Employee Central Core Hybrid: Migrating Contingent Workforce
The recommendations in this document are based on the functionality available up to SAP SuccessFactors release mentioned above. Future functionality can impact the recommendations provided by this document. We strive to keep these recommendations up-to-date, however, in case you find that recent new functionality has 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) for SuccessFactors solutions are delivered by SAP for helping customers and partners on how to choose the most appropriate strategy and solution architecture for SuccessFactors implementations. IDPs are compiled taking into consideration the experience of many implementation projects and addressing frequent business requirements as well as real-life implementation challenges. They are continuously reviewed and updated as product functionality evolves. In addition, the reader is advised to read and familiarize with essential and additional product-related documentation which includes Implementation Guides, SAP Notes, SAP Knowledge Base Articles, and additional assets as referenced in this document, see chapter 7.
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1 TERMINOLOGY

The following table explains some abbreviations used in this document.

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<th>Abbreviation</th>
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<tr>
<td>EC</td>
<td>Employee Central</td>
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<tr>
<td>SAP ERP</td>
<td>SAP Enterprise Resource Planning often referred in the document pertains to SAP HCM on premise system</td>
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2 ABSTRACT

SAP HCM customers frequently employ a non-standard solution reusing the employee master data structure (infotypes) to also store contingent workforce data. This document provides guidance on how to migrate this non-standard contingent workforce data from SAP HCM to EC using Infoporter.

3 INTRODUCTION

The management of contingent workers in Employee Central is different from how employees are managed. There are no explicitly defined standard SAP processes in handling contingent workers in SAP ERP HCM. Most customers manage contingent workers in the same data structures (infotypes) provided for regular employees in SAP ERP HCM. There is also no standard prepackaged SAP HCM migration capability of contingent workers from SAP ERP HCM or S/4 HANA On Premise to EC, as the concept of contingent workers is specific to EC and does not exist as such in SAP HCM or S/4 HANA On Premise. Hence SAP does not support the migration of contingent workers by Infoporter.

4 BUSINESS REQUIREMENT

4.1 Functional Requirements

The document discusses the commonly used way of creating and managing contingent workers in SAP ERP HCM or S/4 HANA On Premise, and how they should be managed in Employee Central and what are means in terms of data migration and data replication between these systems.

The document describes a customer specific approach to migrate contingent workers to Employee Central using Infoporter as a tool.

5 SOLUTION OVERVIEW AND CONCEPTS

The approach for following:

- Contingent worker definition:
  - Commonly used representation by customer in SAP ERP HCM/SAP S/4 HANA
  - Definition in Employee Central

- Contingent worker maintenance in Employee Central:
  - Data model (UI + mandatory fields...)
  - Minimum data set
  - Technical Relationships between the templates
  - Specific scenarios: hire / change hire date / termination / rehire / conversion contingent > internal > contingent

- Migration of contingent workers from SAP ERP/SAP S/4 HANA to Employee Central:
  - Needs for migration
6 DETAILED SOLUTION

6.1 Contingent Worker Definition & Handling in Employee Central & SAP ERP HCM

As described in the introduction, contingent workers are external workers who work within the company on a contract basis. Customers may want to maintain them in their HR system to have visibility on their place in the organization, the contract information, their trainings, and so on.

When external workers are maintained in SAP HCM/ or SAP S/4 HANA, they are maintained as regular employees (sharing the same data model) - with a minimized set of data. The external workers are not paid by the company and are excluded from the payroll. There is no separate standard data structure for contingent workers data maintenance in SAP ERP HCM. These external workers are identified based on different criteria, depending on the customer - for example, based on their employee group (field PERSG in infotype 0001).

Typically, only the basic data is maintained for external workers: infotype 0000 (actions), 0001 (organizational assignment), 0002 (personal data) and optionally 0016 (contract information), 0041 (date types), 0105 (communication). No additional data is not maintained such as data related to payroll or time information, nor additional personal data.

SuccessFactors Employee Central provides a set of features to manage contingent workers. The data set is aligned with the best practices of the vendor management system such as SAP Fieldglass. The data structure for contingent workers is different than the one for employees, to represent the specificities of that type of workers, for which minimum data is maintained.

If external workers need to be maintained in Employee Central, you have to use the contingent workers data structure for those external workers, and not try to the misuse the employee data structure. The technical identifier of contingent workers in Employee Central is the field isContingentWorker in Employment Information. This field could be set to invisible on the UI depending on the needs of the customer.

This difference in setup of the external workers in SAP HCM/SAP S/4 HANA and Employee Central requires adaptation and mapping so that the functionality works in an integrated environment.

6.2 Contingent Workers Maintenance in Employee Central

6.2.1 UI Configuration

In Manage Business Configuration, you can set up different UI configuration for the contingent workers based on the person type. That means that you can hide some fields for the contingent workers maintenance, to enable a minimized data maintenance. Customer shall define the fields in the “default” portlet and activate additional portlets for contingent workers if required. EC APIs(b1902) cannot help to differentiate the configurations that is carried out in BCUI. When odata metadata of APIs is uploaded to SAP HCM, there is only a single set of field configurations that is brought, which represents the EC base data model.

We do not recommend to use the UI configuration to make some fields mandatory for internals and non-mandatory for contingent workers. We recommend to set the field as mandatory only if they are mandatory for both external and internal workers. The reason is that they share the same metadata (data model), and if a field is set as mandatory for internal employee, it is technically set as mandatory for all including contingent
worker. This causes issues in the data import. If some fields have to be setup as required for internal employees and not for contingents, the recommendation is to use business rules for those fields.

6.2.2 Minimum data set for contingents

For contingents, the data to be maintained in SFEC is:

- Basic User Information / User Info
- Employment Details
- Personal Information
- Work Order
- Job History
- Email Information (optional)

It is important to note here that while using the ‘Add Contingent Worker’ wizard, you add the start and end dates of the work order which then creates the Employment Information with two records. Employee Details are not explicitly maintained in UI. An active record for the period mentioned in the work order and an inactive pending record starting on the day after the work order end date. If you are importing contingent worker through .csv files, Employment Details template should be downloaded and imported using the Import Employee Data tool of Employee Central along with other above-mentioned entities. Above mentioned Employee Central entities needs to be imported in the same sequence. Typically, all other information (portlets) are not maintained for contingent workers and are only maintained for regular (internal employees).

6.2.3 Relationships between the templates

Contingent workers are maintained in Employee Central using ‘Add Contingent Worker’ wizard. You usually do not edit specific portlets manually, as there is a strong relationship between different portlets. Understanding the technical relationships between the portlets for Contingent Workers is important to understand the specific scenarios as well as the impact on the integration.

The 3 key templates that have impact on each other are Employment Details - Work Order - Job History:

- When creating a Work Order, its start date will be propagated by the hire date
- The Job History record with event StartCWK will have the same start date as an Active Work Order
- The Job History record with event EndCWK will have the same start date as an Inactive Work Order. It is created by the system itself based on the work order end date. Note that all contingent workers have a Job History record with EndCWK (which could also be in the future).
- Work Order cannot be created if the field isContingentWorker in Employment Info is not true
- No additional records are supported in Job History after the event EndCWK record as the contingent worker is terminated.

6.2.4 Specific Scenarios

Note that all those specific scenarios are described in the Contingent Workforce Management guide. This section does not have an objective to describe those scenarios again, but to highlight what they mean in term of data migration and replication. Again, those scenarios are performed in Employee Central using specific wizards, that generate the appropriate data in the corresponding portlets. A key point to consider when looking at those scenarios is the use of the Work Order portlet, and its impact on the other portlets (effective start date, event reason, and so on).

6.2.4.1 Hire

The hiring of a new contingent worker is done using the tool “Add Contingent Worker”. The wizard leverages the Business Configuration UI(BCUI) configuration, and results in the initial creation of all portlets required for contingent workers.
6.2.4.2 Change hire data

Changing the hire date of a contingent is done by changing the start date of the Work Order. The hire date in employment info and in the job history is automatically updated.

6.2.4.3 Termination

All contingents always have a termination date (which can be in the future) in the Work Order. That termination date corresponds to a termination event (EndCWK) in the job history and termination happens automatically when the end date is reached. Note that no termination info is maintained for contingents.

6.2.4.4 Rehire

Rehiring a contingent should be done by using the “Add contingent worker” functionality for Rehire, which creates a new work order, generating a new set of records (StartCWK and EndCWK) in the job history, corresponding to the dates of the work order. As explained in the contingent workforce implementation guide, if the new employment switch is off, then existing employment info is updated since user ID remains the same. If new employment switch is on, employment info is created with same person ID but different user ID. It is important to note that multiple workorder assignments can only be switched on if the customer uses Employee Central as a standalone as the prepackaged integrations (b1902) do not support multiple workorder assignments.

6.2.4.5 Conversion contingent to internal (full-time employee)

When a contingent worker becomes an internal employee (full-time employee), the first step is to terminate the contingent worker.

There are 2 scenarios to convert a terminated contingent to an internal employee:

- You want to keep the link between the 2 employments: This is typically when the same personid_external is used while different SF username can be maintained.
- You don’t have to keep the link between the 2 employments: If you are ok with generating a new personid_external and a new username for the internal employee and there is no need to trace the history of the external worker employment on the internal employee level, this is definitely the easiest option. This option is not described further in this section as it does not generate additional complexity. Technically this is not a conversion, as there is no link at all between the 2 employments.

In case of scenario 1 (keep the link between the employments), the contingent worker can be rehired as an internal employee. As mentioned in the guide, this is done in Employee Central by using the functionality “Add New Employee”, by accepting the match found with the contingent worker and confirming that you want to hire him as regular employee.

The impact on the data is that a new employment is generated, linked with the previous employment based on the existing personid_external.

6.2.4.6 Conversion internal to contingent

As in the reverse scenario, when an internal employee becomes a contingent worker, the first step is to terminate the internal employee.

Again, there are 2 scenarios to convert a terminated employee to a contingent worker:

1. You want to keep the link between the 2 employments: This is typically when the same personid_external and the different username can be maintained.
2. You don’t have to keep the link between the 2 employments: If you are ok with generating a new personid_external and a new username for the contingent worker and there is no need to trace the history of the internal employee employment on the external worker level. This option is not described further in this section as it does not generate additional complexity. Again, this is technically not a conversion, as there is no link between the 2 employments.
In case of scenario 1 (keep the link between the employments), the internal employee can be rehired as a contingent worker. As mentioned in the guide, this is done in Employee Central by using the functionality “Add Contingent Worker”, by accepting the match found with the internal employee and confirming that you want to hire him as a contingent worker. The impact on the data is that a new employment is generated, linked with the previous employment based on the existing personid_external.

6.3 Migration of contingent workers from SAP HCM to Employee Central

6.3.1 Define the needs for migration

The Contingent workers are temporary workers, that have a limited “life cycle” in the HR system. As for all other topics, you should always validate if there are real needs to migrate the existing contingent workers to Employee Central.

6.3.2 Migration process

The migration of the contingent workers from SAP HCM to Employee Central should be done using CSV imports or web service-based migration. The CSV import files can be extracted from SAP using Infoporter or a web service call can be initiated from the Infoporter.

Web service-based communication channel to migrate contingent workers from SAP HCM to Employee Central is supported from Employee Central release Q4/2019 onwards, because Work Order API was enhanced to work in full purge mode. Since Infoporter always uses APIs in full purge mode, and contingent workers have to be migrated in incremental mode (to respect the relationship between the work order template and the job info template in Employee Central), this is now possible.

This means that delta replication or side-by-side scenarios are supported for contingent workers from Q4/2019 release, as contingent workers can be extracted and loaded manually (using CSVs) or through web service call to Employee Central. If you are in a side-by-side scenario and you maintain contingent workers, the contingent workers can “flow” from one system to another.

6.3.3 Setup Infoporter to Identify Contingent Workers vs Internal Employees

As there is no standard data structure for contingent workers in SAP HCM and is different from the data model for internal employees in Employee Central, we recommend to use separate template groups for contingents and internal employees. This allows you to maintain different mappings for contingents, map a limited list of fields, use different event reasons etc. Again, it is strongly recommended to review SAP HCM external workers and decide what worker records shall be migrated to Employee Central at all.

Using 2 distinct template groups for contingents and internals will make the mapping easier to maintain and allows you to identify which SAP personnel number (pernr) and their corresponding data segments are internals and which are contingents using the validity BAdI (ES_ECPAO_EMP_VALIDITY_TAB, method GET_EMP_VALIDITY_SEGMENTS). For example, that method could be implemented as such:

The result will be that the contingent workers (in the above example, identified by employee group PERSG = 9) are extracted for the template group containing the mapping for the contingent, while other employees are extracted for the other template group.

The assumption for the above logic is that an employee is never converted to a contingent worker (or vice-versa) using the same SAP personnel number (PERNR). See more explanation in the sections below for specific scenarios related to this topic.
6.3.4 Basic Infoporter mapping

Taking all the above into account, here is an example of a one of the customer-specific overview of the minimum mapping needed for the migration of contingent workers from SAP HCM to Employee Central. The mapping themselves obviously depend on the customer-specific requirements. The illustration provided below for Transformation template group is for CSV based communication but the same can be achieved with web service based entities as well.

6.3.4.1 Employment Information (CSV_3)

6.3.4.2 Personal Information (CSV_5)

6.3.4.3 Work Order(1_CSV_6_WO)

The work order information does not exist in SAP HCM. Extracting it from SAP HCM requires BAdI code and default values. You can use BAdI method IF_ECPAQ0_KEMP_DATA_UPDATE~MODIFY_KEMP_DATA to modify and default the work order data. In order to implement the BAdI, you need to define a custom work order CSV based template 1_CSV_6_WO like shown below in view V_ECPAQ0_ECTMPL, based on which the BAdI implementation can be coded for this particular entity/template. Following logic can be implemented in the BAdI:
- User ID should be = employment user id = PERNR in SAP HCM
- Work Order ID should be a unique number (eg: concatenate userid + a sequence number in the case where an employee has multiple work orders)
- Effective start date and start date should be = employment start date
- End date should be = termination date
- Effective status should be “Active”
- Vendor should be a default value if it is currently not maintained

6.3.4.4  Job History (CSV_4)

Nothing specific for contingent workers. The mapping for job history is typically a subset of the mapping for job history for internal employees. The only attention point is that the event reason StartCWK will be used for Hiring and EndCWK for termination action.

6.3.4.5  Email Information (CSV_7)

This template has nothing specific for contingent workers but has similar mappings to regular employees.

6.3.5  Specific Scenarios to Consider for Data Migration

6.3.5.1  Termination

The migration of a terminated contingent worker should include:
- An end date on the Work Order template,
- And a termination record in job history with event reason EndCWK.
All contingent workers need to have a termination, so if there is no termination date in SAP HCM yet, a default termination date needs to be defined for all contingents.

6.3.5.2 Rehire

As the rehire has to be performed in Employee Central by creating a new work order, each hire/rehire action for a contingent worker needs to generate a new work order and new employment accordingly if the customer switched on the multiple workorder assignments.

That means that the migration of a rehired contingent worker should include:

- (at least) Two work orders:
  - One for the first active period, with an end date prior to the next active period
  - One for the second active period, with a start date after the end of the first active period - the work order ID has to be different from the one on the first active period
  - If there are more rehire events, each active period should be represented by a work order
  - The above case will get a separate employment, if the new employment switch is on.

- The corresponding records in job history:
  - A record with event “StartCWK” on the start of the first active period
  - A record with event “EndCWK” on the end of the first active period
  - A record with event “StartCWK” on the start of the second active period
  - A record with event “EndCWK” on the (default) end of the second active period

No record can be included in between the “EndCWK” and the next “StartCWK” record in job history.

6.3.5.3 Conversion contingent > internal > contingent

When employee data is maintained in SAP HCM, 2 scenarios could be valid in SAP HCM for the conversion of internal to contingent and vice-versa:

- Scenario 1: A new SAP personnel number (pernr) is created, so each pernr is always either internal or external, but a conversion is never done using the same pernr. This is actually the only scenario supported in an integrated environment, as it matches the setup of Employee Central (where each userid is either internal or external, but a conversion is never done using the same userid).
- Scenario 2: The same SAP personnel number (pernr) is used, and only the employee group (for example) is changed. This scenario is not supported in an integrated environment, as Employee Central expects 2 separate employments in this case.

The migration of employees who are converted between internal and contingent worker can be a complex scenario. Only the scenario 1 described above (each SAP pernr is either a contingent worker or an internal employee) is supported.

For the explanation below, we take the example of a conversion from a contingent worker to an internal employee:

- The “old” contingent pernr has a termination action in SAP: He is treated as a terminated contingent worker (see scenario “Termination”).
- The “new” internal pernr has a hire action in SAP, which generates a new hire for a new userid for the internal employment in Employee Central.
- If the 2 employments need to be linked in Employee Central (share the same personid_external), the sequence of the data loading needs to be respected (ie the “old” contingent worker needs to be loaded before the “new” internal employee), as well as the templates to be loaded for each employment but the UserInfo template should not be loaded for the “new” internal employee. The data load logic should match the logic for loading employees on concurrent employment. To respect the sequence and validate the templates to be loaded for each employment, the recommendation is do load all employments of those “conversion” scenarios manually, via CSV. If the 2 employments do not have to be linked in Employee Central, the internal employee and the contingent worker have no link at all, so they can be loaded separately.
6.4 Replication of contingent workers from Employee Central to SAP HCM

6.4.1 Replication process

For the contingent worker replication from Employee Central to SAP HCM, only one template group can be used to query and replicate data using BIB. That means on the contrary to the data migration, you have to use the same template group to define the mapping for contingent workers as the one for internal employees. One has to bear this in mind when defining and configuring the mapping in the template group for the employee and contingent worker replication.

6.4.2 Specific BIB mapping considerations for contingent workers

As the same mapping is used for contingent workers as for internal employees, you only have to focus on the mapping specific for contingent workers.

All the fields that are not defined for contingent workers in Employee Central are not mapped, which means that you don’t have to “filter them out” if you don’t want that information in SAP (as it is not available in Employee Central in the first place).

A general consideration is that all the fields that are mandatory in SAP HCM and that are not defined in Employee Central have to be “defaulted” during the replication for the contingent workers. A typical example would be the gender field, which is usually mandatory in SAP and maintained for all internal employees in Employee Central, but not maintained for contingent workers in Employee Central. Pay group and related payroll fields will not be considered in the SAP HCM while creating contingent worker.

For the event reason mapping, as contingent workers use specific event reasons (StartCWK and EndCWK), those event reasons need to be mapped to respectively to a hiring and a termination actions in SAP. For the rehire scenario, the event reason StartCWK might have to be mapped to a rehire action in SAP.

6.4.3 Specific Scenarios

The specific scenarios (hire, termination, rehire…) do not generate an additional complexity for the replication of contingents, so they are not detailed in this section.

The conversion between internal and contingent requires the contingent and internal employment to each have their own pernr (the scenario where a single pernr is kept and only the employee group is changed is not supported for the replication).

7 REFERENCES

SAP Help Portal
- Implementation Guide
  Contingent Workforce Management
  Migrating Employee Data from SAP ERP HCM to Employee Central(Overview Guide)
  Replicating Employee Data from SAP ERP HCM to Employee Central Using SAP Cloud Platform Integration as the Middleware

Architectural Leading Practice (ALP)
- Data Migration Strategy