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Current Situation

Integration Advisor

Roadmap
Reality: Integrate APIs/interfaces in heterogeneous landscapes

Each interface has its own complexity
Flow of invoices in Intelligent Enterprise process “Procure-to-Pay”

* Every business partner has their own customized message interface, usually based on different B2B standards
Exchange between applications via middleware

SAP Cloud Platform Integration

One integration flow per combination and variation
- Combination = between to 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

Meaning?

Why mapped?

Why not mapped?

Complex function, because of different representation of semantics
Typical end-to-end flow for building integration content

1. **Business requirements**
   - Business domain experts
   - Current tools: PDF, HTML
   - Efforts: ~50%

2. **Message implementation guideline**
   - Current tools: PDF
   - Efforts: ~50%

3. **Mapping guidelines**
   - Current tools: PDF
   - Efforts: ~15%

4. **Technical implementation**
   - Current tools: SAP AIF, SAP Process Orchestration
   - Efforts: ~30%

5. **Testing and correction**
   - Current tools: SAP AIF
   - Efforts: ~5%

6. **Deployment**
   - Current tools: SAP AIF, SAP Process Orchestration

**Media breaks**
- no loop back
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)
Type system information often spread over various documents

- Available as PDFs
- Several documents for complete understanding necessary
- Message structures complex:
  - ~200 message types
  - ~400 complex and ~700 simple data types
  - ~300 code list

→ ~4 billion different semantic expressions possible

Example: message definition INVOIC of type system EDIFACT
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

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<td>Boundary Conditions</td>
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Anonymized examples
Mapping guidelines (MAGs)

**Mapping** between source and target message interface

- Which elements have to be mapped in order to fulfill same business meaning and requirements?
- Which elements have to be additionally involved to convey the requirements completely?
- Are there any format or processing instructions such as splitting, assembling of values, or changing the format?
- How the code values have to be mapped?
- Are there any instructions for restructuring element groups?
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?

Influencing factors

- Industries
- Products and services
- Countries and laws

Typical view of an IDoc interface
Business requirements
Steps of information collection to unambiguously understand the requirements of business messages

Scope identification

Business context clarification

Message identification

Types of system selection

Type system, version, message, code values

Example payloads

Discussion with business domain and integrator experts

Analyze if selection fits requirements

Review of source code

Business context clarification

Countries & Laws

Industries

Products & Services

Procure to Pay

A2A or B2B

E-Invoicing

Invoice

Purchase Order

Despatch Advice

A2A or B2B

Procure to Pay

E-Invoicing

ISO

UN/EDIFACT

XML

SAP

IBCS

GS1

* Type system & version & message & code values
SAP Cloud Platform Integration Advisor

Intelligent content management system for A2A and B2B scenarios

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 *crowdsourced 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
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

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

1.) This is the current state of planning and may be changed by SAP at any time without notice.
Integration Content Advisor – Future Capabilities

Overall:
- Delta comparison
- Faceted search
- Statistical and analytical information

Type Systems
- Further A2A and B2B libraries
- Proprietary structures

MIG Editor
- Multi-message Support
- Graphical constraint language
- Complex patterns
- Example payload upload
- Intelligent extension approach
- Calculation/migration of MIGs by importing from
  - Meta-Schemas
  - Payloads

MAG Editor
- Envelope parameters
- Complex pattern mapping
- Source sort tree approach
- Graphical function editor
- Multi mappings across several APIs
- Toggle feature for more readable representation
- MIG editing capabilities
- Calculation/migration of MAGs by importing of mmaps + XSLTs
IA value proposition

Intelligent tool and 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: [Image of bus and horse]  =  To: [Integration Advisor]
Thank you.

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