ERP-289 Integration Process - Currency Conversion SAP ECC to Icertis

Status	Approved
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Jira Request ID	ERP-101 - Jira project doesn't exist or you don't have permission to view it.
Jira Development ID	ERP-289 - Jira project doesn't exist or you don't have permission to view it.

High-Level Specification

Application System (Source)	SAP ECC (PRS, PF2-050)
Application System (Target)	Icertis
Source System Interface	ERP-110
Target System Interface	ERP-261
Business Process Reference	03.03.04.05. Manage Contract Master Data

Functional Overview

The objective of this specification is to create a custom integration that facilitates the transmission of Currency Exchange Rate Master data from SAP ECC (PRS, PF2-050) to Icertis so that currency exchange rates can be synchronized smoothly.

The integration ensures that Icertis always has up-to date currency and exchange-rate information essential for contract calculations and validations. This process performs the following functions.

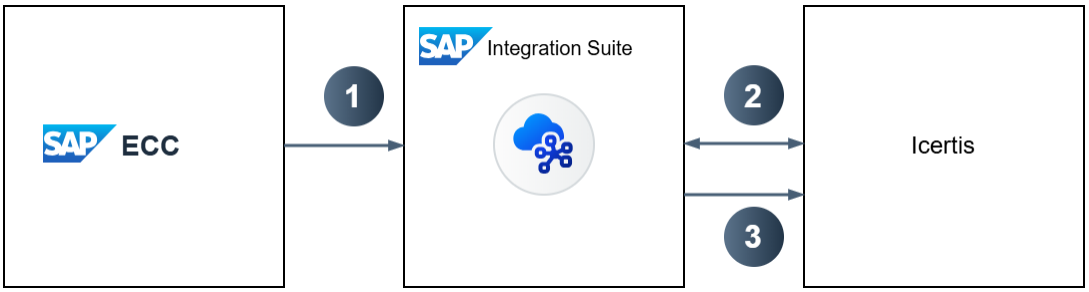
- Receives currency and exchange-rate data from SAP ECC (PRS, PF2-050) through the ERP-110 Interface.
- Maps and transforms the data to align with the structural and validation requirements of the Icertis APIs.
- Orchestrates the end-to-end data flow, including transmission, response handling and error management.

This integration is triggered daily through a job scheduled in ECC to ensure that Icertis consistently receives the most recent exchange-rate information required for contract evaluation and processing.

Scope and Objectives

- **Scope:**
  This request covers the end-to-end integration required to transform and create/update currency exchange rate data flowing from SAP ECC (PRS, PF2-050) to Icertis. It includes the middleware logic, data mapping, orchestration, and exception handling necessary to ensure accurate and reliable data transmission.
- **Objectives:**
  - Automate the transfer of currency and exchange rate data from SAP ECC(PRS, PF2-050) to Icertis.
  - Ensure that the data is transformed and mapped according to Icertis API specifications.
  - Handle exceptions, retries and monitoring to ensure the process runs reliably.

Process Flow Diagram



Step	Description	Comment
1	SAP ECC(PRS, PF2-050) will send the latest currency exchange rate xml data to CPI.	Daily batch job will send the data from SAP ECC to CPI via Proxy adapter Refer ERP-110 for more details.
2	CPI retrieves the existing data from Icertis via GET call and append the Icertis sysId for the existing records.	CPI invokes the Icertis API via GET call to retrieve existing currency exchange rate records along with their SysIds. CPI compares the fromCurrency value from Icertis records with the fromCurrency records received from SAP ECC. If a match is found, CPI appends the corresponding SysId, to the outbound payload for create/update operation.
3	CPI create/update the new/existing currency exchange rate records in Icertis	Create/Update of the currency exchange rate records in Icertis will be done using POST API call.

Assumptions

- SAP ECC (PRS, PF2-050) serves as the authoritative source for clean and validated currency and exchange rate data.
- Icertis APIs for currency master data ingestion are fully configured, available, documented, and accessible for integration.
- The middleware platform SAP CPI, reliably supports secure API communication, comprehensive error handling, and transaction-level logging.
- Performance benchmarks are satisfied, ensuring that data transfers complete successfully within the defined batch processing window.

Dependencies

- ERP-110 (Source system interface) and ERP-290 (Target system interface) must be available and operational to facilitate seamless data exchange.
- Currency and exchange-rate data in SAP ECC(PRS, PF2-050) must be updated in timely manner to ensure accuracy and consistency.
- Scheduled batch job execution in SAP ECC (PRS, PF2-050) must be maintained to support timely data extraction and transmission

Security, Integrity and Controls

- Secure authentication mechanisms are in place at middleware for access to both SAP ECC(PRS, PF2-050) and Icertis systems:
- Secure HTTPS protocol is used for all data transfers between the middleware and SAP ECC, ensuring encrypted communication and protection against unauthorized access.
- OAuth 2.0 authentication is implemented for accessing Icertis APIs via an Azure-registered application, providing token-based security and controlled access
- Audit logging captures all integration transactions, including timestamps, request/response metadata, and error details for traceability and compliance.

Configuration Requirements

- **Azure Application Registration**
    - Since Icertis relies on Azure Active Directory as its identity provider (IdP), an application must be registered in Azure to enable OAuth 2.0 token generation and validation. This establishes trusted access between the middleware and the Icertis APIs.
    - The application registration includes defining the client ID, client secret, scope, and API permissions required to access the Icertis endpoints.

Design Rationale

This interface is designed to enable seamless integration between SAP ECC (PRS, PF2-050), source system and Icertis the target system for currency and exchange-rate master data. The middleware orchestrates the data flow, ensuring accurate mapping, necessary transformation, and reliable end-to-end delivery.

Data Structure

Source Structure

The following fields will be used to define the required data structure of the interface:

Schema File: ExchangeRateSchemaECC.xsd

Sample Extract from SAP ECC (PRS, PF2-050):

FromCurrency	ToCurrency	RateIdentifier	ValidFrom	Rate
USD	EUR	USD:EUR	2025-11-10	0.8700000000
SGD	EUR	SGD:EUR	2025-11-10	0.6600000000

The currency conversion data generated by ERP-110 contains all exchange rates. Since Icertis requires only EUR-based rates, CPI filters and extracts only the EUR Direct conversion rates.

Sample Payload from SAP ECC

```
<?xml version="1.0" encoding="UTF-8"?>
<ExchangeRates xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <ExchangeRate>
        <FromCurrency>USD</FromCurrency>
        <ToCurrency>EUR</ToCurrency>
        <RateIdentifier>USD:EUR</RateIdentifier>
        <ValidFrom>2025-11-10</ValidFrom>
        <Rate>0.8700000000</Rate>
    </ExchangeRate>
    <ExchangeRate>
        <FromCurrency>SGD</FromCurrency>
        <ToCurrency>EUR</ToCurrency>
        <RateIdentifier>SGD:EUR</RateIdentifier>
        <ValidFrom>2025-11-10</ValidFrom>
        <Rate>0.6600000000</Rate>
    </ExchangeRate>
</ExchangeRates>
```

Target Structure

Field	Description
ContractTypeName	Name of the Masterdata.
NextState	Indicates the state of the contract type. For currency exchange rate as there is no next state.
RequestIdentifier	Use “RequestIdentifier” to uniquely identify each item on the result endpoint’s response.
EndpointVersion	EndpointVersion” don’t have any default value set. Ensure to set it to a number.
UseExternalId	unique identifier for entities getting created from external systems.
SysId	Unique technical identifier of the record.
Name	Indicates from to currency pair.
ICMFromCurrency	Specifies the source currency for the exchange rate.
ICMToCurrency	Specifies the target currency for the exchange rate.
ICMRate	Source to Target currency Exchange rate.
HasMoreData	Indicates if there is more data that can be accessed by going to next page.

Mapping and Calculation

Transformation in CPI (Icertis required format):

Source Table	Source Field	Required (Y/N/O)	Description	Target Field	Required (Y/N)	Description	Rule Type	Rule Instruction
NA	NA	NA	NA	ContractTypeName	Y	Name of the Masterdata	Fixed Value	ICMCurrencyExchangeRate
NA	NA	NA	NA	NextState	Y	indicates the state of the contract type. For currency exchange rate as there is no next state, pass always blank.	Fixed Value	Blank/Empty
NA	NA	NA	NA	RequestIdentifier	Y	Use “RequestIdentifier” to uniquely identify each item on the result endpoint’s response. This can be used to track the status of each job item of a bulk Job	Increment	Auto Increment (E.g.: 1,2,3)
NA	NA	NA	NA	EndpointVersion	Y	“EndpointVersion” don’t have any default value set. Ensure to set it to a number. The recommended value is 3 for best error handling and reporting. Supported values are 1, 2, and 3. 1 – Not recommended, 2 – Enables attribute validation, and 3 – Handles concurrency errors and enables attribute validation.	Fixed Value	3
NA	NA	NA	NA	UseExternalId	Y	unique identifier for entities getting created from external systems	Fixed Value	false
Icertis-GET API	Sysid	O	Unique Identifier of the existing currency exchange rate record.	SysId	Y	Unique technical identifier of the record	Conditional	• Blank when creating the master data • 32 characters Sysid generated at Icertis for update
NA	RateIdentifier	Y	Concatenated string of the two currency codes separated by by a colon.	Name	Y	indicates from to currency pair e.g. SGD:EUR	Copy	Direct mapping
NA	FromCurrency	Y	Specifies the source currency for the exchange rate	ICMFromCurrency	Y	Specifies the source currency for the exchange rate	Copy	Direct mapping
NA	ToCurrency	Y	Specifies the target currency for the exchange rate	ICMToCurrency	Y	Specifies the target currency for the exchange rate	Copy	Direct mapping
NA	Rate	Y	Source to Target currency Exchange rate	ICMRate	Y	Source to Target currency Exchange rate	Copy	Direct mapping
NA	NA	NA	NA	`HasMoreData`	Y	Indicates if there is more data that can be accessed by going to next page	Fixed Value	false

For retrieving the existing currency exchange rate data from Icertis,

below GET API is used

https://{icertis api host name}/api/v1/masterdata/{contractTypeName}

where contractTypeName = ICMCurrencyConversion.

For updating the currency exchange rate master data, the following BULK update API is used

https://{icertis api host name}/api/v1/bulk/masterdata.

The sample request body for the Icertis bulk upsert is as below.

Sample Payload To Icertis API


```
{
    "Data": {
        "JobItems": [
            {
                "SysId": "96c08d87-3c89-4b7d-b075-e360bb41db07",
                "UseExternalId": "false",
                "NextState": "",
                "EndPointVersion": "3",
                "RequestIdentifier": "1",
                "RequestBody": {
                    "ICMFromCurrency": "USD",
                    "ICMRate": "0.8700000000",
                    "Name": "USD:EUR",
                    "ICMToCurrency": "EUR"
                }
            },
            {
                "SysId": "5449222c-3d3a-4044-baae-a17165381ed1",
                "UseExternalId": "false",
                "NextState": "",
                "EndPointVersion": "3",
                "RequestIdentifier": "2",
                "RequestBody": {
                    "ICMFromCurrency": "SGD",
                    "ICMRate": "0.6600000000",
                    "Name": "SGD:EUR",
                    "ICMToCurrency": "EUR"
                }
            }
        ],
        "HasMoreData": "false",
        "ContractTypeName": "ICMCurrencyExchangeRate"
    }
}
```


Processing Logic

- SAP CPI receives the inbound currency exchange rate file from SAP ECC (PRS, PF2-050)
- CPI filters exchange rate records with EUR target (To Currency) currency.
- It applies the transformation rules, including mapping the source fields to the target structure required by the Icertis API.
- The processed data is transmitted to the Icertis API, using secure OAuth2 communication.
- If any error occurs during transformation or routing, CPI logs the issue and stops further processing.
- The interface follows a full-load approach, either the entire batch is successfully processed or the batch is rejected in full.

Language Requirements

- No multilingual support required for exchange rate data.

Delta or Full Load Requirements

The integration processes all records as a complete batch; if any issue occurs, the entire batch is rejected

Interface Alert & Monitoring

- Alerts should be configured for:
    - API failures
    - Validation errors
- Monitoring tools (middleware logs) should notify:
    - Integration support team
    - Business users (email)
- Retry logic should be in place for transient failures.

User Interface Requirements

Not Applicable

Volumetrics

A daily load of approximately 70 currency pairs will be created or updated in bulk. The initial load will create the currency exchange master data, and all subsequent loads will update the existing master data

Performance Consideration

Scheduling and Execution Window

- Given that the interface processes only around 70 records, no performance impact is expected.

Error Handling

The interface incorporates robust error-handling and monitoring to ensure reliable data processing between SAP ECC and Icertis. If any failure occurs during data load, transformation, or API communication, the entire batch is rejected to maintain data integrity.

Errors are logged with detailed information, and automated alerts are sent to the integration support team for prompt action.

In the event of an error, the subsequent day's scheduled job will update the latest currency exchange rates.

Testing

Test Conditions and Expected Results

TC1	Currency and exchange rate master data is received from SAP ECC as part of the initial load	EUR-based currency exchange rate records are successfully created in Icertis.
TC2	Currency and Exchange rate master data received from SAP ECC as part of the subsequent load	EUR-based currency exchange rate records are updated successfully in Icertis.
TC3	Error during the transformation, mapping at the CPI End	Error is logged at CPI end.

Test Considerations/Dependencies

Development Details

Package

Package Name	Parent Package

Other Development Objects

Object Type	Object Name	Purpose/High Level Logic	Design Rationale Reference

Appendix

See also

File	Modified
File Currency ExRate Upload To Icertis from ECC draw.io diagram	Dec 12, 2025 by KUMAR-ext, Rajesh
File ~Currency ExRate Upload To Icertis from ECC.tmp draw.io Draft	Dec 12, 2025 by KUMAR-ext, Rajesh
File ECC_CPI_Icertis_CurrencyExRate draw.io diagram	Nov 06, 2025 by KUMAR-ext, Rajesh
File ~ECC_CPI_Icertis_CurrencyExRate.tmp draw.io Draft	Nov 06, 2025 by KUMAR-ext, Rajesh

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Change log

Version	Published	Changed By	Comment
CURRENT (v. 58)	**Dec 12, 2025 02:25**	**KUMAR-ext, Rajesh**	
v. 57	Dec 11, 2025 16:25	**KUMAR-ext, Rajesh**	
v. 56	Dec 11, 2025 16:21	**KUMAR-ext, Rajesh**	
v. 55	Dec 11, 2025 16:10	**KUMAR-ext, Rajesh**	
v. 54	Dec 11, 2025 14:50	**KUMAR-ext, Rajesh**	
v. 53	Nov 12, 2025 14:51	**MCARTHUR-ext, Richard**	
v. 52	Nov 10, 2025 09:03	**KUMAR-ext, Rajesh**	
v. 51	Nov 10, 2025 08:21	**KUMAR-ext, Rajesh**	
v. 50	Nov 10, 2025 07:54	**KUMAR-ext, Rajesh**	
v. 49	Nov 10, 2025 06:28	**EPASINGHE-ext, Kapila**	

Go to Page History

Workflow history

This view shows the 5 most recent entries. The complete workflow log is available from the 'Document Activity' menu item.

From Dec 11, 2025 to Dec 12, 2025	Actor	Type	Activity	Version
Approved	KUMAR-ext, Rajesh	Edit	updated the page at 2:50 pm	
Nov 19, 2025				
	TILBEE-ext, Amanda	State	changed state to Approved at 3:53 pm	v53

Lead Approval	TILBEE-ext, Amanda	State	gave *POD Lead Review* approval at 3:53 pm	
	WENNINGER-ext, Sascha	State	assigned approval *POD Lead Review* to TILBEE-ext, Amanda at 8:09 am	
Nov 13, 2025				
	MCARTHUR-ext, Richard	State	changed expiry date to '20 Nov, 2025 11:24 pm' at 11:24 pm	
		State	changed state to Lead Approval at 11:24 pm	v53