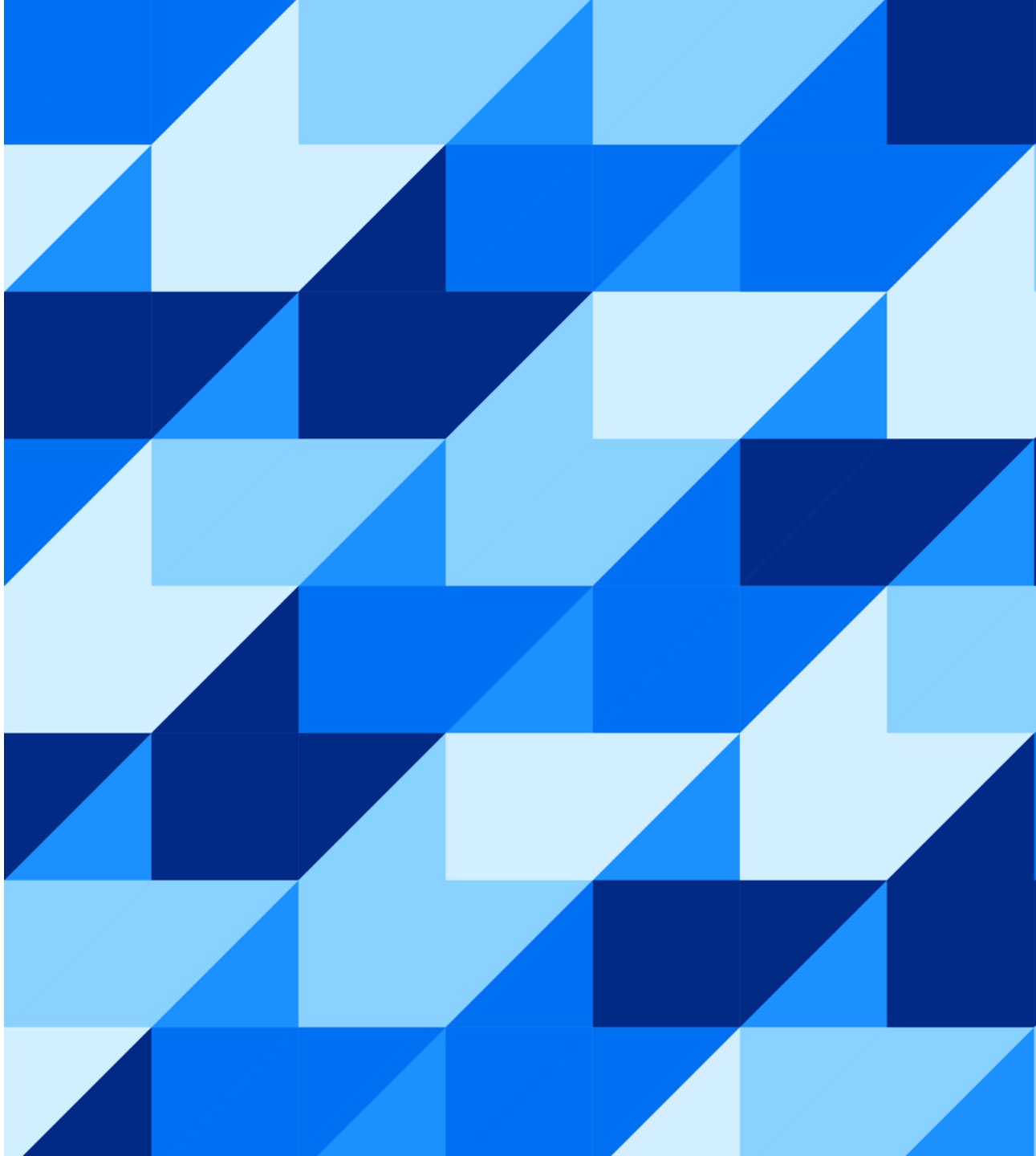
SAP Integration Suite Monthly Updates – March 2024

Product Management Team, SAP Integration Suite
Month 03, 2024

PUBLIC



Disclaimer

The information in this presentation is confidential and proprietary to SAP and may not be disclosed without the permission of SAP. Except for your obligation to protect confidential information, this presentation is not subject to your license agreement or any other service or subscription agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or any related document, or to develop or release any functionality mentioned therein.

This presentation, or any related document and SAP's strategy and possible future developments, products and or platforms directions and functionality are all subject to change and may be changed by SAP at any time for any reason without notice. The information in this presentation is not a commitment, promise or legal obligation to deliver any material, code or functionality. This presentation is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. This presentation is for informational purposes and may not be incorporated into a contract. SAP assumes no responsibility for errors or omissions in this presentation, except if such damages were caused by SAP's intentional or gross negligence.

All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

Agenda

- Cloud Integration Updates – Sunny Kapoor (15’)
- Graph Model Extension Editor with Multi- Source Support – Palak Garg (15’)
- Pipeline Concept in Cloud Integration – Alexander Bundschuh (25’)

Cloud Integration

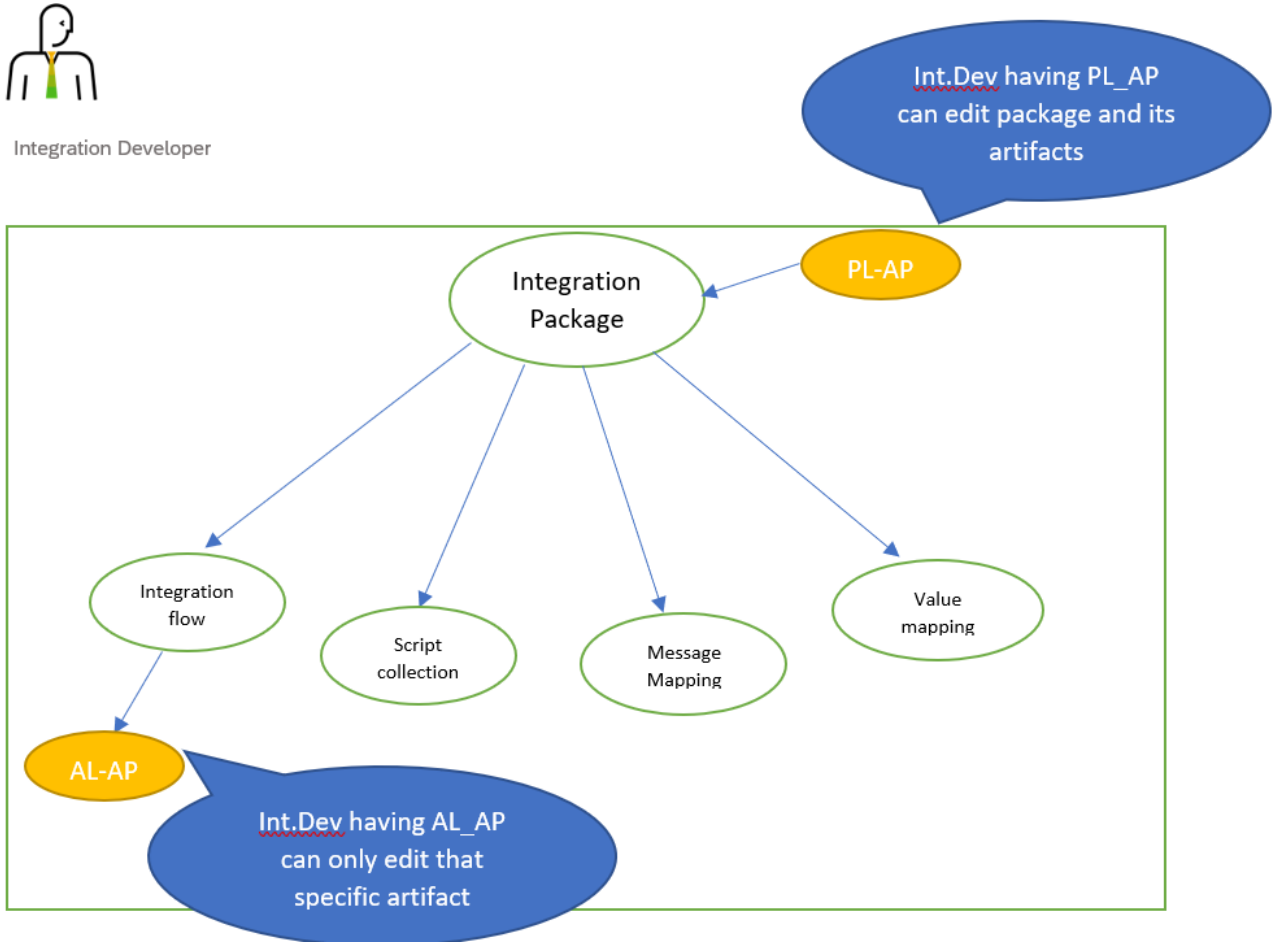
PUBLIC

Defining Access Policies at Integration Package Level

- You can now use access policies to protect all artifacts of an integration package.
- This enhancement simplifies administration efforts for tenant administrator considerably.
- If an access policy has been defined for an integration package, access policies for individual artifacts (within this package) will still be taken into account.

Recommendation

- To protect all artifacts of Package, apply PL-AP
- To protect one or some set of artifacts, apply, AL-AP



Documentation

Other updates

- A new property (**SAP_IntegrationFlowID**) is available that contains the ID of the integration flow that sent a message through the **JMS receiver adapter**. The JMS consumer (reading the message through the JMS sender adapter) can use this property to define further steps that depend on the integration flow ID.
  See: Headers and Exchange Properties Provided by the Integration Framework

- In the **SuccessFactors SOAP Receiver Adapter**, you can now dynamically define the **Address** and **Credential Name** fields in the message exchange.
  See: Configure the SuccessFactors SOAP Receiver Adapter

- You can now provide an option to send additional request headers and custom query options for **$metadata call** in **OData V4 Receiver Adapter**.
  See: Configure the OData V4 Receiver Adapter

- You can now select the **encoding** format for the outgoing payload in **EDI to XML converter**.
  See: Define EDI to XML Converter

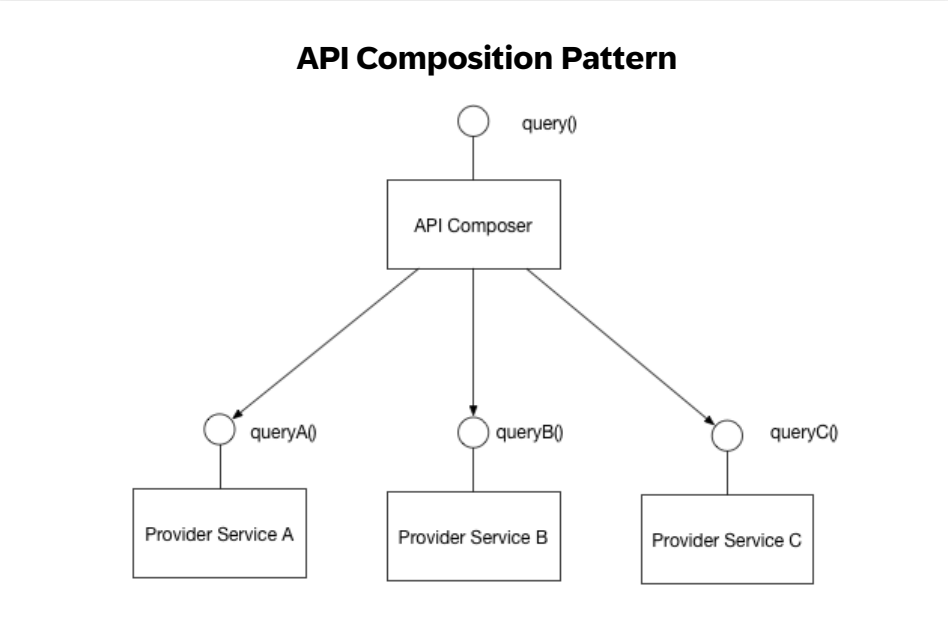
- A new property allows you to **set the time zone** for the **XAdES SigningTime** element of the signature created by the **XML Signer step**.
  See: Signing the Message Content with XAdES-BES (1)

API Management with Graph

PUBLIC

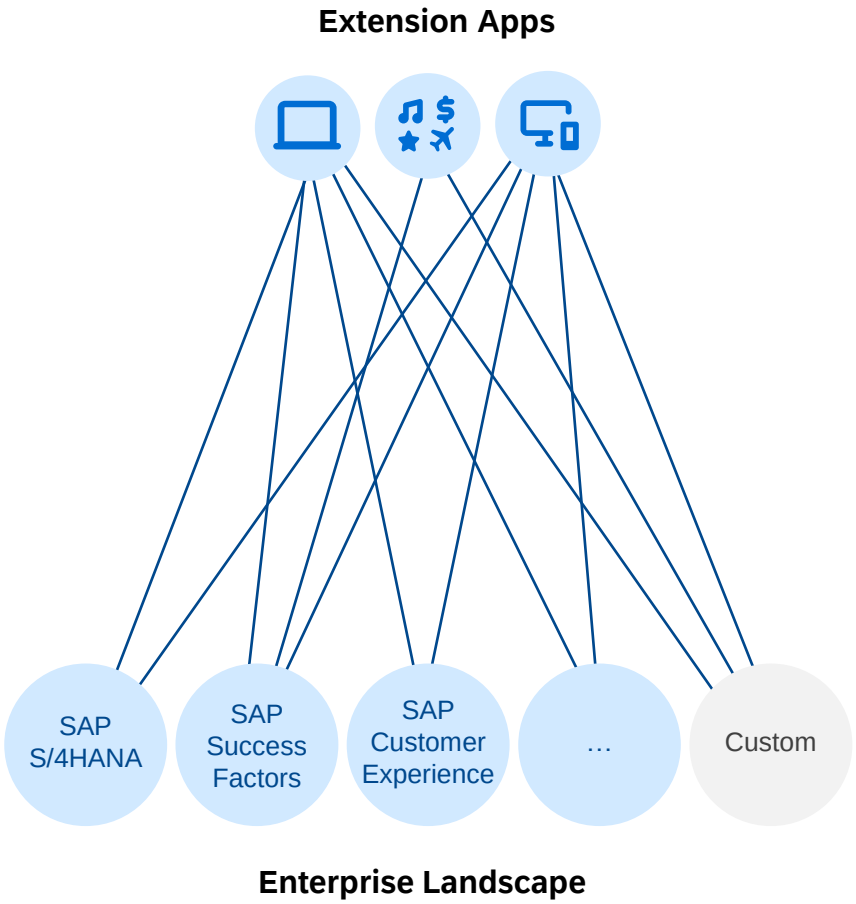
API Composition with Graph - Terminology

API Composition: Create a single unified API endpoint & API data model out of several APIs



microservices.io

The app developer challenge …



App developers require ever more expertise and skills

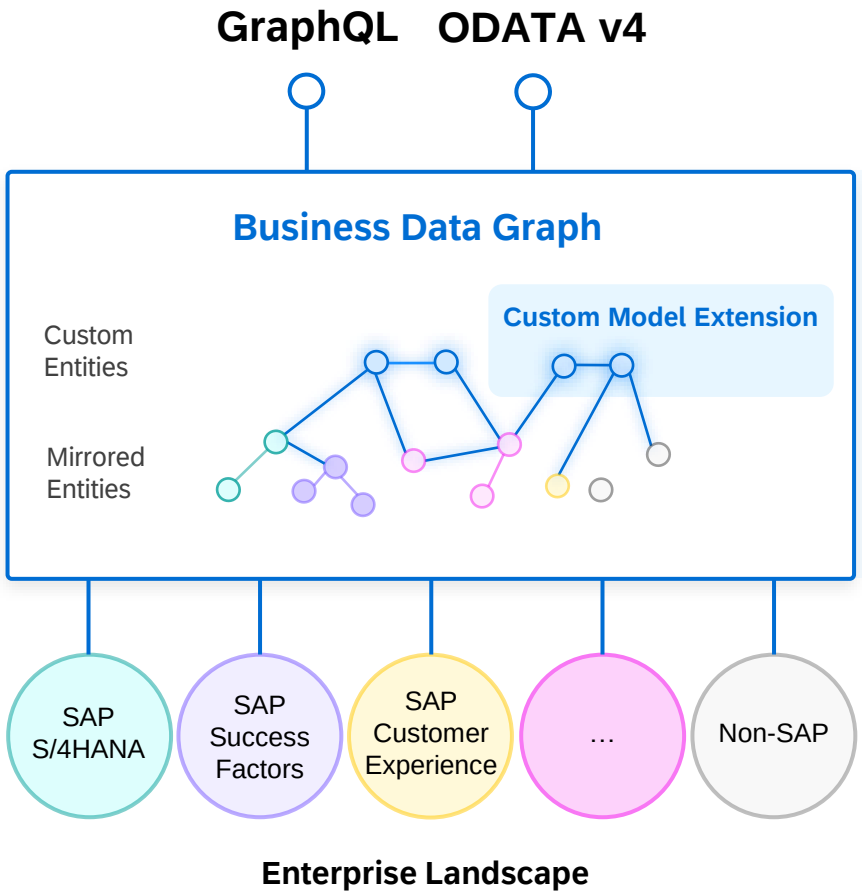
- Understanding the landscape: where data lives, replications, leading systems …
- Facing diverse connectivity and security challenges
- Identifying and using the correct APIs

Each application deals with the same complexity…

Enterprise landscapes expand in scale and complexity

- Growing portfolio of cloud solutions from SAP and other cloud solutions, more diversity
- Various data models, security technologies, tools, APIs and protocols

Anatomy of a Business Data Graph (BDG)



- You control the policy of how data is exposed

- You can introduce your own **custom entities**
- The data objects are discovered: a business data graph is constructed out of **mirrored entities**, one-to-one, grouped into namespaces
- Supported SAP entities are **enriched** with thousands of semantic connections.

- You configure your data sources

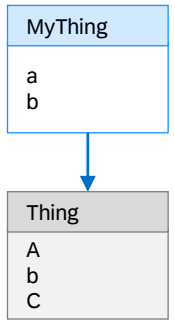
Custom Model Extensions

Custom Entity

Source Entities

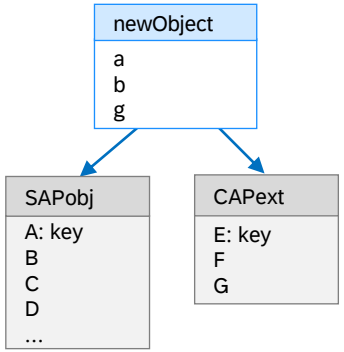
Projection

A “view”: reshapes (e.g. rename, retype, suppress) underlying APIs and attributes



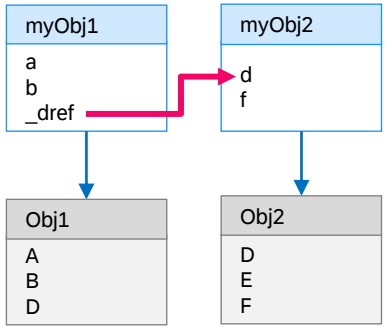
Composition

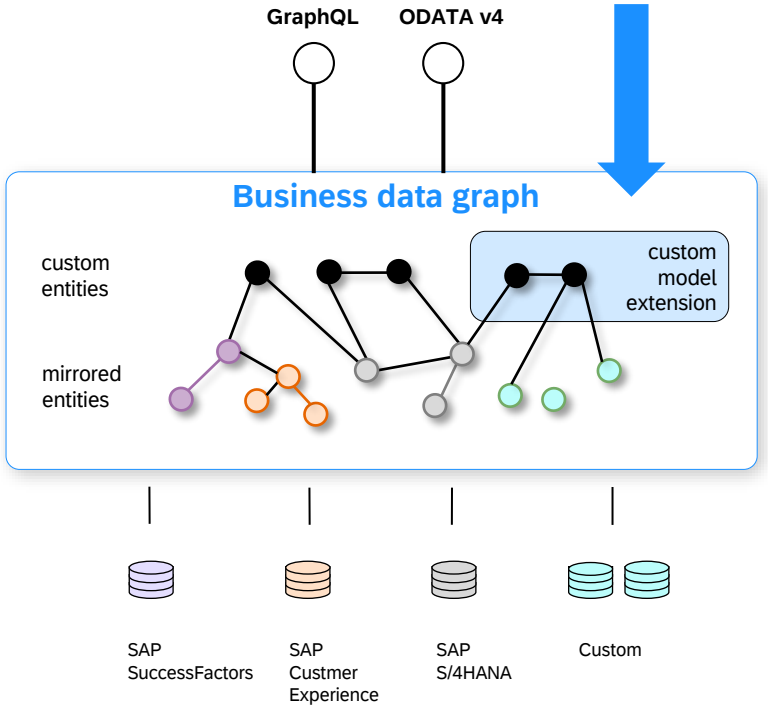
A “merged” entity: includes attributes from multiple source entities



Connection

An association between entities of a data graph



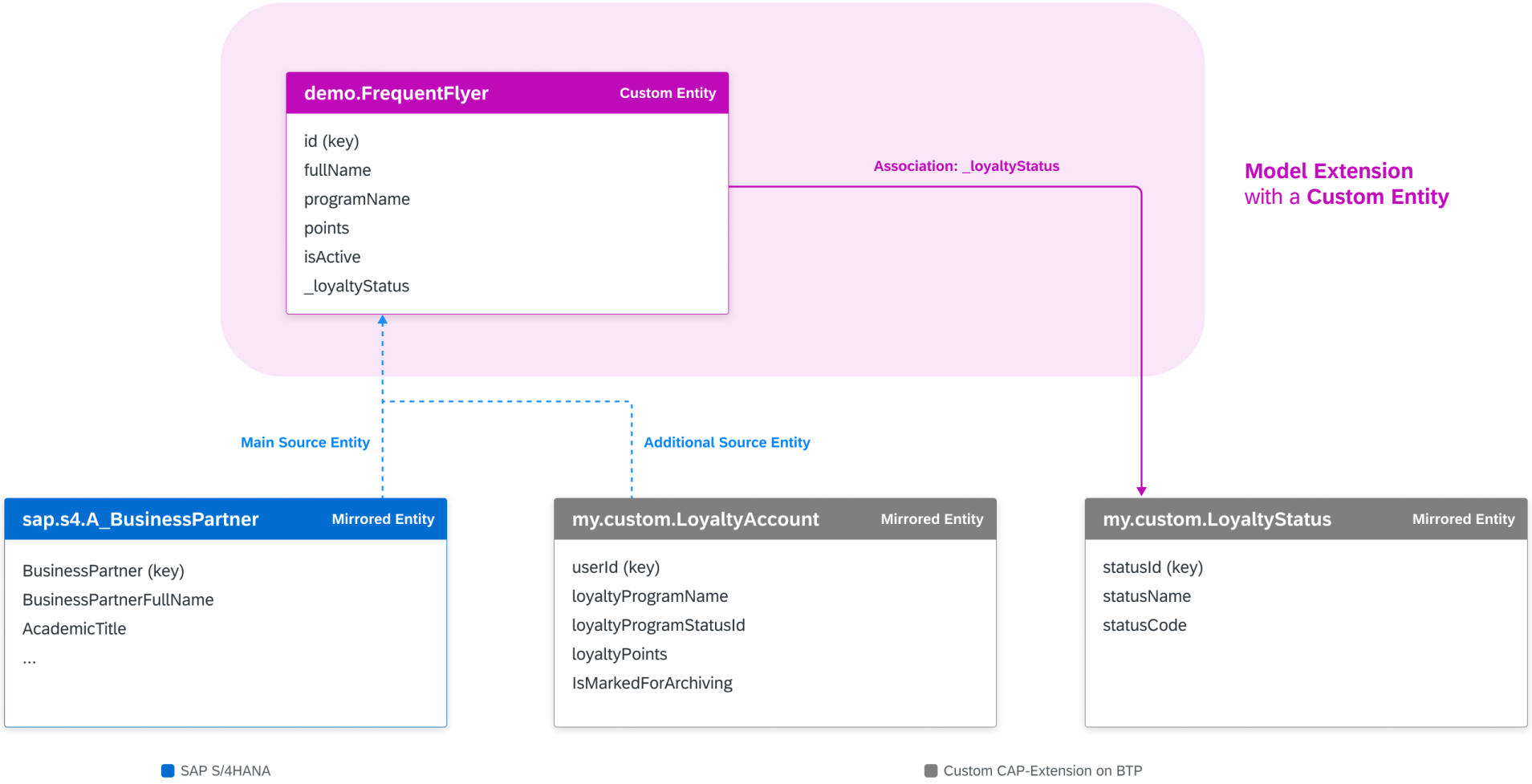


Custom model extensions allow you to compose **your own data graph**.

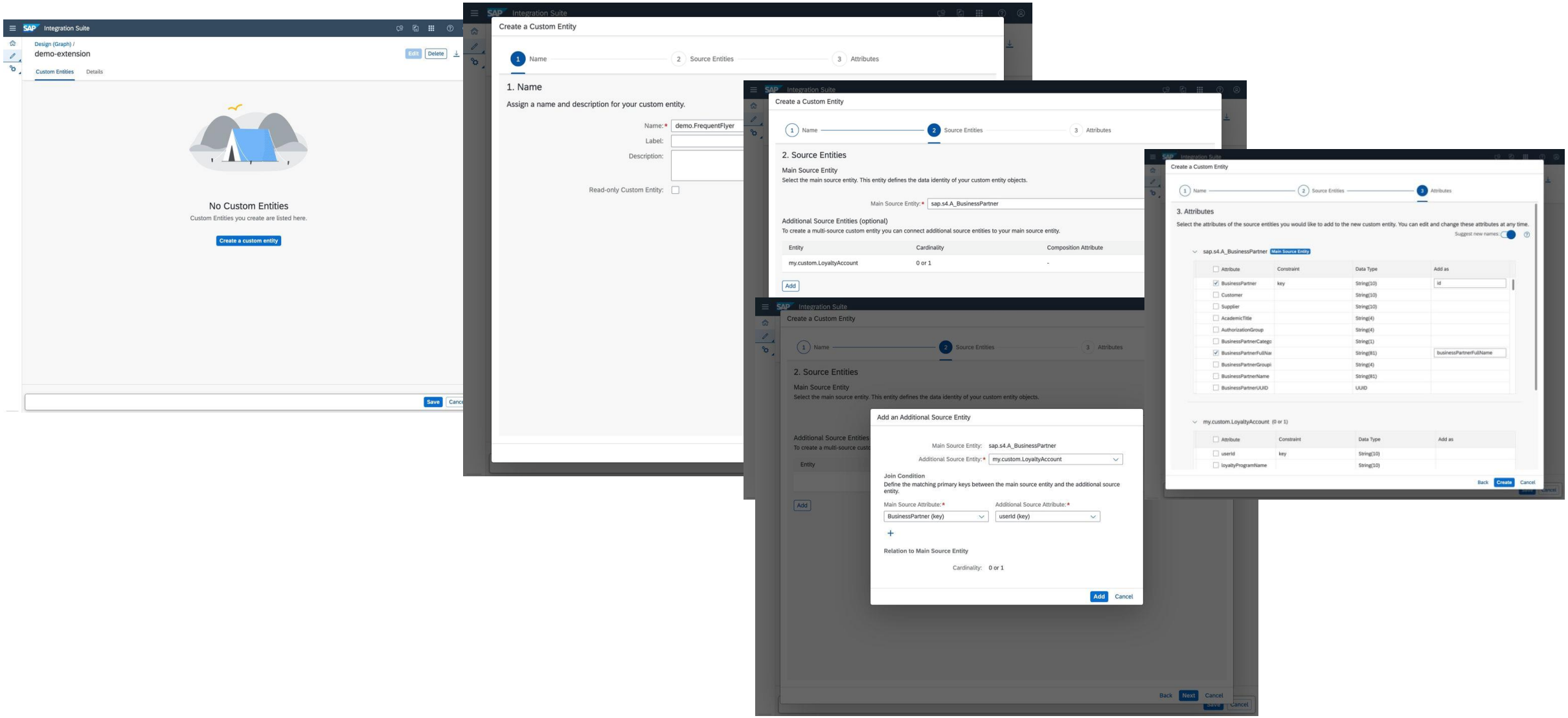
Demo

PUBLIC

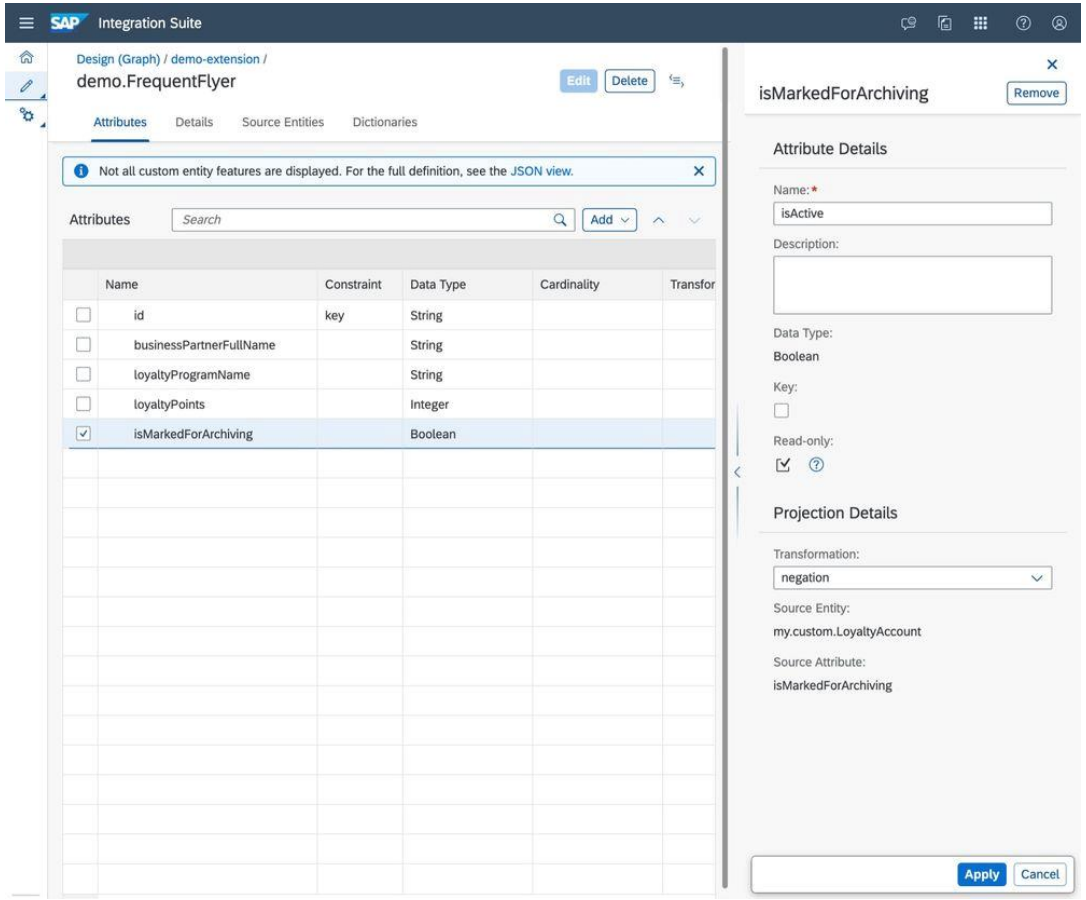
Demo Scenario



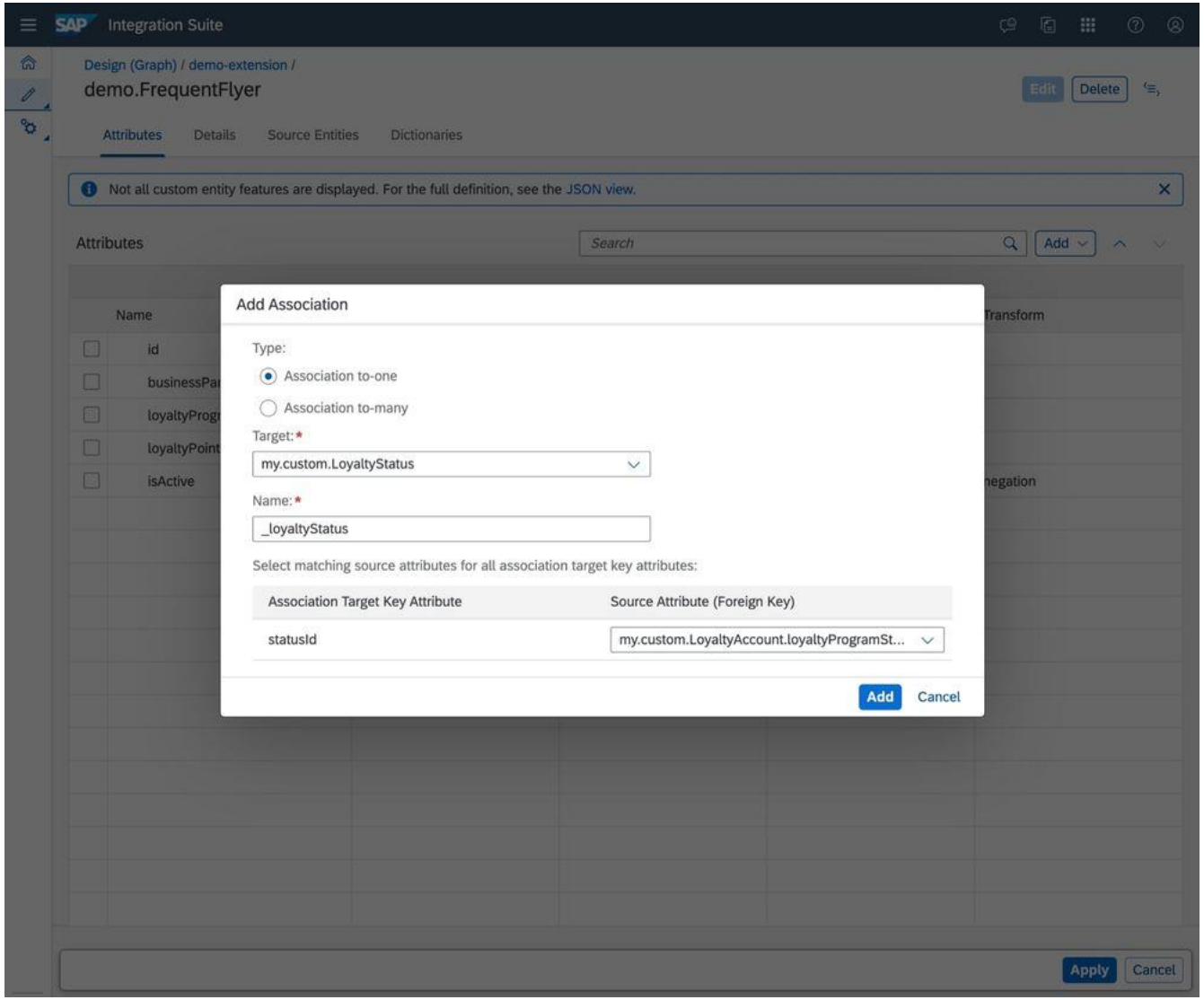
Create model extensions using custom entities



Applying transformations in custom entities



Adding a new association in custom entity



Pipeline Concept in Cloud Integration

PUBLIC

Pipeline concept in Cloud Integration: Motivation

Cloud Integration has a very flexible pipeline allowing the design of a rich variety of integration patterns. SAP Process Orchestration in contrary has a very strict pipeline designed for reliable message processing providing sophisticated decoupling, splitting and restarting capabilities while guaranteeing Exactly Once processing. This requirements are also still valid for interfaces in Cloud Integration.

Key achievements of the pipeline in Cloud Integration are:

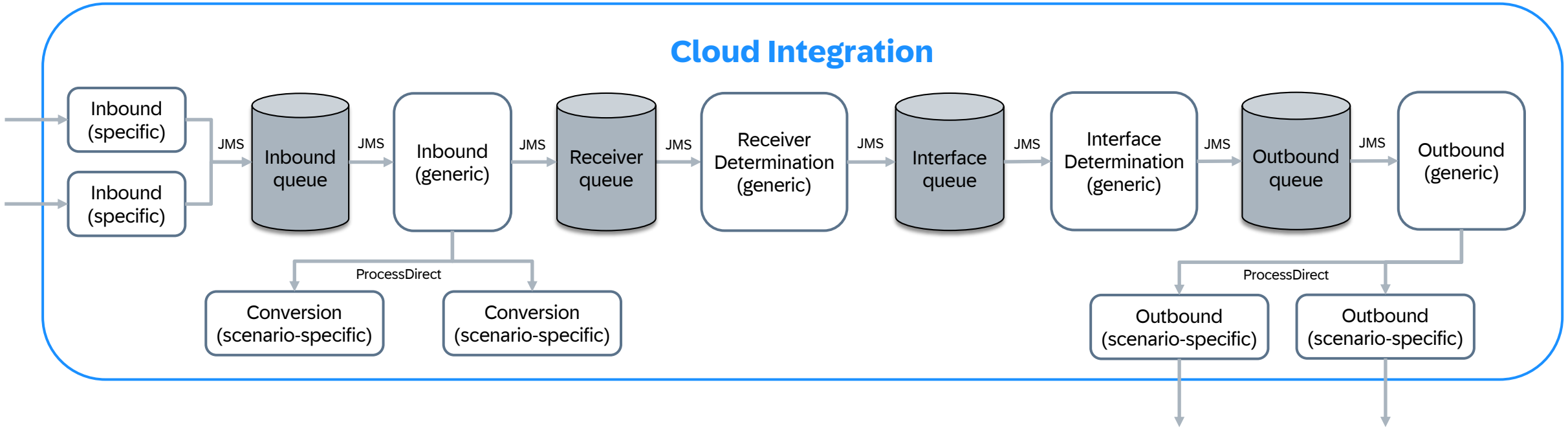
- Ensures decoupling and **Exactly Once** processing for asynchronous processing (also for split and restart)
- Provides sophisticated **restart capabilities** (automatic retries and also manual retry options)
- Simplifies operations by **separating errors** into different generic queues separated by routing/mapping and receiver backend delivery
- Allows **reusability of artifacts** across multiple flows by using generic concept
- Allows **easy isolation** and **tuning of parallelization** for individual receiver systems
- Simplifies **configuration on the sender system** – e.g. just one ALE port on S/4 required
- Requires **lower number of JMS queues** to respect the limits of an Integration Suite tenant, as a side effect simplifying operations
- Supports packaging in IDoc/Proxy, Multi-Message mapping and maintain-order at runtime **in a generic manner**
- **Simplifies integration flow model** especially for content based router and recipient list scenarios

Pipeline concept in Cloud Integration at a glance

Key elements:

- **Sequence of integration flows** each representing a pipeline step
  – Generic flows are used across all integration scenarios
  – Scenario-specific integration flows handle the scenario-specific message conversions and mappings
- **Partner Directory**
  – to define the message processing behavior, e.g., max number of retries, receiver specific queue
  – to dynamically configure the generic integration flows
- **XSLT mappings** to carry out the receiver determination and interface split pipeline steps
- Combination of **JMS queues and ProcessDirect** adapters to connect the pipeline steps
  – Need of 4 queues and 2 ProcessDirect connections
  – Need of 4 additional queues to park queue in case of errors (dead letter queues)

Sequence of integration flows / pipelines



The pipeline concept in a nutshell:

- Could handle all async scenarios with just 4 JMS queues
- Consists of generic and scenario-specific integration flows
- Dynamic configuration to process messages individually using Partner Directory

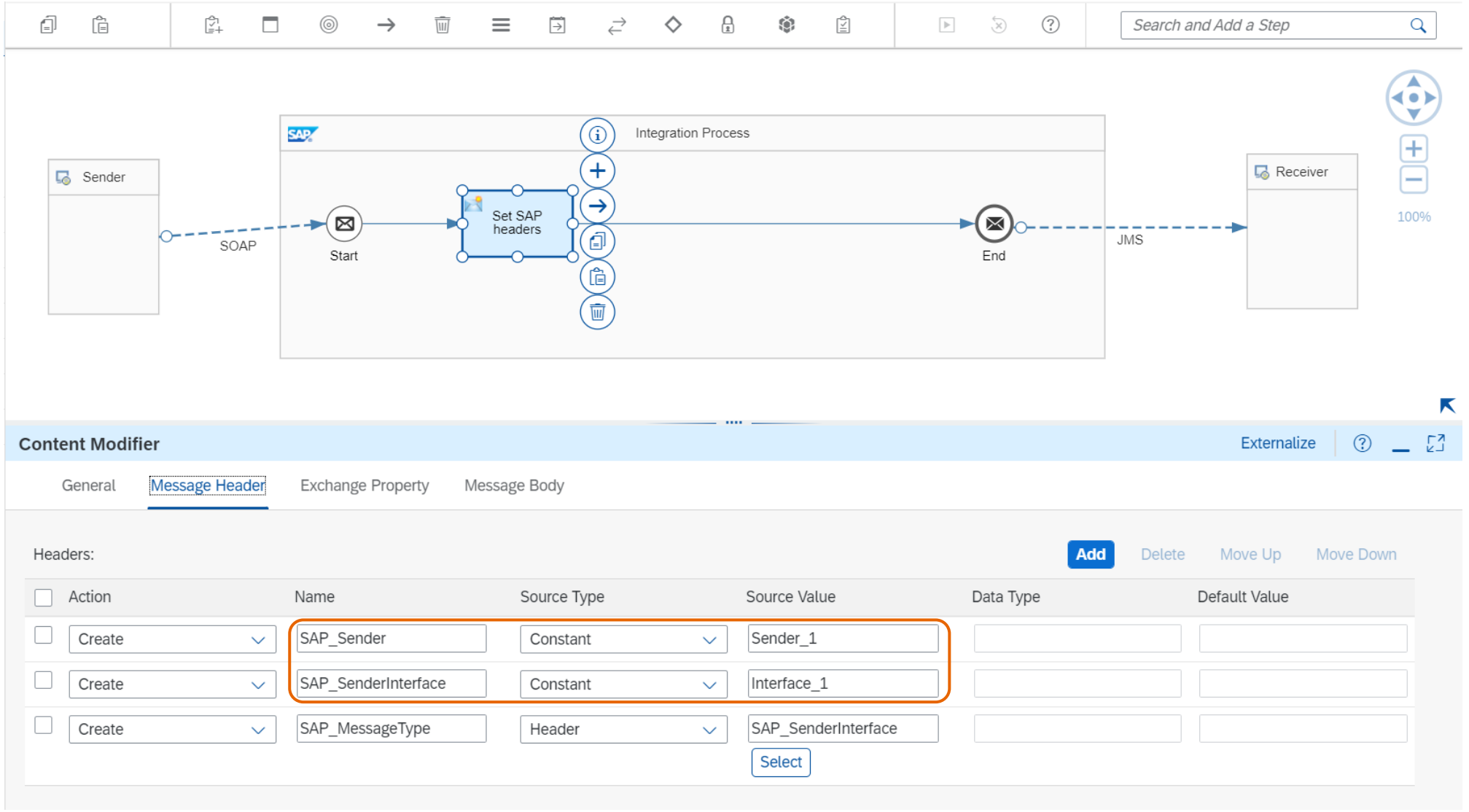
Integration flows

JMS queues

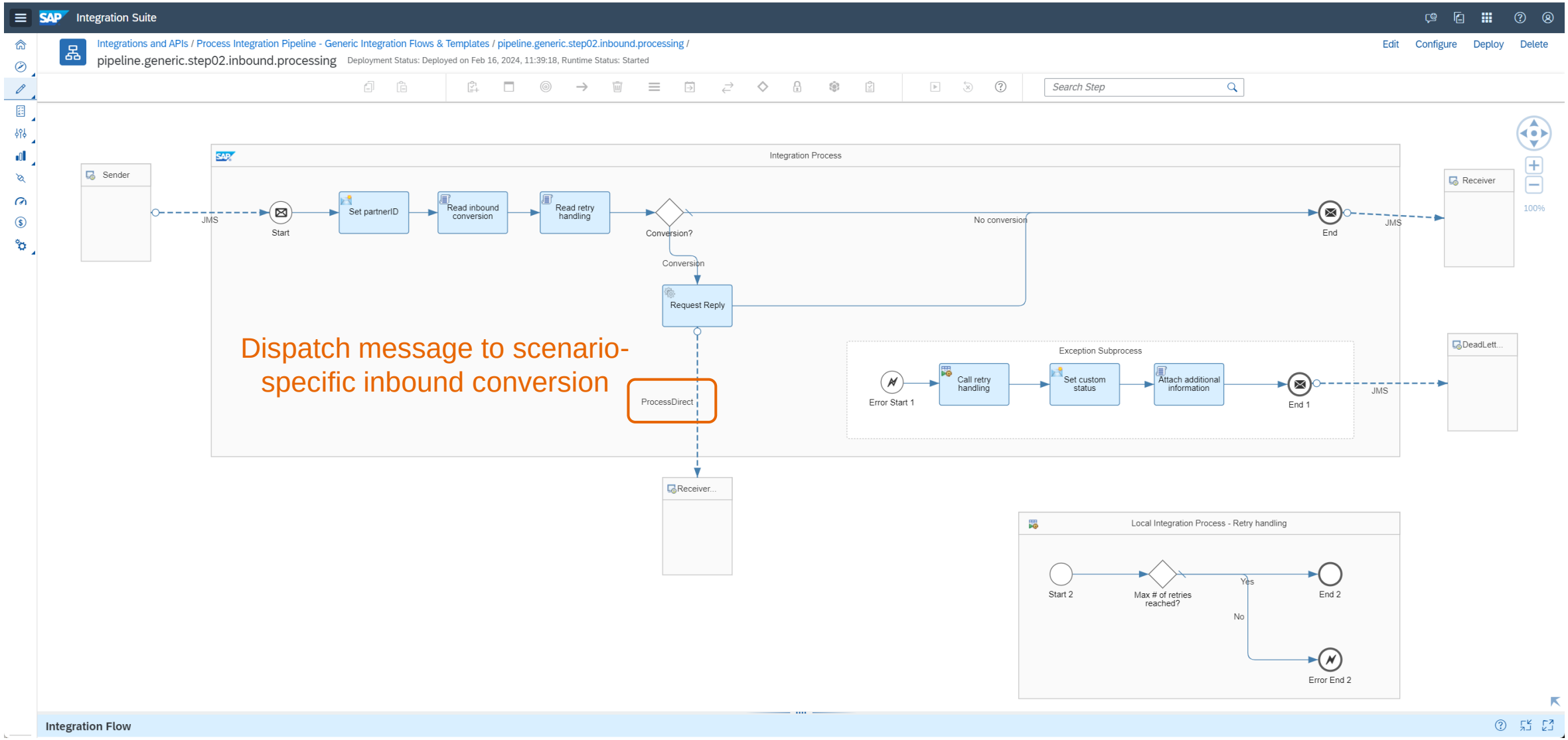
Special cases

- Generic inbound integration flow that acts as **one single entry point for XI proxy inbound** scenarios
- Generic inbound integration flow that acts as **one single entry point for IDoc inbound** scenarios
- **Reuse extended receiver determinati**on message mapping instead of XSLT
- Support for **receiver-specific JMS queues** if required (default is the generic outbound queue)

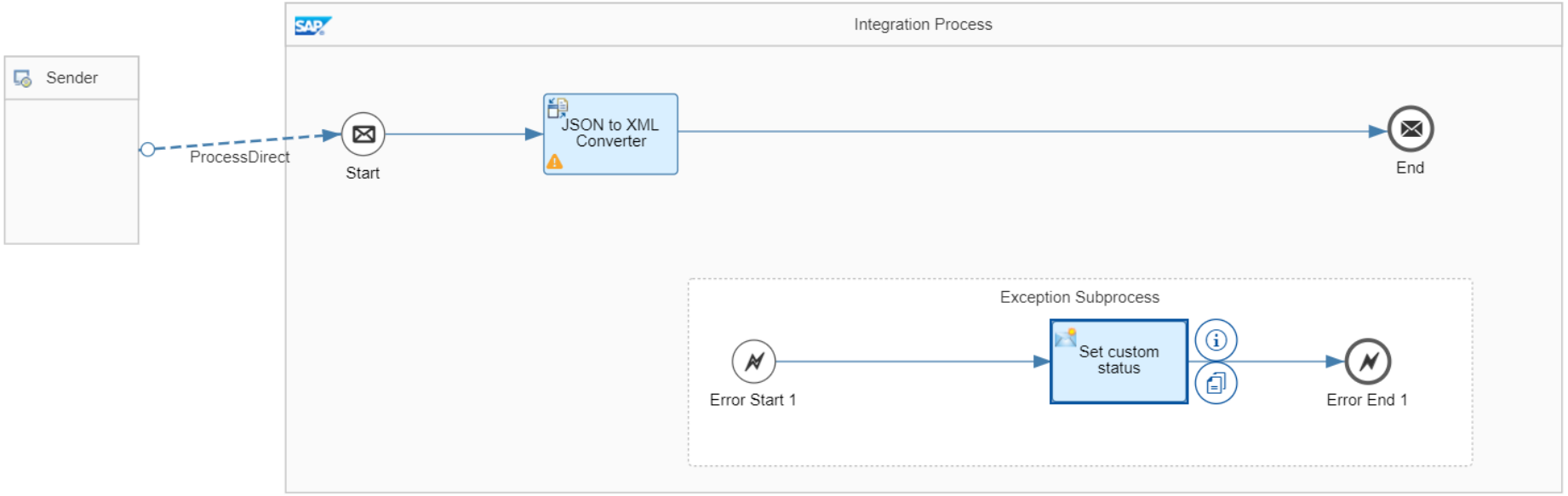
Pipeline step 1: Example for Scenario-Specific Inbound Processing



Pipeline step 2: Generic Inbound Processing



Pipeline step 3: Example for Scenario-Specific Inbound Conversion



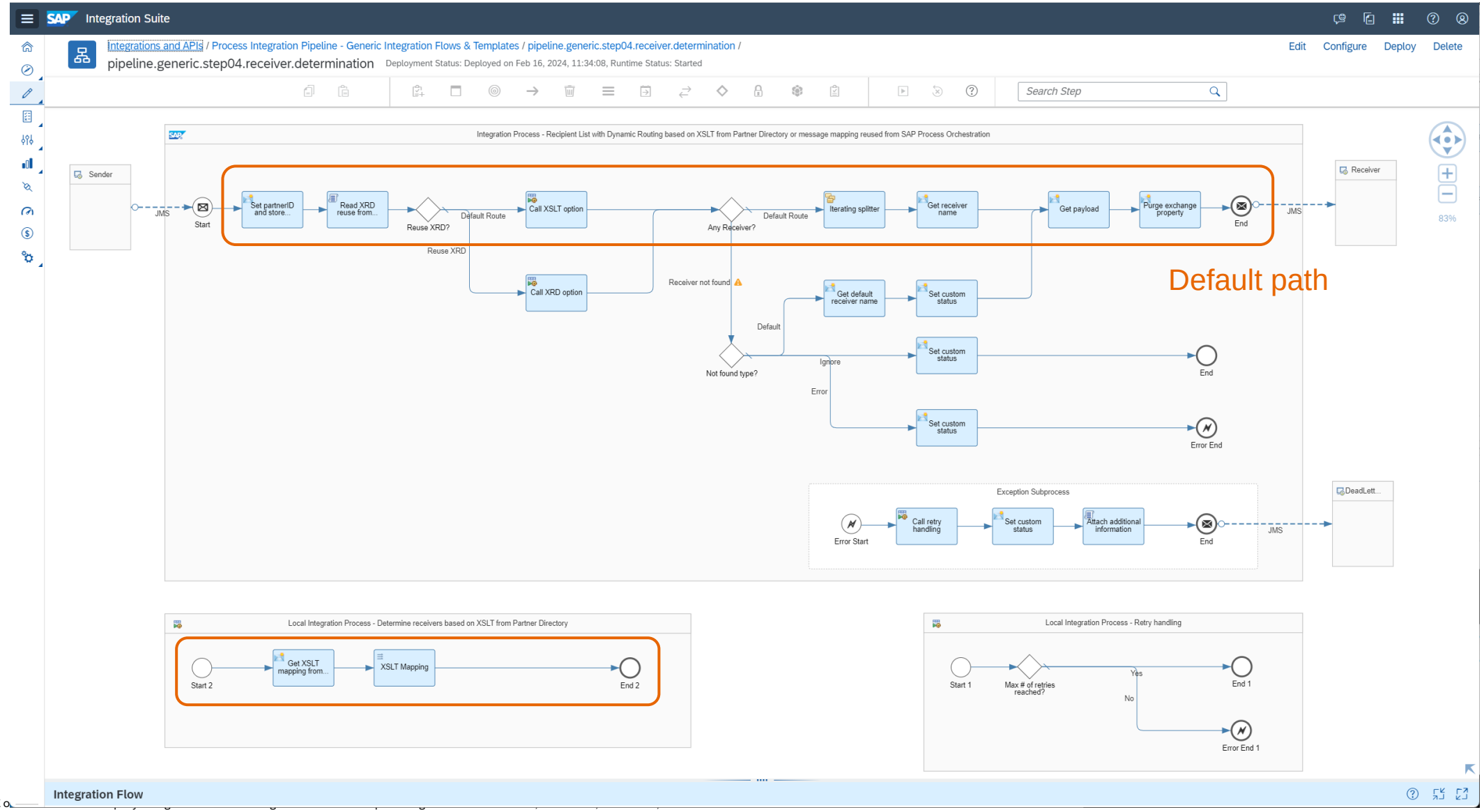
Content Modifier

General | Message Header | Exchange Property | Message Body

Properties:

Action	Name	Source Type	Source Value
Create	SAP_MessageProcessingLogCustomStatus	Constant	RetryViaParentFlow

Pipeline step 4: Generic Receiver Determination



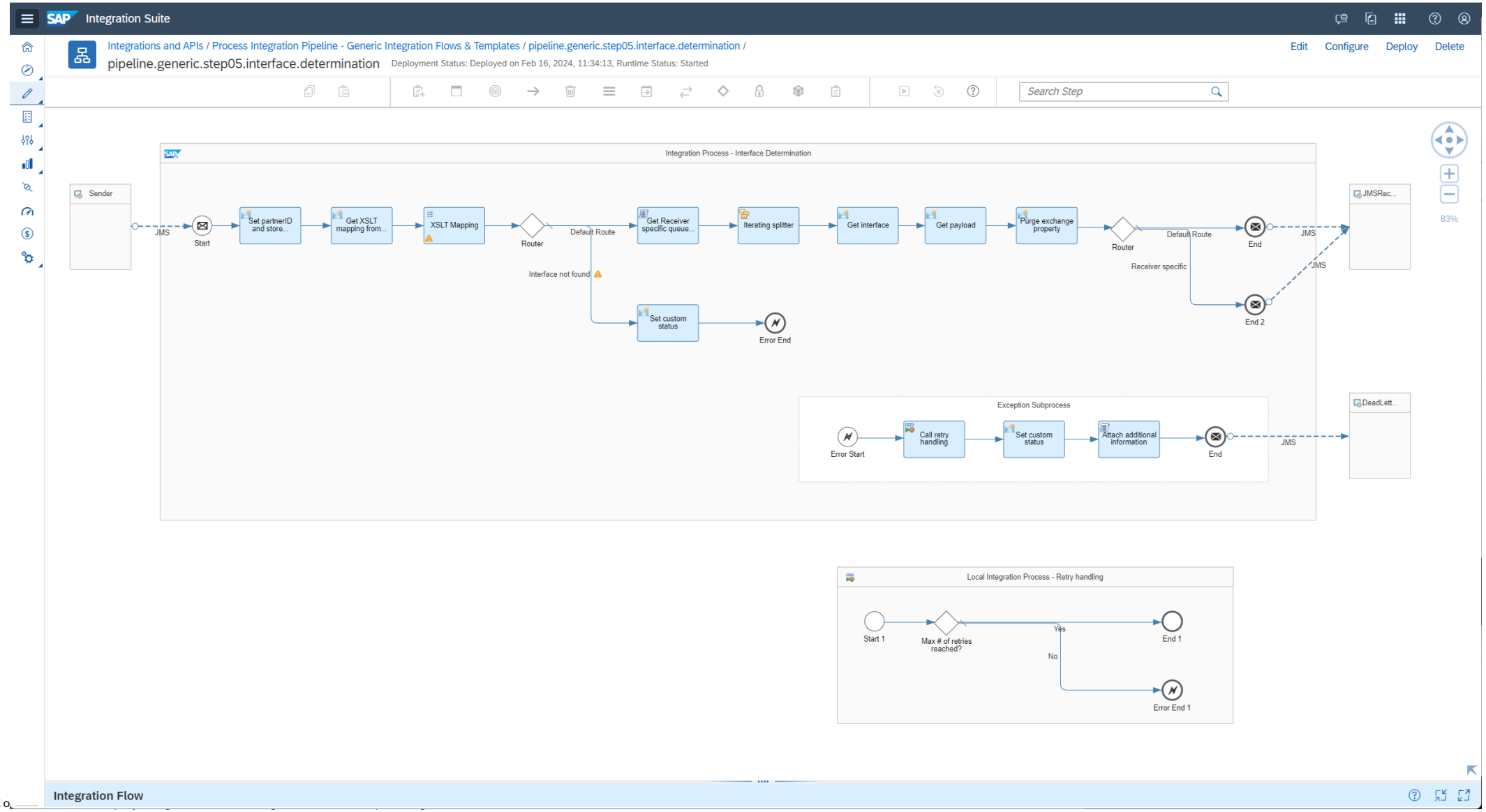
Generic Receiver Determination – Sample Receivers XSLT

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="3.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:template match="/">
    <ns0:Receivers xmlns:ns0="http://sap.com/xi/XI/System">
     <ReceiverNotDetermined>
       <Type>Error</Type>
       <DefaultReceiver/>
    </ReceiverNotDetermined>
    <xsl:if test="/*:Item/Category = 'Keyboards’”>
      <Receiver>
        <Service>Receiver_1</Service>
      </Receiver>
    </xsl:if>
    <xsl:if test="(/*:Item/Category = 'Keyboards') or (/*:Item/Category = 'Software’)”>
      <Receiver>
        <Service>Receiver_2</Service>
      </Receiver>
    </xsl:if>
    <xsl:if test="(/*:Item/Category = 'Keyboards') and (/*:Item/ProductName != 'XXXX’)”>
      <Receiver>
        <Service>Receiver_3</Service>
      </Receiver>
    </xsl:if>
    </ns0:Receivers>
  </xsl:template>
</xsl:stylesheet>
```

Generic Receiver Determination – Sample Receivers XML

```
<?xml version="1.0" encoding="UTF-8"?>
<ns0:Receivers xmlns:ns0="http://sap.com/xi/XI/System">
  <ReceiverNotDetermined>
    <Type>Error</Type>
    <DefaultReceiver/>
  </ReceiverNotDetermined>
  <Receiver>
    <Service>Receiver_1</Service>
  </Receiver>
  <Receiver>
    <Service>Receiver_2</Service>
  </Receiver>
</ns0:Receivers>
```

Pipeline step 5: Generic Interface Determination



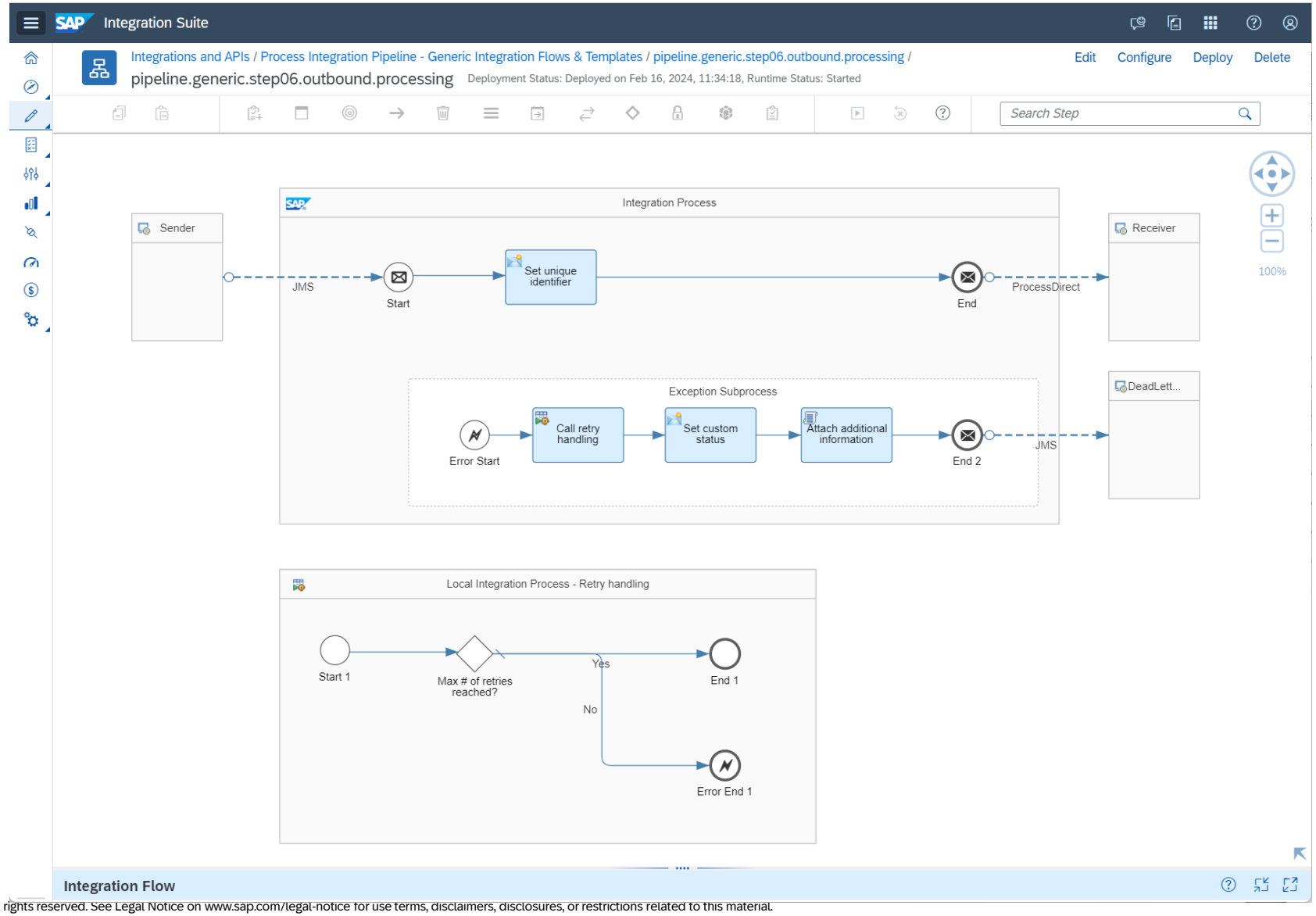
Generic Interface Determination – Sample Interfaces XSLT

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="3.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:template match="/">
    <ns0:Interfaces xmlns:ns0="http://sap.com/xi/XI/System">
    <xsl:if test="/*:Item/Quantity = '10’”>
      <Interface>
        <Index>1</Index>
        <Service>/pip/07/scenario1/rcvidx1/ifidx1</Service>
      </Interface>
    </xsl:if>
    <xsl:if test="/*:Item/CurrencyCode = 'EUR’”>
      <Interface>
        <Index>2</Index>
        <Service>/pip/07/scenario1/rcvidx1/ifidx2</Service>
      </Interface>
    </xsl:if>
    <xsl:if test="/*:Item/Quantity != '10’”>
      <Interface>
        <Index>3</Index>
        <Service>/pip/07/scenario1/rcvidx1/ifidx3</Service>
      </Interface>
    </xsl:if>
    </ns0:Interfaces>
  </xsl:template>
</xsl:stylesheet>
```

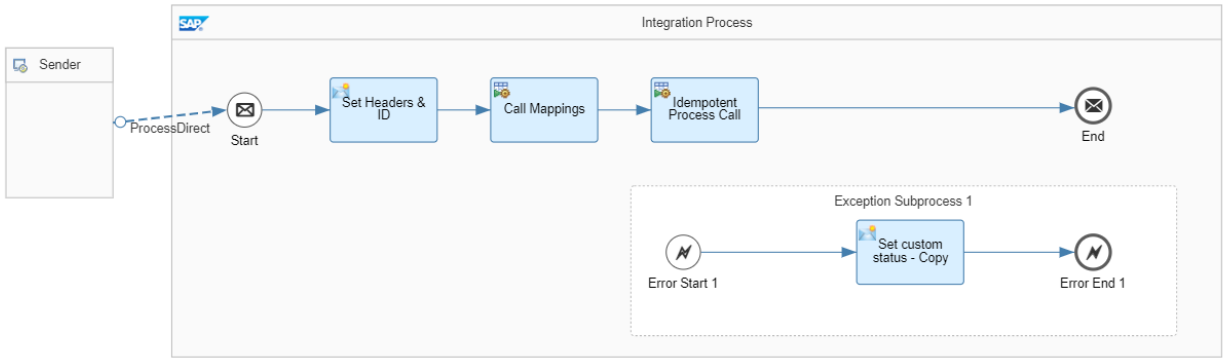
Generic Interface Determination – Sample Interfaces XML

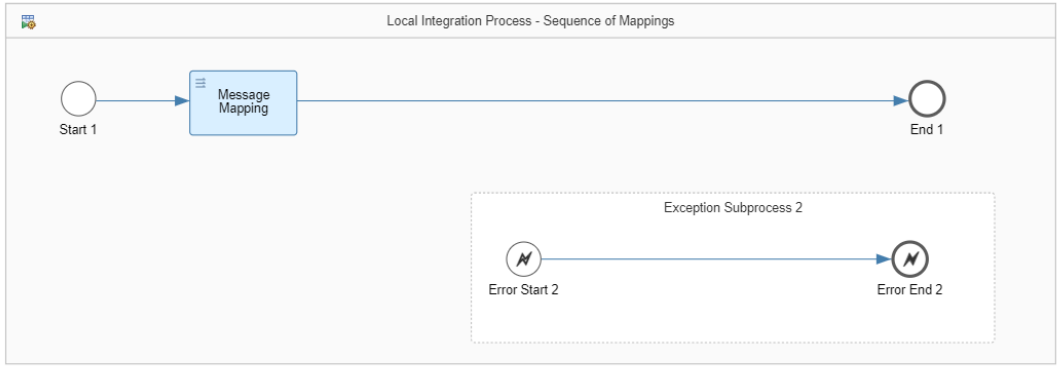
```
<?xml version="1.0" encoding="UTF-8"?>
<ns0:Interfaces xmlns:ns0="http://sap.com/xi/XI/System">
  <Interface>
    <Index>1</Index>
    <Service>/pip/07/scenario1/rcvidx1/ifidx1</Service>
  </Interface>
  <Interface>
    <Index>2</Index>
    <Service>/pip/07/scenario1/rcvidx1/ifidx2</Service>
  </Interface>
</ns0:Interfaces>
```

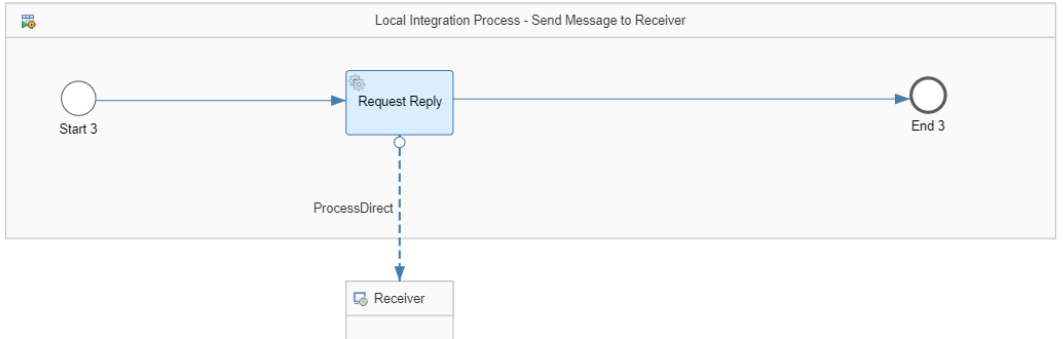
Pipeline step 6: Generic Outbound Processing



Pipeline step 7: Example for Scenario-Specific Outbound Processing





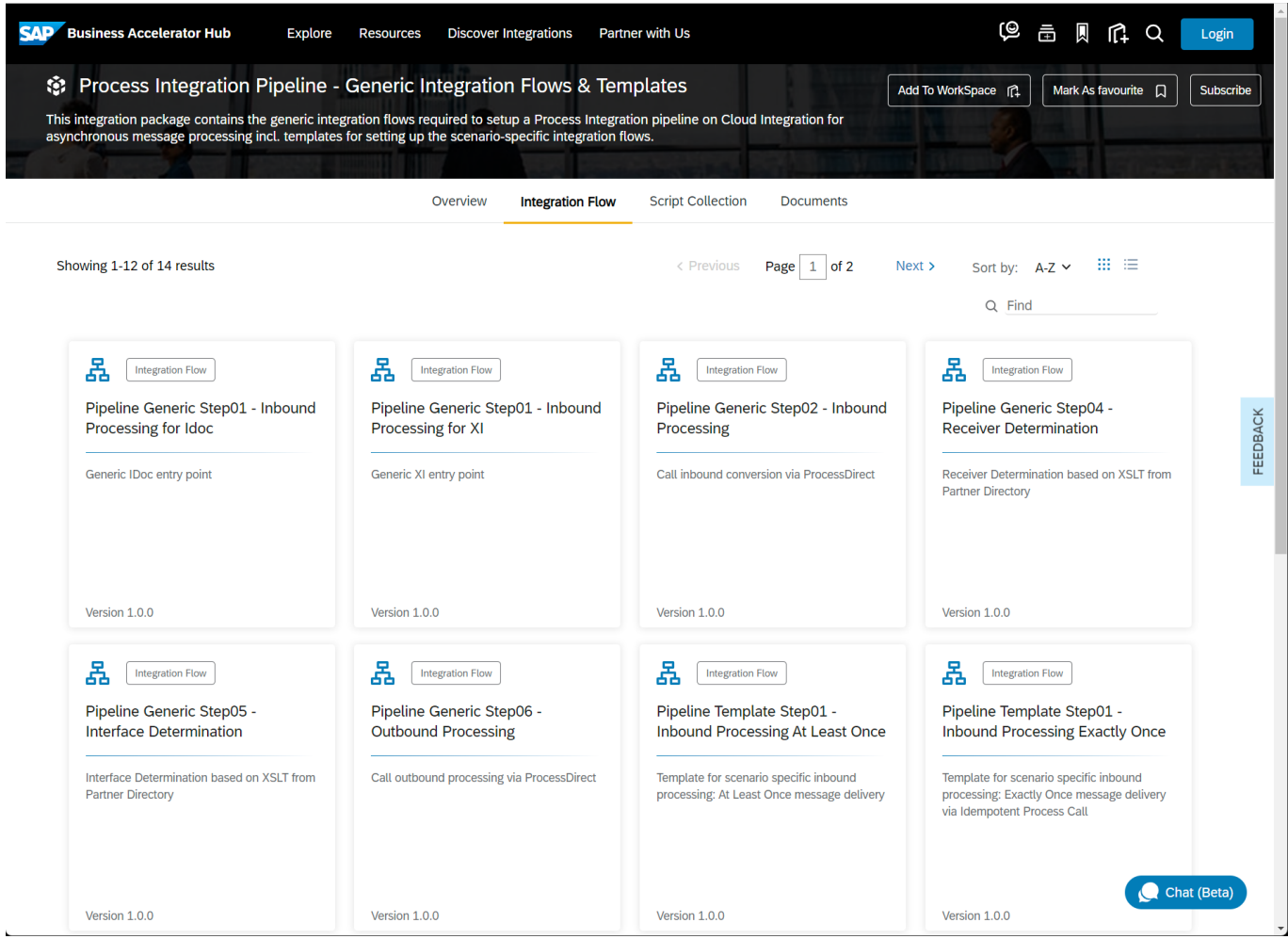


Further information

[Pipeline concept in migration guide for SAP Process Orchestration]

[Integration package at SAP Business Accelerator Hub]

[Blog series in SAP Community]



Thank you.

Contact information:

Name
Email

Follow us

www.sap.com/contactsap

THE BEST RUN SAP