time split in infotype 0008 even if no other field of infotype 0008 actively changed via job info.
  - Note that in the decoupled framework class CL_HRPA_INFOTYPE_0008 the feature DFINF (which is responsible in PA30, among other things, to default the working hours per period) is not relevant, and therefore it is also not relevant for the integration (the working hours per period is proposed independently of the DFINF setting)
If one or more of the above fields cannot always be automatically determined as proposed, a custom field in EC and respective replication will be needed.

3.4.5.1 Challenges for data model and integration design

The approach presented above might not be feasible in the implementation in question or might need to be adjusted. Here are some common situations when this could be the case:

- Certain work schedules in ERP have special requirements how they must be filled. For example, the on-call duty (RUF) work schedule is defined with 0 hours per day, week, month and year, and 0 working days a week. This makes it difficult to determine how to default field “working hours per payroll period” (IT0008-BSGRD) if this field should not be equal 0 for such cases in the installation in question. If this is the case (and if this kind of work schedule is in use) additional custom fields might be needed in EC to represent and replicate this scenario.

- Certain existing customers installations do represent the employee contractual FTE with the field employment percent (IT0007-EMPCT). The conditions necessary for achieving this representation have been described in chapter “Work schedules and planned working time in ERP”. For this case, the standard FTE field in EC might be replicated to field IT0007-EMPCT, and a custom field in EC can be created to represent and replicate to the capacity utilization field (IT0008-BSGRD). In situations when these two values are different, the compa-ratio and range penetration will not work properly. It is also important to consider the custom capacity utilization field for indirect valuation of pay component, for example to reduce the pay component amounts upon a capacity utilization reduction.

- Certain existing customers don’t work with the fields “working hours” in infotype 0007 but only with the field “employment percent”. This can be the case, if all the working hours fields are blocked for input (overriding feature WRKHR). Changing the employment percentage will then automatically change the employee planned working hour fields. If this is the case, and if this behavior cannot be changed (to avoid side effects with retro-calculation or to avoid further impact in payroll) it will be necessary to calculate this percentage in EC with a custom field and replicate it to ERP. In this case, the standard FTE field plus the (custom) work schedule percentage would be present in EC.

Other customer-specific situations might arise and require further adjustment in EC data model and integration. This is mainly an issue that arises due to the flexibility in ERP HCM for covering the different requirements, and how companies with different complexity originally implemented the ERP HCM system.

3.4.6 Restricting value help for Work Schedules in EC

Over the years existing ERP customers may have created a big number of work schedules. Commonly this number can exceed a couple of thousands. In ERP work schedules are assigned to individual employee groups (a combination of employee group/subgroup and personnel area/subarea), which greatly facilitates the task of finding the allowed work schedule for a given employee, since ERP shows the user (in infotype 0007) only the work schedules that can be assigned to that particular employee (depending on the grouping criteria). Therefore, even if the company has over twenty thousand work schedules (T508A-SCHKZ), the user will still get an input help of only a couple of dozen to choose from. In EC, it is important to achieve the same input consistency behavior for the work schedules as in ERP, since it not only facilitates the job of the HR-user during hire or job changes, as it prevents replication errors which can easily happen if the HR-user assigns the employee to a work schedule valid for another employee group.

Work schedules in EC are by default filtered by the country of the legal entity which the employee belongs. Work schedules marked as international will be valid to all employees. For adapting this behavior and making it more restrictive as in ERP the following steps can be taken:
1. Create a new “permissibility” MDF table(object) with the following structure:

<table>
<thead>
<tr>
<th>Permissibility Code</th>
<th>Permissibility Name</th>
<th>Personnel Area</th>
<th>Personnel Subarea</th>
<th>Employee Group</th>
<th>Employee Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>(data)</td>
<td>(data)</td>
<td>(data)</td>
<td>(data)</td>
<td>(data)</td>
<td>(data)</td>
</tr>
</tbody>
</table>

2. Create an association from the work schedule to the permissibility object above.
3. Create a custom field in Job Info with the permissibility object type described above.
4. Create a field-criteria on the work schedule field for the above object in Job Info (in the data model).

Note that this filtering works in the work schedule field of Job Information portlet but does not work on the Find a Work schedule UI (the popup screen that can be used to find a work schedule).

The downside of this approach is to keep the associations and permissibility entries in the MDF object up-to-date, as this translates into a manual activity with every new work schedule created in ERP. Although there is a solution to migrate work schedules from ERP to EC (program ECTIM_TRANSFER_WSR_TO_EC, for more details refer to guide: Migrating Data from SAP ERP HCM to Employee Central Using Infoporter) this will not migrate the custom associations described above.

3.5 Distribution strategy for compensation related data and processes

This section explains the concept of ERP wagetypes and EC pay components, which infotypes and which EC Portlets play a role for the core-hybrid scenario, and what part of this data is relevant for moving to EC. The last chapters of this section dedicate to the details of basic-pay management.

3.5.1 Determining which parts of the compensation data is relevant for moving to EC

Before designing compensation related data in EC and determining what data is to be migrated, it is important to understand and sort out the differences between the kinds pay components (wagetypes) and the related infotypes in ERP. This understanding makes it easier to identify what data should be managed in EC going forward.

Three kinds of wagetypes exist in ERP (as seen in figure 19):

- Primary wagetypes: these are entered directly by users in infotypes and are part of employee masterdata. Although some of these wagetypes are automatically determined (indirect valuation) and are not allowed value-override by the user.
- Secondary wagetypes: these are generated automatically by time evaluation and payroll. They are not considered as masterdata, but as transactional data and are stored in database clusters, not in infotypes.
- Non-wagetypes: these are like primary wagetypes but are technically not wage types, rather currency-specific fields in infotypes. During payroll calculation secondary wagetypes are generated to represent these amounts.
Based on the above summary, it starts to become evident that only the primary wagetypes are relevant for being “migrated” to EC. These are good news, since the primary wagetypes represent only between 10% to 20% of the total wagetypes in the ERP system. The third kind of wage types (the non-wage types explained above) fall into the categories of country-specific, global benefits, loans etc and therefore are too payroll specific. Which means they should be kept in ERP going forward.

The following diagram (figure 20) explains how the different types wagetypes relate to the different infotypes in ERP. It also shows which data is relevant for managing in EC, and which data is relevant for managing in ERP.
The following points can be used as a “rule of thumb” to identify which wagetypes should be represented as pay components in EC:

- All pay components that form the employee compensation package / total rewards (this means all wagetypes in infotype 0008 and some wagetypes of infotypes 0014 & 0015) should be moved to EC
- Additional components (recurring or one-time) which the manager or employee should see in the employee’s record, in a statement or which may require workflow approvals (such as a special bonus): these will be the wagetypes in infotypes 0014 & 0015 which are relevant for bringing to EC.
- The pay component cannot be a payroll specific one (example: some transportation allowance which will later anyway be seen in the employee Payslip). This can be the case for most wagetypes in infotypes 0014 & 0015.
- Specific infotypes (country-specific, loans, garnishments and benefits) should not be brought to EC.

Certain types of data, such as benefits, allowances and loans can be managed in ERP in different ways. They can either be managed with purpose-specific infotypes (like 167-169, 45, 195 etc, represented by the top-right box on the above figure) or they can be managed simply with infotype 0014 & 0015. It will depend on the existing implementation, and if these business requirements needed a more robust solution (purpose-specific infotype) or could be simply managed in a generic way (with infotypes 0014 & 0015). Sometimes both ways are implemented, varying by country.

For example: health insurance allowances/grants are strictly regulated in some countries, and in some not.
- For Germany, the infotype 0013 will be used for this purpose, as it contains specific business logic to manage the different possible grants related to health insurance in Germany,
- for other countries, the benefits infotype 0167 can be used,
- And for other countries, infotype 0014 can be used.

In this sense, it is recommended to perform an analysis on the existing implemented processes and determine which infotypes and wagetypes are used for managing such data. If infotypes 0014 & 0015 are used, and if it would make sense to allow for MSS for some of these processes, then it can be advisable to bring these wagetypes to EC.

The following table presents further background and reasoning on which wagetypes / pay components to manage in EC:

<table>
<thead>
<tr>
<th>Category of pay component/ wage type (in EC and in ERP HCM)</th>
<th>Relevant for managing in EC</th>
<th>Related infotype</th>
<th>Background and reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base salary / basic pay</td>
<td>100%</td>
<td>Infotype 0008</td>
<td>This is an essential part of the employee masterdata, and EC offers the functionality for covering the related requirements. In terms of wagetypes, these are few when comparing to the total number of primary wagetypes customers usually have configured in ERP HCM. They can however be different according to country, pay scale structure and/or employee subgroup-grouping. In real cases, for global customers managing payroll in many countries, the amount of such wagetypes can reach more than 1 or 2 thousand.</td>
</tr>
<tr>
<td>Allowances, benefits, grants. Part of “employee total rewards”</td>
<td>100%</td>
<td>Infotype 0014</td>
<td>These are values relevant for employee total reward and are usually agreed contractually or planned in advance.</td>
</tr>
</tbody>
</table>
| Payroll specific recurring amounts – not part of “employee total rewards” | 0%                          | Infotype 0014    | (Note: this category could account for up to 90% of the wagetypes managed in IT0014 by global customers)
This are values do not account for the employee’s total rewards. There are literally infinite multi-purpose wagetypes that can fit into this category. For example, a recurring “lump sum rounding” might be added in infotype 0014 to cover some technical gaps in a country payroll implementation. |
<p>| One-time Reimbursements, bonuses, commission                | 100%                        | Infotype 0015 and | These are values relevant for employee total reward and usually also contractually foreseen, although without commitment / obligation. For example, bonus pay out or commissions will depend on how well the |</p>
<table>
<thead>
<tr>
<th>etc – part of “employee total rewards”</th>
<th>infotype 0267</th>
<th>employee performed in a given period. Such use cases are also relevant for MSS scenarios, or integration with Compensation planning / Variable pay module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payroll specific one-time amounts – not part of “employee total rewards”</td>
<td>0%</td>
<td>Infotype 0015</td>
</tr>
</tbody>
</table>

The following diagram 20 shows the pay components distribution from an EC Portlet and replication perspective. Note that the information on portlets do not translate one-to—one with the infotypes. For example, some pay components stored in the “recurring payments” portlet will be replicated to infotype 0008, while some to infotype 0014.

![Diagram showing pay components data distribution from an EC Portlet and replication perspective](image)

**Figure 21: pay components data distribution from an EC Portlet and replication perspective**

### 3.5.1.1 Restricting pay components in EC

As previously discussed in chapter “3.1 - Enterprise structure, personnel structure and payroll area” elements such as pay components (wagetypes) and work schedules are dependent on employee group/subgroup and personnel area/subarea (which makes them automatically dependent on legal entity and country as well). To obtain a consistent behavior in EC and avoid replication errors in ERP, it is required to restrict pay components in EC by the equivalent employee grouping as in ERP.

In the compensation recurring portlet, the field Pay component can be restricted in two methods (only one of the below methods can be chosen)

1. **Having an association from Country or Legal entity to the Pay component wrapper object.**
2. **Having an association from Pay Component Foundation object to any MDF object, for example: Employee subgroup is an object type /or Pay group etc.**

The details of each of the method are explained below:

1. **Having an association from Country or Legal entity to the Pay component wrapper object.**
   In this method the association is modeled on the MDF object such as Country MDF object or Legal Entity MDF object to the Pay component wrapper (FOWPayComponent) in the configure Object Definitions UI. Data of the allowed pay components per Legal Entity/Country has to be updated on the Legal Entity/Country.
Ideally one of these objects Legal Entity /Country must be used, if the association is defined in both the objects then the result is an “OR condition”. Even if one of the fields satisfies the criteria then the pay component is shown in the value help.

2. Having an association from Pay Component Foundation object to any MDF object, for example: Pay Component to employee subgroup.

In this method the association is created in the corporate data model from the foundation object pay component to another MDF object like Employee subgroup (custom MDF object) or personnel subarea.

In addition to adding the association, the field criteria also need to be defined. For more information on the field criteria refer to the KBA https://apps.support.sap.com/sap/support/knowledge/public/en/2287729 or the EC master implementation guide.

If the association is created to multiple MDF objects, then the result is based on an “AND condition”. For the above example if the association is there for both employee subgroup and personnel subarea, the pay component will be shown in the value help only if the employee meets the criteria for the two mentioned fields.

3.5.2 Basic pay management in EC and replication to ERP

Now that the overall compensation related data distribution has been discussed, the following chapters will focus on the “basic pay” management, which is the core of the compensation data.

In EC, the basic pay corresponds to:
- Certain fields in the job information portlet
- Fields in the compensation information portlet
- Most of the data in the recurring payments portlet, and in ERP

In ERP, the basic pay data corresponds to the data in infotype 0008.

A few automated processes are required for managing and keeping the basic pay up-to-date, such as:
- Automatically determining and valuating salary tables (indirect valuation),
- Periodically reclassifying employees into pay scale/seniority levels,
- Mass salary adjustments (based on individual factors).

Evidently, both ERP and EC offer solutions for the above-mentioned processes. The following chapters will discuss how to migrate these processes from ERP to EC. For this purpose, it is first necessary to understand the different types of remuneration structures and which processes are relevant for which structure.

3.5.2.1 Employee remuneration structures and remuneration types

From payroll perspective, employees can be grouped into two main groups:
- Hourly-paid employees
- Salaried employees

These groups can be further divided into:
- Unionized employees (non-exempt as known in USA), in which salaries/wages are determined by tariff agreement (collective labor agreement (CLA) as known is USA)
- Non-unionized employees (exempt employees in USA), in which salaries are freely determined by the market / employer

From a remuneration structure point of view (the way how wages and salaries are composed), these can be grouped into three categories:
- Individual contracts
- Salary grades & ranges
- Pay-scale
The following table summarizes the different remuneration structure and relevant requirements for the different groups of employees

<table>
<thead>
<tr>
<th>Remuneration type / employee subgroup</th>
<th>Hourly paid / wage earner</th>
<th>Salaried employee</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Union Employees</strong> (non-exempt employees)</td>
<td><strong>Pay scale structure</strong> with pay components, amounts and rates</td>
<td><strong>Pay scale structure</strong> with pay components, amounts and rates</td>
</tr>
<tr>
<td></td>
<td>No Compa-ratio calculation, no pay-range salary check, no compensation planning based on performance</td>
<td>No Compa-ratio calculation, no pay-range salary check, no compensation planning based on performance. However, a “small” additional performance supplement can be given by the management to specific employees, subject to performance reviews.</td>
</tr>
<tr>
<td></td>
<td>Periodic pay scale level progression based on hours worked / membership duration, age etc</td>
<td>Periodic pay scale level progression based on hours worked / membership duration, age etc</td>
</tr>
<tr>
<td></td>
<td>Periodic salary table adjustments due to collective agreement decisions</td>
<td>Periodic salary table adjustments due to collective agreement decisions</td>
</tr>
<tr>
<td><strong>Non-union employees</strong> (exempt-employees)</td>
<td><strong>Pay scale structure</strong> with pay components, amounts and rates (employer, instead of collective agreement, determines rates)</td>
<td>Pre-defined pay components and amounts: not required, as in many cases, integration with recruiting and individual contracts take place.</td>
</tr>
<tr>
<td></td>
<td>No Compa-ratio calculation, no pay-range salary check, no compensation planning based on performance</td>
<td>Compa-ratio/pay range check: required (for salary grade Employees)</td>
</tr>
<tr>
<td></td>
<td>Periodic pay scale level progression based on hours worked / membership duration, age etc</td>
<td>Full integration with Compensation planning (performance based)</td>
</tr>
<tr>
<td></td>
<td>Periodic salary table adjustments due to company specific agreements, inflation adjustments (in certain countries), etc.</td>
<td>Periodic salary table adjustments due to company specific agreements, inflation adjustments (in certain countries), etc.</td>
</tr>
<tr>
<td></td>
<td>Periodic salary table adjustments due to company specific agreements, inflation adjustments (in certain countries), etc.</td>
<td>Annual salary - either: break down of annual salary into base salary pay components or determination and consistency check of annual salary based on individual salary components</td>
</tr>
</tbody>
</table>

Certain mixture of the above-mentioned requirements might occur, for example: Global companies may employ a certain job which in one country is governed by a collective agreement and in other countries not (this can be the case for salaried employees). It then makes sense to map the pay scale salaries (of a given country) with the (global) salary grades structure in order to form a uniform salary structure and more easily support international transfers and global assignments.

### 3.5.2.2 Remuneration structure in ERP

In ERP, the remuneration structure is composed by five fields, which are entered in infotype 0008:

- Employee grouping for collective agreement provision (TRFKZ), which is automatically derived from employee group and subgroup from infotype 0001 (and table TS03).
- Pay scale type and Pay scale Area (TRFAR and TRFGB) which are usually defaulted by table T001P (personnel area and subarea) or via feature TARIF. In most cases these fields are blocked in infotype 0008 and cannot be directly input.
- Pay scale group and level (TRFGR and TRFST) which normally are directly entered by HR Admins in infotype 0008. These fields represent the usual tariff group and tariff level of a collective agreement.
These “pay scale” fields can be used for collective agreement employees, as well as for employee’s subject to a salary table but not under a collective agreement (example: factory worker hourly rate based on job level). The same pay scale fields are also relevant for salary grade (salary range) employees; these are usually white-collar employees with an annual salary contract (which must fit into a range). In other words, ERP utilizes the same field structure (composed of the five fields described above) to represent tariff/pay scale & pay grade employees. For pay scale employees, the main table related to the remuneration structure in infotype 0008 is table T510, while for pay grade employees, a legacy and a new solution exist (tables T510N and T710) which serve for checking the value in field annual salary (ANSAL). The figure below illustrates how the structure in infotype 0008 is connected to the different salary structure tables.

![Figure 22 – remuneration structure in infotype 0008 is connected to different salary tables, depending if the employee is a pay scale employee or pay grade (and if the legacy or new solution is used).](image)

Notice that table T710 lacks the employee group modifier (TRFKZ) as it is based on a newer solution combined with Org-management with infotype 1005. In this infotype, the position (or job) must indicate the planned remuneration type: Pay scale, Pay grade or individual contract. During infotype 0008 record creation, the planned remuneration type is read from IT1005 and either table T510 or T710 is applied.

3.5.2.3 Remuneration structure in EC

In EC, the remuneration structure resembles very much the one in ERP, with a few differences:

- For pay scale employees, only the following four objects need to be maintained: Pay scale Type, Pay scale Area, Pay scale Group and Pay scale level. A set of MDF objects exist to represent the salary structure of the pay scales (here it is possible to define at pay scale level, the pay components and amounts).

- For pay grade employees, only the pay grade field must be entered while the four pay scale fields should be left blank. Foundation objects exist for representing the pay grades along with the associated pay ranges. One pay grade can be associated to multiple pay ranges. The differentiation (at employee level) of the pay ranges is given by legal entity and location (Geo Zone). For example, grade H-02 is associated to two ranges: Range H-AU-02 for Australia, and range H-DE-02 for Germany. If the employee in grade H-02 is transferred from Australia to Germany (keeping the same grade) his/her range will automatically switch with the transfer.
The figure 22 illustrates the remuneration structure in EC and the related Foundation / MDF objects.

Figure 23: remuneration structure in EC and the related Foundation / MDF objects for pay grade and pay scales.

3.5.2.4 integration considerations for remuneration structure

In the majority of the existing ERP implementations, the following fields are mandatory in infotype 0008, independently if the employee is a pay scale or pay grade employee: Pay scale Type (TRFAR), Pay scale Area (TRFGB), Pay scale Group (TRFGR). The field Pay scale Level (TRFST) is frequently optional, since:

- many tariff agreements don't have a “level” concept, but only “group”
- pay grade employees can be managed without the “level” field, by using the “group” to define the different possible grades (and subgrades). This depends on the existing implementation.

It is not recommended to change any existing salary structure in ERP (customizing), as these are used throughout the system with country specific variations in a big number of places. Furthermore, the side-effects on retrocalculation could be enormous. Instead, the EC remuneration structure must fit to the ERP from an integration perspective.
The first consideration is with regards to the infotype 1005 for planned remuneration. This solution will no longer play a role in the EC Core-hybrid setup. To achieve the equivalent functionality of IT1005 in EC, it is recommended to define the pay scale / pay grade details at the position level and copy the attributes during hire / job change events to job information via business rules. With a custom attribute in the position (or in the Job) object (and business rules in job info) it is also possible to enforce one of the three options: pay grade, pay scale or individual contract. If the HR Admin should not be able to override at employee level the defaulted remuneration structure from the position or job, the respective fields (in job info) can be blocked via RBP. The figure 24 illustrates this consideration.

![Diagram](image)

**Figure 24- Considerations regarding infotype 1005**

With regards to the five “pay scale” fields in infotype 0008, following considerations should be taken:

- Employee grouping for collective agreement provision (TRFKZ) will be automatically derived from employee group and subgroup from infotype 0001 (and table T503) during replication.
- Pay scale type and Pay scale Area (TRFAR and TRFGB) should be defaulted using the standard mechanism in infotype 0008 (table T001P (personnel area and subarea) or via feature TARIF), therefore, do not replicate these values.
- Pay scale group and level (TRFGR and TRFST) should be replicated from EC. In the case of pay scale employees, the mapping is self-explanatory, for pay grade employees, it will be required to understand how paygrade and ranges had been setup in ERP. In some cases, the EC pay grade will have to be replicated to pay scale group, while pay scale level must be left empty. In other cases, some mapping of pay grade need to derive pay scale group and level in ERP. This can be achieved in the replication with a BAdI.

The figure 25 shows the replication for pay grade employees.
3.5.2.5 Indirect valuation

During hire, job changes (relevant to employee’s compensation) and other compensation-related events, employee pay components must be maintained. This maintenance can be automated to a certain extent and is commonly referred to “indirect valuation of pay components”. In fact, it is often required that the pay components and their values be automatically determined by the system, not even allowing HR-Admins to directly change those values.

In ERP, the indirect valuation for basic-pay affects the wagetypes and amounts seen in infotype 0008 (the region marked in yellow in figure 10). Several different indirect valuation modules exist in ERP allowing for the coverage of different country-specific and tariff-specific requirements. For each wagetype, it is possible to define if this will be relevant for basic pay, which indirect valuation module is applicable and the so called “reduction method” responsible for factoring the wagetype amount to the employee FTE (or relative to tariff working hours agreement). In the system documentation of table V_T511 (at field level), detailed documentation about these attributes are available. When EC comes into play, it is expected that the same wagetypes will originate in EC and will simply be replicated into infotype 0008. Infotype 0008 will then not determine nor calculate any wagetypes going forward and will serve as a “display-only” repository of the basic-pay wagetypes. This implies that all the indirect valuation logic implemented at the given installation today, be rebuilt in EC, while at the same time, it requires the de-activation of the indirect valuation for those basic-pay wagetypes in ERP (table T511). Notice that payroll specific indirect valuation still needs to be active. For example, base-salary and vacation-allowance (in Germany: Grundgehalt und Urlaubsgeld) might be components of the same tariff agreement, however the base-salary is determined at master-data level (IT0008), while vacation-allowance is determined at payroll-runtime. In this case, only the indirect valuation for the base-salary must be deactivated in T511, so that payroll can still generate the vacation-allowance. Also, table T510 – the equivalent to the pay scale level objects in EC still must be maintained for the vacation-allowance as per tariff agreement amounts (this is not restricted to T510 but relevant to any other country-specific table for indirect valuation which is read by payroll).

All the wagetypes present in infotype 0008 must then originate from EC. It is strictly not recommended to have a partial solution, where some wagetypes originate from EC while some are maintained directly in infotype 0008. In certain implementation projects, involving too many countries and tariff agreements, it may be challenging to rebuild all the indirect valuation requirements in EC. Shall this be the case, the replication for infotype 0008 must be descoped, which implies in not maintaining compensation information in EC nor remuneration structure fields (pay scale/pay range fields). This in turn has an impact on compensation planning module and will require an integration between ERP and Compensation planning. In case infotype 0008 is descoped from the integration,
then the scope of infotype 0007 also becomes questionable, since they can easily become “out of sync” in terms of their dependencies, as previously explained in this document (chapter 3.4).

From a pure EC product strategy perspective, it is recommended to manage basic pay and its indirect valuation directly in EC.

Indirect valuation is also applicable to many wagetypes of infotypes 14 and 15. For those infotypes, the distribution of their wagetypes (and indirect valuation) between EC and ERP is a bit more flexible, since the wagetypes represent subtypes in the infotypes. As already mentioned in this document, only certain wagetypes of infotypes 0014 and 0015 will be managed in EC, and for these, the indirect valuation must be carried out in EC, while for all the remaining ones, indirect valuation must be carried out in ERP. Again, this can be switched at wagetype level, in table T511.

Indirect valuation must also be carried out in combination with processes such as pay scale level progression, tariff-based salary increases and/or market correction salary increase. The IDP document “Optimizing Indirect Valuation of Pay Components in EC” explains in a detailed level the different aspects of indirect valuation and how to set these up in EC.

3.5.2.6 Pay scale level progression

Pay scale level progression, also known in ERP as payroll/pay scale reclassification, or in EC known as “grade step progression” is the automatic movement of employees to the next higher pay level according to certain eligibility criteria. This is common in industries with a unionized workforce. Both in ERP and EC, this automated process consists of three steps:

1. Determination of the current pay scale level and eligibility criteria for moving the employee to the next level
2. Moving eligible employees to the next level (in EC this is done in Job Information record, in ERP directly in infotype 0008)
3. Update employee basic pay wages based on the new pay scale level (via indirect valuation: in EC this is achieved with business rules “onSave” of job information, and in ERP it is achieved with the indirect valuation framework in infotype 0008).

When EC becomes the system of record, this process must be performed solely in EC and no longer in ERP.

In ERP, steps 1 and 2 above are executed by program RPIPSR00, which outputs a batch-input session responsible for changing the pay scale level (TRTST) field of infotype 0008 for affected employees. The batch-input upon saving the record, will update the wagetypes (step 3) via indirect valuation. Mostly, the “wagetype updates” via indirect valuation is fictional as their amounts are not stored in table PA0008 (by the standard logic, unless BAdIs are implemented) but always recalculated upon display. This can be verified by comparing data in infotype 0008 via PA30 and database table PA0008. Program RPIPSR00 is usually scheduled to run every month (see figure 26)
In EC, steps 1 and 2 are executed by the tool “off-cycle batch” (figure 27), which uses a set of business rules for the eligibility criteria and for moving the employee to the next pay scale level. The new pay scale level is entered in employee’s job information record, and upon the saving of this record, another set of rules will update the employees basic-pay components (step 3) in recurring payments (indirect valuation). The off-cycle batch tool must be scheduled to run recurrently, and in certain cases it should run daily.

In the existing ERP implementation, certain rules for the pay scale reclassification might be in place. Upon moving this process to EC, it is required to understand the customers’ requirements in order to allow for an accurate process coverage in EC. The following table recap the criteria of program RPIPSR00 (further details can be read on the program’s system documentation) and directions how these can be covered in EC. In the IDP document: “Managing Pay Scale Progression in Employee Central” it is covered in detail how to implement different requirements in EC. To derive the which requirements the existing customer might have in place, the report variants of RPIPSR00 can be checked.
<table>
<thead>
<tr>
<th>Pay scale reclassification type</th>
<th>can be performed in EC?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Age</td>
<td>yes</td>
<td>Automatically updating employee job level (based on simple conditions) can be automated with EC standard tools and business Rules</td>
</tr>
<tr>
<td>Membership duration (in german: Berufsjahre/Stufe)</td>
<td>yes</td>
<td>Can be covered with off-cycle batch and rules, in combination with data model enhancements</td>
</tr>
<tr>
<td>Actual worked hours</td>
<td>no</td>
<td>The time evaluation and business logic required for determining this kind of pay-scale progression is not available in EC. The progression has to be calculated in SAP ERP HCM and uploaded to EC via imports or integration</td>
</tr>
<tr>
<td>managers decision “on specific date” and other country-specific progression rules</td>
<td>yes</td>
<td>Can be covered with off-cycle batch and rules, in combination with data model enhancements</td>
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</tbody>
</table>

### 3.5.2.7 Automated pay increase

In certain countries and for certain employee groups, it may be required to increase employees’ salaries according to specific rules. This is a mass-update process supported both by ERP and EC. When EC becomes the system of record, this process must be performed solely in EC and no longer in ERP.

For “pay grade/pay range” employees, the process of increasing pay is usually done via the module “Compensation Planning”: managers decide on the increase and this information is imported into employees pay components / wagetypes. An exception exists for example in countries with high inflation (for example in south American countries) where the compensation planning in broken down into phases:

1. Employees’ salaries are updated retroactively at the end of the year (or any other period) by a certain percentage (stated by local authorities, usually not bound to an industry or collective agreement, but country/region-wide).
2. This new salary is imported into Compensation Planning. The salary increase budget is already decreased by the mandatory (inflation) increase applied in point 1.
3. Compensation review is performed with the remaining budget, and new salaries are imported into the employees masterdata.

In a pure SAP ERP landscape, the tool used for step 1 above is program RPITRF00. Steps 2 & 3 are part of the ERP ECM integration.

In EC, the Compensation Planning integration will take care of the above steps, with the exception that step 1, as of time of writing, is not supported by native EC tools. For covering this step, an import can be used with mass salary data.

For tariff (pay scale) employees, the pay increase is specified by the union agreements. The process of updating the salary consists of two steps (applicable to both ERP and EC):

1. Updating the pay scale structure to the new values
2. Running a tool to update the employee compensation records to the new pay scale values and updating (if existing) individual pay components

In the IDP document: “Managing automated pay increase in EC” it is covered in detail how to configure different scenarios in EC for the tariff employees. In order to understand which scenarios the current EC-ERP implementation will require, it may be useful to analyze the existing variants of ERP programs RPUS1000 & RPITRF00 and the configuration in table T510D. The figure 28 recaps how the mentioned programs and configuration play a role together in the salary increase process in existing ERP installations.
Figure 28: Programs and steps involved in ERP for automated salary increase

4 References

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<th>Document Type</th>
<th>Document Name</th>
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</thead>
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<td>Implementation Guide</td>
<td>Employee Central Position Management</td>
</tr>
<tr>
<td>Implementation Guide</td>
<td>Replicating Employee Master Data and Organizational Assignments from Employee Central to SAP ERP HCM (As of Q2 2017)</td>
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<td>Implementation Guide</td>
<td>Replicating Organizational Objects from Employee Central to SAP ERP HCM (As of Q2 2017)</td>
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<td>IDP (implementation design principles)</td>
<td>Employee Central Core Hybrid: Process &amp; Data Distribution Strategy</td>
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<td>Employee Central: Managing Pay Scale Based Salary Increase</td>
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<td>IDP (implementation design principles)</td>
<td>Employee Central: Managing Indirect Valuation of Pay Components</td>
</tr>
<tr>
<td>IDP (implementation design principles)</td>
<td>Employee Central: Managing Pay Scale Progression</td>
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