SAP Cloud Integration –

Integration Flow EDI to SAP IDoc - Inbound

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1. Introduction

The SAP BTP includes the SAP Cloud Integration, which offers diverse approaches to connect your IT systems with other cloud or on premise system landscapes. This makes cloud integration simple and reliable. Hence it is SAP's strategic integration platform for SAP Cloud customers. It provides out-of-the-box connectivity across cloud and on-premise solutions. Since the SAP Cloud Integration is operated by SAP, you don't need to worry about basic activities. Additionally, SAP is offering prepackaged integration content as reference templates, that allows customers to quickly realize new business scenarios. This drastically reduces integration project lead times and lowers resource consumption significantly.

This document gives an overview about the inbound EDI to SAP IDoc template flow of SAP Cloud Integration in combination with SAP Integration Advisor (IA). It is explained how exported runtime artefacts from SAP IA can be imported into the flow and how the flow can be configured. This template flow can be used for the following EDI standards:

- ASC X12
- UN/EDIFACT
- Any UN/EDIFACT subset (like GS1 EANCOM or Odette EDIFACT)
- ODETTE

We assume the reader is an integration developer and is familiar with SAP Cloud Integration.

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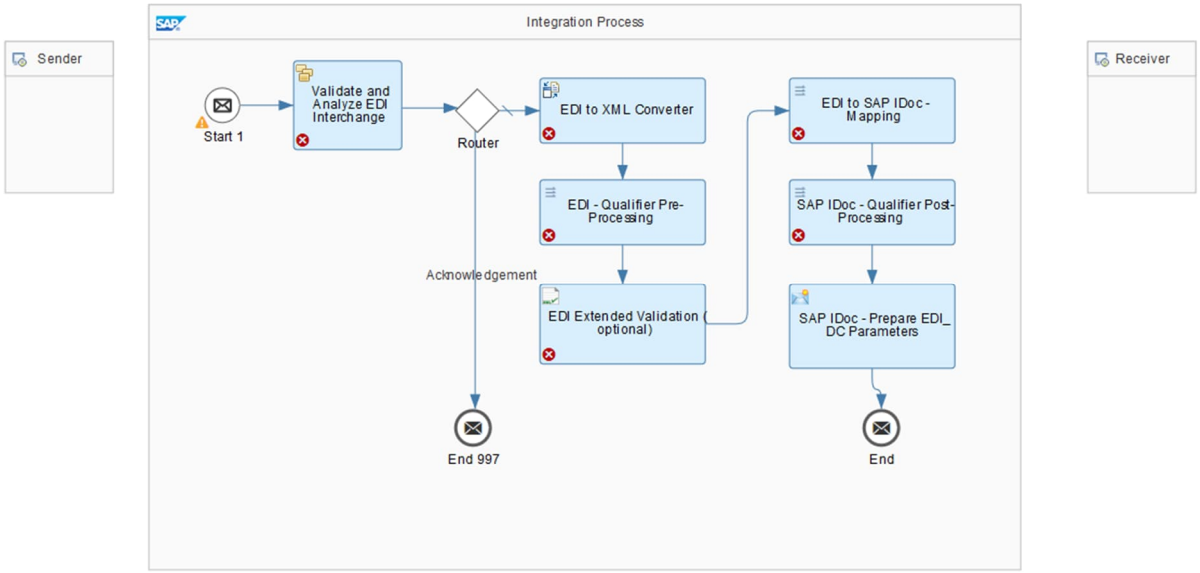
3. Integration Flow

Integration Flow	
Name	EDI to SAP IDoc - Inbound
Description	EDI to SAP IDoc – Inbound Template



3.1 Basic Concepts

With the SAP Integration Advisor one can create MIG (message implementation guidelines) and MAG (mapping guidelines). These can be exported as SAP Cloud Integration runtime artifacts (zip file containing *xslt and *xsd files). The flow templates contain steps serving as containers for the exported runtime artifacts (where the runtime artifacts can be imported into). E.g. the runtime artifacts exported from the MIG and MAG of the SAP Integration Advisor can be used as follows: schemas (xsd) can be used in EDI Splitter, EDI to XML Converter, XML to EDI Converter, XML Validator (extended validation) ; stylesheet transformations (xslt files) in XSLT Mapping.

Furthermore, it is necessary to define and customize the communication adapters as well as the required information of the interchange envelope and header structures (e.g. in the content modifier).

3.2 Sender Channel

Sender channel is configured by the customer. In case of IDoc outbound scenario, an IDoc SOAP adapter should be used.

3.3 Start Event

The Start Message event is triggered by the sending system.

3.4 Validate and Analyze EDI Interchange

EDI Splitter

EDIFACT / X12	*Incoming EDI message is validated (optional) and an acknowledgement is generated (optional). Depending upon the result of validation, the payload is forwarded for further processing.*
Source Encoding	*(select)*
Validate Message	*(select)*
Transaction Mode	*(select)*
EDI Schema Definition	*Integration Flow*
Schema Name	*ASC-X12_<MessageType>_<ReleaseVersion>.xsd or* *UN-EDIFACT_<MessageType>_<ReleaseVersion>.xsd or* *UN-EDIFACT_<MessageType>_<ReleaseVersion>_<AssociationAssignedCode>.xsd or* *ODETTE_<MessageType>_<ReleaseVersion>.xsd* *Runtime artefact from SAP IA. Located in the MIG source folder within the exported zip file.*
Create Acknowledgement	*(select)*
Interchange Number	*(select)*

Note: The EDI_Splitter sets automatically a list of header variables, we use from these the 2 variables SAP_EDI_Sender_ID , SAP_EDI_Receiver_ID in the step (ContentModifier) where we “prepare the EDI_DC Parameters” of the Idoc .

3.5 Router (optional)

Processing	*If acknowledgement generation is configured at the EDI Splitter, acknowledgement messages and EDI messages can be routed separately.*
ERORR HANDLING	*(select)*
ROUTING CONDITION:	*(Row 1)*
Order	*1*
Route Name	*(type in) For e.g., “997” or “CONTRL”*
Condition Expression	*${header.EDI_ACKNOWLEDGEMENT} = 'true'*
Default Route	*(not selected)*
ROUTING CONDITION:	*(Row 2)*
Order	*2*
Route Name	*None*
Condition Expression	*None*
Default Route	*(selected)*

3.6 EDI to XML Converter

Converter

EDI to XML Converter

General	
Name	EDI to XML Converter
EDIFACT / X12	
Source Encoding	e.g. UTF-8
EDI Schema Definition	Integration Flow
Schema Name	*ASC-X12_<MessageType>_<ReleaseVersion>.xsd or* *UN-EDIFACT_<MessageType>_<ReleaseVersion>.xsd or* *UN-EDIFACT_<MessageType>_<ReleaseVersion>_<AssociationAssignedCode>.xsd or* *ODETTE_<MessageType>_<ReleaseVersion>.xsd* *Runtime artefact from SAP IA. Located in the MIG source folder within the exported zip file.*

3.7 EDI - Qualifier Pre-Processing

XSLT Mapping

Mapping	*In this step, the EDI is preprocessed via an XSLT mapping.*
Name	*<SourceMIGName>*__preproc.xsl
Resource	*Runtime artefact from SAP IA. Located in the MIG source folder within the exported zip file.*
Type	XSLT Mapping
Output Format	XML

3.8 EDI Extended Validation (optional)

XML Validator

Mapping	*XML Validation step where the result of the qualifier pre-processing is validated against the ASC X12 / EDIFACT extended validation XSD. Supports XSD 1.1 version.*
Name	*<SourceMIGName>__RD.xsd*
Resource	*Runtime artefact from SAP IA. Located in the MIG source folder within the exported zip file.*
Type	XSLT Mapping
Output Format	XML

If you don't want to execute validation of the message, simply remove this flow step from your integration flow.

3.9 EDI to SAP IDoc Mapping

XSLT Mapping

Mapping	*Mapping step where the EDI message is transformed into the SAP IDoc message via XSLT.*

Name	*<MAGName>.xsl*
Resource	*Runtime artefact from SAP IA. Located at the root folder of the exported zip file.*
Type	XSLT Mapping
Output Format	XML

3.10 SAP IDoc - Qualifier Post-Processing

XSLT Mapping

Mapping	*The qualifiers within the target Idoc message are removed via an XSLT mapping.*
Name	*<TargetMIGName>__postproc.xsl*
Resource	*Runtime artefact from SAP IA. Located in the MIG target folder within the exported zip file.*
Type	XSLT Mapping
Output Format	XML

3.11 SAP IDoc - Prepare EDI_DC Parameters

Content Modifier

The nodes of the message other than the node EDI_DC40 are extracted into the header variable *ExtractedMessage* via XPath. An example value is provided here:

Message Header (example)					
Action	Name	Type	Data Type	Value	Default
Create	ExtractedMessage	XPath	org.w3c.dom.NodeList	//IDOC/*[not(local-name()='EDI_DC40')]	
Exchange Property / Message Body (example)					

Example values for the values of the elements of the EDI_DC node are provided in the following table:

Content Modifier	*The header parameters of the SAP IDoc (EDI_DC40 segment) are filled.*

Action	Name	Type	Data Type	Value	Remark
Create	SAP_IDoc_EDIDC_TABNAM	Constant		EDI_DC40	
Create	SAP_IDoc_EDIDC_MANDT	XPath	java.lang.String	//EDI_DC40/MANDT	
Create	SAP_IDoc_EDIDC_DOCNUM	XPath	java.lang.String	//EDI_DC40/DOCNUM	
Create	SAP_IDoc_EDIDC_DOCREL	XPath	java.lang.String	//EDI_DC40/DOCREL	
Create	SAP_IDoc_EDIDC_STATUS	XPath	java.lang.String	//EDI_DC40/STATUS	
Create	SAP_IDoc_EDIDC_DIRECT	XPath	java.lang.String	//EDI_DC40/DIRECT	
Create	SAP_IDoc_EDIDC_OUTMOD	XPath	java.lang.String	//EDI_DC40/OUTMOD	
Create	SAP_IDoc_EDIDC_EXPRSS	XPath	java.lang.String	//EDI_DC40/EXPRSS	
Create	SAP_IDoc_EDIDC_TEST	XPath	java.lang.String	//EDI_DC40/TEST	
Create	SAP_IDoc_EDIDC_IDOCTYP	XPath	java.lang.String	//EDI_DC40/IDOCTYP	
Create	SAP_IDoc_EDIDC_CIMTYP	XPath	java.lang.String	//EDI_DC40/CIMTYP	
Create	SAP_IDoc_EDIDC_MESTYP	XPath	java.lang.String	//EDI_DC40/MESTYP	
Create	SAP_IDoc_EDIDC_MESCOD	XPath	java.lang.String	//EDI_DC40/MESCOD	
Create	SAP_IDoc_EDIDC_MESFCT	XPath	java.lang.String	//EDI_DC40/MESFCT	
Create	SAP_IDoc_EDIDC_STD	XPath	java.lang.String	//EDI_DC40/STD	
Create	SAP_IDoc_EDIDC_STDVRS	XPath	java.lang.String	//EDI_DC40/STDVRS	
Create	SAP_IDoc_EDIDC_STDMES	XPath	java.lang.String	//EDI_DC40/STDMES	
Create	SAP_IDoc_EDIDC_SNDPOR	XPath	java.lang.String	//EDI_DC40/SNDPOR	
Create	SAP_IDoc_EDIDC_SNDPRT	XPath	java.lang.String	//EDI_DC40/SNDPRT	
Create	SAP_IDoc_EDIDC_SNDPFC	XPath	java.lang.String	//EDI_DC40/SNDPFC	
Create	SAP_IDoc_EDIDC_SNDPRN	XPath	java.lang.String	//EDI_DC40/SNDPRN	
Create	SAP_IDoc_EDIDC_SNDSAD	XPath	java.lang.String	//EDI_DC40/SNDSAD	
Create	SAP_IDoc_EDIDC_SNDLAD	XPath	java.lang.String	//EDI_DC40/SNDLAD	
Create	SAP_IDoc_EDIDC_RCVPOR	XPath	java.lang.String	//EDI_DC40/RCVPOR	
Create	SAP_IDoc_EDIDC_RCVPRT	XPath	java.lang.String	//EDI_DC40/RCVPRT	
Create	SAP_IDoc_EDIDC_RCVPFC	XPath	java.lang.String	//EDI_DC40/RCVPFC	
Create	SAP_IDoc_EDIDC_RCVPRN	Header	java.lang.String	//EDI_DC40/RCVPRN	
Create	SAP_IDoc_EDIDC_RCVSAD	XPath	java.lang.String	//EDI_DC40/RCVSAD	
Create	SAP_IDoc_EDIDC_RCVLAD	XPath	java.lang.String	//EDI_DC40/RCVLAD	
Create	SAP_IDoc_EDIDC_CREDAT	Expression		${date:now:yyyyMMdd}	
Create	SAP_IDoc_EDIDC_CRETIM	Expression		${date:now:HHmmss}	

Create	SAP_IDoc_EDIDC_REFINT	XPath	java.lang.String	//EDI_DC40/REFINT	
Create	SAP_IDoc_EDIDC_REFGRP	XPath	java.lang.String	//EDI_DC40/REFGRP	
Create	SAP_IDoc_EDIDC_REFMES	XPath	java.lang.String	//EDI_DC40/REFMES	
Create	SAP_IDoc_EDIDC_ARCKEY	XPath	java.lang.String	//EDI_DC40/ARCKEY	
Create	SAP_IDoc_EDIDC_SERIAL	XPath	java.lang.String	//EDI_DC40/SERIAL	

```
<?xml version="1.0" encoding="UTF-8"?>
<ORDERS05>
<IDOC BEGIN="1">
<EDI_DC40 SEGMENT="1">
<TABNAM>${property.SAP_IDoc_EDIDC_TABNAM}</TABNAM>
<MANDT>${property.SAP_IDoc_EDIDC_MANDT}</MANDT>
<DOCNUM>${property.SAP_IDoc_EDIDC_DOCNUM}</DOCNUM>
<DOCREL>${property.SAP_IDoc_EDIDC_DOCREL}</DOCREL>
<STATUS>${property.SAP_IDoc_EDIDC_STATUS}</STATUS>
<DIRECT>${property.SAP_IDoc_EDIDC_DIRECT}</DIRECT>
<OUTMOD>${property.SAP_IDoc_EDIDC_OUTMOD}</OUTMOD>
<EXPRSS>${property.SAP_IDoc_EDIDC_EXPRSS}</EXPRSS>
<TEST>${property.SAP_IDoc_EDIDC_TEST}</TEST>
<IDOCTYP>${property.SAP_IDoc_EDIDC_IDOCTYP}</IDOCTYP>
<CIMTYP>${property.SAP_IDoc_EDIDC_CIMTYP}</CIMTYP>
<MESTYP>${property.SAP_IDoc_EDIDC_MESTYP}</MESTYP>
<MESCOD>${property.SAP_IDoc_EDIDC_MESCOD}</MESCOD>
<MESFCT>${property.SAP_IDoc_EDIDC_MESFCT}</MESFCT>
<STD>${property.SAP_IDoc_EDIDC_STD}</STD>
<STDVRS>${property.SAP_IDoc_EDIDC_STDVRS}</STDVRS>
<STDMES>${property.SAP_IDoc_EDIDC_STDMES}</STDMES>
<SNDPOR>${property.SAP_IDoc_EDIDC_SNDPOR}</SNDPOR>
<SNDPRT>${property.SAP_IDoc_EDIDC_SNDPRT}</SNDPRT>
<SNDPFC>${property.SAP_IDoc_EDIDC_SNDPFC}</SNDPFC>
<SNDPRN>${property.SAP_IDoc_EDIDC_SNDPRN}</SNDPRN>
<SNDSAD>${property.SAP_IDoc_EDIDC_SNDSAD}</SNDSAD>
<SNDLAD>${property.SAP_IDoc_EDIDC_SNDLAD}</SNDLAD>
<RCVPOR>${property.SAP_IDoc_EDIDC_RCVPOR}</RCVPOR>
<RCVPRT>${property.SAP_IDoc_EDIDC_RCVPRT}</RCVPRT>
<RCVPFC>${property.SAP_IDoc_EDIDC_RCVPFC}</RCVPFC>
<RCVPRN>${property.SAP_IDoc_EDIDC_RCVPRN}</RCVPRN>
<RCVSAD>${property.SAP_IDoc_EDIDC_RCVSAD}</RCVSAD>
<RCVLAD>${property.SAP_IDoc_EDIDC_RCVLAD}</RCVLAD>
<CREDAT>${property.SAP_IDoc_EDIDC_CREDAT}</CREDAT>
<CRETIM>${property.SAP_IDoc_EDIDC_CRETIM}</CRETIM>
<REFINT>${property.SAP_IDoc_EDIDC_REFINT}</REFINT>
<REFGRP>${property.SAP_IDoc_EDIDC_REFGRP}</REFGRP>
<REFMES>${property.SAP_IDoc_EDIDC_REFMES}</REFMES>
<ARCKEY>${property.SAP_IDoc_EDIDC_ARCKEY}</ARCKEY>
<SERIAL>${property.SAP_IDoc_EDIDC_SERIAL}</SERIAL>
</EDI_DC40>
${header.ExtractedMessage}
</IDOC>
</ORDERS05>
```

3.12 End Event

The End Message event shoud be connected with the receiving system.

3.13 Receiver Channel

Receiver channel is configured by the customer.