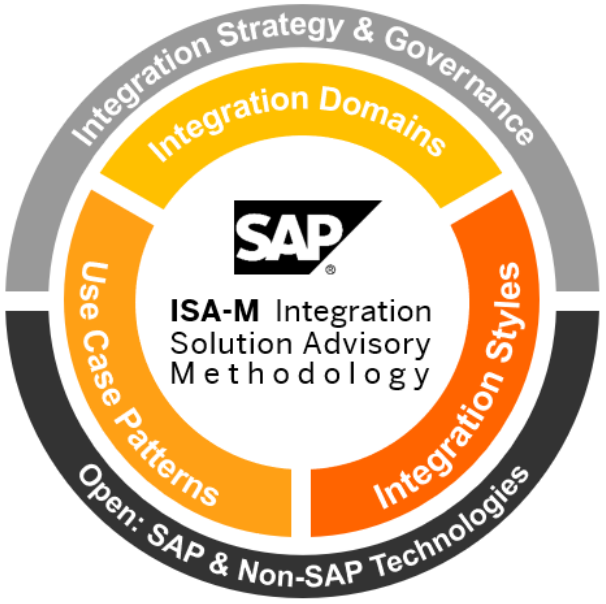
ISA-M Template

Derive Integration Guidelines for Your Organization



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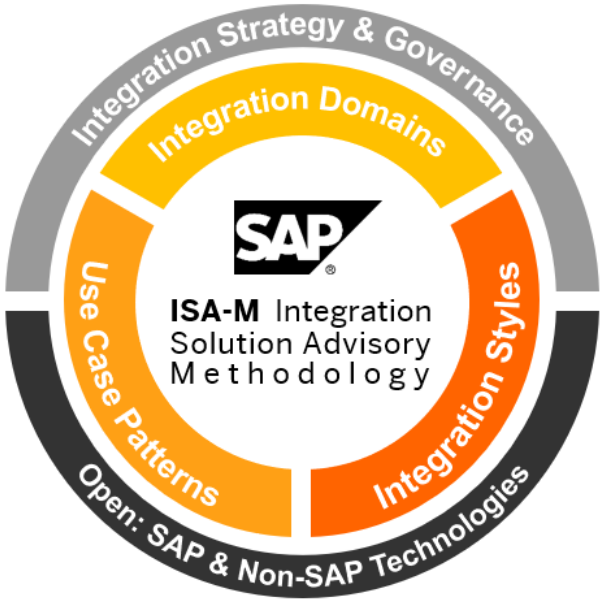
Further information can be found here.

ISA-M Integration Solution Advisory Methodology

ISA-M Template

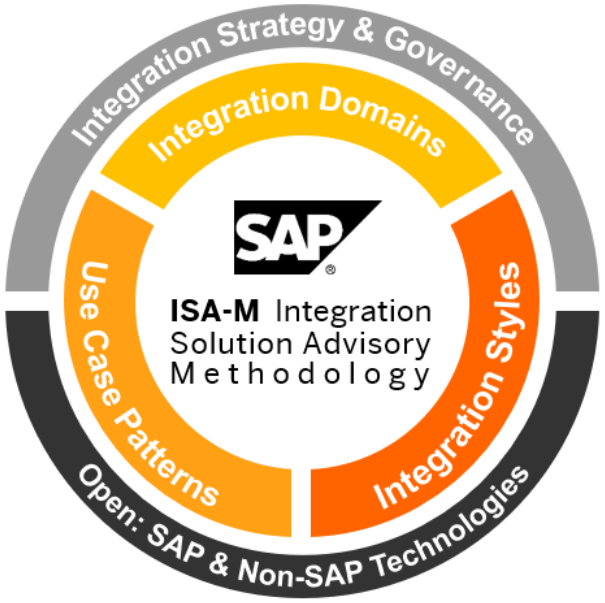
Overview



1	2	3	4	5	6	7
Overview & Terms of Use	Integration Roles	Integration Domains	Integration Styles & Use Cases Patterns	Technology Mapping	Interface Assessment	CIO Guides

ISA-M Template

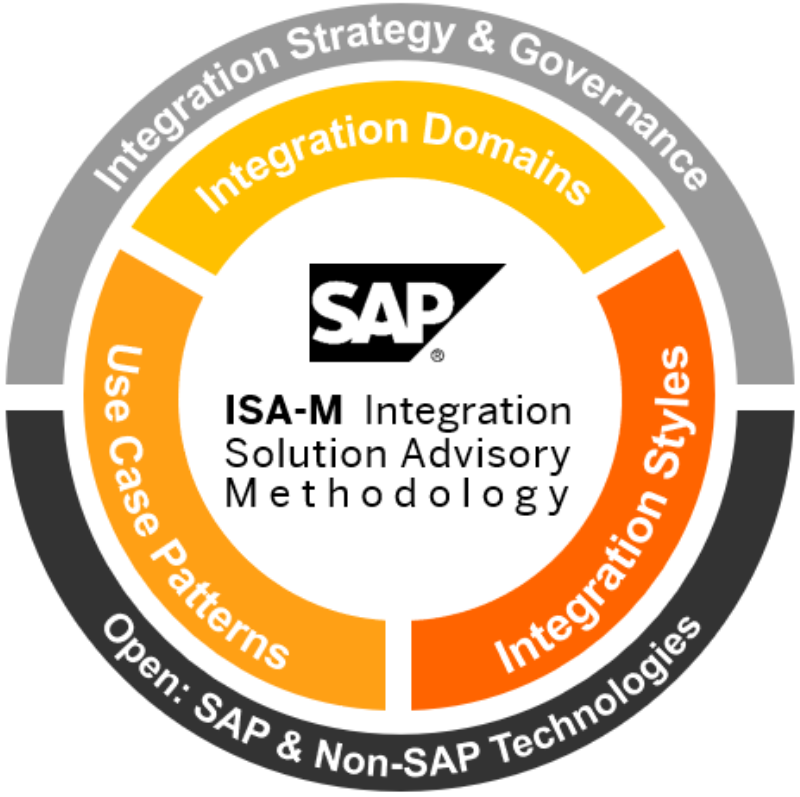
Overview



1	2	3	4	5	6	7
Overview & Terms of Use	Integration Roles	Integration Domains	Integration Styles & Use Cases Patterns	Technology Mapping	Interface Assessment	CIO Guides

Integration Solution Advisory Methodology (ISA-M)

Simplify Integration by a Systematic Integration Approach



Overview

- Helps enterprise architects to shape their integration strategy
- Collection of typical integration styles and patterns
- Mapping to integration services (based on customer context)
- Open to SAP and Non-SAP integration technologies
- Target Group: Enterprise Architects / Integration Architects

ISA-M Template for Use by Customers and Partners (*)

- Template to define customer-specific integration guidelines
- Successfully adopted in multiple global organizations
- Reusable within organizations, projects or services
- Can be adapted/extended to specific needs

* Customers and partners must comply with the Terms of Use (“TOU”), see slide 5

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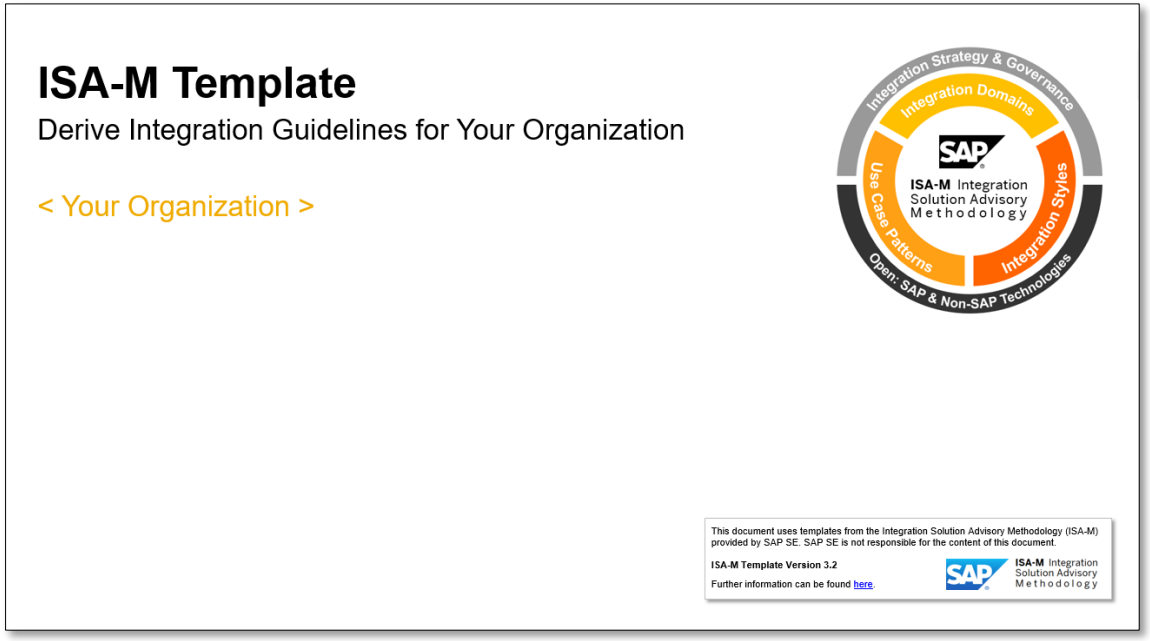
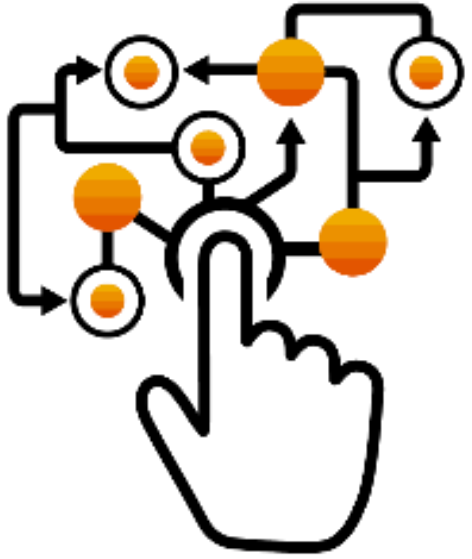
ISA-M Integration Solution Advisory Methodology

ISA-M Template

Adapt and Customize To Your Specific Needs





Explanation — This element is used to introduce and describe concepts of the methodology and/or related product information.

How To Use — This element is used to give additional information on how to apply the ISA-M template to your customer context.

ISA-M Template

Document History

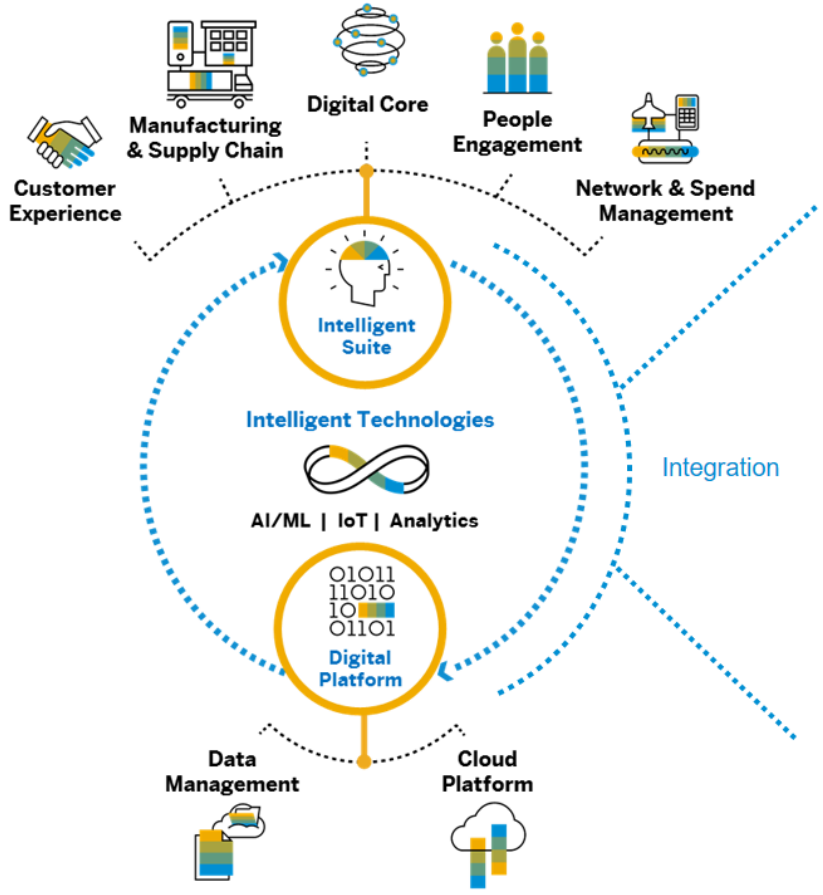
Version	Date	Changes
3.0	September, 2016	• Updated description of integration domains • Updated descriptions of integration styles • New category ‘Enabling Services’ to capture integration related technologies • Updated descriptions of reference use case patterns • Updated decision table templates
3.1	March, 2017	• Updated template to reflect naming changes in SAP Cloud Platform

3.2	October, 2018	• Updated descriptions and examples for all integration styles, use case patterns and sample integration technology mappings
		• Added information on SAP’s integration strategy for the intelligent enterprise and the role of ISA-M (slide 8-9)
		• Added overview on ISA-M use cases for enterprise architects (slide 11-12)
		• Added ‘How to Use’ and ‘Explanations’ to slides to give additional information on how ISA-M can be adapted by customers
		• Added typical integration roles and their responsibilities (slide 15-17)
		• Updated examples for integration technology mappings including links to further product information (slide 32-74)
		• Added additional guidance based on integration patterns:
		  • Integration Layer vs. Application Layer (slide 44)
		  • Integration Layer vs. API Management Layer (slide 73)
		• Added section and links for CIO Guides (slide 81-82)
		• Added integration domain (slide 19)
		  • Business-to-Government (B2G)
		• Renamed ‘Integration Solution Advisor Methodology’ to ‘Integration Solution Advisory Methodology’
		• Renamed Integration Styles to more ‘classical names’ (all slides)
		  • ‘Process Invocation’ to ‘Process Integration’
		  • ‘Data Movement’ to “Data Integration”
		  • ‘User-Centric Consumption to ‘User Integration’
		  • ‘Enabling Services’ to ‘Cross Use Cases’
		• Added new use case patterns (slide 30)
		  • API-Managed Integration
		  • Event-Based Integration
		  • Stream Analytics

Intelligent Enterprises are Integrated Enterprises

SAP's Integration Strategy for the Intelligent Enterprise

Overview



1

OUT-OF-THE-BOX INTEGRATION

2

OPEN INTEGRATION

3

HOLISTIC INTEGRATION

4

AI-DRIVEN INTEGRATION

Explanation

Integration is a key enabler for intelligent enterprises. SAP's integration strategy for the intelligent enterprise is based on four core principles. ISA-M complements SAP's technology portfolio by a methodology that helps enterprise architects to shape their integration strategy. ISA-M provides a holistic view on integration including all types of integration use cases needed for full E2E integration.

Intelligent Enterprises are Integrated Enterprises

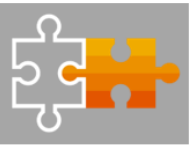
SAP's Integration Strategy for the Intelligent Enterprise

Overview

1 OUT-OF-THE-BOX INTEGRATION

SAP provides integrated E2E business processes including plug-and play integrations enabled by a standardized application- and technology portfolio.

2 OPEN INTEGRATION



SAP provides exhaustive third party integration capabilities supported by its partner ecosystem. Public API's allow any type of custom extensions.

3 HOLISTIC INTEGRATION

SAP covers all flavors of integration (Process, B2B, Data, UX, IoT).
ISA-M methodology helps customers to shape their integration strategy.

4 AI-SUPPORTED INTEGRATION

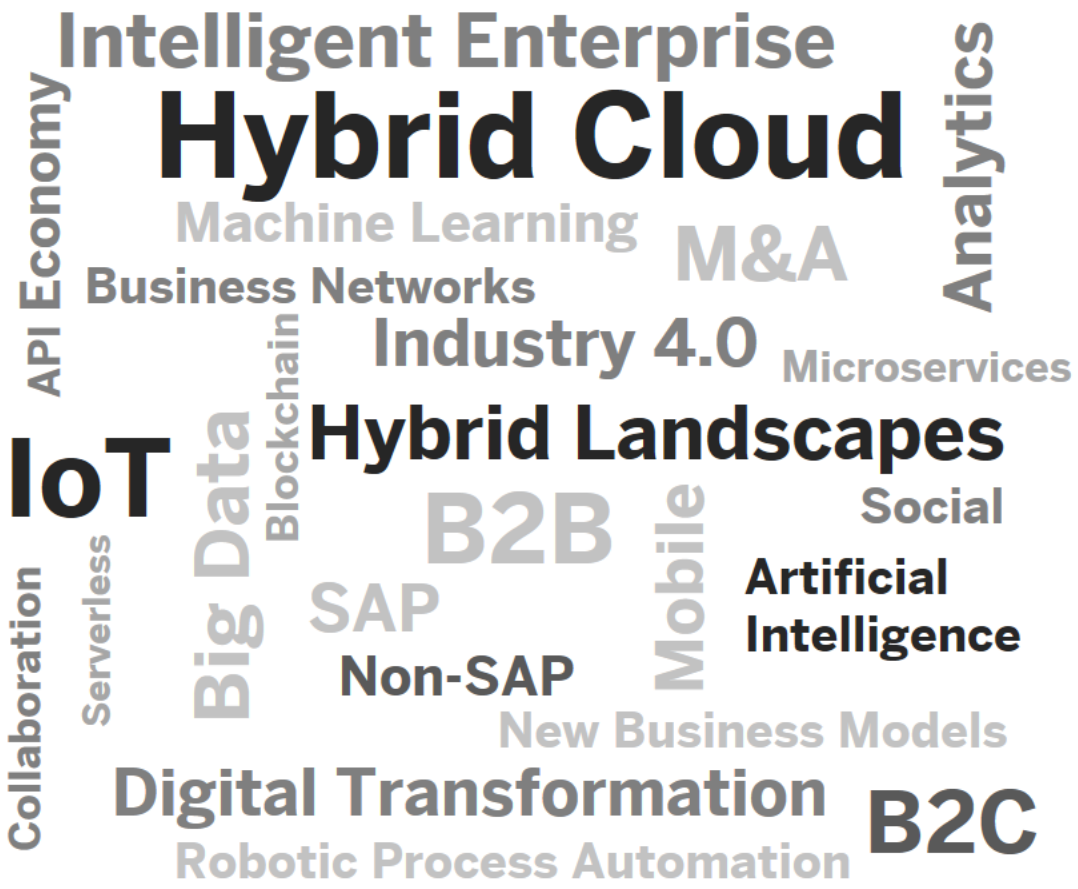
SAP is investing into simplification of the E2E integration experience.
AI techniques will be embedded into next generation services.

Explanation

ISA-M supports the holistic integration principle by providing a systematic methodology for enterprise architects to define, asses and evolve their integration architecture. It supports enterprise architects in defining integration guidelines for their organizations and allows to include SAP as well as Non-SAP integration technologies / services (depending on the customer context).

Integration Challenge for Enterprise Architects

The Increased Scope of Integration



Fast Evolving Hybrid Landscapes
How to define the integration strategy for my organization?

Hybrid Integration Platform (HIP)
When to use what integration technology/service (SAP/Non-SAP)?

Integration Governance
How to define integration guidelines for my organization?

"Through 2020, integration work will account for 50% of the time and cost of building a digital platform" — Gartner

ISA-M: Use Cases for Enterprise Architects

Simplify Integration by a Systematic Integration Approach

Overview

1	2	3
Common Terminology	**Integration Strategy Definition**	**Integration Governance & Hybrid Integration Platform**
Provide holistic view on integration (technology-agnostic)	Review your current integration architecture	Define integration guidelines for your organization
Improve communication between teams and system integrators	Define your target integration architecture	Blueprint your Hybrid Integration Platform (SAP/Non-SAP)
Establish knowledge sharing culture (best practices)	Identify future building blocks (e.g. for POCs)	Define areas for self-service integration

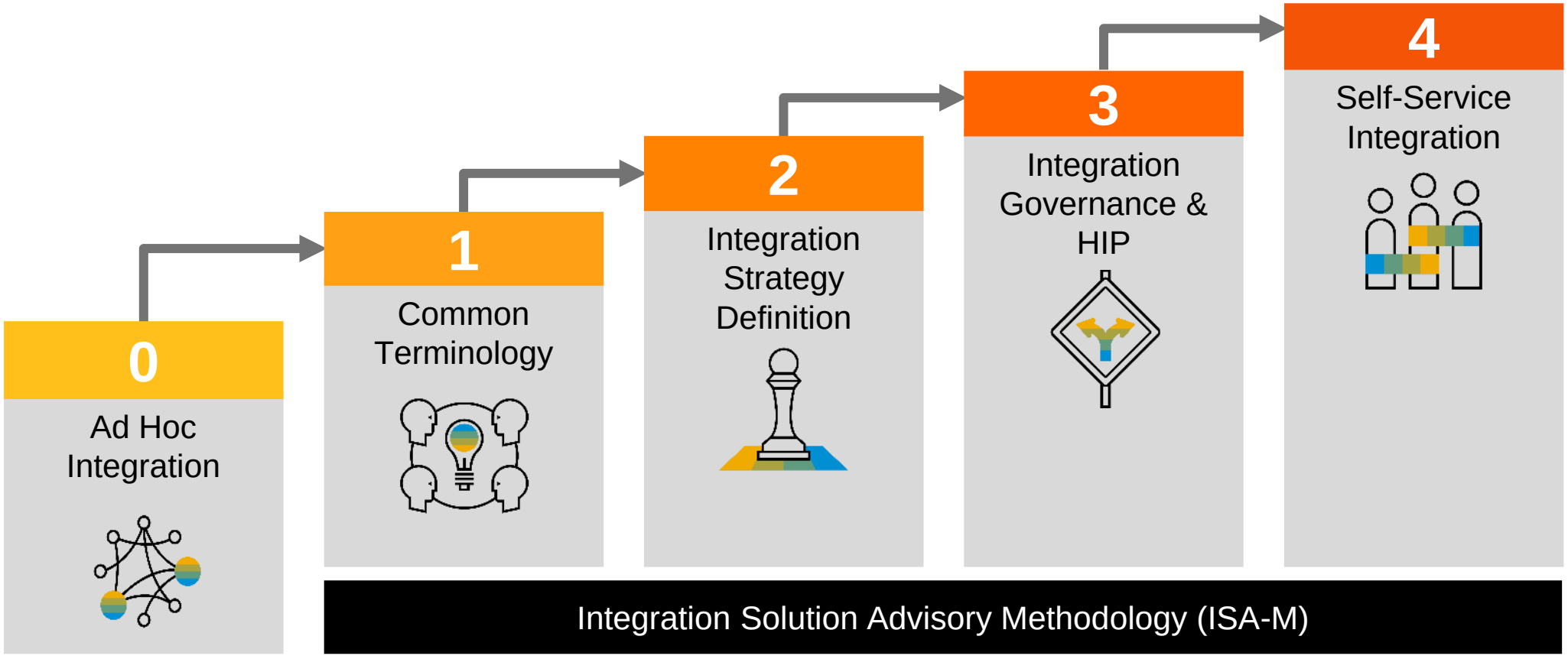
How To Use

This slide provides an overview on how ISA-M can be applied in organizations. Depending on the specific needs of your organization you can flexibly select from the possible use cases and use the ISA-M template as a starting point and adapt/extend it to your specific needs. Based on this template, you can create your customer-specific integration strategy and/or guidance document(s).

ISA-M: Increase Your Integration Maturity Level

Simplify Integration by a Systematic Integration Approach

Overview



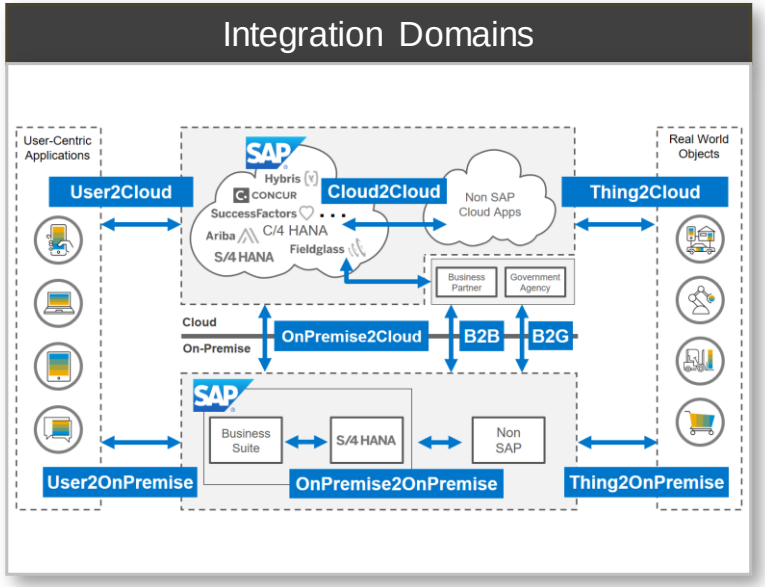
Explanation

This slide shows how you can increase your integration maturity level by moving from an ad-hoc integration practice to a more systematic way of integration. Based on established integration standards, you could also define areas for self-service integration e.g. by allowing citizen integrators to implement simple integration scenarios on their own within the context of your overall integration governance.

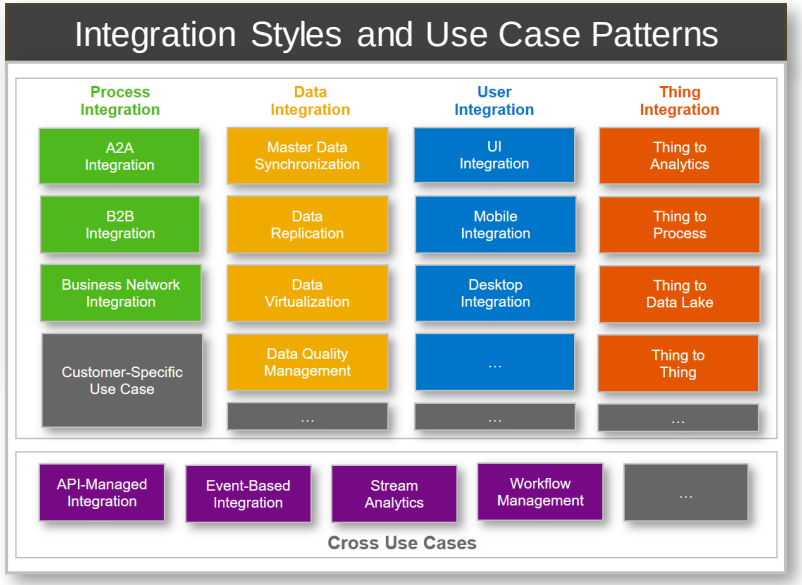
ISA-M in a Nutshell

Simplify Integration by a Systematic Integration Approach

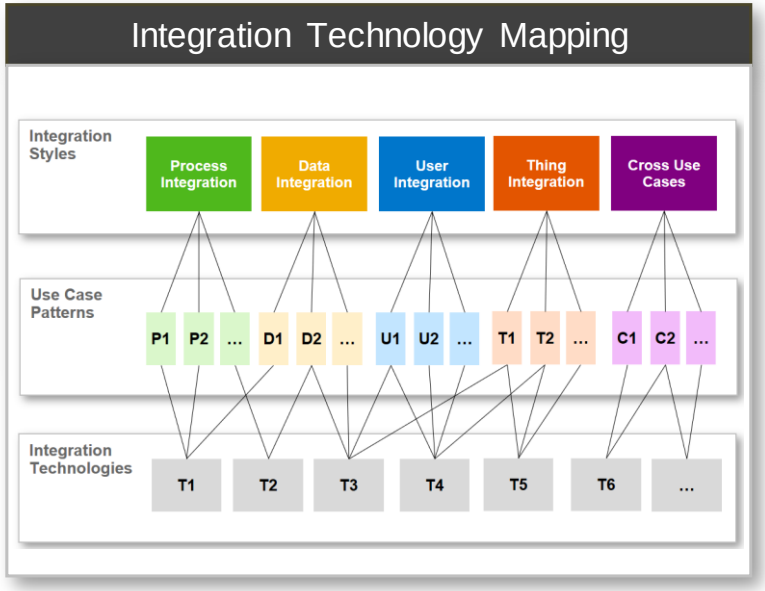
Integration Domains



Integration Styles and Use Case Patterns



Integration Technology Mapping

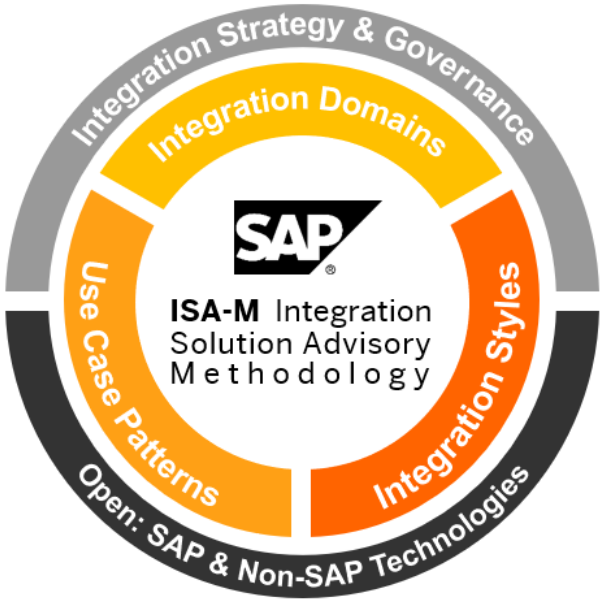


Explanation

Integration domains describe typical areas in a hybrid landscape where integration is needed. Integration styles and use case patterns comprise a set of typical, technology-agnostic integration use cases. Finally, integration styles and use cases can be mapped to integration technologies/services (SAP and/or Non-SAP) based on a given customer context.

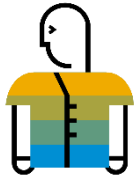
ISA-M Template

Overview

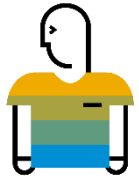


Integration Roles – Overview

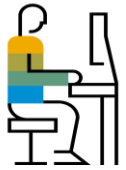
Sample Integration Roles and Responsibilities



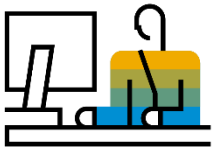
Enterprise Architect



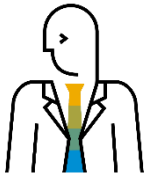
Integration Architect



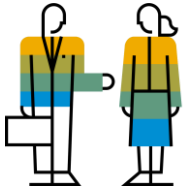
Integration Developer



Integration Administrator



Business Domain Expert



Business User

Citizen Integrator

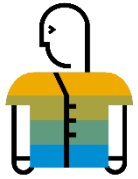
Application/API Developer

How To Use

ISA-M includes frequently used integration roles in organizations, together with their typical responsibilities and some sample activities in the context of SAP. The concrete definition of integration roles depends on your specific customer context. You can use the outlined integration roles as a starting point and adapt/extend them to your specific needs. These roles, for example, can help you to establish an integration competency center within your organization and derive areas for self-service integration (e.g. simple integration tasks covered by citizen integrators).

Integration Roles – Definitions I

Sample Integration Roles and Responsibilities



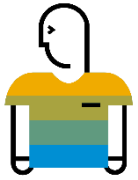
Enterprise Architect

Responsibilities

- Definition, communication, and continuous improvement of an integration reference architecture based on an overall IT strategy
- Definition of integration standards and technology selection guidelines (cross-vendor, hybrid integration platform)
- Evaluation of new integration technologies / services

Sample Tasks in SAP Context

- Definition and rollout of company-wide technology selection guidelines using the ISA-M
- Roll-out of integration standards



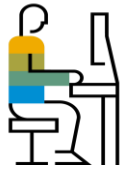
Integration Architect

Responsibilities

- Definition of technical integration architectures with a focus on specific integration technologies / services
- Definition of technical specifications for integration scenarios based on business requirements
- Definition and communication of patterns, templates, and best practices

Sample Tasks in SAP Context

- Definition of development guidelines for SAP Cloud Platform Integration or SAP Process Orchestration
- Definition of best practices for integration flows for SAP Cloud Platform Integration, for example, based on enterprise integration patterns*



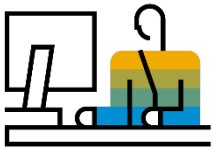
Integration Developer

Responsibilities

- Implementation and test of integration scenarios based on technical specifications
- Implementation and extension of prepackaged integration scenarios

Sample Tasks in SAP Context

- Implementation of integration flows in SAP Cloud Platform Integration or SAP Process Orchestration
- Implementation of data orchestration flows in the SAP Data Hub solution



Integration Administrator

Responsibilities

- Technical setup and operations of integration scenarios (for example, archiving or certificate management)
- Technical monitoring of interfaces, including root-cause analysis and technical error handling

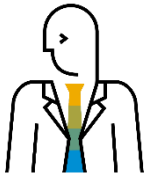
Sample Tasks in SAP Context

- Technical monitoring of messages from SAP Cloud Platform Integration in SAP Solution Manager
- Deployment of certificates in SAP Cloud Platform Integration

* Gregor Hohpe and Bobby Woolf, Enterprise Integration Patterns, 2003

Integration Roles – Definitions II

Sample Integration Roles and Responsibilities



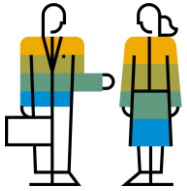
Business Domain Expert

Responsibilities

- Specification of business requirements for a specific business process domain or line of business
- Semantic definition of interface customizations and messages mapping (together with an integration architect)

Sample Tasks in SAP Context

- Definition of customized B2B interfaces and mappings in the Integration Content Advisor for SAP Cloud Platform Integration



Business User

Responsibilities

- Processing of workflow tasks
- Interacting with business applications (omni-channel access)
- Monitoring and error correction of messages in a specific business process domain or line of business

Sample Tasks in SAP Context

- Processing of workflow tasks, e.g. in SAP Cloud Platform Workflow
- Error correction, canceling, or restart of messages in the SAP Application Interface Framework as part of SAP S/4HANA or SAP Business Suite applications

Citizen Integrator

Responsibilities

- Business user with the ability to perform some integration tasks independently (self-service)
- Elimination of need for deep integration knowledge

Sample Tasks in SAP Context

- Implementation of simple integration scenarios by HR business users in the integration center of SAP SuccessFactors
- Integration of buyers and suppliers in the SAP Ariba Cloud Integration Gateway solution based on a self- service wizard approach

Application/API Developer

Responsibilities

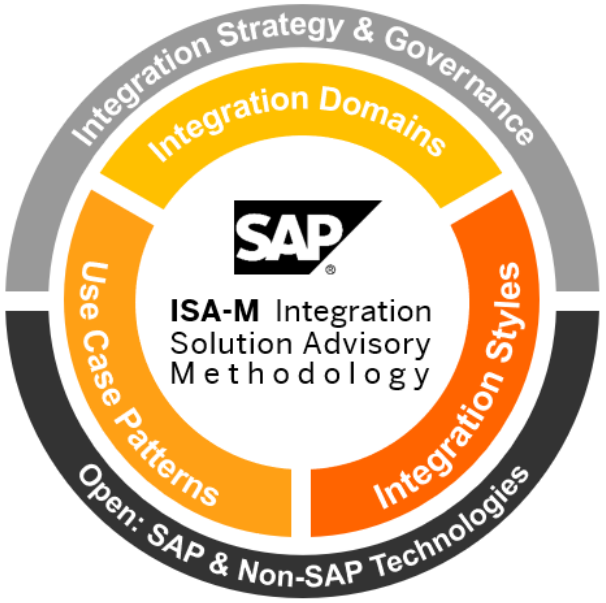
- Customization of enterprise applications
- Provisioning of customer-specific APIs
- Development of extension applications or mobile applications

Sample Tasks in SAP Context

- Customization of applications with SAP S/4HANA
- Development of extension applications on SAP Cloud Platform
- Development of innovate, API-based applications (e.g. for fast innovation cycles, bimodal IT)

ISA-M Template

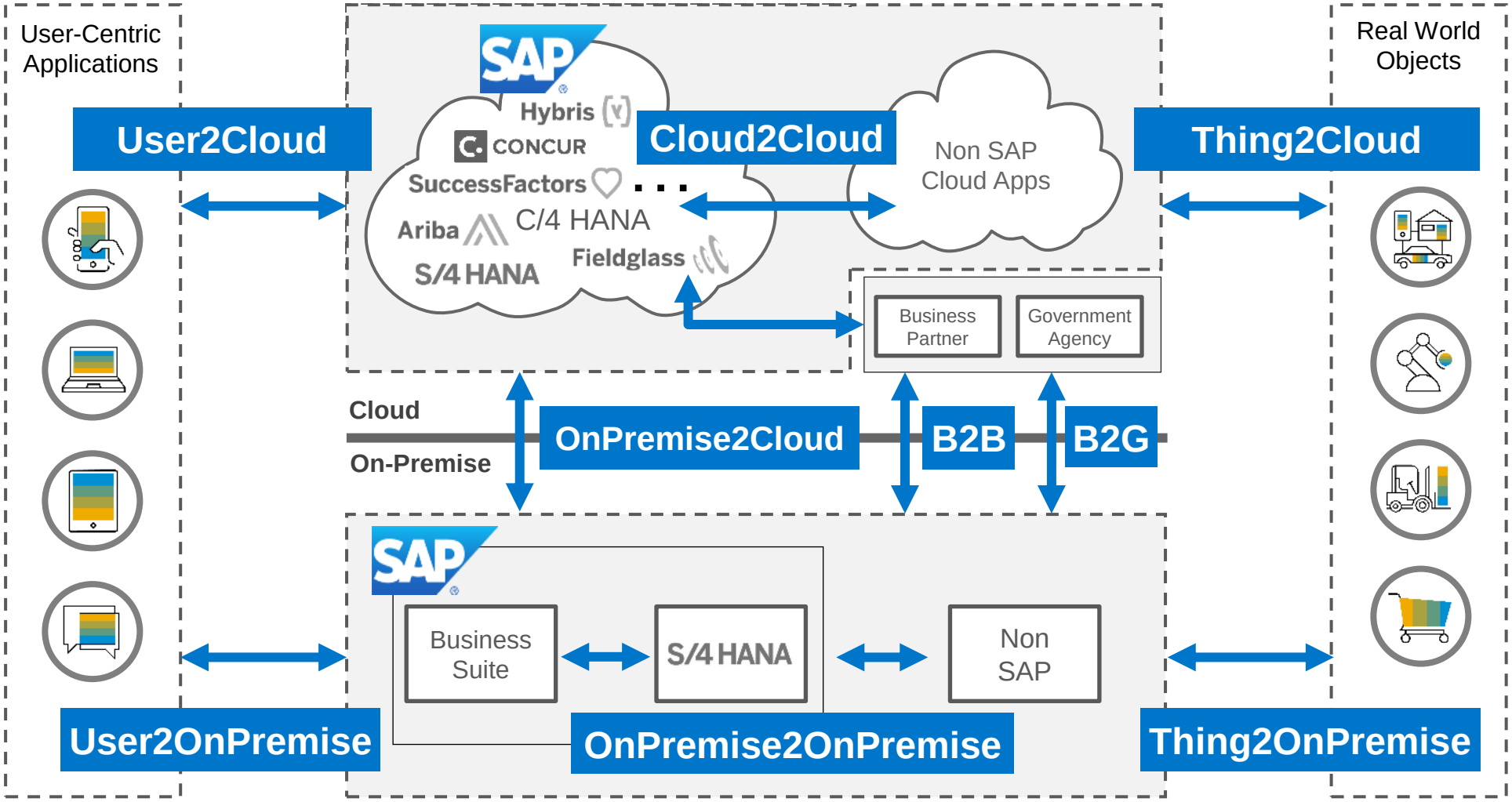
Overview



Integration Domains*

Typical Integration Areas in a Hybrid Landscape

Integration Domains → Integration Styles → Technology Mapping



* Further domains possible

Integration Domains

High-Level Assessment of Your Integration Architecture

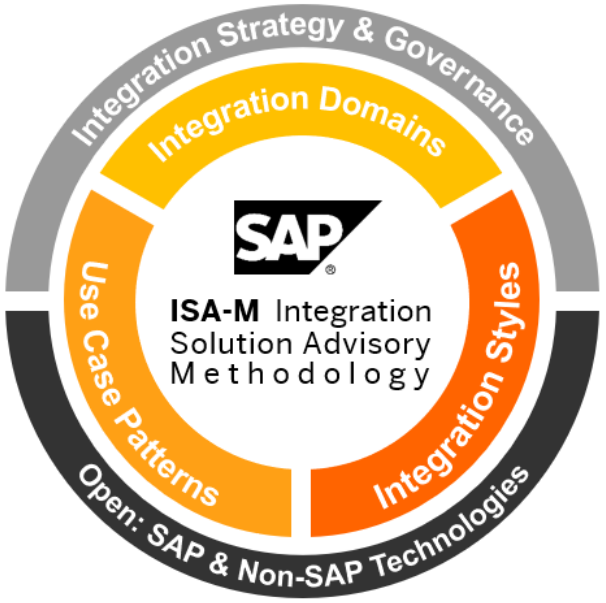
Integration Domain	Relevance			Integration Services / Technologies	
	Relevant	Not Relevant	Under Evaluation	As Is	To Be
OnPremise2OnPremise					
OnPremise2Cloud					
Cloud2Cloud					
B2B					
B2G					
User2OnPremise					
User2Cloud					
Thing2OnPremise					
Thing2Cloud					

How To Use

Integration domains provide the entry point into ISA-M and can be used as a “big picture” for integration. You can do an assessment of your integration architecture by selecting the integration domains that are relevant for your organization or that you might want to further evaluate. Next, you can list your current integration technologies / services (As Is) and also derive your future target architecture (To Be). Integration domains are technology agnostic and can therefore also help in blueprinting a hybrid integration platform consisting of multiple integration services/technologies (SAP/Non-SAP). You could also remove integration domains that are not relevant in your organization.

ISA-M Template

Overview



1	2	3	4	5	6	7
Overview & Terms of Use	Integration Roles	Integration Domains	Integration Styles & Use Cases Patterns	Technology Mapping	Interface Assessment	CIO Guides

Integration Styles

Four Fundamental Archetypes of Integration*

Process Integration	Data Integration	User Integration	Thing Integration
How to chain business processes across business applications?	How to synchronize data between business applications?	How to integrate user-centric applications with business applications?	How to integrate real-world things with business applications?

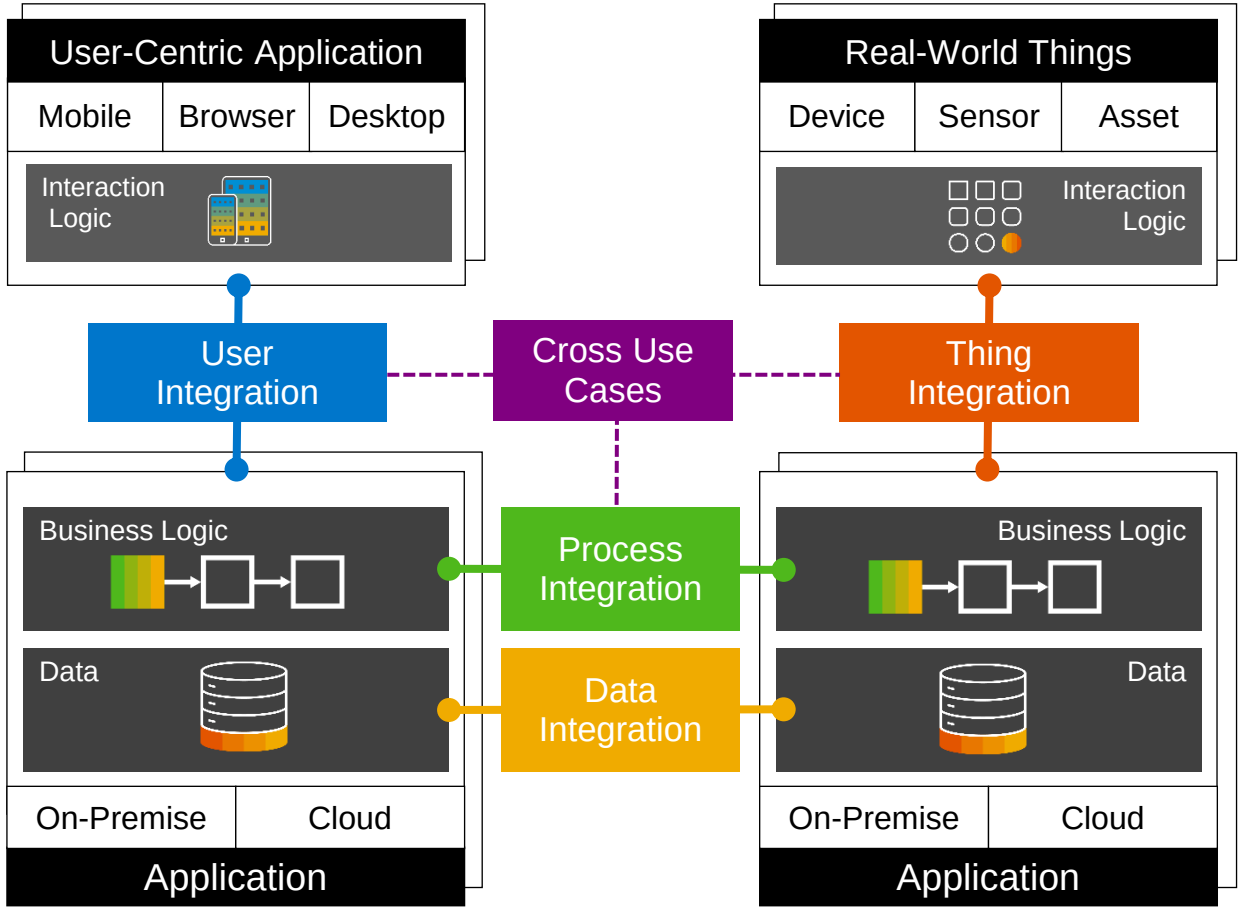
Explanation

Integration styles describe basic categories or types of integration: process-, data-, user-, and thing-centric integration. Each integration style has specific characteristics and can be refined by use-case patterns (see following slides). Integration styles build the key pillar of ISA-M.

* In the next ISA-M update, we plan to add **Analytics Integratio**n as an additional integration style

Integration Styles

Technology-Agnostic: Open to SAP and Non-SAP



Explanation

Integration Styles cover key integration archetypes: the process integration style connects business processes across applications whereas the data integration style allows to synchronize or access data across applications. The user integration style allows to connect user-centric applications (e.g. mobile apps) with applications whereas the thing integration style allows to connect real world objects (e.g. sensors, machines) with applications. All integration styles are technology agnostic and are applicable within multiple integration domains (e.g. cloud, on-premise, hybrid).

Cross Use Cases build a category for all integration-related use cases that complement one ore more of the four core integration styles. For example, API-Managed Integration provides full-lifecycle management for APIs that, e.g. can be leveraged in user- or process-centric integration scenarios. Workflow Management is an other example for a cross use case as it can spawn across process- user and data centric integration scenarios. Further examples in this category will be explained on the next slides such as Event-Based Integration.

Integration Styles

Key Characteristics and Decision Criteria

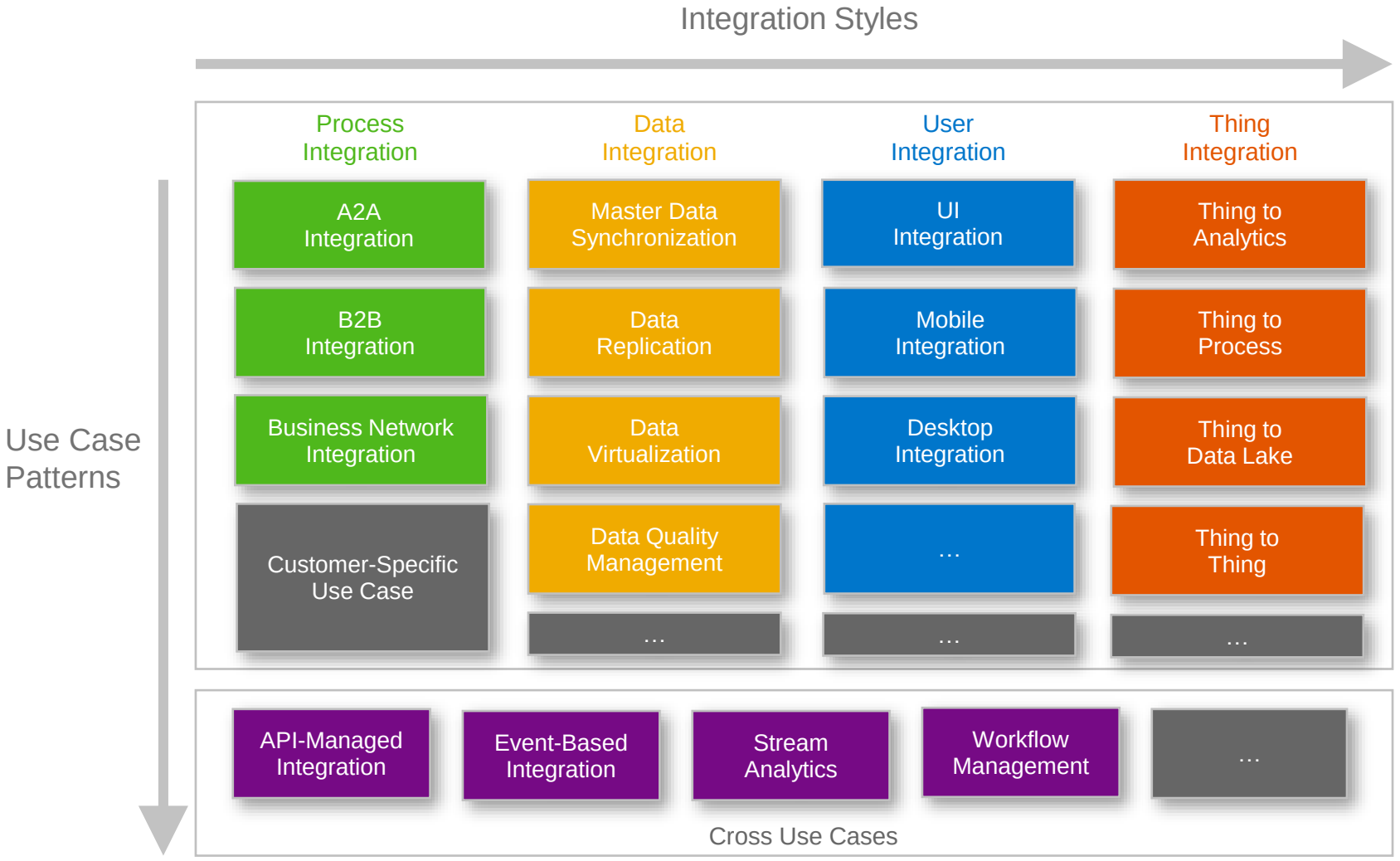
	Process Integration	Data Integration	User Integration	Thing Integration
Objective	Chaining of business processes	Synchronization of data	Omni-channel access to backend applications	Capturing and processing of real world data
Interaction Type	System-2-System	System-2-System	User-2-System	Thing-2-System
Coupling to Application	Process-Level	Data-Level	UI-Level	Data-Level / Process Level
Primary Trigger	Application Event	Schedule or Application Event	User Event	Thing Event
Urgency of Completion	(Near) Real-Time	Batch or Near Real-Time	(Near) Real-Time	(Near) Real-Time or Batch
Unit of Data Exchange	Single Objects	Bulk-Data or Single Objects	Single Objects or Bulk-Data	Single Objects or Bulk-Data
Specific Requirements	• Transactional Integrity • Reliable Messaging • Message Orchestration • B2B protocol support	• Data Orchestration • Complex transformations • Data Quality Management • Big Data Processing	• Online / Offline Support • Device Management • End-User Management • Application Management	• Thing Management • Edge Intelligence • IoT protocol support • Event Stream Processing

How to Use

This slide summarizes typical characteristics per integration style. It can help enterprise architects / integration architects to map integration styles to relevant capabilities of integration technologies / services (as part of the technology mapping). The listed criteria can be used as a starting for discussion and could be further refined in your specific context.

Integration Styles and Use Case Patterns

Technology-Agnostic Library of Integration Use Cases



Use Case Patterns: Each integration style can be refined by use case patterns which describe frequently found integration use cases in enterprise landscapes. Based on the same principles, the cross use cases category comprises use case patterns that complement one ore more of the four core integration styles – e.g. API-Managed Integration or Event-Based Integration. Use Case Patterns are technology-agnostic

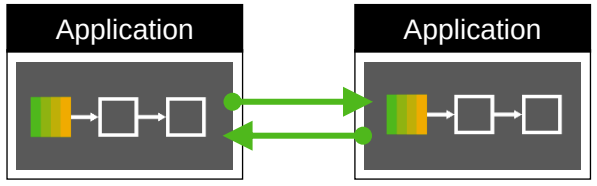
Extensible Library: ISA-M includes a typical set of use case patterns that you can use as a starting point for your organization. You can flexibly adjust the library of use case patterns to your specific needs e.g. by adding additional customer-specific use case patterns or removing patterns that are not relevant in your organization. In the next slides, all use case patterns are described in more detail including an example in the context of SAP.

Process Integration Style

Use Case Patterns

A2A Integration

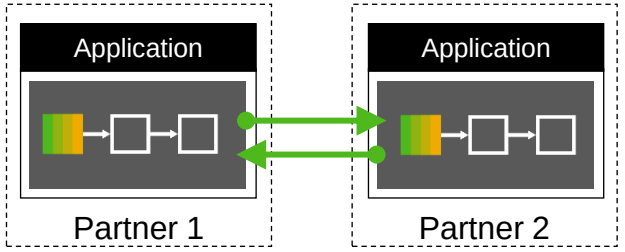
Chaining of business process steps between business applications by the exchange of transactional data.



Example: Lead-to-cash process with integration of SAP C/4HANA and SAP S/4HANA: exchange of sales orders.

B2B Integration

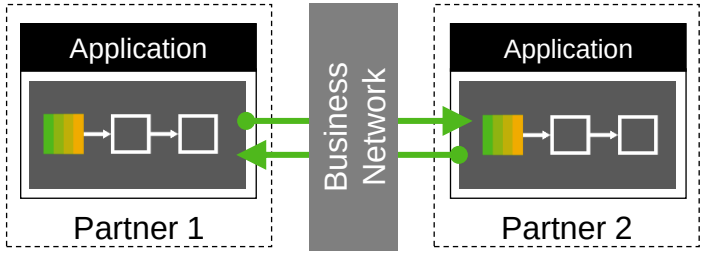
Chaining of business process steps between business partners by the exchange of transactional data leveraging standard B2B protocols.



Example: Design-to-operate process with integration of a manufacturer with suppliers: exchange of purchase orders using B2B standards like ANSI X.12 or UN/EDIFACT.

Business Network Integration

Chaining of business process steps between business partners managed by a business network.



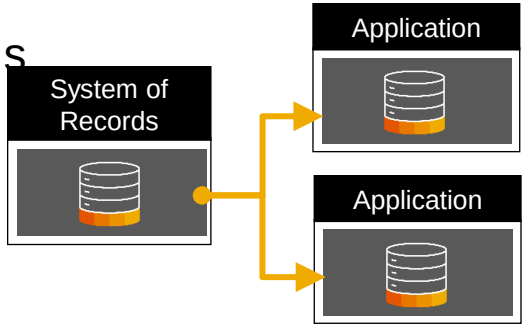
Example: Source-to-pay process with the integration of buyers and suppliers through the SAP Ariba business network: exchange of purchase orders and invoices.

Data Integration Style

Use Case Patterns

Master Data Synchronization

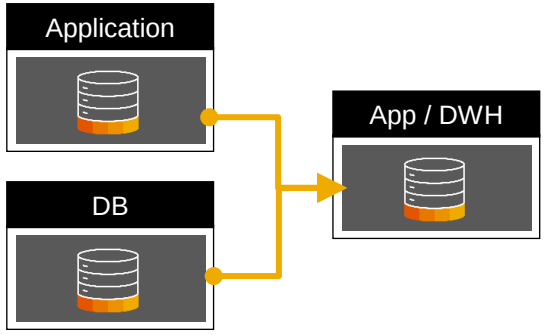
API-based synchronization of master data from a system of records with other applications (initial load, delta transfer).



Example: Synchronization of cost center data between SAP S/4HANA and SAP SuccessFactors.

Data Replication

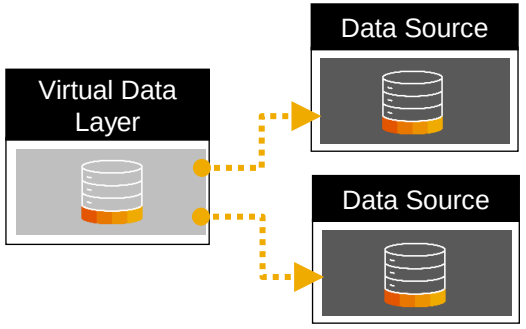
Table-based integration of data covering data replication, migration, or analytical use cases based on ETL/ELT[1].



Example: Replication of data from legacy applications or databases into SAP HANA e.g. for migration, analytics or big data warehousing.

Data Virtualization

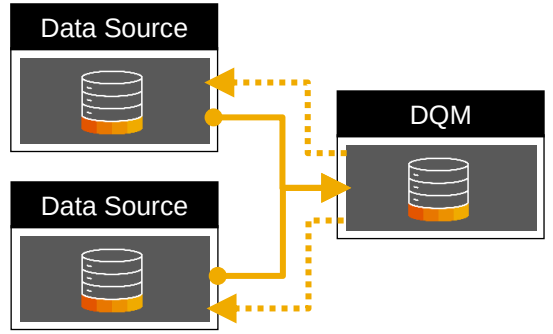
Provisioning of a virtual data layer by federation of queries to remote data sources without physical data movement.



Example: Lookup of shared master data from various data sources, e.g. Virtual data access in SAP HANA to remote data sources.

Data Quality Management

Integration of data from multiple sources for cleansing, matching or consolidation (central business terms).



Example: Cleansing of address data. Embedded DQM services in apps to validate address data and/or enrich with geocodes.

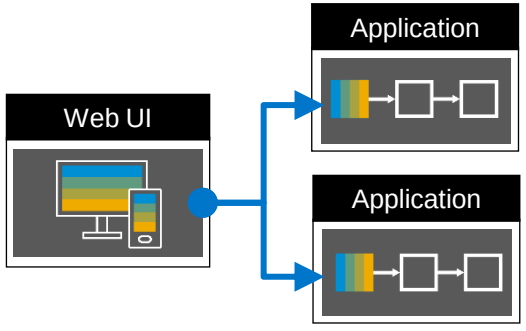
[1] Also APIs might be used for this use case

User Integration Style

Reference Use Case Patterns

UI Integration

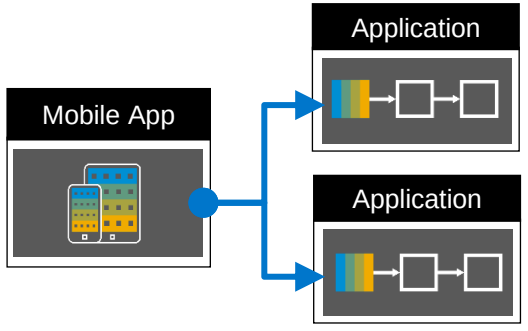
Integration of multiple application UIs into a single point of entry including the consumption of backend application services in a web user interface.



Example: SAP Fiori Launchpad that provides a single point of entry into SAP business application like SAP S/4HANA or SAP SuccessFactors.

Mobile Integration

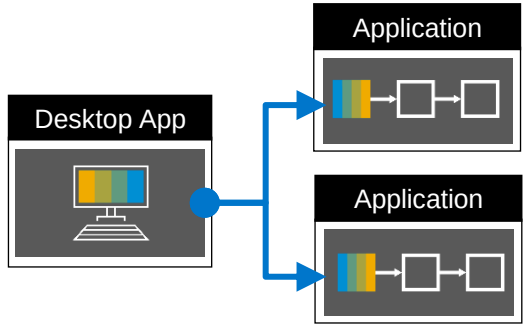
Consumption of backend application services in a mobile app, leveraging native or hybrid device capabilities including offline data synchronization.



Example: iOS or Android mobile apps that access data from on-premise or cloud-based data sources via OData with offline data synchronization.

Desktop Integration

Consumption of backend application services in a desktop application leveraging native desktop capabilities.



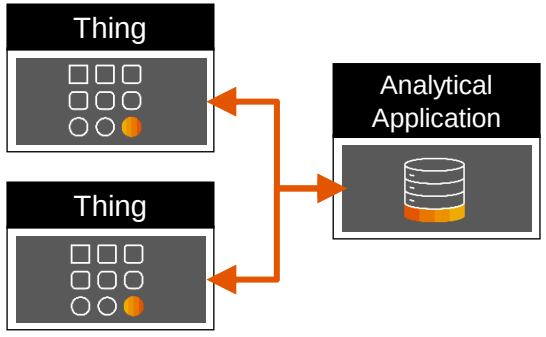
Example: SAP Gateway for Microsoft Office Integration

Thing Integration Style

Use Case Patterns

Thing to Analytics

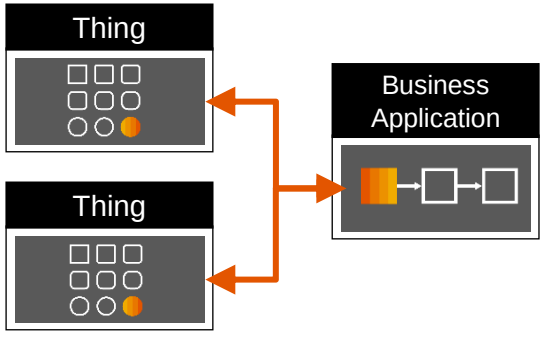
Real-time integration of thing or machine data for monitoring and analytics.



Example: Monitoring of connected devices or machines and to gain real-time visibility of shop floor based production operations.

Thing to Process

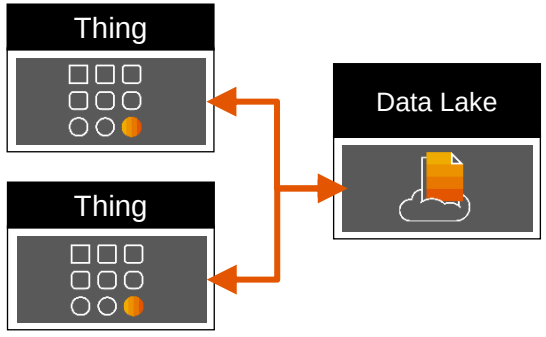
Integration of thing or machine data for triggering a business process step.



Example: Triggering of a service order process based on machine alerts (e.g. in the context of SAP Predictive Maintenance & Service).

Thing to Data Lake

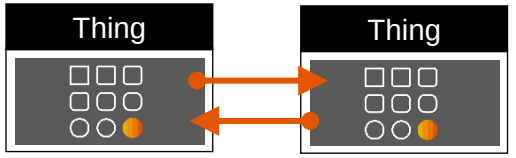
Collection of thing or machine data to derive future value out of it (e.g. by machine learning).



Example: Optimizing asset maintenance with anomaly detection, spectral analysis, and machine learning algorithms.

Thing to Thing

Exchange of data between two or more things, e.g. machine-to-machine (M2M).



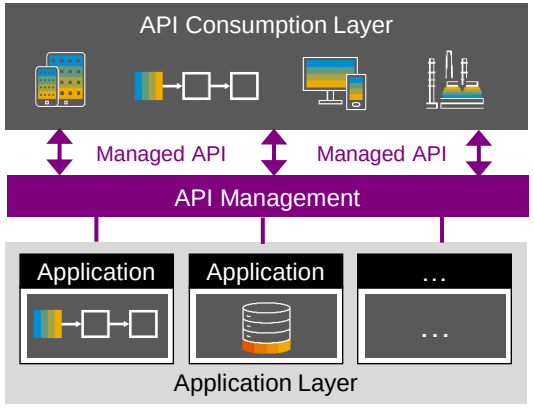
Example: Communication between two robots during production process.

Cross Use Cases

Use Case Patterns

API-Managed Integration

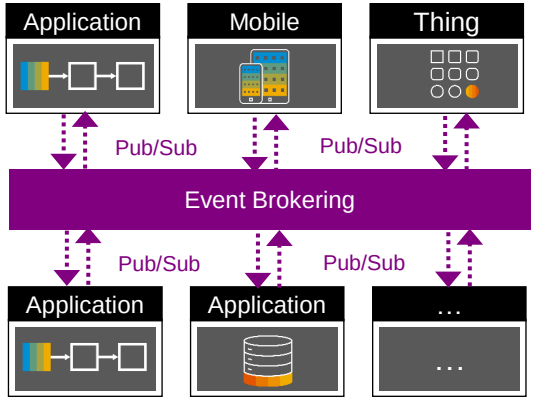
Provisioning of omni-channel and secure access to business applications by managed APIs.



Example: Expose APIs to business partners. Managed APIs leverage API traffic management policies, API security policies and API Analytics.

Event-Based Integration

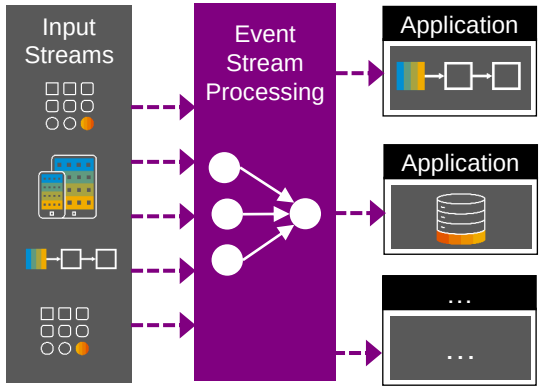
Decoupling of applications, extensions or IoT data by messaging principles (pub/sub).



Example: Event-driven extensions for SAP S/4HANA: Application extensions can react to events from SAP S/4HANA out-of-the-box.

Stream Analytics

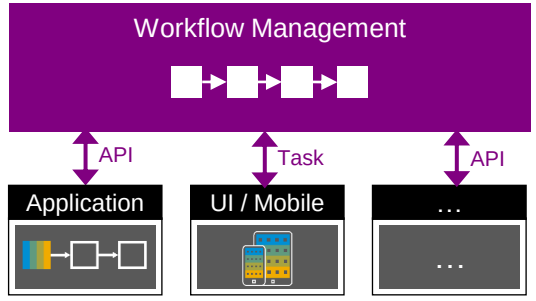
Real-time processing & analytics of event streams including the reaction on event patterns.



Example: Monitor incoming IoT-, click-, social media- or business transaction streams for trends, patterns or correlations and respond in real time.

Workflow Management

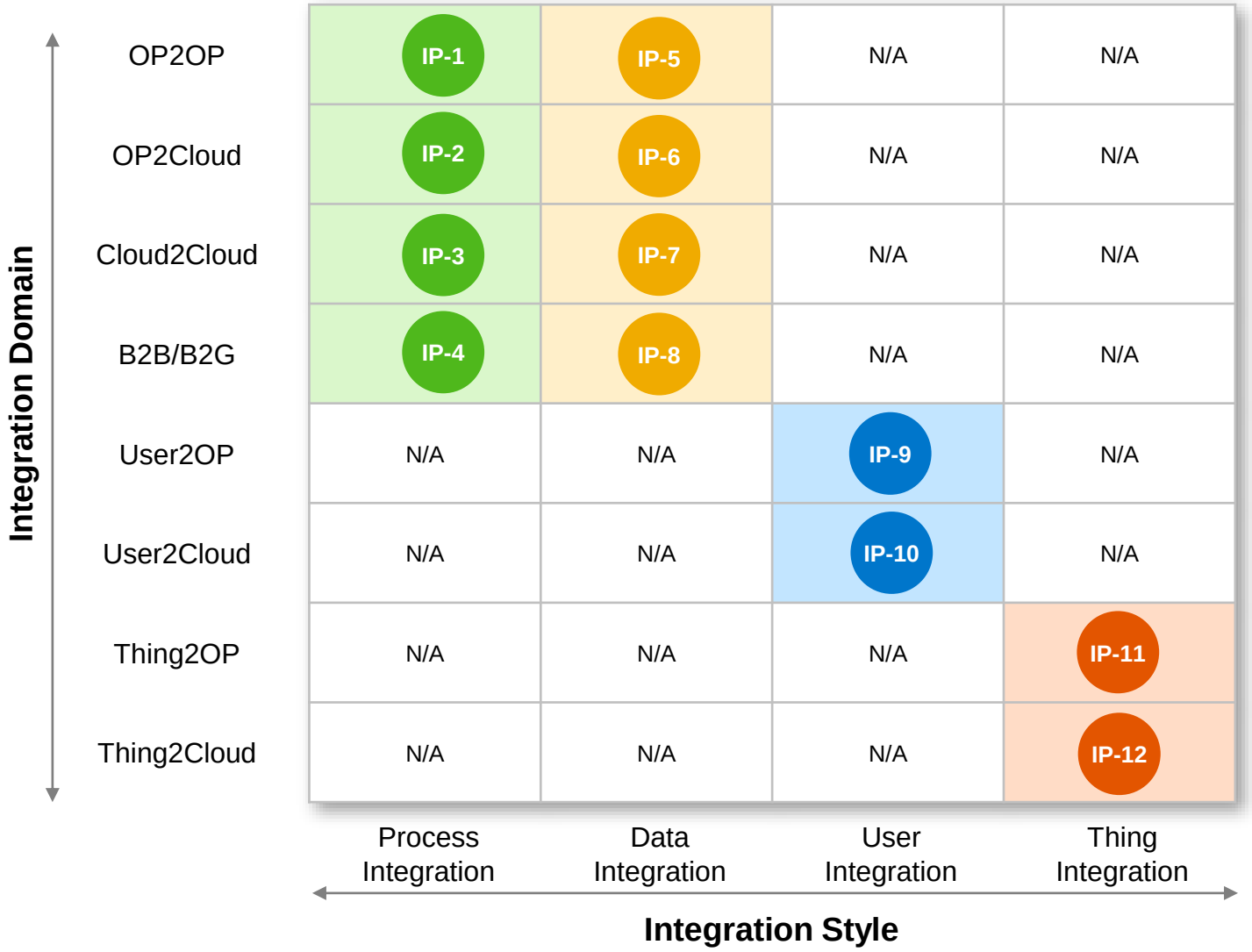
Automation and extension of business processes that spawn across multiple applications.



Example: Extension of SAP S/4 HANA core business processes with additional process logic such as approval steps involving interactive user tasks.

Advanced View: Integration Patterns

Combination of Integration Domains and Integration Styles



How To Use

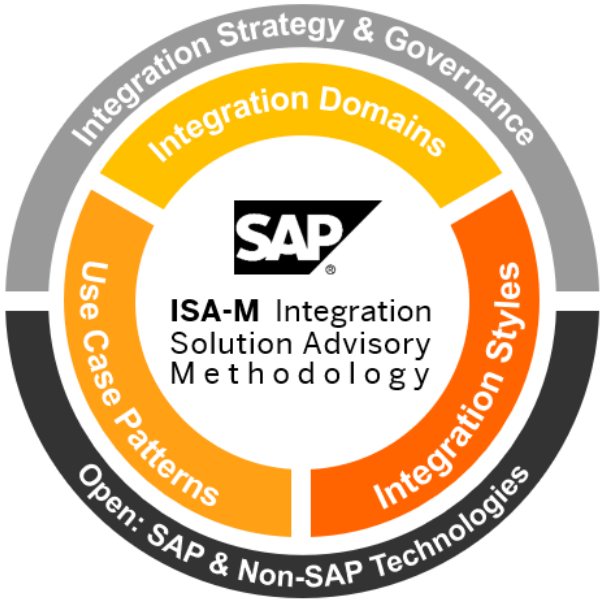
To derive integration guidelines for complex landscapes, the combination of integration domains and integration styles might be required. On this slide, possible combinations of integration domains and integration styles are listed. Each combination is defined as an integration pattern (IP-1 to IP-12).

Example: If you want to define a policy for process integration between two cloud applications your can refer to IP-3.

Important Note: This step is optional and might be helpful for complex landscapes where fine-grained integration guidelines need to be defined. Please skip, if not useful for your orgnaization.

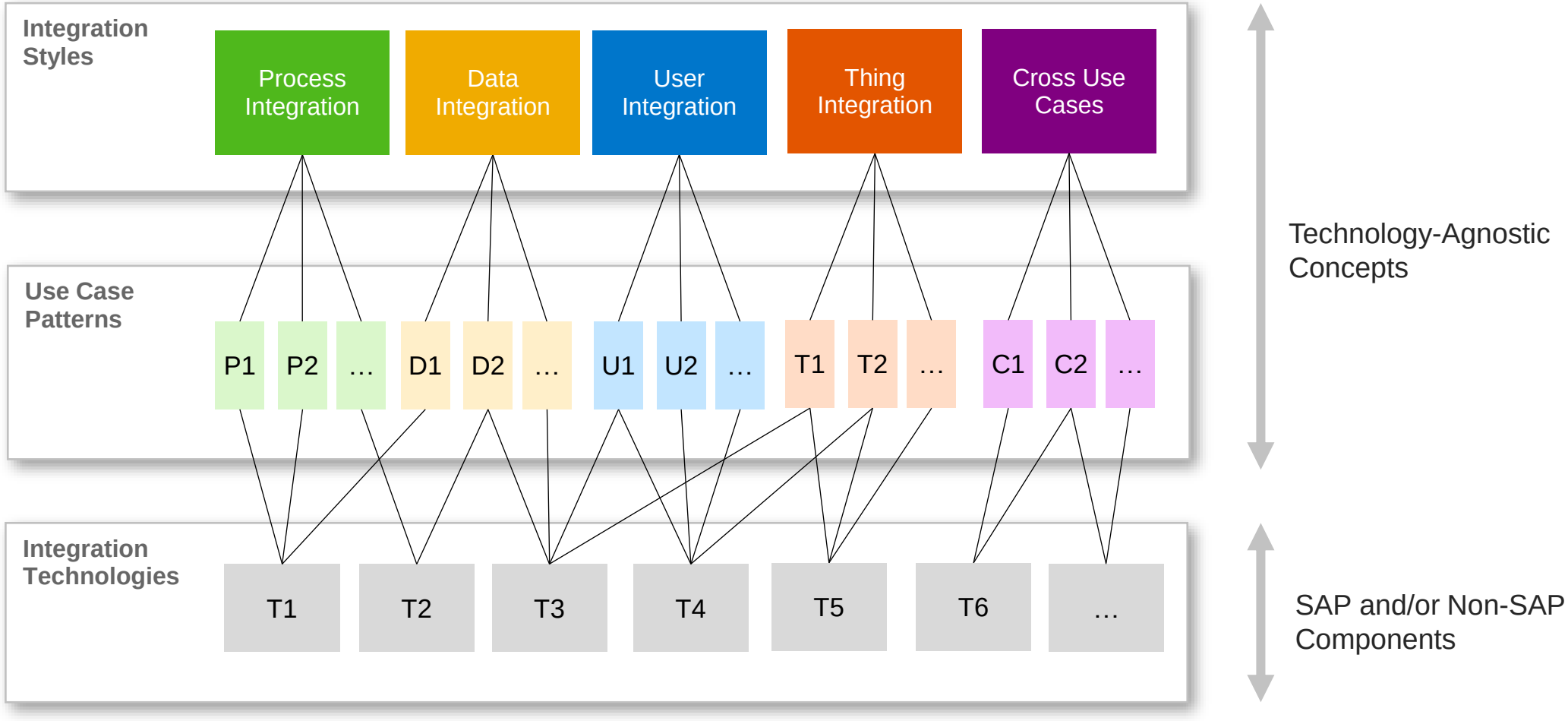
ISA-M Template

Overview



Integration Technology Mapping

Overview

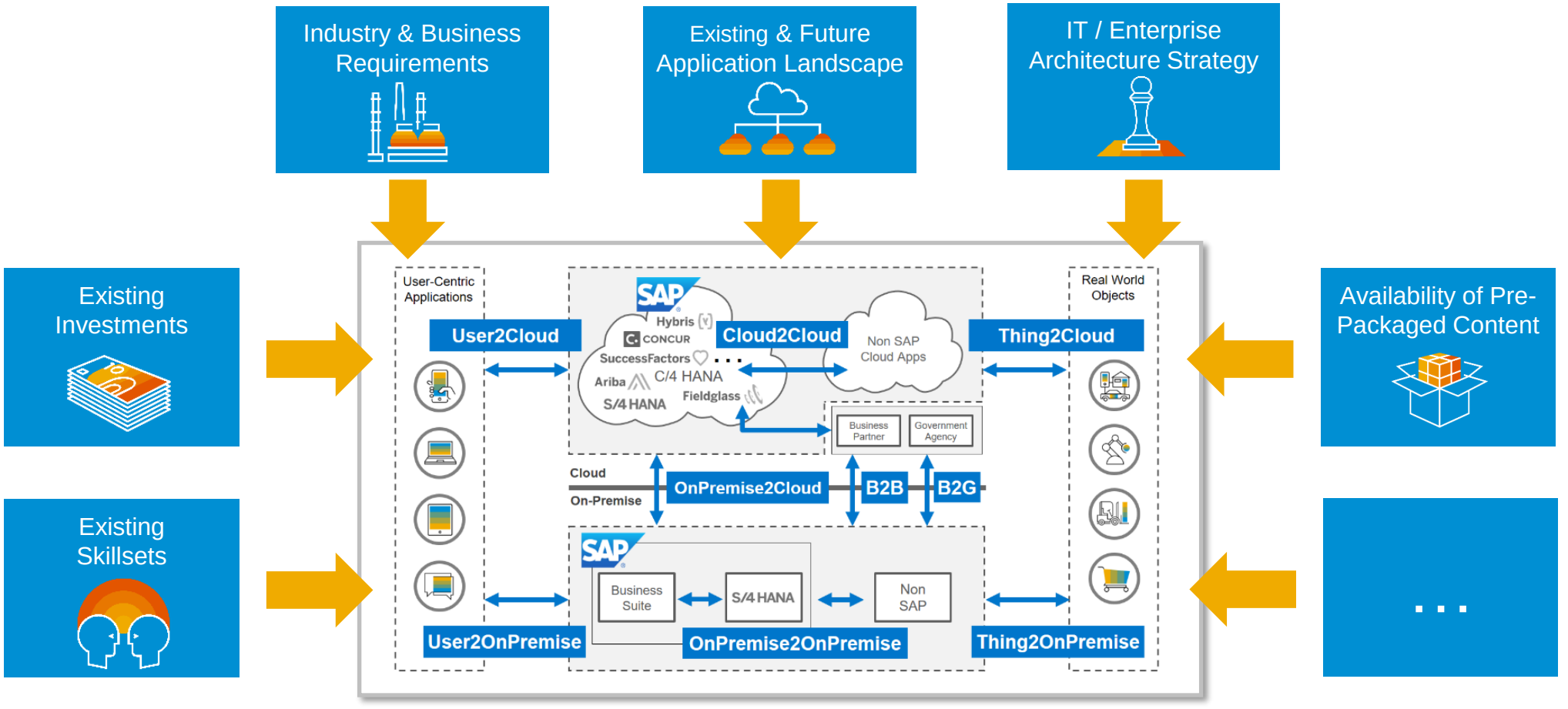


How To Use

In the third step of the methodology, integration styles and use case patterns (all technology-agnostic) can be mapped to integration technologies or services that should be used in your customer context (SAP and/or Non-SAP). This mapping highly depends on your specific customer context – some sample factors that might need to be considered are listed on the next slide. This allows you to derive your own decision framework.

Integration Technology Mapping

Customer Context

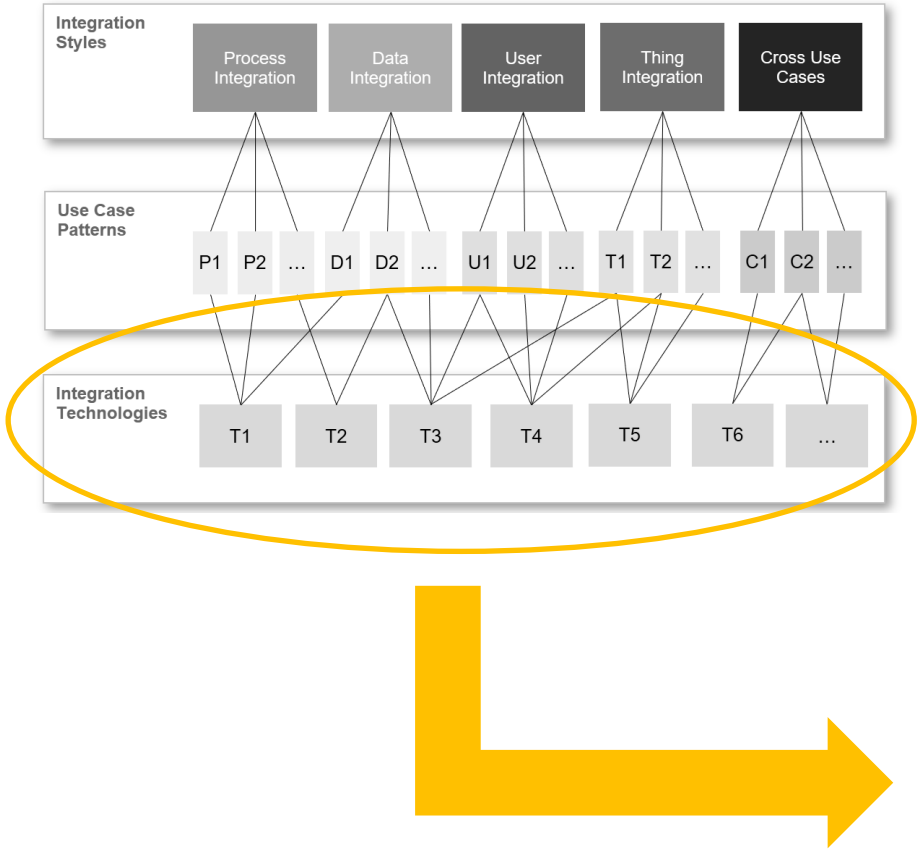


How To Use

The mapping to integration technologies / services highly depends on your specific customer context. This slide shows some sample factors that might need to be evaluated or considered in your organization. The listed factors can be adapted/extended to your specific needs.

Integration Technology Mapping

Recommendation Degrees



How To Use

ISA-M foresees various levels of recommendation degrees that you can assign to integration technologies / services in your organization. This allows you to define integration guidelines for your organization including default recommendations, reasonable alternatives, possible exceptions or techniques that you would like to avoid in your organization. The table below provides some further explanations.

Recommendation Degree	Description
General Recommendation	Assign this degree to your default recommendation for a specific integration style and/or use case pattern, e.g. if you want to establish SAP Cloud Platform Integration as your company standard for hybrid or cloud integration scenarios.
Reasonable Alternative	Assign this degree to possible alternatives that are valid for specific integration scenarios, e.g. if you want to allow certain SAP-to-SAP scenarios to be implemented with a direct integration approach e.g. for migration purposes.
Possible Exception	Assign this degree to possible exceptions for your general recommendations that you would like to allow for restricted use cases, e.g. if you want to allow for some restricted scenarios file-based interfaces.
To Be Avoided	Assign this degree to explicitly cover integration techniques / approaches that you would not like to be further used for new integration scenarios, e.g. to phase out some non strategic integration technologies in you organization.

Integration Technology Mapping

Derive Integration Guidelines for Your Organization

A Process Integration

B Data Integration

C User Integration

D Thing Integration

E Cross Use Cases

Explanation

In the next sections, decision table templates are provided per integration style (A to E) that allow you to define integration guidelines for your organization. This template also includes examples on how to map integration styles to technologies/services from the SAP portfolio (based on a typical hybrid landscape).

The technology mappings given in the next slides are only illustrative examples that need to be aligned with your specific customer context.

Integration Technology Mapping

Derive Integration Guidelines for Your Organization

A

Process Integration

B

Data Integration

C

User Integration

D

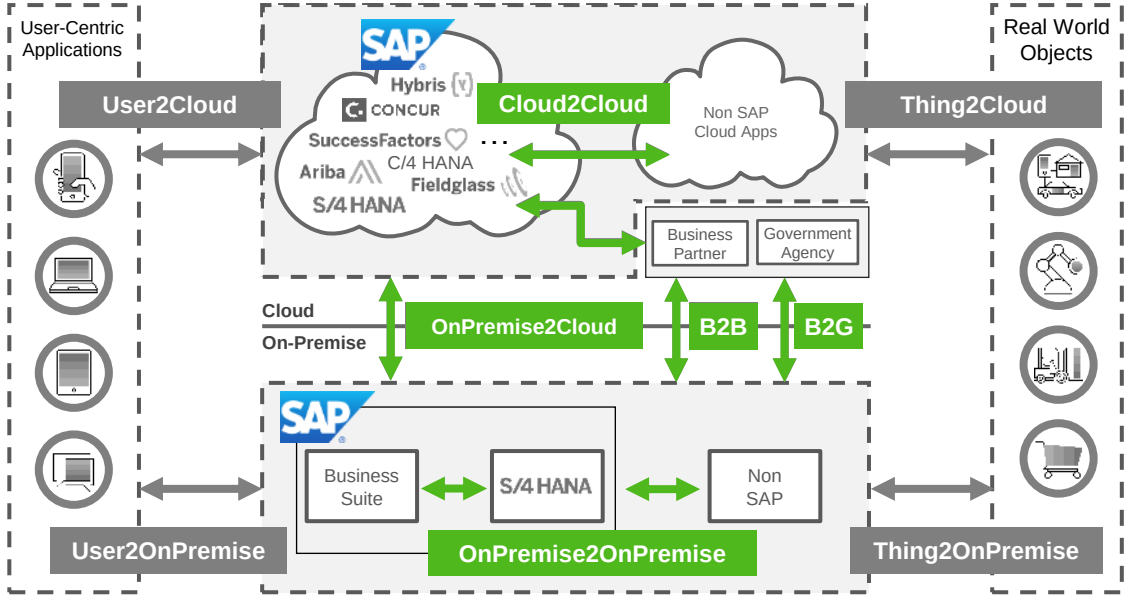
Thing Integration

E

Cross Use Cases

Process Integration Style
Overview

Integration Domains → Integration Styles → Technology Mapping



Process Integration | Data Integration | User Integration | Thing Integration | Cross Use Cases

How To Use

This section provides a decision table template (slide 40) that allows you to define integration guidelines for the **process integration style** for your organization including the highlighted integration domains. ISA-M is open to also include Non-SAP integration technologies/services.

The ISA-M template also includes examples on how to map this integration style to sample technologies/services from the SAP portfolio. Where applicable, we have also added references to the CIO Guides for Integration or links to other documents where you will find more information.

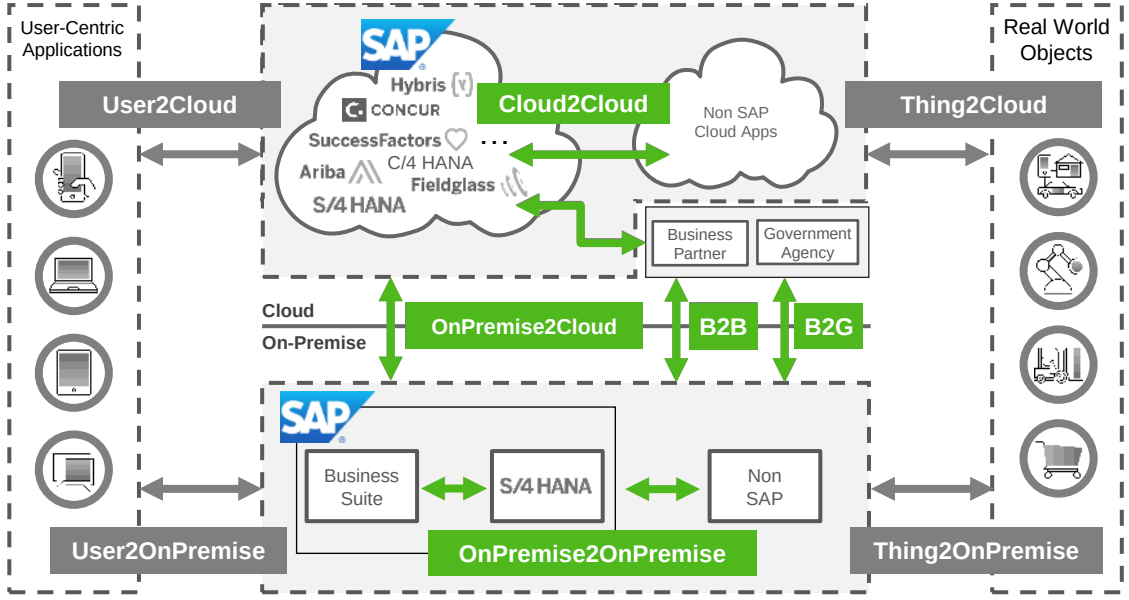
Important Note: The sample technology mappings given in the next slides are only illustrative examples that need to be aligned with your specific context and requirements. SAP also provides consulting services in case you need further support.

Process Integration Style

Sample Technology Mapping

Integration Domains → Integration Styles → **Technology Mapping**

1 Integration Domain(s) and Integration Style



Process Integration | Data Integration | User Integration | Thing Integration | Cross Use Cases

2 Sample Mapping to SAP Technologies / Services

SAP Cloud Platform Integration Suite

- SAP's IPaaS for cloud and hybrid integration
- Prepackaged content for SAP and non-SAP apps
- Integration Content Advisor for SAP Cloud Platform Integration (Leverage machine learning to significantly reduce integration efforts)
- SAP Cloud Platform Open Connectors (+150 pre-built connectors for Non-SAP apps)
- Complementary: SAP Process Orchestration and SAP Application Interface Framework (AIF)

Key Characteristics

- A2A, B2B/B2G, master data synchronization use cases
- API-based integration and near real-time processing
- Transactional process integrity

Process Integration Style

Decision Table Template

Integration Guidelines						
Integration Technology / Service Sample Values: 1) SAP Cloud Platform Integration 2) SAP Process Orchestration 3) SAP Application Interface Framework 4) Non-SAP …	**Recommendation Degree** Sample Values: 1) General Recommendation 2) Reasonable Alternative 3) Possible Exception 4) To be avoided …	**Description** Optionally: refer to use case patterns	**Relevant Integration Domains**			
			OP2OP	OP2Cloud	Cloud2Cloud	B2B/B2G
SAP Cloud Platform Integration	General Recommendation	Use for all hybrid and cloud-to-cloud scenarios leveraging pre-packaged integration content.		●	●	
SAP Process Orchestration	General Recommendation	Use for all on-premise to on-premise integration scenarios including B2B/B2G scenarios.	●			●
SAP Application Interface Framework	General Recommendation	Use complementary to SAP Cloud Platform Integration and SAP Process Orchestration as part of SAP S/4HANA. Provides deep integration capabilities into the application layer.	●	●		●
…	…	…				

How To Use

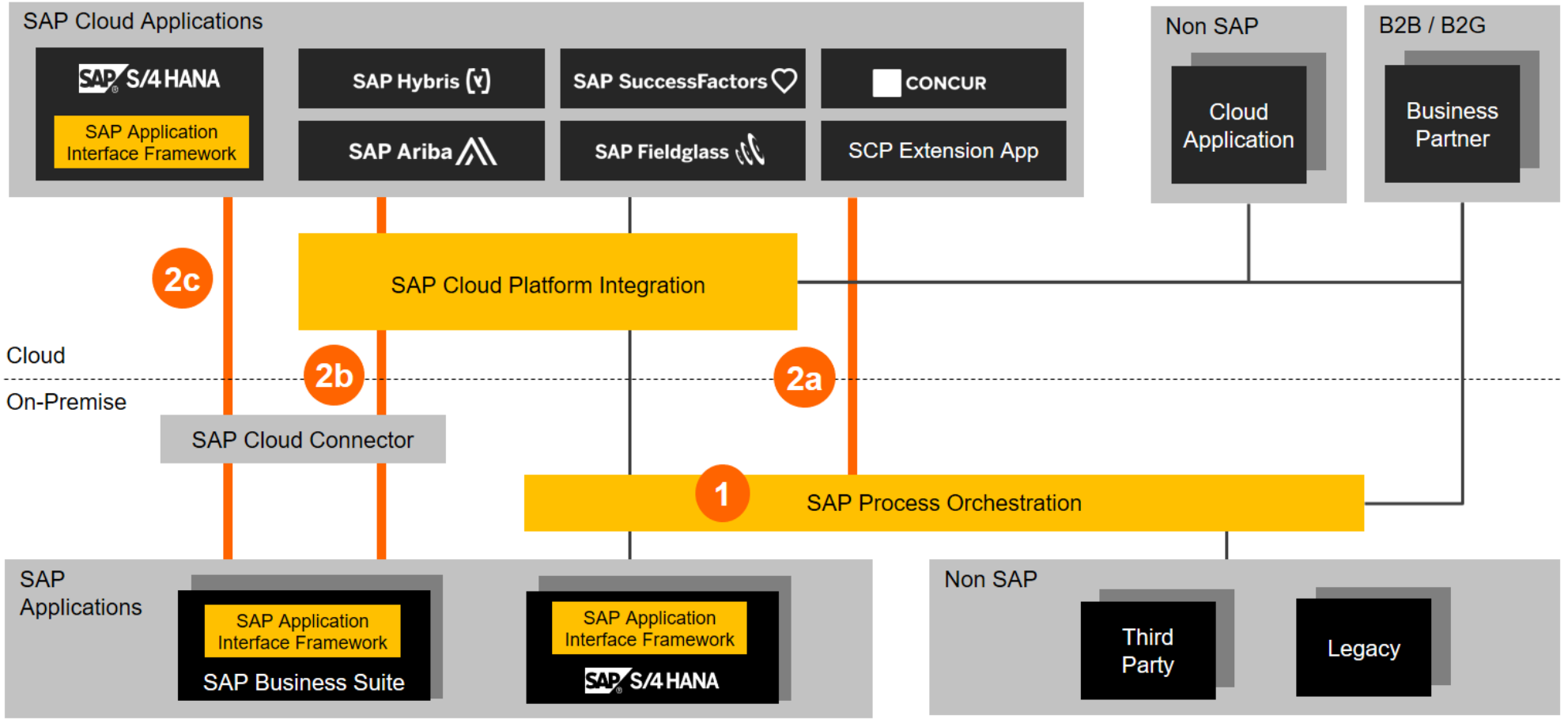
This table allows you to define integration guidelines for the **process integration style** for your organization. Per row, you can add one integration guideline: In **column 1**, you can select the relevant integration technology/service for which you want to define the guideline (e.g. SAP Cloud Platform Integration). In **column 2**, you can define the recommendation degree that you would like to assign to the integration technology/service within your organization (e.g. General Recommendation). In **column 3**, you can further describe your integration guideline, optionally by referring to the relevant use case patterns. **Column 4** allows you to assign the integration technology/service to the relevant integration domain(s), e.g. OnPremise2Cloud or Cloud2Cloud. Please adjust the decision template to your specific needs.

Important Note: The sample technology mappings shown in the table above are only illustrative examples that need to be aligned with your specific context and requirements. Also the inclusion of Non-SAP integration technologies / services is possible.

Process Integration Style

SAP Cloud Platform Integration & SAP Process Orchestration

Integration Domains → Integration Styles → Technology Mapping



Explanation

SAP Cloud Platform Integration and SAP Process Orchestration build the foundation of SAP's integration strategy for supporting A2A, B2B, B2G and master data synchronization use cases. Both technologies are complementary.

Source and further Information: CIO Guide: Process and Data Integration in Hybrid Landscapes.

Process Integration Style

SAP Cloud Platform Integration & SAP Process Orchestration

	SAP Cloud Platform Integration	SAP Process Orchestration
Deployment	• Data centers owned and run by SAP • Multicloud	• Customer landscape • Private cloud (e.g. SAP HANA Enterprise Cloud)
Operations	SAP	Customer
License Model	Monthly subscription fee, pay per use	Product license
Architecture	• Multitenancy with data isolation • Virtualization with automated failover • Rolling software updates	• Single-tenant solution • Failover to be configured by customer • Near-zero downtime maintenance for updates through support packages or enhancement packages
Prepackaged Integration Content	Availability for a wide variety of cloud solutions from SAP, third-party applications, and business-to-business and business-to-government scenarios	• Availability for a wide variety of on-premise SAP and third-party applications • Runtime of the SAP Cloud Platform Integration service (starting from SAP Process Orchestration software, release 7.5) for reuse of cloud integration content
Preferred Integration Domains	• Cloud to cloud • On premise to cloud (for customers with cloud focus)	• On premise to on premise • On premise to cloud (for customers with an on-premise focus)
Decision Criteria	• Center of gravity – deployment of most or leading applications – in the cloud • No need to invest in on-premise middleware (installation, operation, upgrades) • Fast innovation cycle • Flexible license model • Scenarios with a need for compliance, such as e-invoicing or payroll, to integrate with legal authorities	• Center of gravity – deployment of most or leading applications – on premise • Interest in leveraging an existing investment in SAP Process Orchestration • Customer interest in having full control over integration (installation, operation, upgrades)

How To Use

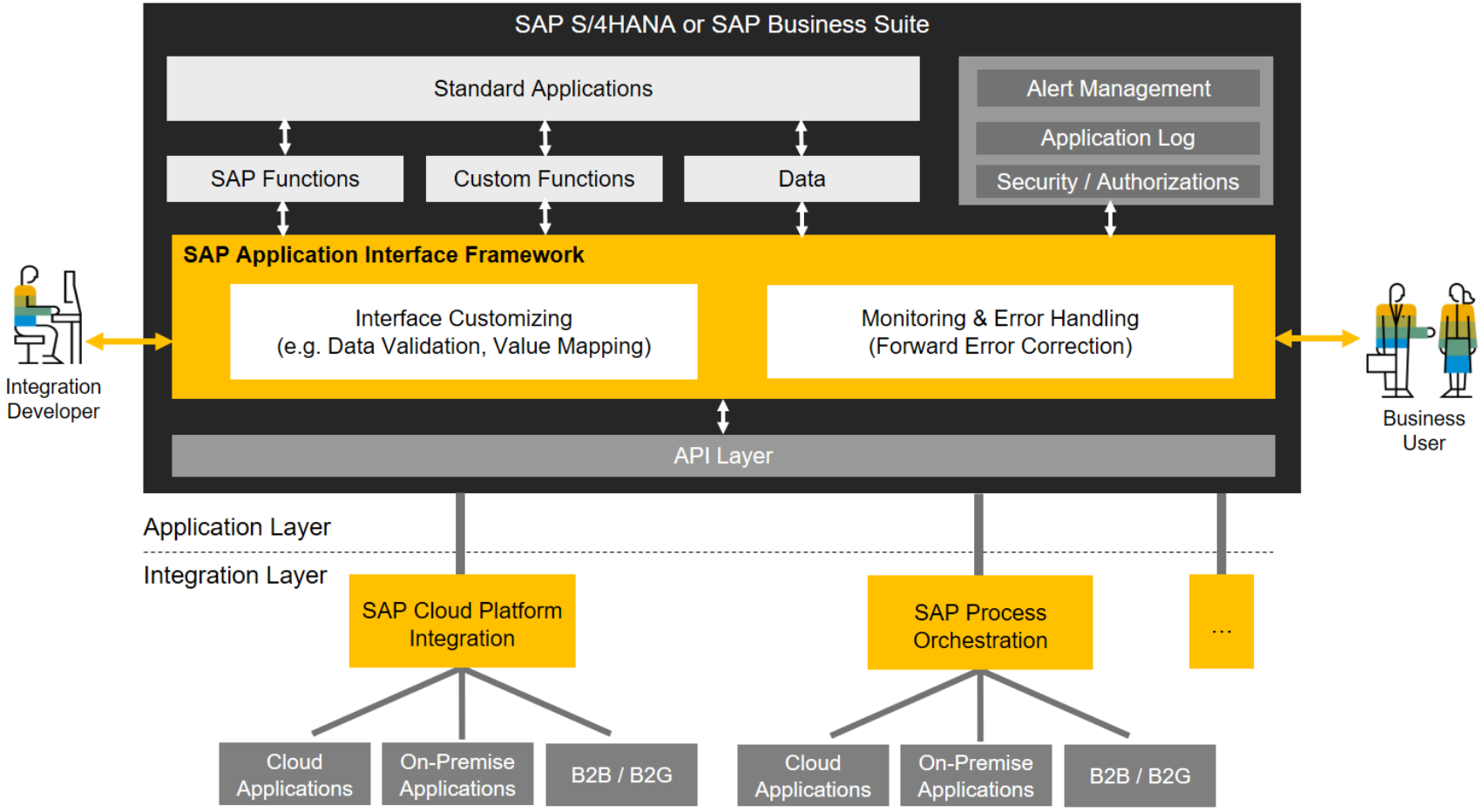
SAP Cloud Platform Integration and SAP Process Orchestration build the foundation of SAP's integration strategy for supporting A2A, B2B, B2G and master data synchronization use cases. Both technologies are complementary.

Source and further Information:
CIO Guide: Process and Data Integration in Hybrid Landscapes.

Process Integration Style

SAP Application Interface Framework (AIF)

Integration Domains → Integration Styles → Technology Mapping



Explanation

SAP Application Interface Framework (AIF) complements SAP Cloud Platform Integration and SAP Process Orchestration with a deep integration capability into the application layer of SAP S/4HANA or SAP Business Suite. Among others, it provides monitoring and error handling for business users.

Source and further Information: CIO Guide: Process and Data Integration in Hybrid Landscapes.

Process Integration Style

Sample Integration Patterns – Integration and Application Layer

Sample Integration Pattern	Integration Layer	Application Layer
Integration Technology	SAP Cloud Platform Integration or SAP Process Orchestration	SAP Application Interface Framework
Structure Mapping	●	●
Routing	●	●
Splitter	●	●
Aggregator	●	●
Protocol Adaptation	●	●
Value Mapping – Static Code List	●	●
Value Mapping – Dynamic Code List	●	●
Data Validation	●	●
Forward Error Correction (Business User)	●	●

● Recommended ● Partially possible ● Not recommended

Explanation

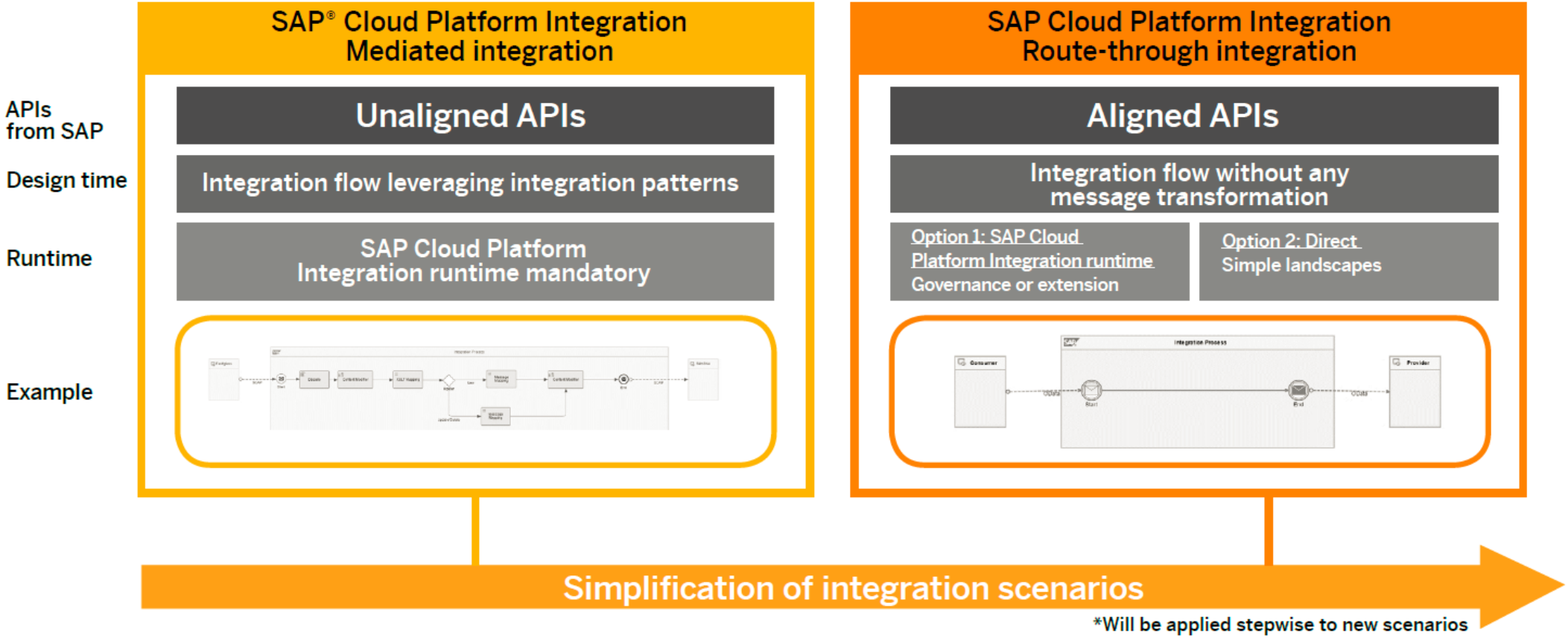
A key question for integration architects is which patterns to implement in the integration layer and which patterns to implement in the application layer. This slide lists some typical patterns and their best practices and can be extended/adapted to capture best practices in your organization.

Source and further Information: CIO Guide: Process and Data Integration in Hybrid Landscapes.

Process Integration Style

Simplification: Evolution of SAP Integration Content

Integration Domains → Integration Styles → Technology Mapping



Explanation

SAP plans to develop new integration scenarios between SAP applications based on aligned APIs including route-through content for SAP Cloud Platform Integration. This will minimize integration efforts for new integration scenarios for SAP applications.

Source and further Information: CIO Guide: Process and Data Integration in Hybrid Landscapes.

Process Integration Style
Further Information I

Resource	Link	Description
CIO Guide: Process and Data Integration in Hybrid Landscapes	Link	Among others, this guide gives detailed guidance on the complementary usage of SAP Cloud Platform Integration, SAP Process Orchestration and the SAP Application Interface Framework (AIF). In addition, it includes guidance for customers migrating from SAP Business Suite to SAP S/4HANA with regards to integration topics such as transition paths.
CIO Guide: SAP Vision for Integrating SAP Applications in Cloud and Hybrid Environments	Link	Describes SAP's long term vision on integration.
SAP API Business Hub	Link	Discover and consume digital content packages with APIs, pre-packaged integrations, and sample apps from SAP and select partners. Beside APIs, the SAP API Business Hub provides the central place for pre-packaged integration content for SAP Cloud Platform Integration that is available for integration of the various SAP applications like SAP S/4HANA, SAP Business Suite, SAP SuccessFactors, SAP Fieldglass, SAP C/4HANA, SAP Ariba, Concur etc.
SAP Cloud Platform Integration Suite	Link	SAP's Integration Platform-as-a-Service (IPaaS): It simplifies integration by connecting people, processes, data, and devices everywhere by allowing people with different skills to leverage a wide variety of integration approaches, intuitive tools, and prepackaged content to achieve results faster and gain business agility with a versatile, dynamic, and enterprise-grade cloud integration platform.
Roadmap for cloud integration by SAP applications	Link	Search for "SAP Road Map for Cloud Integration". This roadmap includes detailed integration roadmaps for SAP SuccessFactors, SAP Concur, SAP Integrated Business Planning (IBP), SAP Ariba, SAP C/4HANA, SAP Fieldglass, SAP S/4HANA and SAP Business Suite.

How To Use

This slides provides links where you can find further information such as additional guidance, product information and roadmaps.

Process Integration Style
Further Information II

Resource	Link	Description
SAP Cloud Platform Integration	Link	Seamlessly integrate cloud and on-premise applications: connect cloud applications with other SAP and non-SAP cloud and on-premises apps. It is part of the SAP Cloud Platform Integration Suite.
Integration Content Advisor for SAP Cloud Platform Integration	Link	Leverage machine learning and crowd sourcing techniques to reduce integration development efforts for B2B and A2A interfaces by 60%. It is part of the SAP Cloud Platform Integration Suite.
SAP Cloud Platform Open Connectors	Link	Accelerate connectivity with third-party cloud applications. This service includes more than 150 pre-built connectors to non-SAP cloud applications. It is part of the SAP Cloud Platform Integration Suite.
SAP Process Orchestration	Link	SAP's on-premise integration platform: Model, implement, integrate, and monitor custom process applications and integration scenarios, quickly and flexibly.
SAP Application Interface Framework	Link	Implement, monitor, and manage application interfaces from a central location within SAP S/4HANA or SAP Business Suite to simplify interface handling across your system landscape.
SAP S/4HANA Best Practices Explorer	Link	Includes best practices for SAP S/4HANA integration.
SAP Product Roadmaps	Link	Access all product and solution roadmaps from SAP. You will also find latest roadmaps on all integration technologies and services mentioned in ISA-M.

How To Use

This slides provides links where you can find further information such as additional guidance, product information and roadmaps.

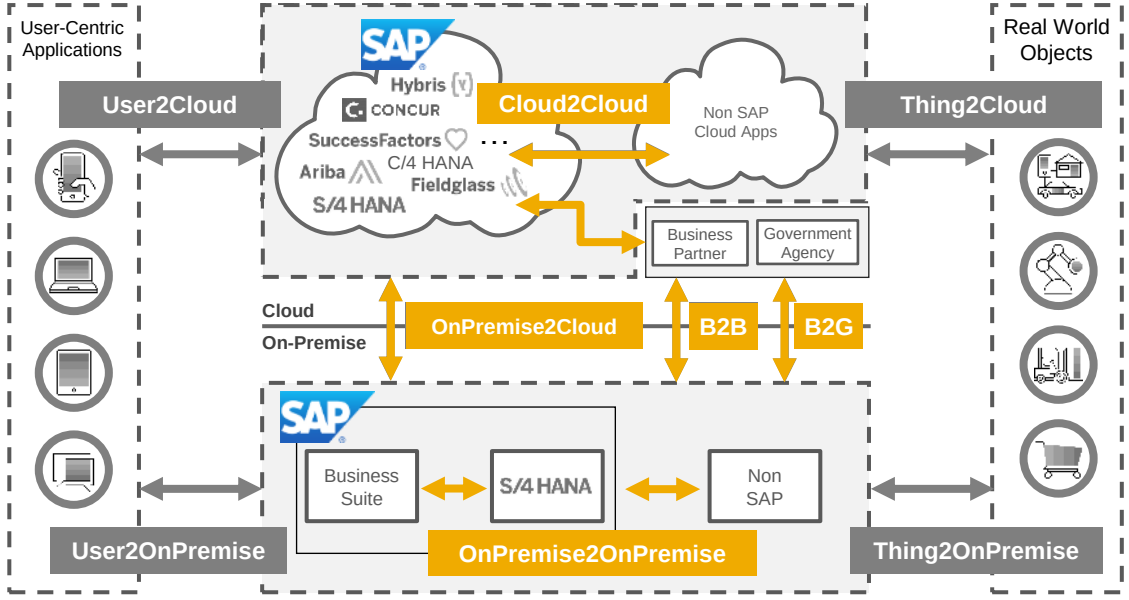
Integration Technology Mapping

Derive Integration Guidelines for Your Organization

A	B	C	D	E
Process Integration	Data Integration	User Integration	Thing Integration	Cross Use Cases

Data Integration Style
Overview

Integration Domains → Integration Styles → Technology Mapping



Process Integration | **Data Integration** | User Integration | Thing Integration | Cross Use Cases

How To Use

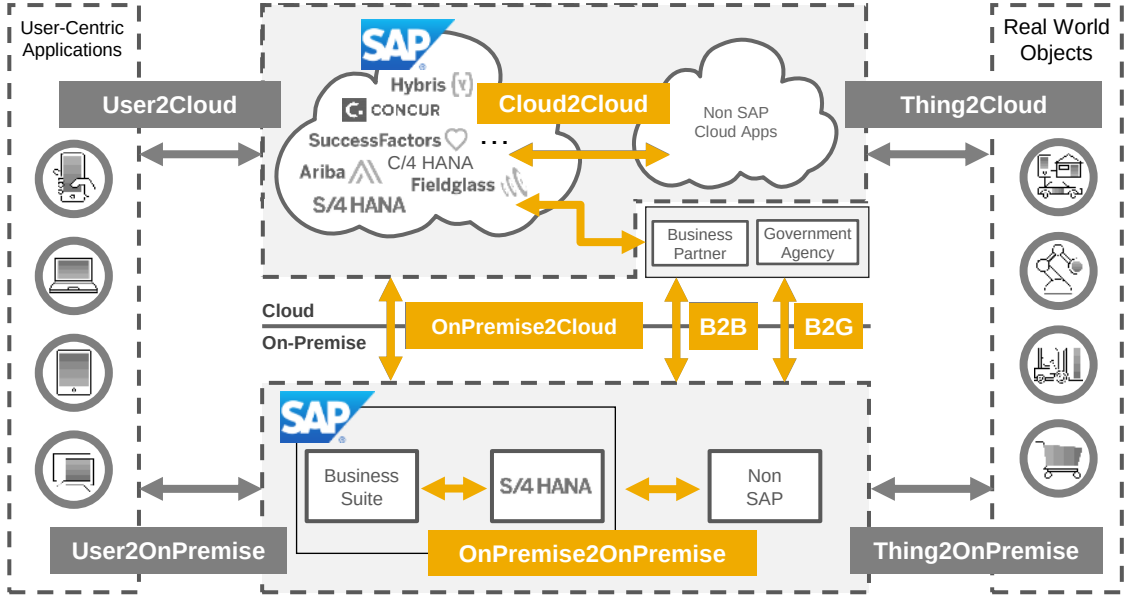
This section provides a decision table template (slide 51) that allows you to define integration guidelines for the **data integration style** for your organization including the highlighted integration domains. ISA-M is open to also include Non-SAP integration technologies/services.

The ISA-M template also includes examples on how to map this integration style to sample technologies/services from the SAP portfolio. Where applicable, we have also added references to the CIO Guides for Integration or links to other documents where you will find more information.

Important Note: The sample technology mappings given in the next slides are only illustrative examples that need to be aligned with your specific context and requirements. SAP also provides consulting services in case you need further support.

Data Integration Style
Sample Technology Mapping

1 Integration Domain(s) and Integration Style



Process Integration | **Data Integration** | User Integration | Thing Integration | Cross Use Cases

2 Sample Mapping to SAP Technologies / Services

SAP Data Hub

- Part of SAP HANA Data Management Suite (HDMS)
- Holistic data management across hybrid landscapes
- Pipelining and orchestration of big data
- Leverages SAP EIM tools, e.g. SAP HANA Smart Data Integration (SDI) or SAP Data Services (DS)

Key Characteristics

- Support of multiple data integration use cases
- Data focused (table/view, storages, processing, libraries)
- High frequent event processing (e.g. via Kafka)
- Advanced data transformations & processing (e.g. ML)

Data Integration Style
Decision Table Template

Integration Guidelines						
Integration Technology / Service Sample Values: 1) SAP Data Hub 2) SAP HANA Smart Data Integration 3) SAP HANA Smart Data Access 4) Non-SAP …	**Recommendation Degree** Sample Values: 1) General Recommendation 2) Reasonable Alternative 3) Possible Exception 4) To be avoided …	**Description** Optionally: refer to use case patterns	**Relevant Integration Domains**			
			OP2OP	OP2Cloud	Cloud2Cloud	B2B/B2G
SAP Data Hub	General Recommendation	Use for data sharing, pipelining, and orchestration use cases. Use as an orchestration layer on top of existing EIM technologies such as SAP HANA Smart Data Integration (SDI) or SAP Data Services (DS).	●	●	●	
SAP HANA Smart Data Integration	General Recommendation	Use for replication of data from SAP and non-SAP source systems into SAP HANA (data replication, ETL, real-time ETL).	●	●		
SAP HANA Smart Data Access	General Recommendation	Use to access data from external data sources without having to physically replicate the data into SAP HANA (data virtualization).	●	●		
…	…	…				

How To Use

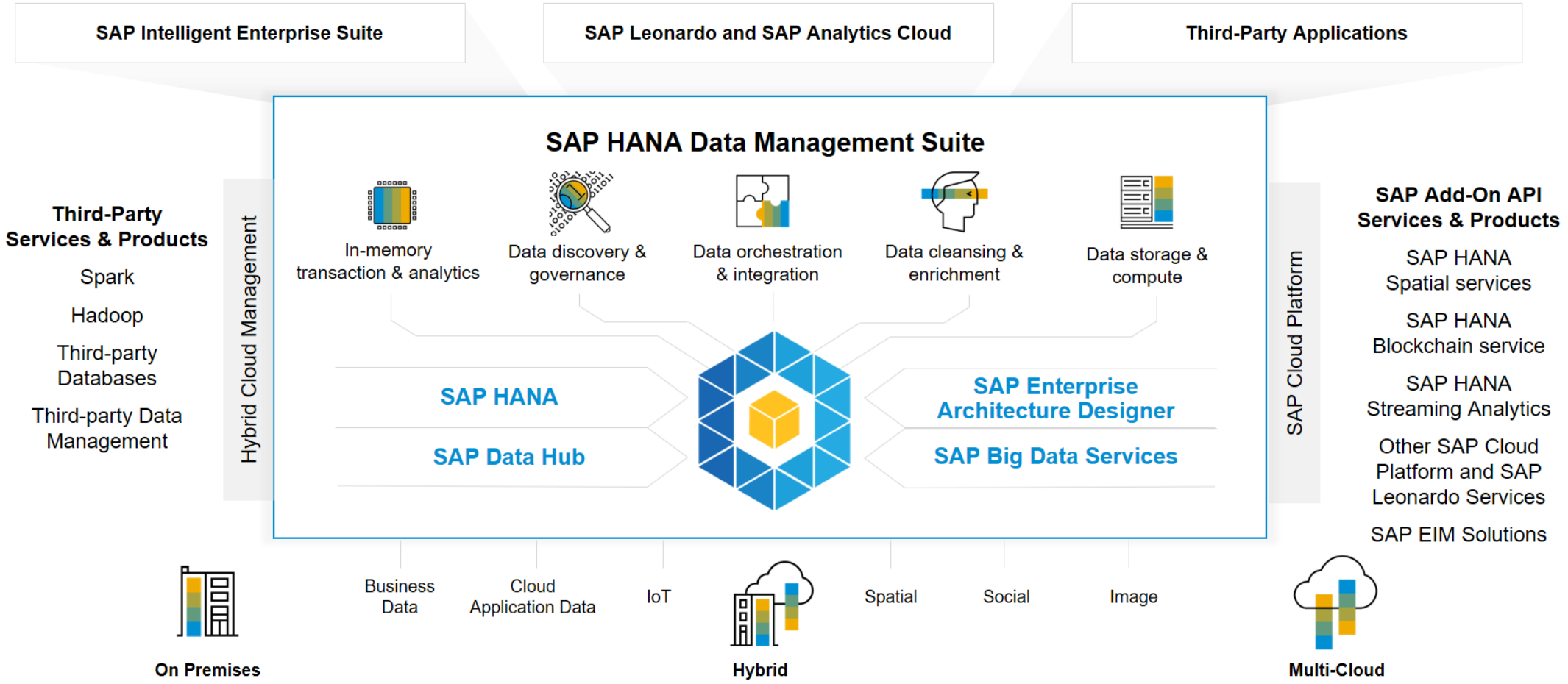
This table allows you to define integration guidelines for the **data integration style** for your organization. Per row, you can add one integration guideline: In **column 1**, you can select the relevant integration technology/service for which you want to define the guideline (e.g. SAP Data Hub). In **column 2**, you can define the recommendation degree that you would like to assign to the integration technology/service within your organization (e.g. General Recommendation). In **column 3**, you can further describe your integration guideline, optionally by referring to the relevant use case patterns. **Column 4** allows you to assign the integration technology/service to the relevant integration domain(s), e.g. OnPremise2Cloud or Cloud2Cloud.

Important Note: The sample technology mappings shown in the table above are only illustrative examples that need to be aligned with your specific context and requirements. Also the inclusion of Non-SAP integration technologies / services is possible.

Data Integration Style

SAP HANA Data Management Suite (HDMS)

Integration Domains → Integration Styles → **Technology Mapping**



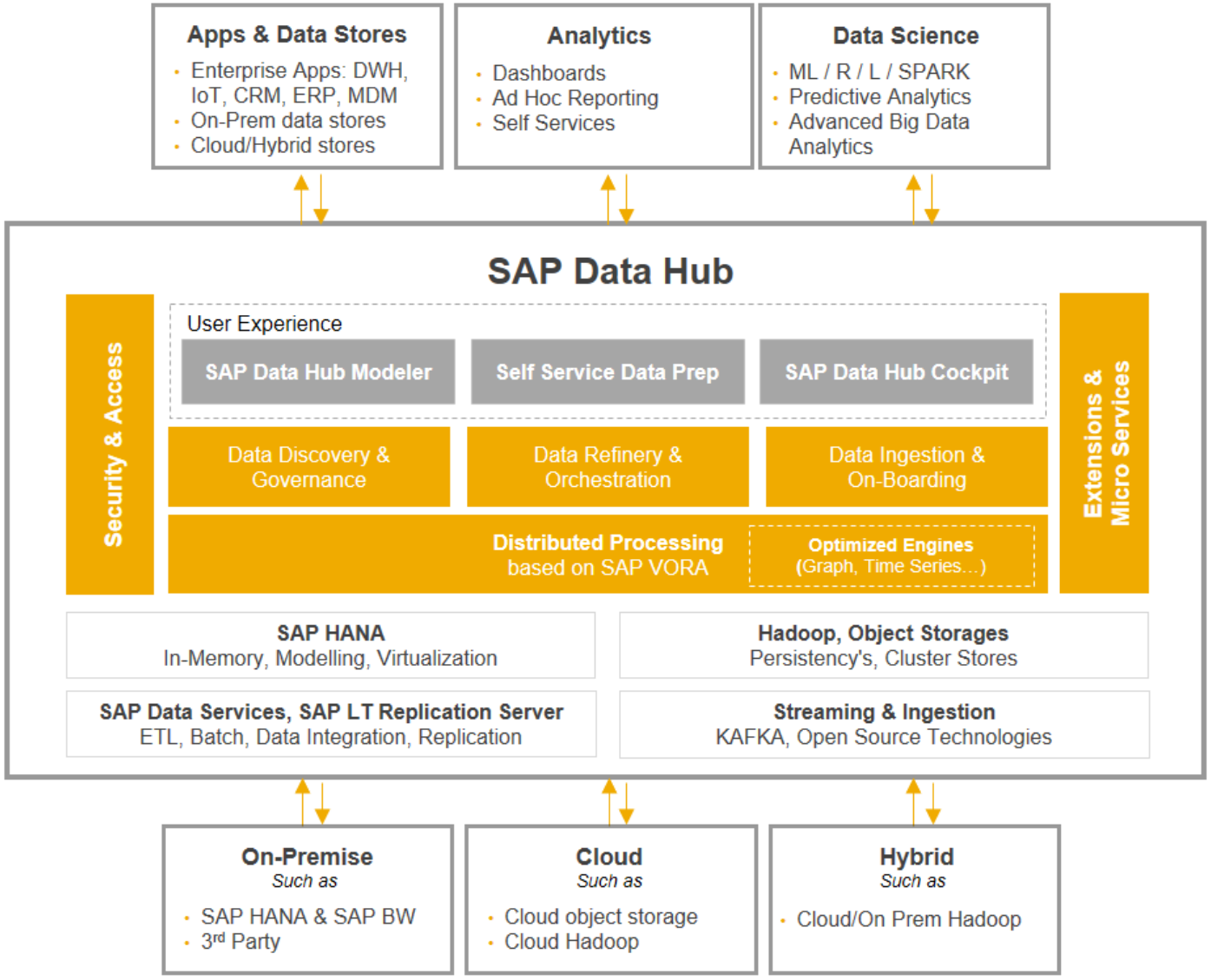
Explanation

SAP HANA Data Management Suite brings secure, governed enterprise class applications and analytics by providing an open, hybrid, and multi-cloud enabled solution suite that orchestrates all the data into a trusted, unified landscape.

Further Information: [SAP HANA Data Management Suite]

Data Integration Style

SAP Data Hub



Integration Domains → Integration Styles → Technology Mapping

Explanation

SAP Data Hub is a data sharing, pipelining, and orchestration solution that helps companies accelerate and expand the flow of data across their modern, diverse data landscapes. SAP Data Hub is part of the SAP HANA Data Management Suite.

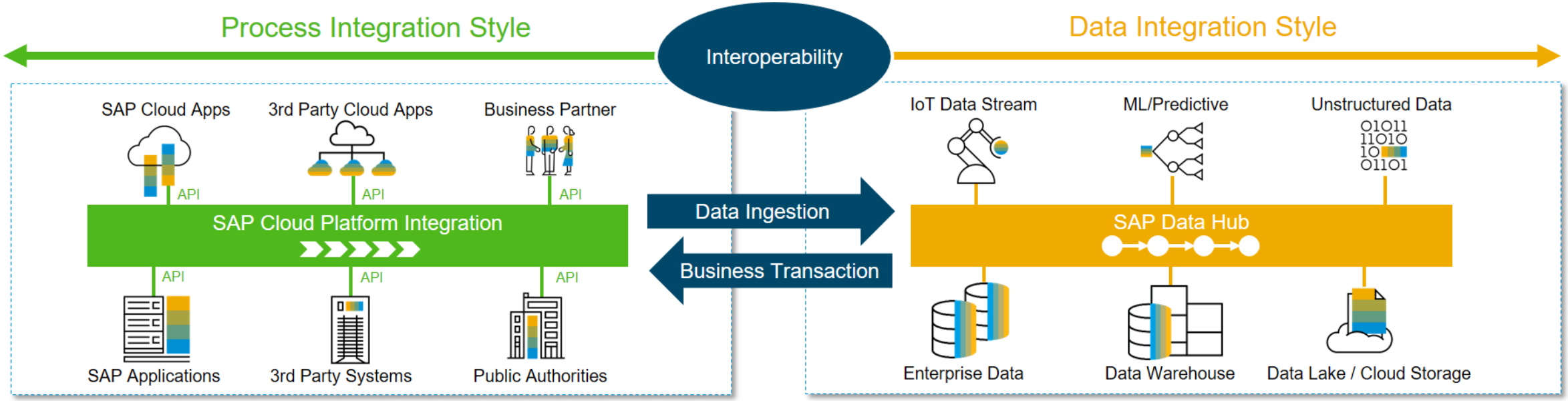
On the next slide, guidance is given on when to use SAP Data Hub (data integration style) and when to use SAP Cloud Platform Integration (process integration style).

Source and further Information:
CIO Guide: Process and Data Integration in Hybrid Landscapes.

Technology Guidance

SAP Cloud Platform Integration and SAP Data Hub

Integration Domains → Integration Styles → Technology Mapping



Key Use Cases and Characteristics

- Chaining of distributed business processes
- A2A / B2B, B2G / Master Data Synchronization
- API focused (synch., async., business events)*
- Message-based processing (mapping, routing, monitoring)
- Transactional Integrity (reliable messaging and error handling)
- Pre-packaged integration content for SAP/Non-SAP scenarios

Key Use Cases and Characteristics

- Pipelining and orchestration of big data in complex landscapes
- Big Data Warehousing, IoT Ingestion, EIM (e.g. batch, streaming)
- Data focused (table/view, storages, processing, libraries)*
- Distributed data processing & server less computing
- High frequent event processing (e.g. via Kafka)
- Advanced data transformations & processing (e.g. ML, Predictive, Code)

* Also table access possible by CPI (like CPI-DS) and API level access possible by SAP Data Hub, but not key focus

Data Integration Style
Further Information

Resource	Link	Description
SAP HANA Data Management Suite	Link	SAP HANA Data Management Suite brings secure, governed enterprise class applications and analytics by providing an open, hybrid, and multi-cloud enabled solution suite that orchestrates all the data into a trusted, unified landscape.
SAP Data Hub	Link	Data orchestration solution that discovers, refines, enriches, and governs any type, variety, and volume of data across an distributed data landscape. It is part if the SAP HANA Data Management Suite.
SAP Data Hub FAQ	Link	This blog provides answers to frequently asked questions on the SAP Data Hub and its relationship to existing EIM technologies.
CIO Guide: SAP Vision for Integrating SAP Applications in Cloud and Hybrid Environments	Link	This guide gives guidance on when to use the SAP Data Hub, SAP HANA Smart Data Integration, SAP HANA Smart Data Access, SAP Data Services, SAP Landscape Transformation Server and SAP Cloud Platform Integration.
CIO Guide to Using SAP Technology for Big Data: SAP HANA, SAP Vora, and SAP Data Hub	Link	This guide gives an overview on SAP big data architectures including SAP HANA, SAP Vora and the SAP Data Hub.
SAP Cloud Platform Integration Suite	Link	SAP's Integration Platform-as-a-Service (IPaaS)
SAP Product Roadmaps	Link	Access all product and solution roadmaps from SAP. You will also find latest roadmaps on all integration technologies and services mentioned in ISA-M.

How To Use

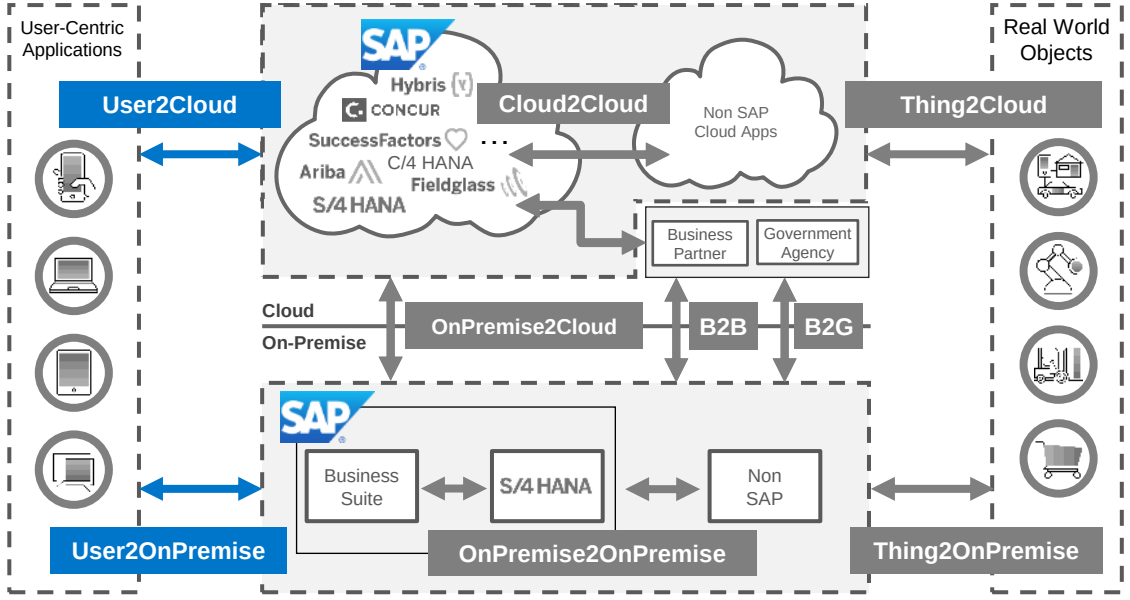
This slides provides links where you can find further information such as additional guidance, product information and roadmaps.

Integration Technology Mapping

Derive Integration Guidelines for Your Organization

A	B	C	D	E
Process Integration	Data Integration	User Integration	Thing Integration	Cross Use Cases

User Integration Style
Overview



How To Use

This section provides a decision table template (slide 59) that allows you to define integration guidelines for the **user integration style** for your organization including the highlighted integration domains. ISA-M is open to also include Non-SAP integration technologies/services.

The ISA-M template also includes examples on how to map this integration style to sample technologies/services from the SAP portfolio.

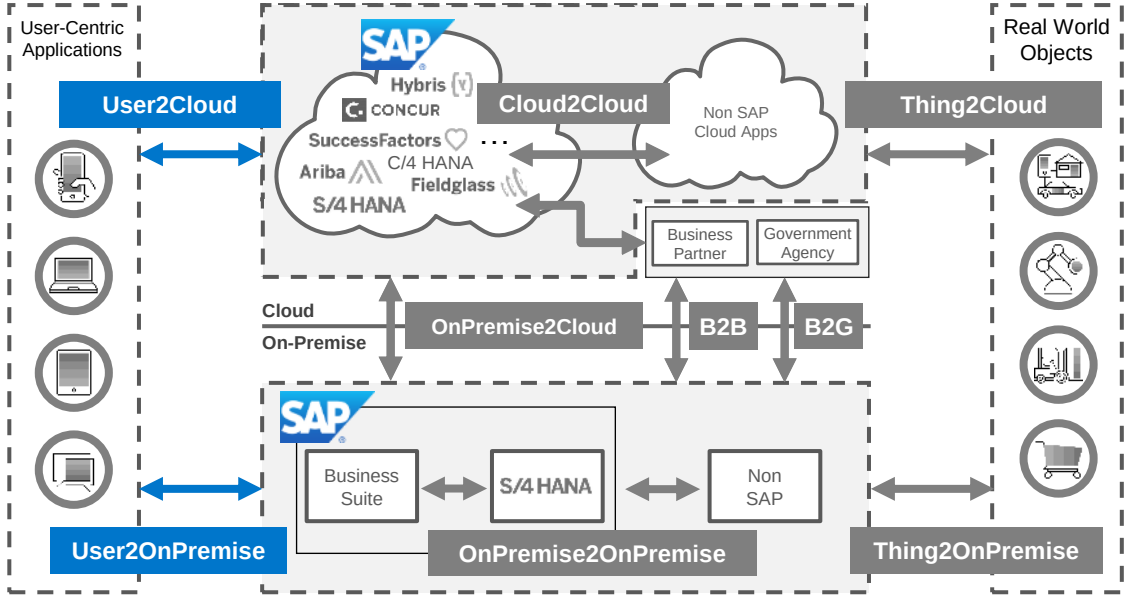
Important Note: The sample technology mappings given in the next slides are only illustrative examples that need to be aligned with your specific context and requirements. SAP also provides consulting services in case you need further support.

User Integration Style

Sample Technology Mapping: UI Integration

Integration Domains → Integration Styles → **Technology Mapping**

1 Integration Domain(s) and Integration Style



Process Integration | Data Integration | **User Integration** | Thing Integration | Cross Use Cases

2 Sample Mapping to SAP Technologies / Services

SAP Fiori Launchpad

- Single point of entry for business applications
- Based on SAP Fiori User Experience
- Responsive design to run on multiple platforms
- Support of multiple deployment options

Key Characteristics

- Role-based access
- Personalization
- Theming and branding via UI theme designer
- Open and extensible

User Integration Style

Decision Table Template

Integration Guidelines				
Integration Technology / Service Sample Values: 1) SAP Fiori Launchpad 2) SAP Cloud Platform Mobile Services 3) SAP Cloud Platform Portal 4) Non-SAP …	**Recommendation Degree** Sample Values: 1) General Recommendation 2) Reasonable Alternative 3) Possible Exception 4) To be avoided …	**Description** Optionally: refer to use case patterns	**Relevant Integration Domains**	
			User2OnPremise	User2Cloud
SAP Fiori Launchpad	General Recommendation	Use as central entry point for business applications (relates to the UI Integration use case pattern).	●	●
SAP Cloud Platform Mobile Services	General Recommendation	Use to develop mobile apps (e.g. iOS and Android apps) and integrate them with backend applications (relates to the Mobile Integration use case pattern).	●	●
…	…	…		

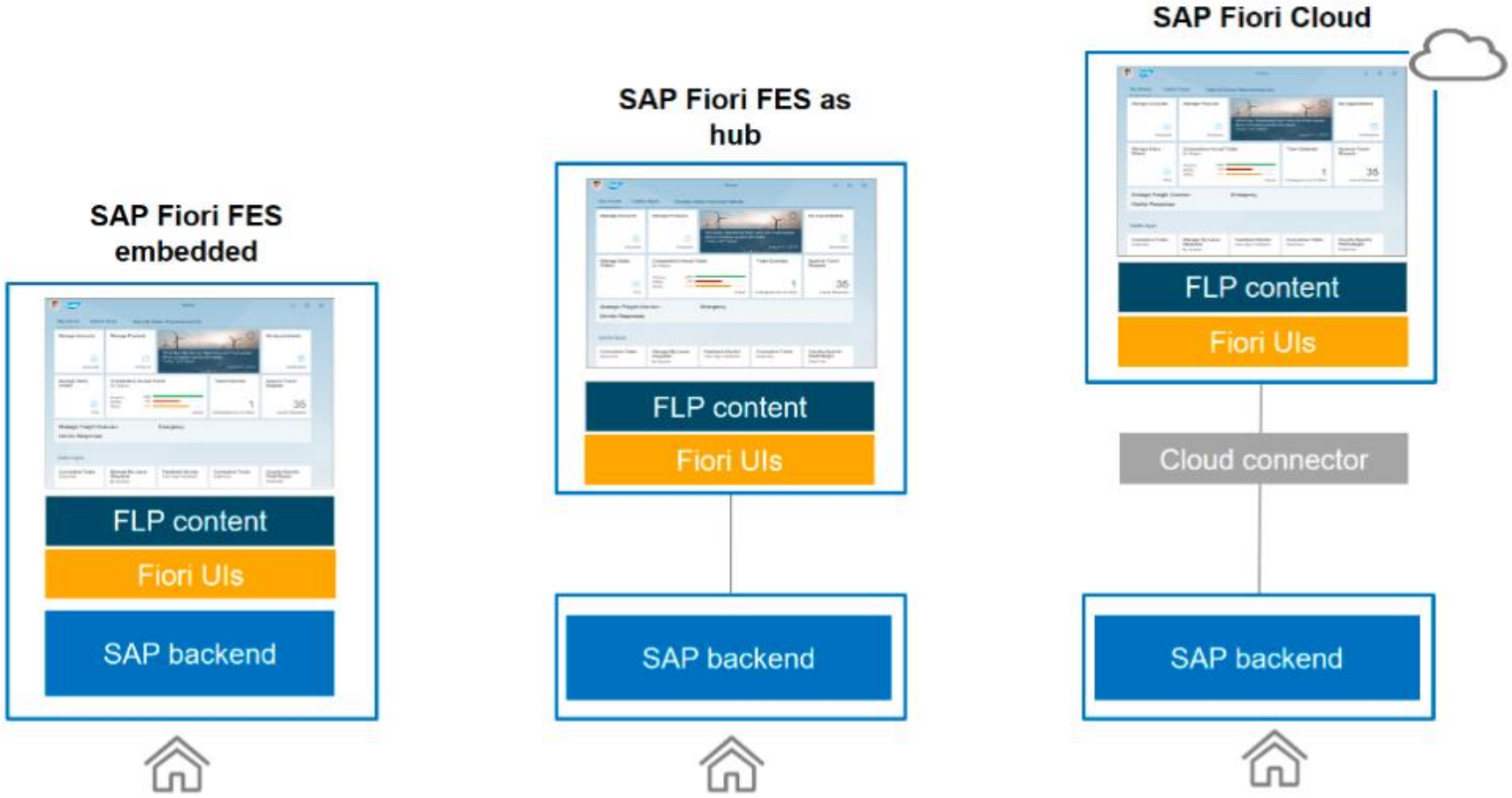
How To Use

This table allows you to define integration guidelines for the **user integration style** for your organization. Per row, you can add one integration guideline: In **column 1**, you can select the relevant integration technology/service for which you want to define the guideline (e.g. SAP Fiori Launchpad). In **column 2**, you can define the recommendation degree that you would like to assign to the integration technology/service within your organization (e.g. General Recommendation). In **column 3**, you can further describe your integration guideline, optionally by referring to the relevant use case patterns. **Column 4** allows you to assign the integration technology/service to the relevant integration domain(s), e.g. User2Cloud or User2OnPremise.

Important Note: The sample technology mappings shown in the table above are only illustrative examples that need to be aligned with your specific context and requirements. Also the inclusion of Non-SAP integration technologies / services is possible.

User Integration Style

Example: SAP Fiori Deployment Options



Explanation

Example: SAP Fiori deployment options with an on-premise SAP backend. The main difference of the deployment options is the location, where the SAP Fiori UIs, the FLP content and SAP Fiori launchpad (FLP) as entry point to the applications is deployed.

Source and further Information: SAP Fiori Deployment Options and System Landscape Recommendations

User Integration Style

Further Information

Resource	Link	Description
SAP Fiori Deployment Options and System Landscape Recommendations	Link	In this document, you can find the main SAP Fiori scenarios, the recommended system landscape setup, and the SAP Front-end server deployment options. This document also includes insights into SAP Front-end server hub and embedded deployment and what aspects to consider. The FAQ section provides answers to common questions regarding the SAP Fiori deployment options. Relates to the “UI Integration” use case pattern.
SAP Fiori – OData Provisioning Options	Link	As part of the guide “SAP Fiori Deployment Options and System Landscape Recommendations” an overview is given on the OData Provisioning options.
SAP Cloud Platform Mobile Services	Link	Create and run native, hybrid and micro mobile apps with a mobile app development platform (Enterprise iOS and Android apps). Secure access to on-premise or cloud-based data sources, data-access features and offline OData synchronization. Relates to the “Mobile Integration” use case pattern.
SAP Cloud Platform Portal	Link	Build Digital Experience Portals for employees, customers and partners.
SAP Fiori Cloud	Link	Revamp your user experience with SAP Fiori on SAP Cloud Platform.
UI Theme Designer	Link	Apply your corporate branding to applications based on SAPUI5 technology.
SAP Cloud Platform Integration Suite	Link	SAP’s Integration Platform-as-a-Service (IPaaS)
SAP Product Roadmaps	Link	Access all product and solution roadmaps from SAP. You will also find latest roadmaps on all integration technologies and services mentioned in ISA-M.

How To Use

This slides provides links where you can find further information such as additional guidance, product information and roadmaps.

Integration Technology Mapping

Derive Integration Guidelines for Your Organization

A

Process Integration

B

Data Integration

C

User Integration

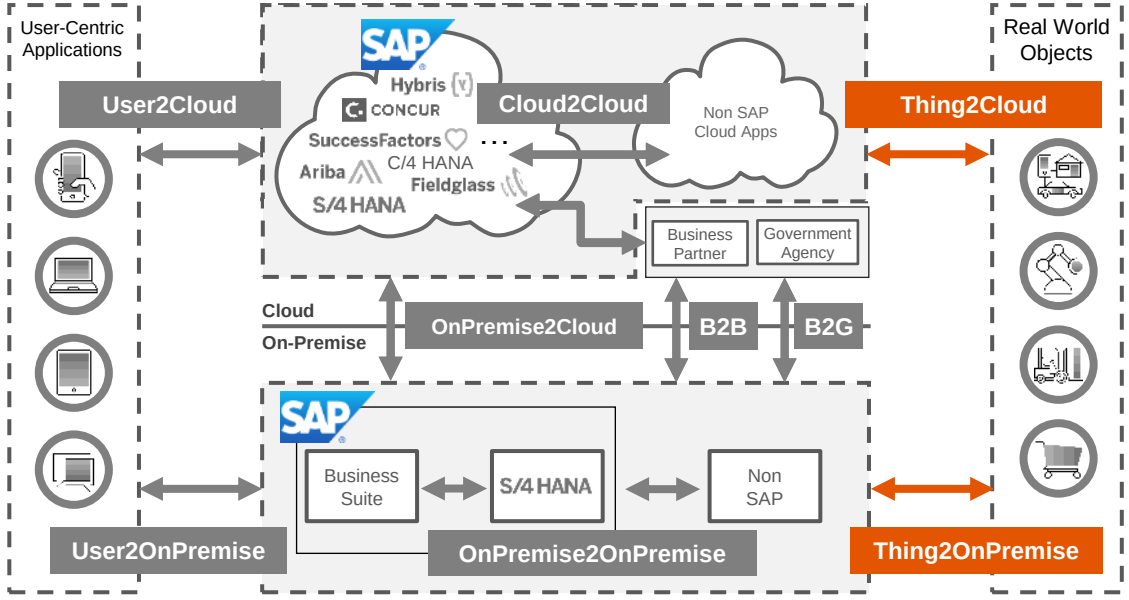
D

Thing Integration

E

Cross Use Cases

Thing Integration Style
Overview



How To Use

This section provides a decision table template (slide 65) that allows you to define integration guidelines for the **thing integration style** for your organization including the highlighted integration domains. ISA-M is open to also include Non-SAP integration technologies/services.

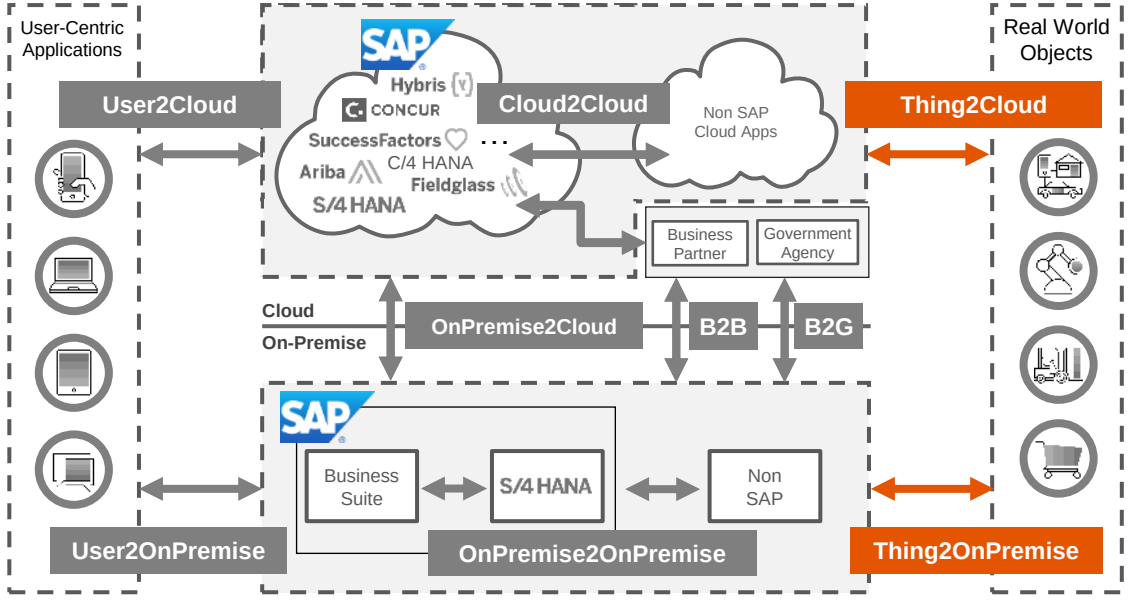
The ISA-M template also includes examples on how to map this integration style to sample technologies/services from the SAP portfolio.

Important Note: The sample technology mappings given in the next slides are only illustrative examples that need to be aligned with your specific context and requirements. SAP also provides consulting services in case you need further support.

Thing Integration Style

Sample Technology Mapping

1 Integration Domain(s) and Integration Style



Process Integration | Data Integration | User Integration | **Thing Integration** | Cross Use Cases

2 Sample Mapping to SAP Technologies / Services

SAP Cloud Platform Internet of Things

- Part for SAP Cloud Platform Integration Suite
- Integrate data from devices and process it in business or analytical IoT applications
- Integral part of SAP Leonardo IoT Foundation and SAP Edge Services to build and run IoT applications in the cloud

Key Characteristics

- Device Lifecycle Management
- IoT specific protocol support (e.g. MQTT, OPC-UA)
- Edge-level processing intelligence
- Remote software updates

Thing Integration Style
Decision Table Template

Integration Guidelines				
Integration Technology / Service Sample Values: 1) SAP Cloud Platform Internet of Things 2) SAP IoT Application Enablement 3) SAP Plant Connectivity 4) Non-SAP …	**Recommendation Degree** Sample Values: 1) General Recommendation 2) Reasonable Alternative 3) Possible Exception 4) To be avoided …	**Description** Optionally: refer to use case patterns	**Relevant Integration Domains**	
			Thing2OP	Thing2Cloud
SAP Cloud Platform Internet of Things	General Recommendation	Use to on-board, configure, integrate and manage remote devices.		●
SAP IoT Application Enablement	General Recommendation	Use this set of microservices to build IoT apps and leverage data storage to deliver real-time insights (complementary to SAP Cloud Platform IoT).		●
SAP Edge Services	General Recommendation	Use to process data on the edge layer, e.g. to provide continuity for critical business functions without reliance on network connectivity (complementary to SAP Cloud Platform IoT).		●
…				

How To Use

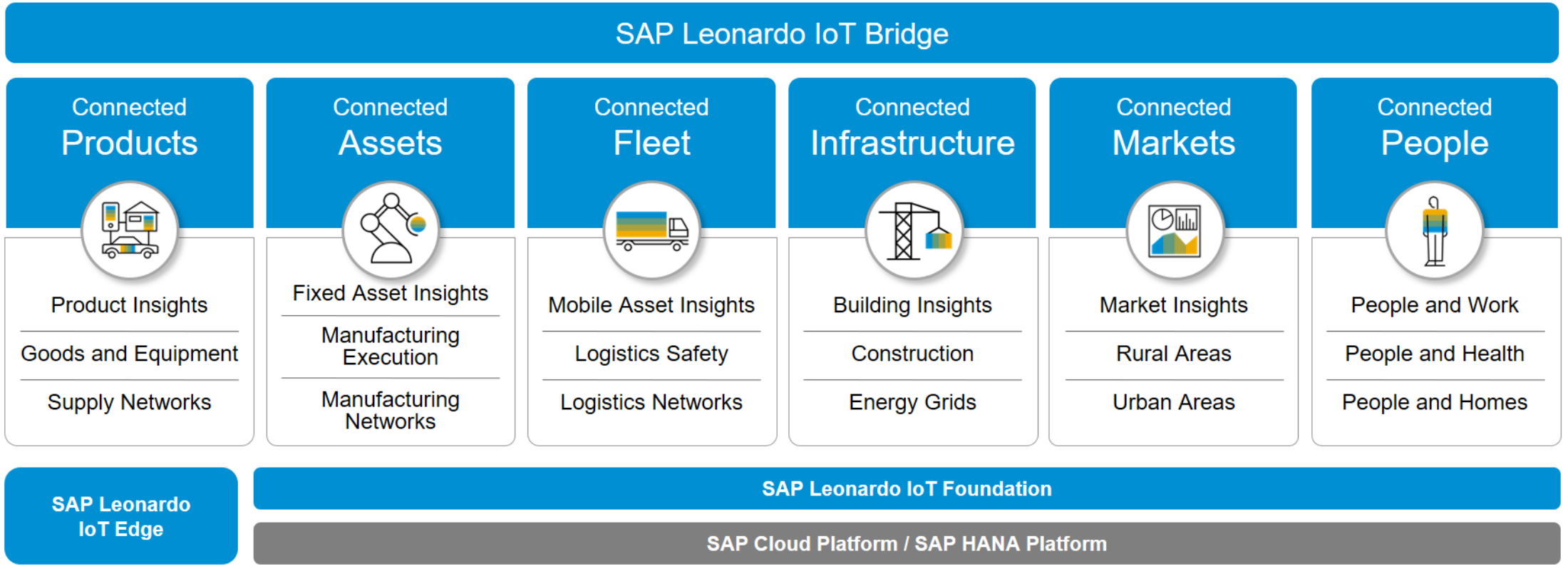
This table allows you to define integration guidelines for the **thing integration style** for your organization. Per row, you can add one integration guideline: In **column 1**, you can select the relevant integration technology/service for which you want to define the guideline (e.g. SAP Cloud Platform Internet of Things). In **column 2**, you can define the recommendation degree that you would like to assign to the integration technology/service within your organization (e.g. General Recommendation). In **column 3**, you can further describe your integration guideline, optionally by referring to the relevant use case patterns. **Column 4** allows you to assign the integration technology/service to the relevant integration domain(s), e.g. Thing2Cloud or Thing2OnPremise.

Important Note: The sample technology mappings shown in the table above are only illustrative examples that need to be aligned with your specific context and requirements. Also the inclusion of Non-SAP integration technologies / services is possible.

Thing Integration Style

Overview: SAP Leonardo Internet of Things

Integration Domains → Integration Styles → Technology Mapping



Explanation

This slides provides an overview on SAP Leonardo Internet of Things.

Source and further Information: Link

Thing Integration Style
Further Information

Resource	Link	Description
SAP Leonardo Internet of Things	Link	Entry page for all IoT related information including IoT applications, IoT technologies and IoT services.
SAP Leonardo Internet of Things: Business Outcomes in a Connected World - Compendium	Link	This guide that provides an overview on SAP's IoT portfolio.
SAP Cloud Platform Internet of Things	Link	On-board, configure and manage any remote device with our out-of-the-box IoT connectivity and large-scale device management.
SAP Edge Services	Link	Scale and extend cloud functionality to the edge of the network.
SAP IoT Application Enablement	Link	A complete set of microservices designed to build powerful apps and leverage data storage to deliver real-time insights.
SAP Plant Connectivity	Link	Connect your machines to solutions such as SAP MII, manufacturing execution systems (MES), SAP EWM, and more. Deliver Industrial Internet of Things (IIoT) and machine-to-machine (M2M) connectivity to your business.
SAP Product Roadmaps	Link	Access all product and solution roadmaps from SAP. You will also find latest roadmaps on all integration technologies and services mentioned in ISA-M.

How To Use

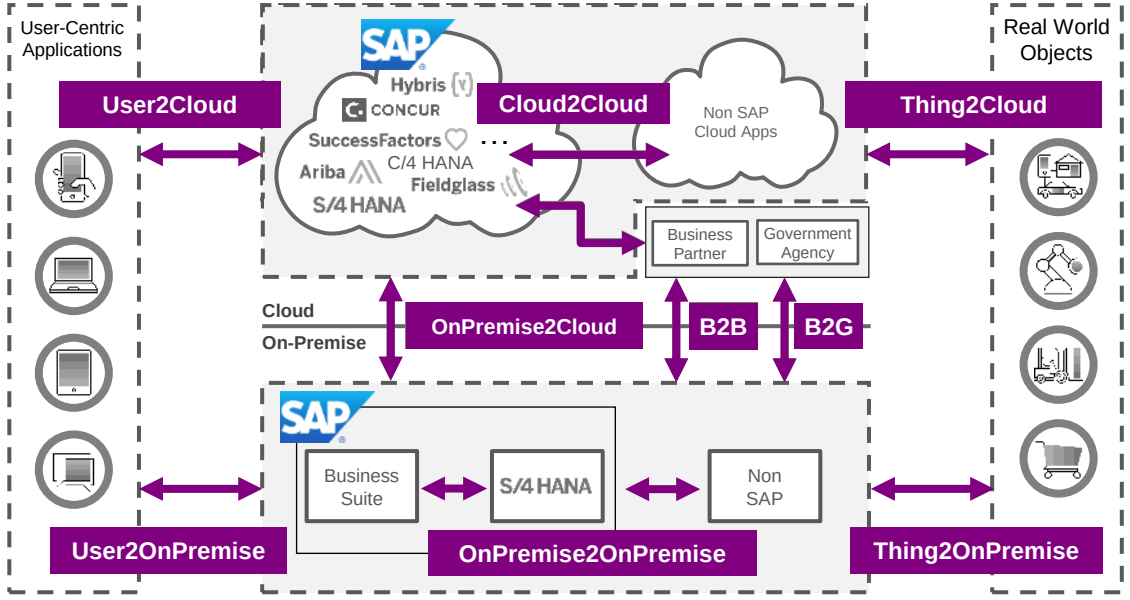
This table provides links where you can find further information such as refined guidance, product information and roadmaps.

Integration Technology Mapping

Derive Integration Guidelines for Your Organization

A	B	C	D	E
Process Integration	Data Integration	User Integration	Thing Integration	Cross Use Cases

Cross Use Cases
Overview



Process Integration | Data Integration | User Integration | Thing Integration | **Cross Use Cases**

How To Use

Cross Use Cases build a category for all use case patterns that complement one ore more of the four core integration styles. For example, API-Managed Integration provides full-lifecycle management for APIs that, e.g. can be leveraged in user- or process-centric integration scenarios. Workflow Management is an other example for a cross use case as it can spawn across process-, user- and data-centric integration scenarios. It also includes all other integration-related use cases such as business rules management or stream analytics.

This section provides a decision table template (slide 71) that allows you to define integration guidelines for the **cross use case category** for your organization including the highlighted integration domains. ISA-M is open to also include Non-SAP integration technologies/services. The ISA-M template also includes examples on how to map cross use cases to sample technologies/services from the SAP portfolio.

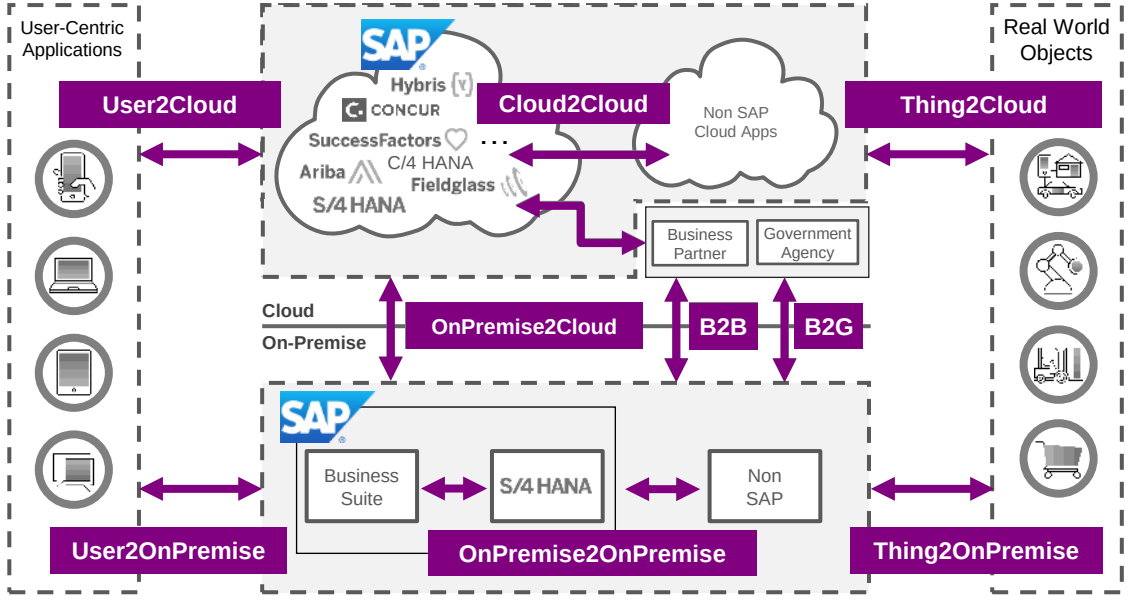
Important Note: The sample technology mappings given in the next slides are only illustrative examples that need to be aligned with your specific context and requirements. SAP also provides consulting services in case you need further support.

Cross Use Cases

Sample Technology Mapping: API Managed Integration

Integration Domains → Integration Styles → Technology Mapping

1 Integration Domain(s) and Integration Style



Process Integration | Data Integration | User Integration | Thing Integration | **Cross Use Cases**

2 Sample Mapping to SAP Technologies / Services

SAP Cloud Platform API Management

- Part for SAP Cloud Platform Integration Suite
- Provides full lifecycle management for APIs
- Can be used in multiple integration domains and styles

Examples

- Omnichannel access and mobile
- Open real-time B2B Integration
- Data access governance and monetization

Key Characteristics

- API traffic management policies
- API security policies
- API analytics and monetization

Cross Use Cases
Decision Table Template

Integration Guidelines								
Integration Technology / Service Sample Values: 1) SAP Cloud Platform API Management 2) SAP Cloud Platform Enterprise Messaging 3) SAP Cloud Platform Workflow 4) Non-SAP …	**Recommendation Degree** Sample Values: 1) General Recommendation 2) Reasonable Alternative 3) Possible Exception 4) To be avoided …	**Description** Optionally: refer to use case patterns	**Relevant Integration Domains**					
			User2OP	User2Cloud	OP2OP	OP2Cloud	Cloud2Cloud	B2B/B2G
SAP Cloud Platform API Management	General Recommendation	Use to provide secure, omni-channel access for APIs that are exposed to partners and app developers		●		●	●	●
SAP Cloud Platform Enterprise Messaging	General Recommendation	Use to build applications and extensions that can react to events from SAP S/4HANA. Decoupling of apps and services.				●	●	
SAP Cloud Platform Workflow	General Recommendation	Use to build, run, and manage workflows, from simple approvals to end-to-end processes that span across different organizations and applications.		●		●	●	
…	…	…						

How To Use

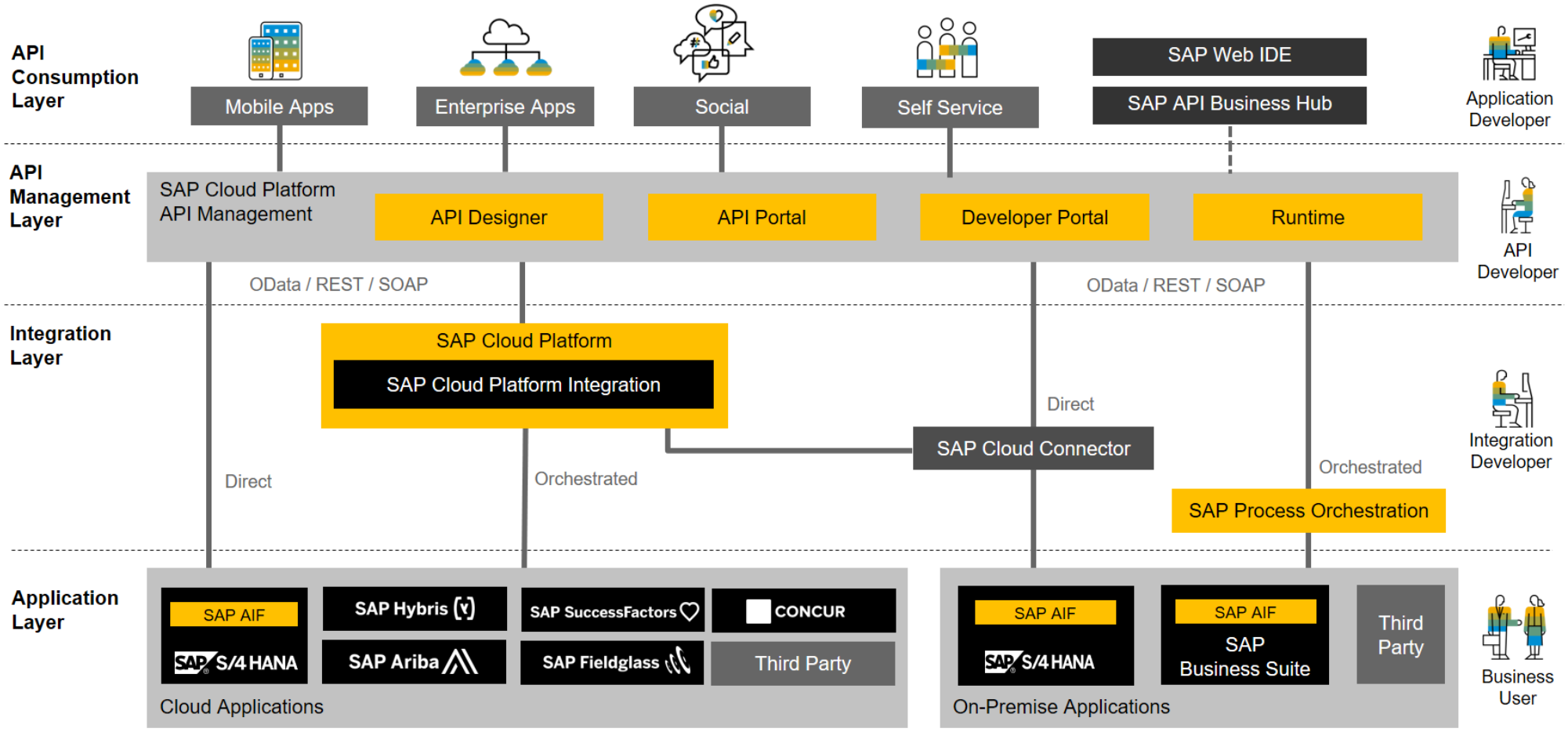
This table allows you to define integration guidelines for the **cross use cases category** for your organization. Per row, you can add one integration guideline: In **column 1**, you can select the relevant integration technology/service for which you want to define the guideline (e.g. SAP Cloud Platform API Management). In **column 2**, you can define the recommendation degree that you would like to assign to the integration technology/service within your organization (e.g. General Recommendation). In **column 3**, you can further describe your integration guideline, optionally by referring to the relevant use case patterns. **Column 4** allows you to assign the integration technology/service to the relevant integration domain(s), e.g. User2Cloud or Cloud2Cloud.

Important Note: The sample technology mappings shown in the table above are only illustrative examples that need to be aligned with your specific context and requirements. Also the inclusion of Non-SAP integration technologies / services is possible.

Cross Use Cases

Example: SAP Cloud Platform API Management

Integration Domains → Integration Styles → Technology Mapping



Explanation

SAP API Management provides a solution for the full lifecycle management of APIs and complements SAP Cloud Platform Integration and SAP Process Orchestration. It enables use cases like omnichannel access, open real-time B2B Integration or data access governance and monetization.

Source and further Information: CIO Guide: Process and Data Integration in Hybrid Landscapes.

Cross Use Cases

Sample Integration Patterns – API Management and Integration Layer

API Policies & Integration Patterns	API Management Layer	Integration Layer
Integration Technology	SAP API Management	SAP Cloud Platform Integration or SAP Process Orchestration
API Traffic Management Policies	●	○
API Security Policies	●	○
API Analytics & Monetization	●	○
Structure Mapping	◐	●
Protocol Adaptation	◐	●
Routing	○	●
Splitter	○	●
Aggregator	○	●
Value Mapping	○	●

● Recommended ◐ Partially possible ○ Not recommended

Explanation

This slide shows some typical API policies and integration patterns that are best implemented in the API management layer or the integration layer. It provides guidance for integration architects on how to combine both offerings and can be extended/adapted to capture best practices in your organization.

Source and further Information: CIO Guide: Process and Data Integration in Hybrid Landscapes.

Cross Use Cases
Further Information

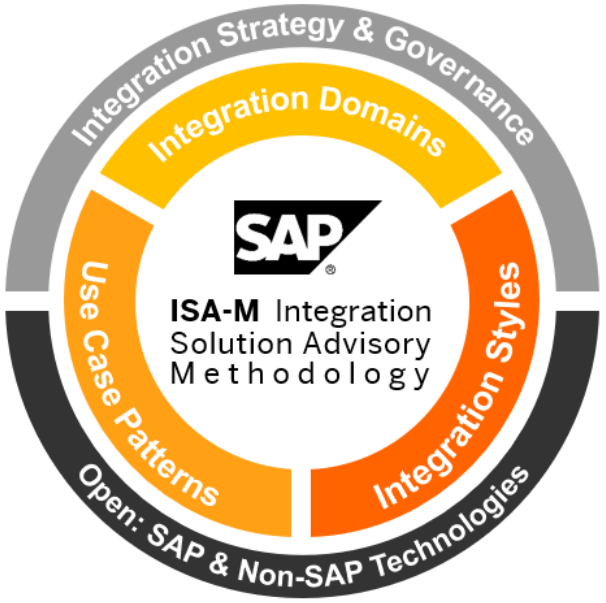
Resource	Link	Description
CIO Guide: Process and Data Integration in Hybrid Landscapes	Link	Among others, this guide gives detailed guidance on the complementary usage of SAP Cloud Platform Integration, SAP Process Orchestration and the SAP Application Interface Framework (AIF). It also includes guidance on the complementary usage of SAP Cloud Platform API Management.
SAP Cloud Platform Integration Suite	Link	SAP's Integration Platform-as-a-Service (IPaaS): It simplifies integration by connecting people, processes, data, and devices everywhere by allowing people with different skills to leverage a wide variety of integration approaches, intuitive tools, and prepackaged content to achieve results faster and gain business agility with a versatile, dynamic, and enterprise-grade cloud integration platform.
SAP Cloud Platform API Management	Link	Use API management to create simple connected digital experiences for your consumers, partners, and employees. Part of SAP Cloud Platform Integration Suite.
SAP Cloud Platform Enterprise Messaging	Link	Cloud-based messaging and event-enabling service for decoupling application logic and developing microservices. Part of SAP Cloud Platform Integration Suite.
SAP Cloud Platform Workflow	Link	Automate business processes using workflow technology. Part of SAP Cloud Platform Integration Suite.
SAP Cloud Platform Business Rules	Link	Enrich cloud offering with decisions modeling, management and execution service. Part of SAP Cloud Platform Integration Suite.
SAP Streaming Analytics	Link	Process continuous streams of event data in real time and act on the results. Part of SAP Cloud Platform Integration Suite.
SAP Cloud Platform Connectivity	Link	Simply and securely connect cloud and on-premise systems Part of SAP Cloud Platform Integration Suite.
SAP Product Roadmaps	Link	Access all product and solution roadmaps from SAP. You will also find latest roadmaps on all integration technologies and services mentioned in ISA-M.

How To Use

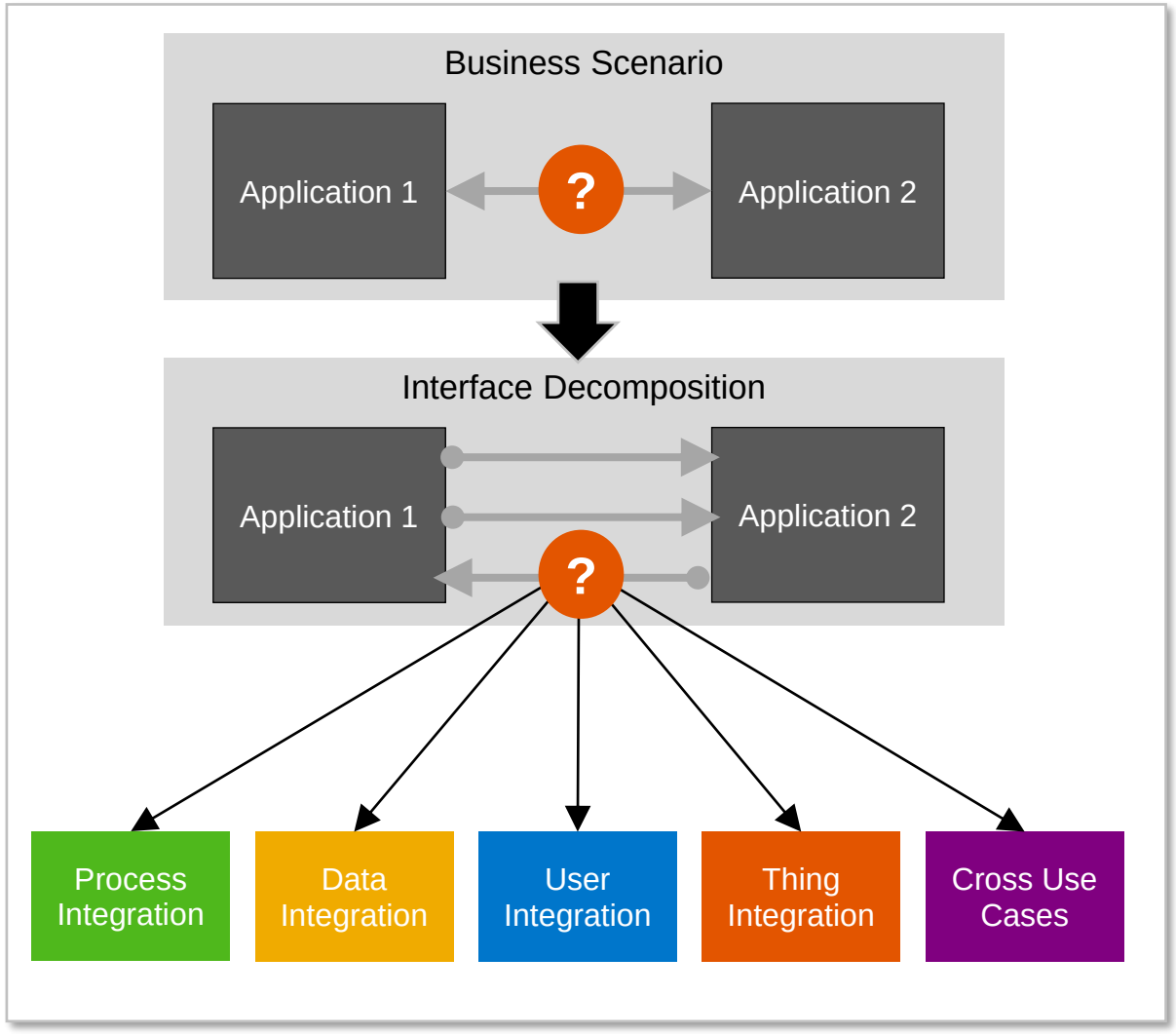
This slides provides links where you can find further information such as additional guidance, product information and roadmaps.

ISA-M Template

Overview



Interface Assessment
Overview



How To Use

A typical task in implementation projects is to blueprint integration scenarios between two applications. Typically, a business scenario is decomposed into technical interfaces.

Next, each technical interface needs to be classified / assessed whether it is a process-, data-, user- or thing-centric integration style. Based on the specific characteristics, the appropriate integration technology/service needs to be selected.

ISA-M supports the classification of interfaces that will we shown on the next slides: in this example a business scenario is decomposed into three technical interfaces: Data Replication, A2A Integration, Mobile Integration.

Interface Assessment

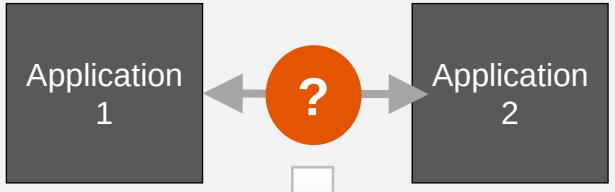
Sample Interface 1: Data Replication

Interface Assessment

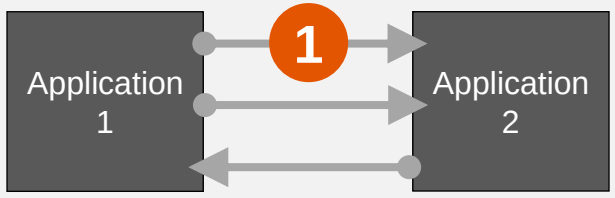
Analyze Business Scenario → Identify Integration Style and Pattern → Choose Integration Technology

Domain: OnPremise2Cloud

Business Scenario



Interface Decomposition



Integration Style & Use Case Pattern Matrix

Process Integration	Data Integration	User Integration	Thing Integration
A2A Integration	Master Data Synchronization	UI Integration	Thing to Analytics
B2B Integration	Data Replication (2)	Mobile Integration	Thing to Process
Business Network Integration	Data Virtualization	Desktop Integration	Thing to Data Lake
Customer-Specific Use Case	Data Quality Management	…	Thing to Thing
	…	…	…

API-Managed Integration	Event-Based Integration	Stream Analytics	Workflow Management	…

Cross Use Cases

Decision Table *
(Based on Customer Context)

Option	Integration Technology
1	SAP HANA Smart Data Integration (3)
2	…

Interface Assessment

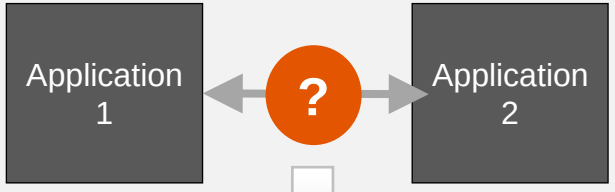
Sample Interface 2: A2A Integration

Interface Assessment

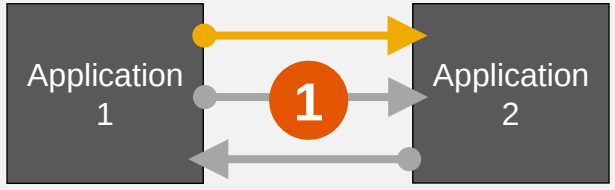
Analyze Business Scenario → Identify Integration Style and Pattern → Choose Integration Technology

Domain	OnPremise2Cloud

Business Scenario



Interface Decomposition



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Customer-Specific Use Case	Data Quality Management	…	Thing to Thing
	…	…	…

API-Managed Integration	Event-Based Integration	Stream Analytics	Workflow Management	…

Cross Use Cases

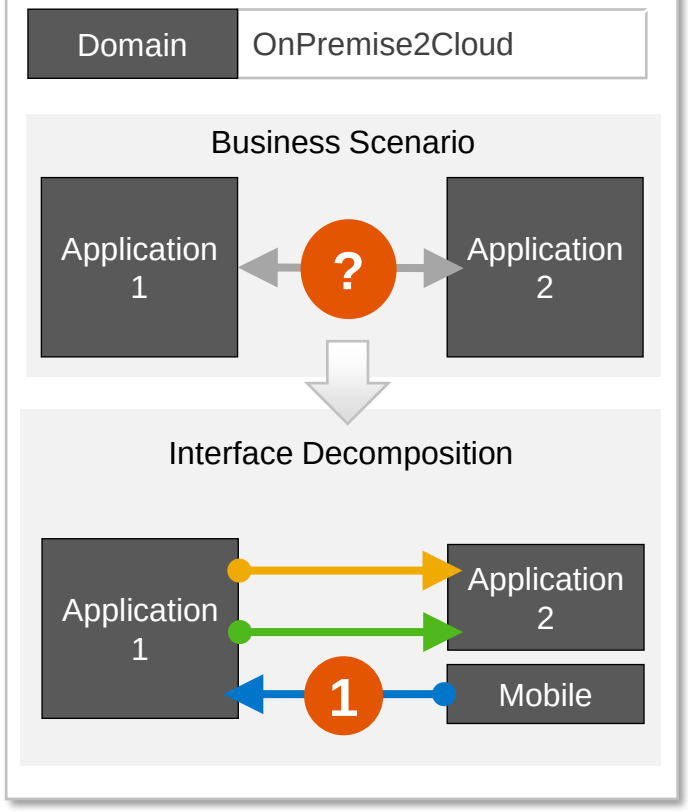
Decision Table * (Based on Customer Context)

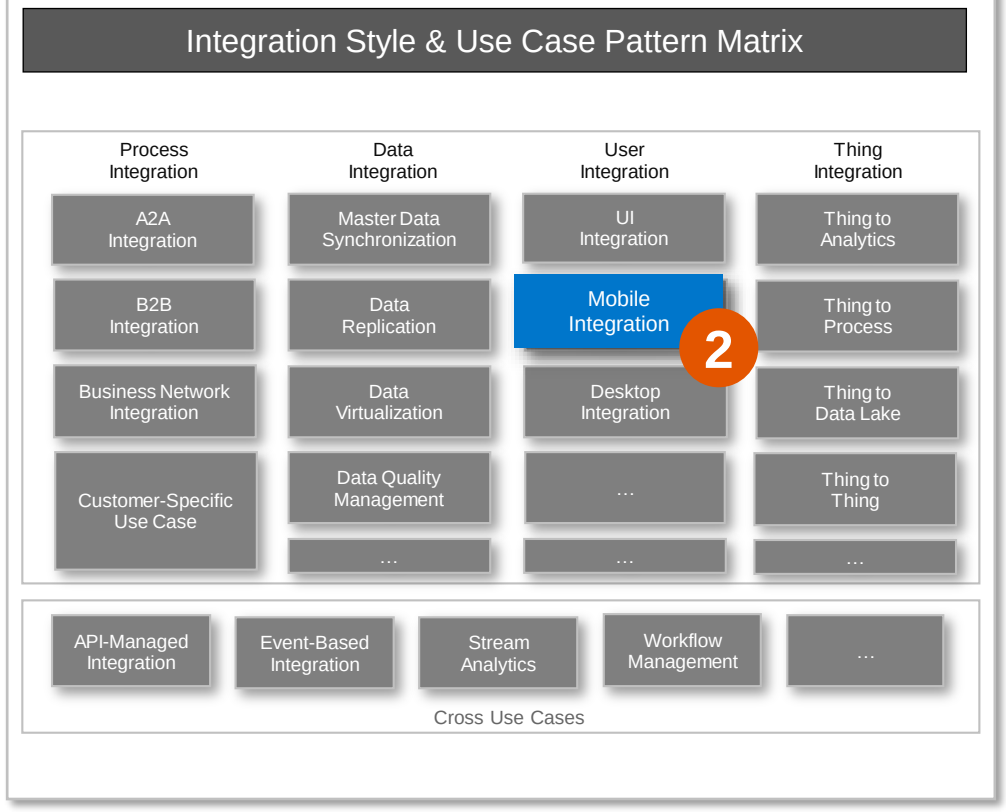
Option	Integration Technology
1	SAP Cloud Platform Integration (3)
2	…

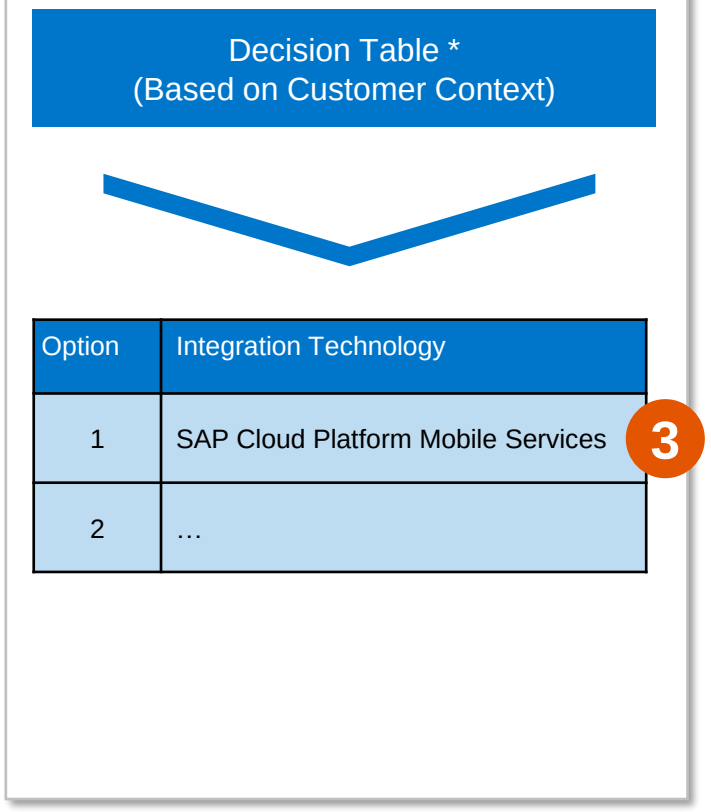
Interface Assessment

Sample Interface 3: Mobile Integration

Analyze Business Scenario → Identify Integration Style and Pattern → Choose Integration Technology

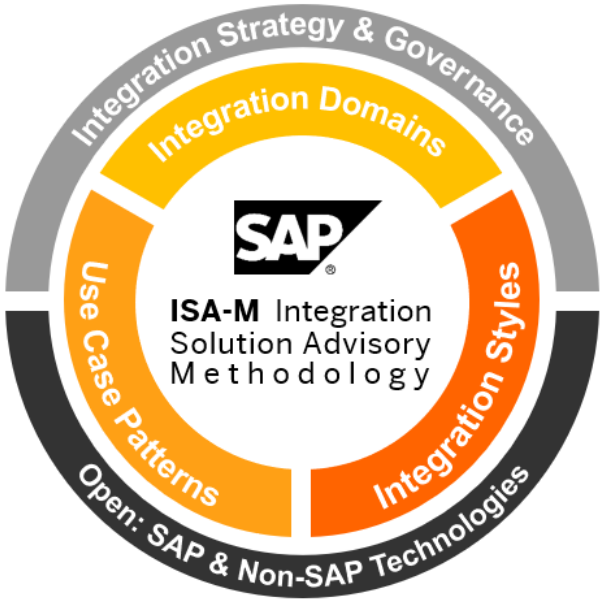






ISA-M Template

Overview



1	2	3	4	5	6	7
Overview & Terms of Use	Integration Roles	Integration Domains	Integration Styles & Use Cases Patterns	Technology Mapping	Interface Assessment	CIO Guides

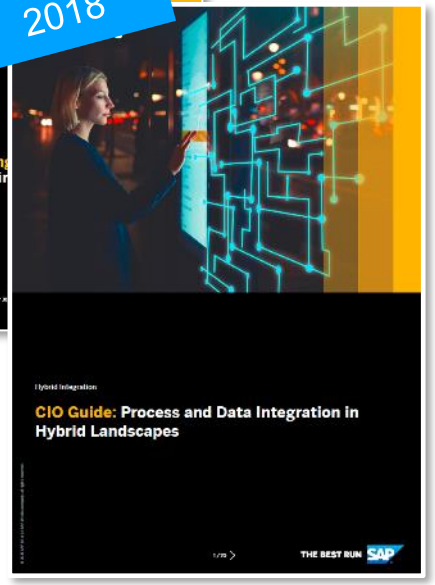
CIO Guides for Integration

Complementary Guides for Enterprise Architects

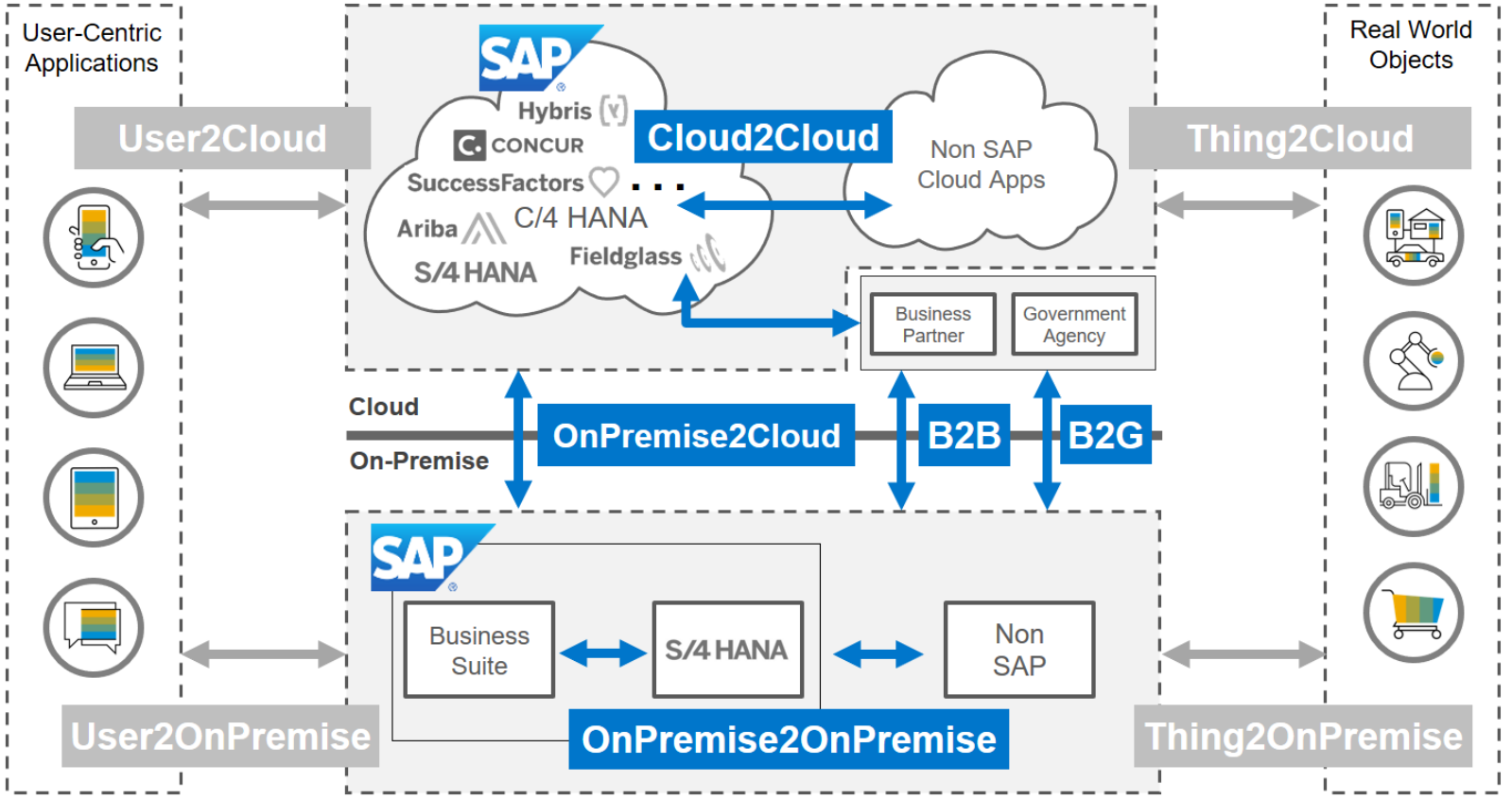
2017

Download

2018



Download



Scope

CIO Guides for Integration

Further Information & Detailed Technology Guidance

2017

SAP Vision for Integrating SAP Applications in Cloud and Hybrid Environments

- Describes SAP's long term Vision for Integration
- Key Integration Use Cases
- API Alignment
- Process Integration Guidance
- Data Integration Guidance

https://www.sap.com/documents/2017/05/eebd96bd-b97c-0010-82c7-eda71af511fa.html

2018

Process & Data Integration in Hybrid Landscapes

- Refined Guidance for Process, B2B and Data Integration
- Integration Solution Advisory Methodology (ISA-M)
- SAP API Strategy
- Integration Automation
- SAP S/4HANA Transition Guidance

https://www.sap.com/documents/2018/06/de3238a0-077d-0010-87a3-c30de2ffd8ff.html

2018

Identity Lifecycle in Hybrid Landscapes

- Reference Architecture for Identity and Access Management
- Scenarios for Identity and Access Management
- Standards for Authentication and Provisioning
- SSO with SAP Cloud Platform Identity Authentication

https://www.sap.com/documents/2018/05/38ce7d25-067d-0010-87a3-c30de2ffd8ff.html