



# SAP Cloud Platform Integration Advisor

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PUBLIC

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# Agenda

Integration Suite capabilities

Current situation in integration projects

Improve it with the Integration Advisor

Recent Innovations

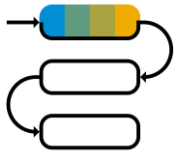
Demo

Value Proposition and Roadmap

Time for hands-on exercise

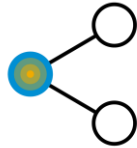
# SAP Cloud Platform Integration Suite

A modular iPaaS to connect the Intelligent Enterprise



## Cloud Integration

Seamlessly integrate anything, anywhere (A2A/B2B) in real time.



## API Management

Expose your data and processes as APIs. Manage E2E life cycle.



## Integration Advisor

Accelerate implementation and maintenance of B2B scenarios using machine learning.



## API Business Hub

Jump start integration projects with APIs, packaged integration content and adapters.



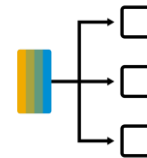
## Data Intelligence

Deliver data-driven innovation, unifying enterprise AI and intelligent information management.



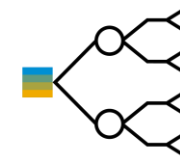
## Open Connectors

Accelerate connectivity to 3<sup>rd</sup> party applications.



## Connectivity

Securely access remote services that run on-premise.



## Enterprise Messaging

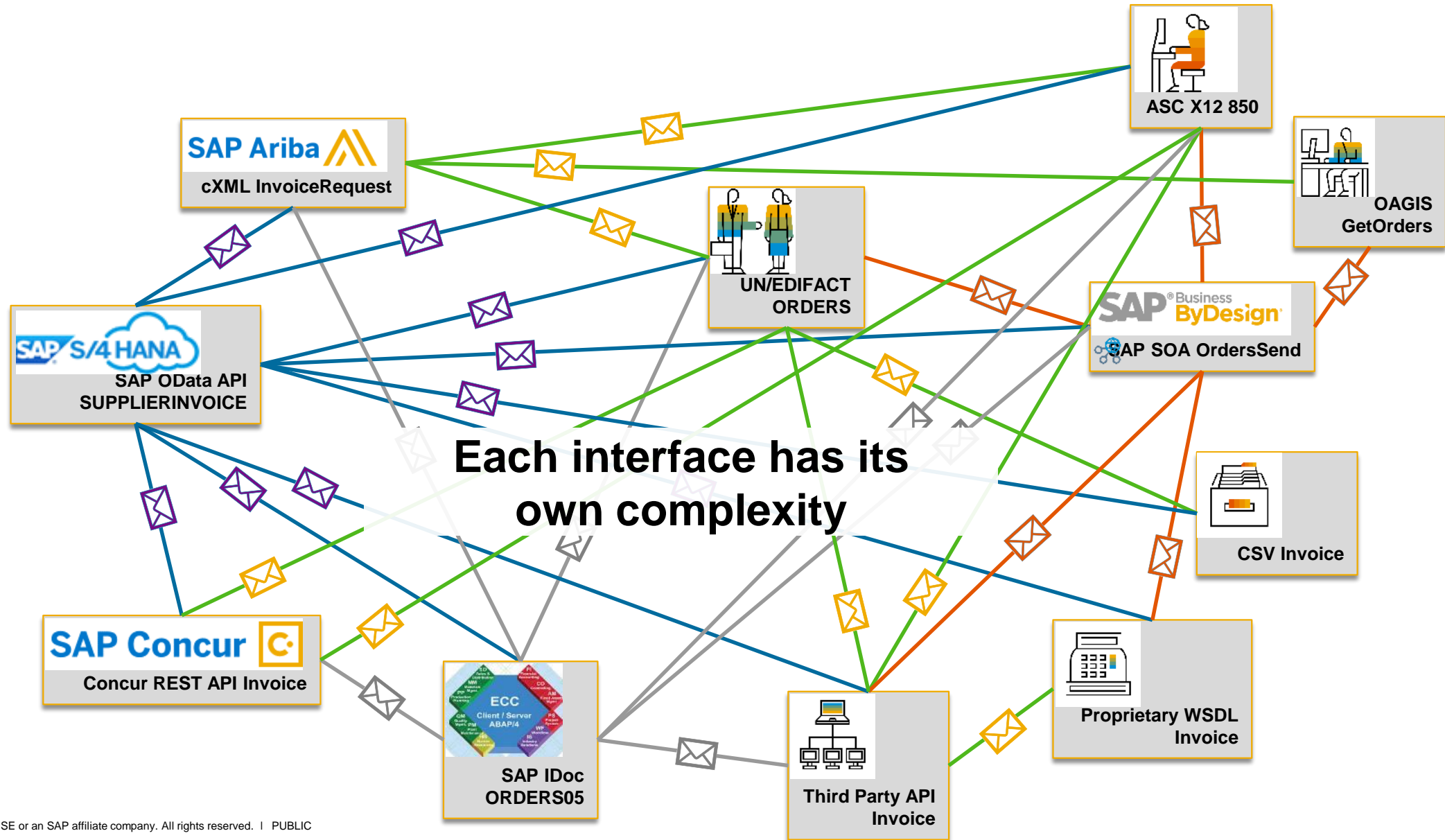
Decouple communication and send messages & events.



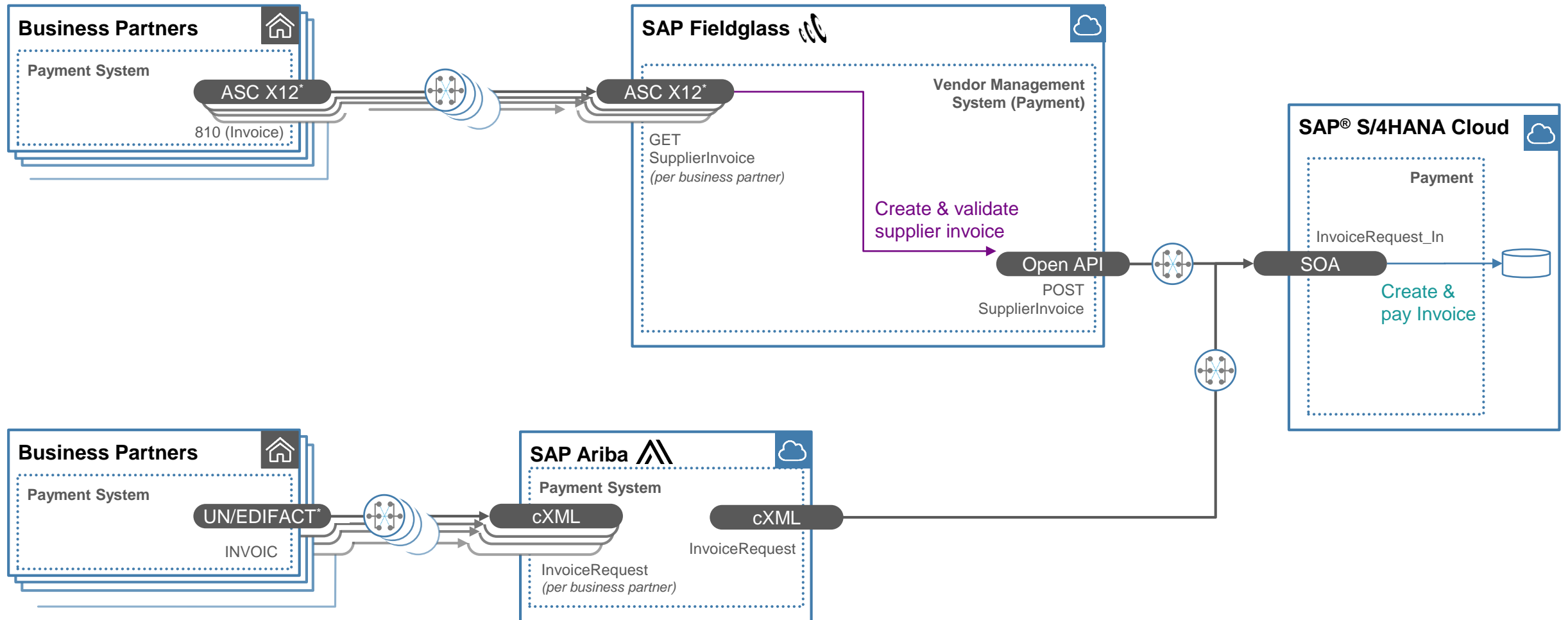
# Current situation in integration projects



# Reality: Integrate APIs/interfaces in heterogeneous landscapes



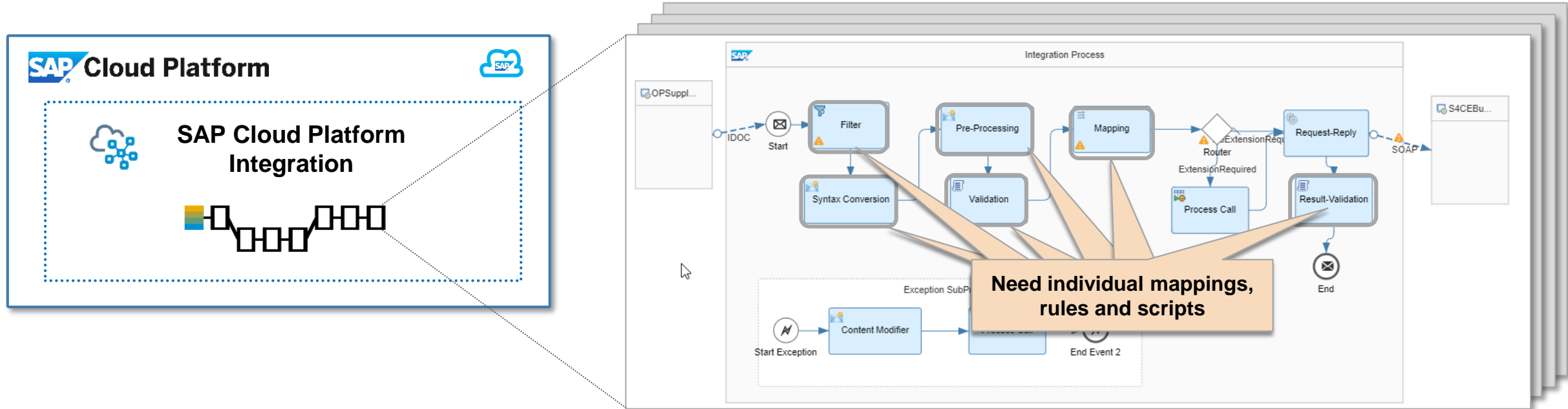
# Flow of invoices in Intelligent Enterprise process “Procure-to-Pay”



# Processes between applications via middleware

## SAP Cloud Platform Integration

### Integration flows per combination



### One integration flow per combination and variation

- Combination = between two different applications
- Variations = per message type and per different requirements in given business context
- Business context = considering aspects in different industries, countries, products, roles, etc.



# Technical mapping in current middleware solutions

SAP Cloud Platform Integration

Design / Integration of SAP S/4HANA Cloud for Procurement with SAP S/4HANA or SAP ERP / Purchase order confirmation / MM\_OrderConfirmationRequest\_OPSupplier\_2\_S4CEBuyer /

MM\_OrderConfirmationRequest\_OPSupplier\_2\_S4CEBuyer

Simulate

ORDERS05

Structure	Occurrence
ORDERS05	1..1
IDOC	1..1
@BEGIN	1..1
EDI_DC40	1..1
E1EDK01	1..1
E1EDK14	0..13
@SEGMENT	1..1
QUALF	0..1
ORGID	0..1
E1EDK03	0..10
@SEGMENT	1..1
IDDAT	0..1
DATUM	0..1
UZEIT	0..1
E1EDK04	0..10
@SEGMENT	1..1
MWSKZ	0..1
MSATZ	0..1

Meaning?

Why not mapped?

OrderConfRequest

Structure	Occurrence
ns0:OrderConfRequest	1..1
MessageHeader	1..1
OrderConfirmation	1..1
PurchaseOrderID	0..1
PurchasingDocumentType	0..1
PurchasingOrganization	0..1
PurchasingGroup	0..1
PurchaseOrderCreationDate	0..1
PurchaseOrderLastChangeDate	0..1
SalesOrderID	0..1
SalesDocumentType	0..1
SalesOrganization	0..1
DistributionChannel	0..1
OrganizationDivision	0..1
SalesGroup	0..1
SalesOffice	0..1
SalesOrderCreationDate	0..1
TransactionCurrency	0..1

Why mapped?

Why not mapped?

Mapping expression

Test Input File: Upload test file Browse

QUALF

007

ORGID

equals(str..)

ifWithoutEl..

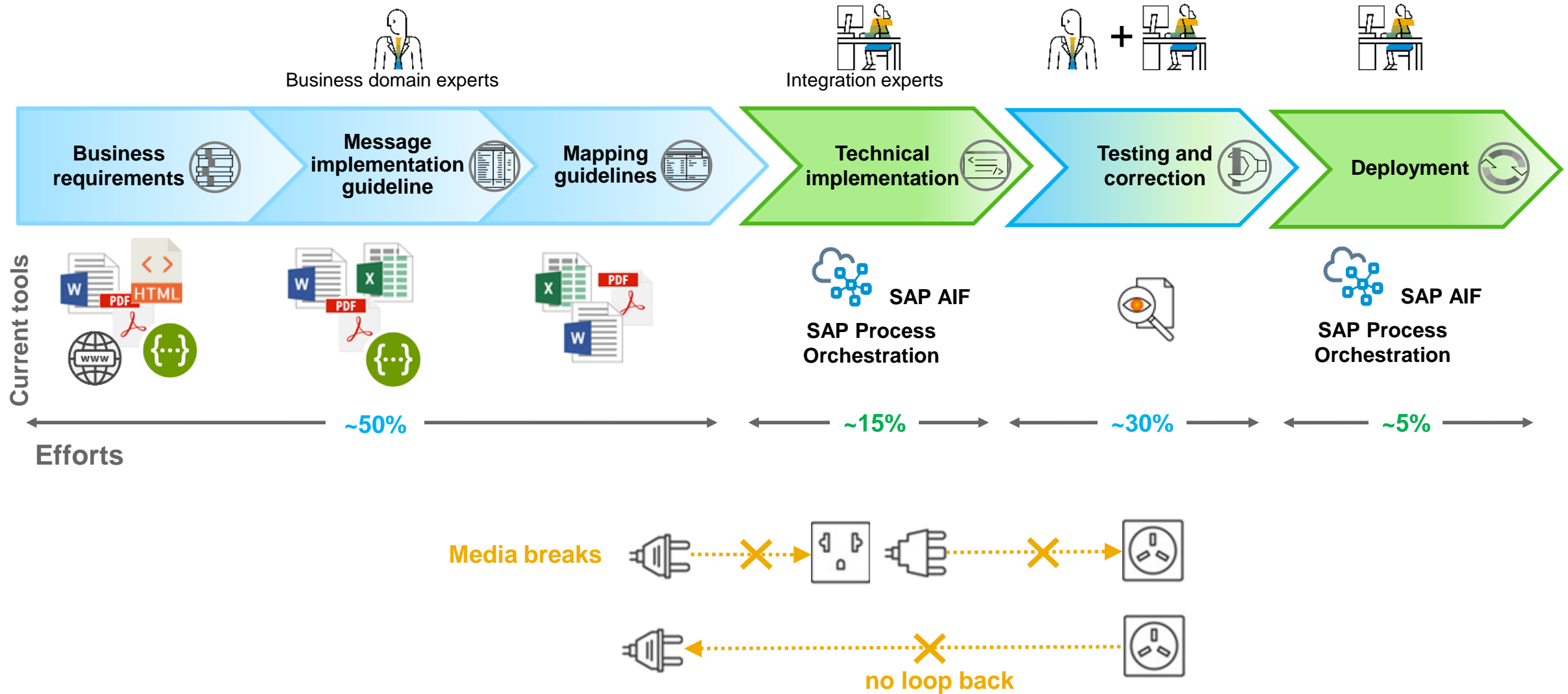
Distributio..

removeSUPPR..

removeConte..

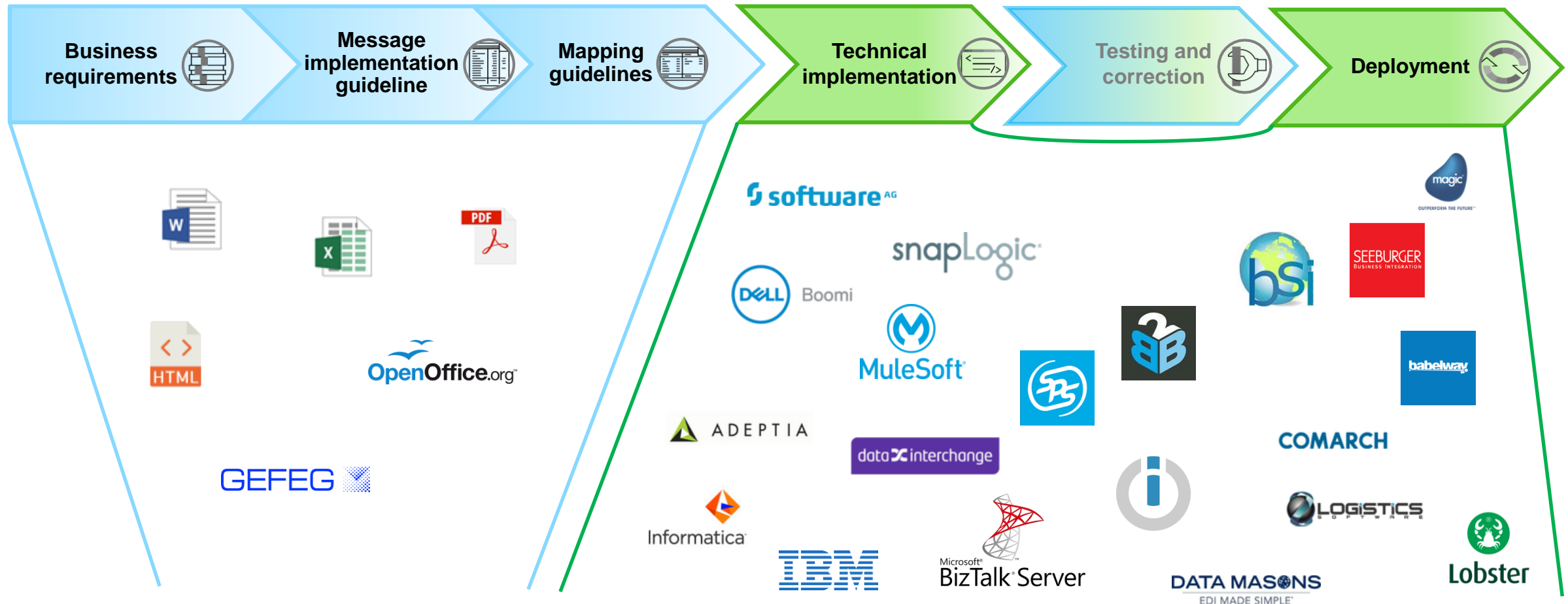
Complex function, because of different representation of semantics

# Typical end-to-end flow for building integration content



# Tools for end-to-end flow steps

Most middleware systems just focus on technical implementations and deployment



# Available information of type systems

- Available on different locations/systems
- Different media types (pdf, html, doc, ...)
- Different level of detail
- Several documents for complete understanding necessary
- Available in non-/semi-structured formats
- Some type systems have fees
- Message structures too complex (< 4 billion different semantic expressions)

The collage consists of six screenshots arranged in a grid-like fashion, overlapping slightly. The top-left screenshot shows the UNECE website with a sidebar menu and a main content area titled '2011-Present'. The top-middle screenshot is a 'Develop IDoc Types: Initial Screen' window showing a table with columns 'Basic Type' and 'Description'. The top-right screenshot is the 'ASC X12 Store' website, displaying a list of products with prices and purchase buttons. The bottom-left screenshot is the 'SAP API Business Hub' search results page for 'Invoices', showing various API endpoints and their descriptions. The bottom-middle screenshot is the 'ISO 3166' website, providing information about country codes and how to access the standards. The bottom-right screenshot is the 'SAP Account Management' interface, showing a table of account types with columns for 'Mag ID', 'Message Name', 'SO', 'Submitting Organization', 'Instances', and 'Mag ID Request'.



# Message implementation guideline (MIG)

Required for implementation of a “standard”  
**message interface** based on a message  
definition of a type system specifying

Scope, context and usage instructions

- Relevant required and optional elements
- Properties per element
- Unambiguous business meaning per element
- Required code lists and code values
- Dependencies and conditions across elements
- Constraints, validation rules and boundary conditions

5.5.2 InvoicePartner

Attribute	Description	Notes
Contact role="shipTo"		ShipTo info must be sent here or at the line level.
Name	Sold To Company Name (Customer site or plant). Free-form name.	
PostalAddress	<Street> <City> <State> <PostalCode> <Country>	
Contact role="billTo"		Optional
addressID	Bill To addressID	Optional

5.5.2 InvoiceDetails

Attribute	Description	Notes
Quantity	Supplier defined sequence number for the current invoice line item.	Required. Must be unique across all invoice lines within an invoice.
Quantity	The quantity being invoiced for the line item.	Required. Quantity must be provided with a quantity < B and a list Price < B.
Item	Item	Required
Item	Item	Required

5.5.2.1 InvoiceDetailsShipping

Ship to, bill to, and optionally the bill to bill to is not at the header. Use the UNEDIFACT element InvoiceDetailsShipping. Ship to information is not applicable to services invoices.

GLOBAL INVOICE AP VERSION 2

UNEDIFACT Message: Segment details

Name	Segment	St Format	SI Format	Use / Remarks
NAD	Party identification details	C	O	Required
3036	Party identification details	M an 35	M an 35	Required
1331	Code list identification code	C an 17	N	Required
3055	Code list responsible agency code	C an 3	C an 3	Required

## Mapping between source and target message interface

- STI Mapping Guide - Svefastakt 1.0 to EN 16931-1 - version 1.2.pdf - Adobe Reader**

CEN	Tree and Business terms	Svefastakt 1.0 Usage	Mapping to EN 16931-1 (and PEPPOL BIS Billing 3.0)
1.1	doc:PartyName	Supplier name	EN 81: doc:PartyName
1.2	doc:Name	UAT requirement no. 5	EN 81: doc:PartyName
1.3	doc:Address	Supplier address	EN 81: doc:PartyName
1.4	doc:GLN	Address identifier	EN 81: doc:PartyName
1.5	doc:PostBox	Post box	EN 81: doc:PartyName
1.6	doc:StreetName	Street address	EN 81: doc:PartyName

**Mapping PEPPOL Doc - Svefastakt 1.0 to EN 16931-1 - version 1.2.pdf - Adobe Reader**

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1.5	doc:PostBox	Post box	EN 81: doc:PartyName
1.6	doc:StreetName	Street address	EN 81: doc:PartyName

# Every standard interface must be customized

## Example

An IDoc purchase order has

- 720 data elements
- 60 code lists with 4,000–5,000 code values
- <5% of these data elements, code lists, and code values are required per implementation
- But **which** one?

Customization means answering a lot of further questions, such as:

Which elements are required?

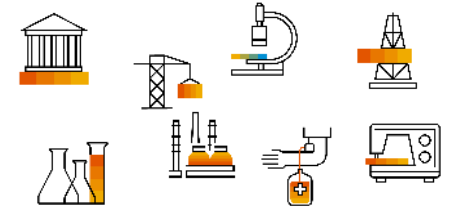
What is the exact meaning?

What are the constraints and conditions of this element?

Are the occurrences correct? Is this element mandatory?

ORDERS05	1..1
IDOC	1..1
@BEGIN	1..1
EDL_DC40	1..1
@SEGMENT	1..1
TABNAM	1..1
MANDT	0..1
DOCNUM	0..1
DOCREL	0..1
STATUS	0..1
DIRECT	1..1
OUTMOD	0..1
EXPRS	0..1
TEST	0..1
IDOC TYP	1..1
GIM TYP	0..1
MESTYP	1..1
MESCOD	0..1
MESFCT	0..1
STD	0..1
STDVRS	0..1
STDMES	0..1
SNDPOR	1..1
SNDPRT	1..1
SNDPFC	0..1
SNDP RN	1..1
SNDSAD	0..1
SNDLAD	0..1

## Influencing factors Industries



## Products and services



## Countries and laws



Typical view of an IDoc interface



# Improve it with the Integration Advisor



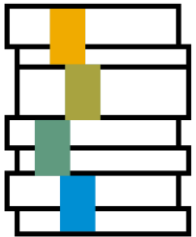


# SAP Cloud Platform Integration Advisor

## Main components

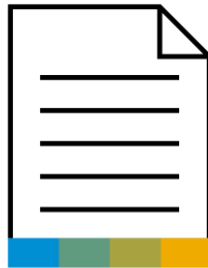
### Library of Type Systems

library of predefined/standardized reusable data types



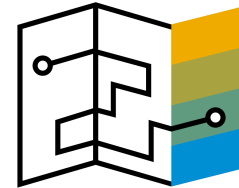
### Message Implementation Guideline (MIGs)

functional specification describing the (source or target) structure of the customized interface



### Mapping Guidelines (MAGs)

Specification of a mapping between a source and target MIG



### Runtime Artifacts

Deployable scripts and schemas



# SAP Cloud Platform Integration Advisor

## Introduction to type systems

A type system has a library of predefined/standardized reusable data types that follow a common syntax and methodology for modeling, naming and structuring

A type system could be a B2B or A2A library based on a specific syntax representation such as XML or JSON

Typical organizations are standardization bodies such as ISO, United Nations, ASC, etc. or software vendors like SAP SE



UN/CEFACT



UN/EDIFACT



# SAP Cloud Platform Integration Advisor

## Content of a Type System

The library of type systems shows a collection of available B2B or A2A type systems in a central place, including all the necessary information for creating and maintaining your customized interfaces

For each type system, you will find the following components:



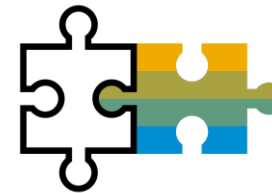
**Versions**



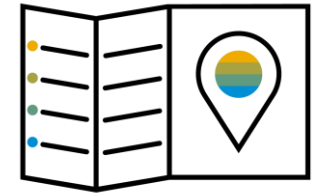
**Messages**



**Complex Types**



**Simple Types**



**Codelists**

# **SAP Cloud Platform Integration Advisor**

**easily create your Message Implementation Guideline (MIG)**

**1**

**Select the  
required type  
system**

**2**

**Select the  
required version**

**3**

**Select the  
required  
message type**  
  
**Or alternatively  
import a  
customized  
structure (xsd  
Format)**

**4**

**Upload a  
Payload  
(optional)**

**5**

**Provide general  
information,  
choose the  
direction & set  
the business  
context**

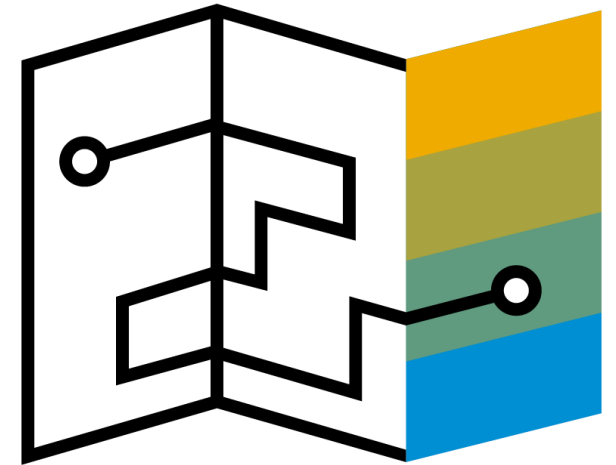


# SAP Cloud Platform Integration Advisor

## What is a Mapping Guideline?

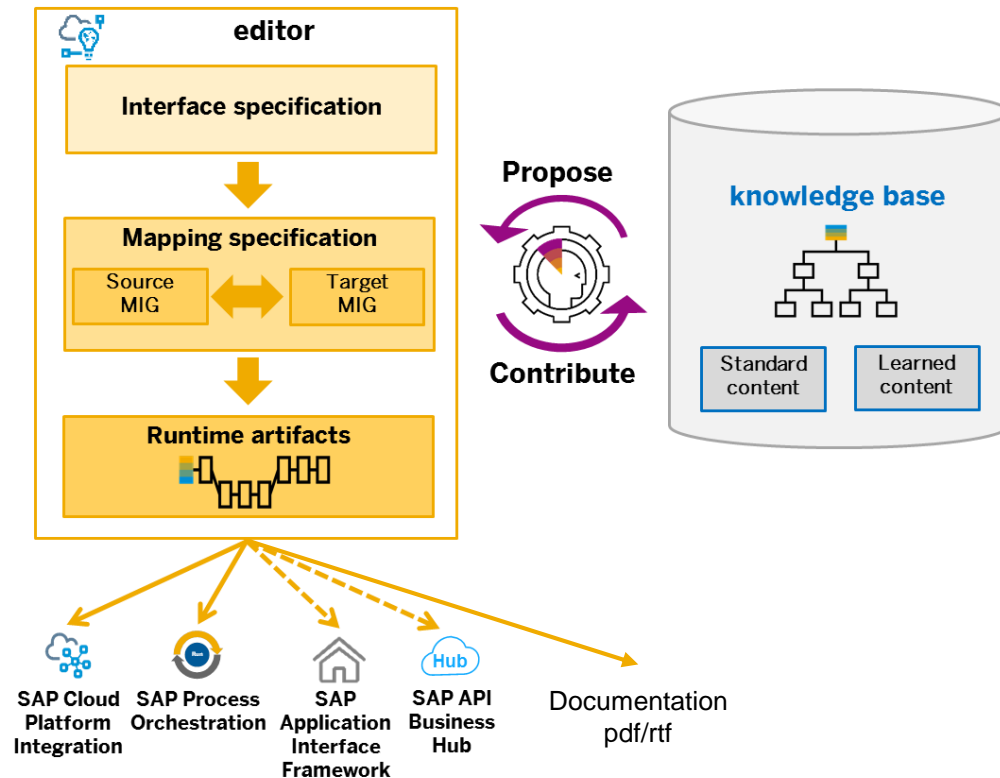
A Mapping Guideline (MAG) is used to create a complete **mapping at the semantic level** that covers the aspects, constraints, and parameters from the source and target Message Implementation Guidelines (MIG)

These can be used for internal purpose or can be shared with trading partners as proposal or a reference guideline



# SAP Cloud Platform Integration Advisor

How does all the pieces work together



## Crowdsourcing capabilities for business oriented interfaces and mappings

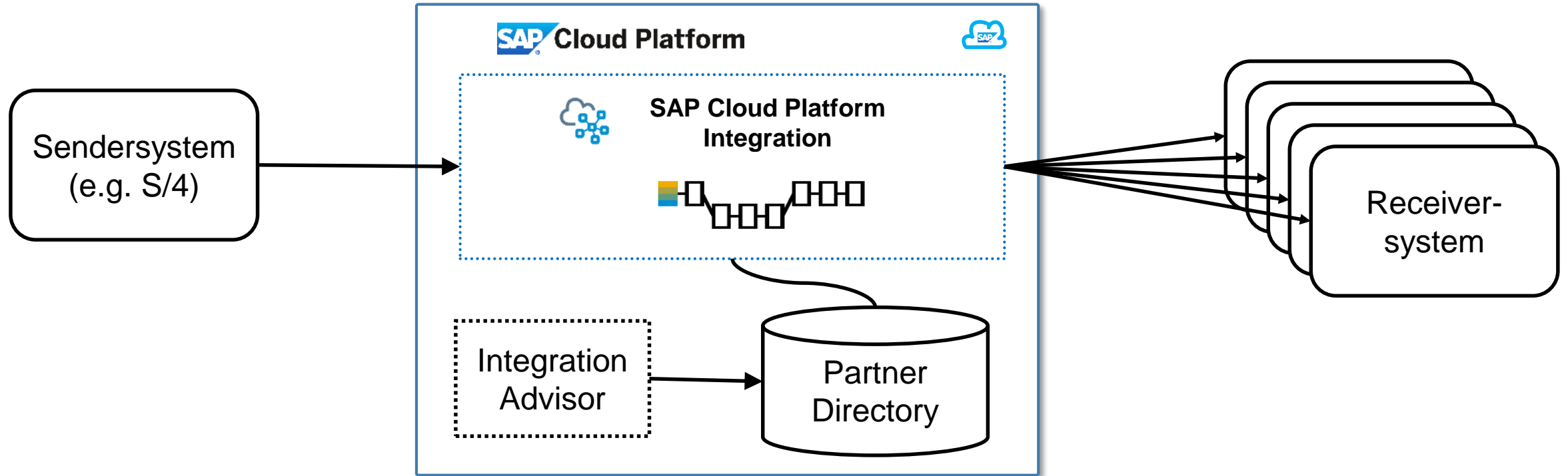
- **Machine learning** approach that helps you to get out-of-the-box proposals ready to start your integration projects without the need for deep domain knowledge and reduces your efforts by 60% or more
- Central integration knowledge base for integration wherein all **crowdsource based learnings** from interface customizations and mappings are stored
  - with international and SAP standards
- **Automatic generation** of documentation and runtime artifacts
- **Community collaboration** for creating and maintaining tailored integration interfaces and mappings

This functionality is unique in the market and protected by various patents held by SAP



# SAP Cloud Platform Integration Advisor

simplify projects by using the Trading Partner Management



One integration flow for many receivers

- One connection from the sender system
- Mapping, validation coming from the partner directory

# Tight connection to SAP's integration and orchestration portfolio



## Integration Advisor

Central and intelligent content management system for creating and maintaining integration content, for



## SAP Cloud Platform Integration

- Gets content via automatic push service
- Stores content in Partner Directory
- Enables dynamic invocation of content by integration flows



## SAP Process Orchestration

- Supports IA's integration content
- In hybrid runtime environment starting with version 7.5
- In JAVA based runtime starting with version 7.3



## SAP API Business Hub

- Embedded IA editing capabilities
- Enables direct customization/extensions of provided APIs

Future 1.)



## SAP Application Interface Framework

- Gets validation rules, constraints, code value mappings and data conversion rules
- Pushes updates to IA

Future 1.)

1.) This is the current state of planning and may be changed by SAP at any time without notice.



# Recent Innovations



# SAP Cloud Platform Integration Advisor

## shared functions

- Mapping functions are often used in the same way
- Increases reuse
- Reuse inside the MAG later inside the tenant
- built-in date/time conversion

The screenshot displays the SAP Cloud Platform Integration Advisor interface. The top navigation bar includes 'Mapping Guidelines /', 'Save', 'Simulate', 'Proposal', 'Cancel', and 'Version: 1.0'. The main title is 'Mapping INT383-Exercise 1 Source MIG to INT383-Exercise1-00'. Below this, the 'Shared Code (1)' tab is selected, and the 'Function' tab is active in the bottom pane.

The 'Definition' section shows the 'Scope' as 'Shared Code' (selected) with a 'ConcatWithComma' dropdown and an 'Edit' button. The 'Shared XSLT Code' section contains the following XSLT snippet:

```
<xsl:variable name="name" select="$nodes_in/nodes_in_1[1]"/>
<xsl:variable name="address" select="$nodes_in/nodes_in_2[1]"/>
<xsl:value-of select="($name, $address)" separator=","/>
```

The bottom pane also includes a 'Confidential Function Content' checkbox and a pagination bar.

# SAP Cloud Platform Integration Advisor

## MIG comparison

- Compare MIGs to identify similarities and differences
- Can compare 2 to n MIGs
- Can compare different versions of the same MIG but also different MIGs

The screenshot displays the SAP Cloud Platform Integration Advisor interface. The left sidebar shows two artifacts for comparison: 'Automotive Purchase Order Interface' (Version: 2.0 (Draft), Message: ORDERS (D.01B S3)) and 'Automotive Purchase Order Interface' (Version: 1.0 (Active), Message: ORDERS (D.01B S3)). The main area shows a comparison table with columns for 'Nodes', 'A', and 'B'. The table is filtered to show 'Nodes with Different Values'. The nodes listed are 'ORDERS', 'UNH', 'S010', '0070', and '0073'. The comparison results are as follows:

Nodes	A	B
ORDERS	✓	✓
UNH	✓	✓
S010	✓	✗
0070	✓	✗
0073	✓	✗

A tooltip 'Not Present' is visible next to the '✗' in the 'B' column for the '0073' node.

# SAP Cloud Platform Integration Advisor

## exchange MIG version in MAG

- As MIGs can exist in different versions it is now possible to exchange the used version in the MAG

The screenshot shows the SAP Cloud Platform Integration Advisor interface. The main title is 'Mapping Guidelines / Mapping IA Webinar Source IDOC to Automotive Purchase Order Interface'. The version is 1.0. The status is Draft. The source MIG is 'IA Webinar Source IDOC' and the target MIG is 'Automotive Purchase Order Interface'. The source version is 1.0 (Draft) and the target version is 2.0 (Draft). The message type is 'ORDERS.ORDERS05 - Pu' and the type system is 'IDoc'. The type system version is 'S4HANA 1709'. The documentation section includes a summary and a definition area with a rich text editor.

**Other MIG Versions**

Version	Status	Modified On	Modified By	Name
1.0	Active	13 Nov. 2018 07:18	I331104	Automotive Purchase Order Interface

Change Version

# SAP Cloud Platform Integration Advisor

## code value mapping

- Code value mappings are often used in the same way
- Increases reuse
- Makes changes to a value mapping easier

The screenshot displays the SAP Cloud Platform Integration Advisor interface. The main window shows a mapping guideline titled "Mapping IA Webinar Source IDOC to Webinar Automotive PO EDIFACT" with version 1.0. The "Mapping" tab is active, showing a tree structure of source and target data elements. A dialog box titled "Select a Global Code Value Mapping" is open, displaying a list of mappings. The selected mapping is "Value Mapping from ISO\_CodelistsAndSchemes/ISO\_3166-1 to ISO\_CodelistsAndSchemes/ISO\_3166-1". Below the dialog, a table shows the source code values and their corresponding target code values.

Source Code Value	Definition	Target Code Value
AD - Andorra		AD - Andorra
AE - United Arab Emirates		AE - United Arab Emirates
AF - Afghanistan		AF - Afghanistan
AG - Antigua and Barbuda		none
AI - Anguilla		none
AL - Albania		none
AM - Armenia		none



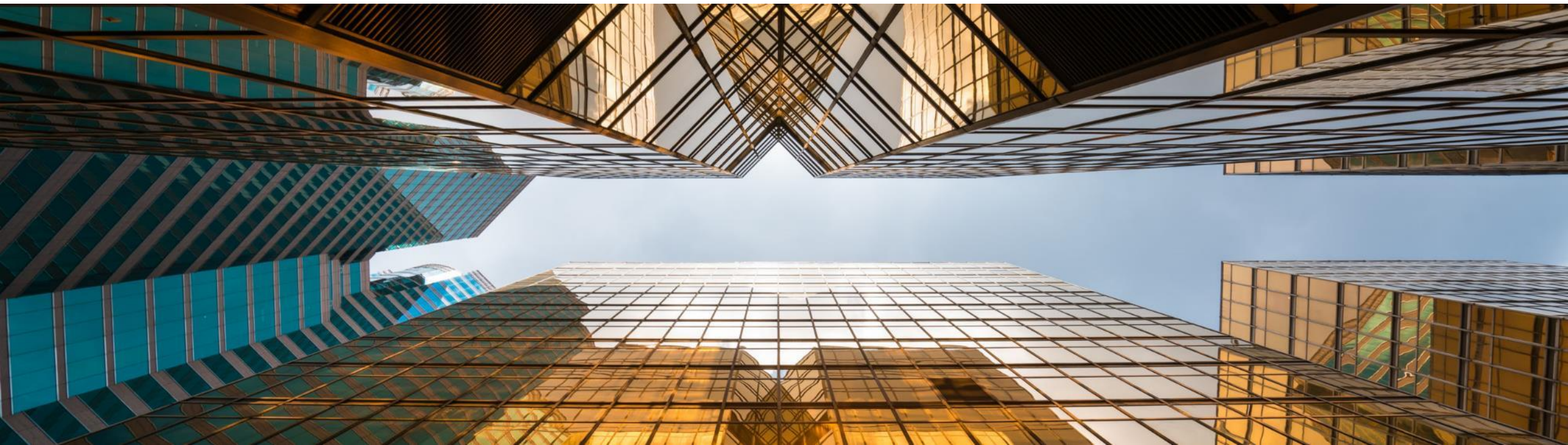
# SAP Cloud Platform Integration Advisor

## Custom Messages

- Define messages outside a typesystem
- Use IA for every message

The screenshot shows the SAP Cloud Platform Integration Advisor interface. A modal dialog titled 'Create Custom Message' is open, displaying a three-step process: 1. XSD File, 2. Messages, and 3. Message Creation. The first step is active. It features a text input field labeled 'XSD-File: \*' and a 'Browse...' button. The background interface includes a sidebar with navigation options like 'Homepage', 'Library of Type', 'Library of Custom', 'Message Implementation', 'Mapping Guide', and 'Profile'. The top bar shows the SAP logo and the application name. The bottom bar has a 'Legal' link.

# Value Proposition and Roadmap



# SAP Cloud Platform Integration Advisor

## Value proposition

### Intelligent tool acting as an accelerator for implementation and enhancements of integration scenarios

- Content management system with complete application-to-application, business-to-business library content
- Embedded proposal service based on continuous deep learning
- Documentation and runtime artifact generation
- Embedded simulation service
- Content governance features
- Accelerated interface enhancements for intelligent enterprise

Reduces integration scenario implementation time and effort by 60% or greater



**This functionality is unique in the market and protected by approximately 50 patents held by SAP.**

# Join the new era of integration content building

The aim is to commoditize the integration content knowledge

- Crowdsourced machine learning
- Collaborative understanding

This facilitates

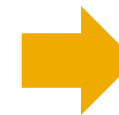
- Higher flexibility
- Lower cost for implementation
- Better transparency

For definition, review, and deploy of interfaces and mappings in end-to-end integration scenarios



Don't miss the chance to switch the speed of your integration projects

From:



To:



=



Integration  
Advisor

# SAP Cloud Platform Integration Advisor

Product road map overview

<https://roadmaps.sap.com/board?q=integration%20advisor&range=CURRENT-LAST#Q3%202020>

## Customer Influence and Adoption

<https://influence.sap.com/sap/ino/#/campaign/2282>





**Demo**

# Thank you.

Contact information:

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Product Manager SAP Cloud Platform Integration Suite

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