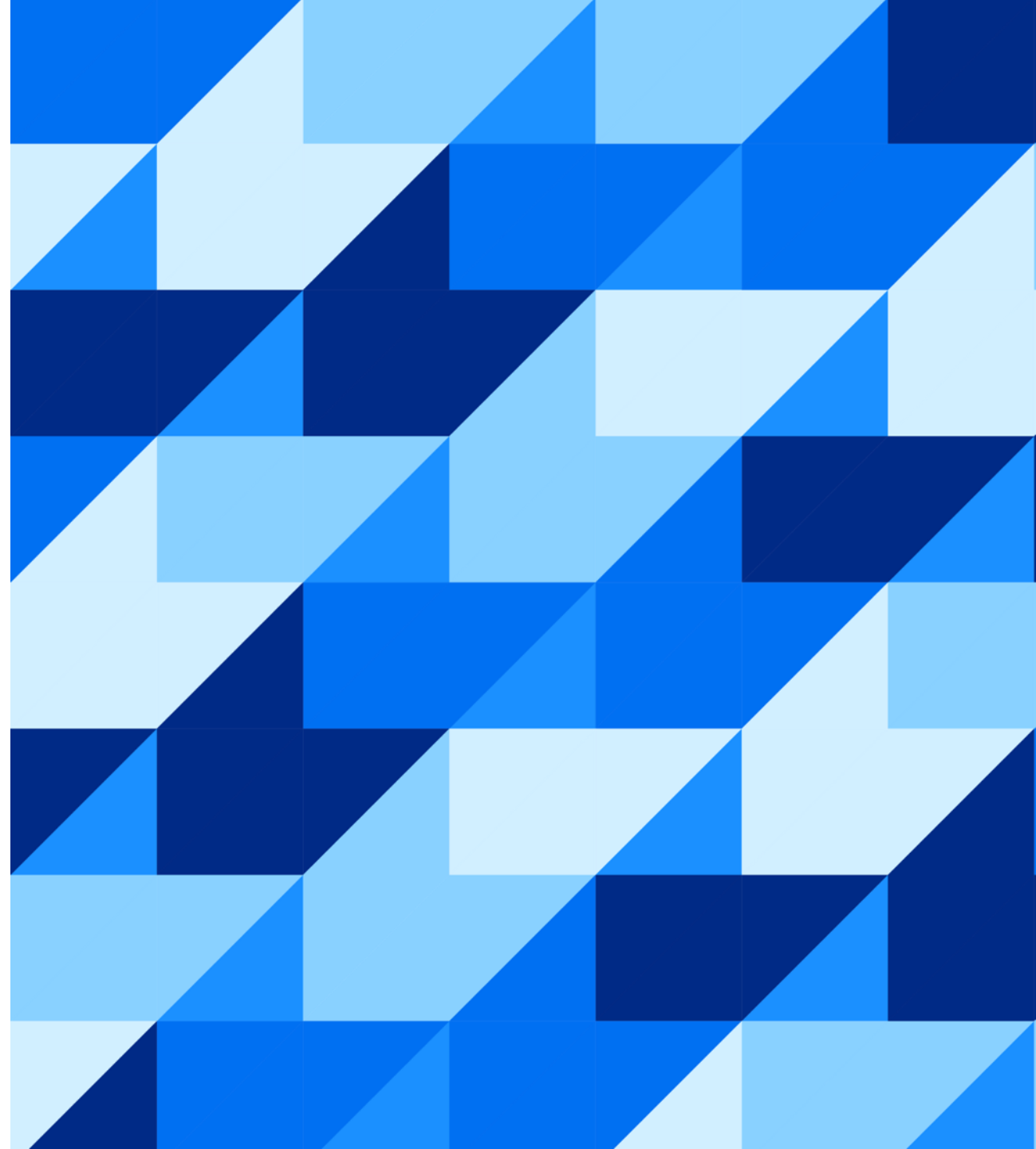




Clean Core & ABAP Cloud - Bericht aus der Praxis

Lukas Bretschneider & Lukas Käser, SAP
June 06, 2024

Public



Agenda

Extensibility Model
Governance Process

THE GOOD

Expectation Management
What are KPIs?
“clean core” developers?
APIfication process

THE BAD

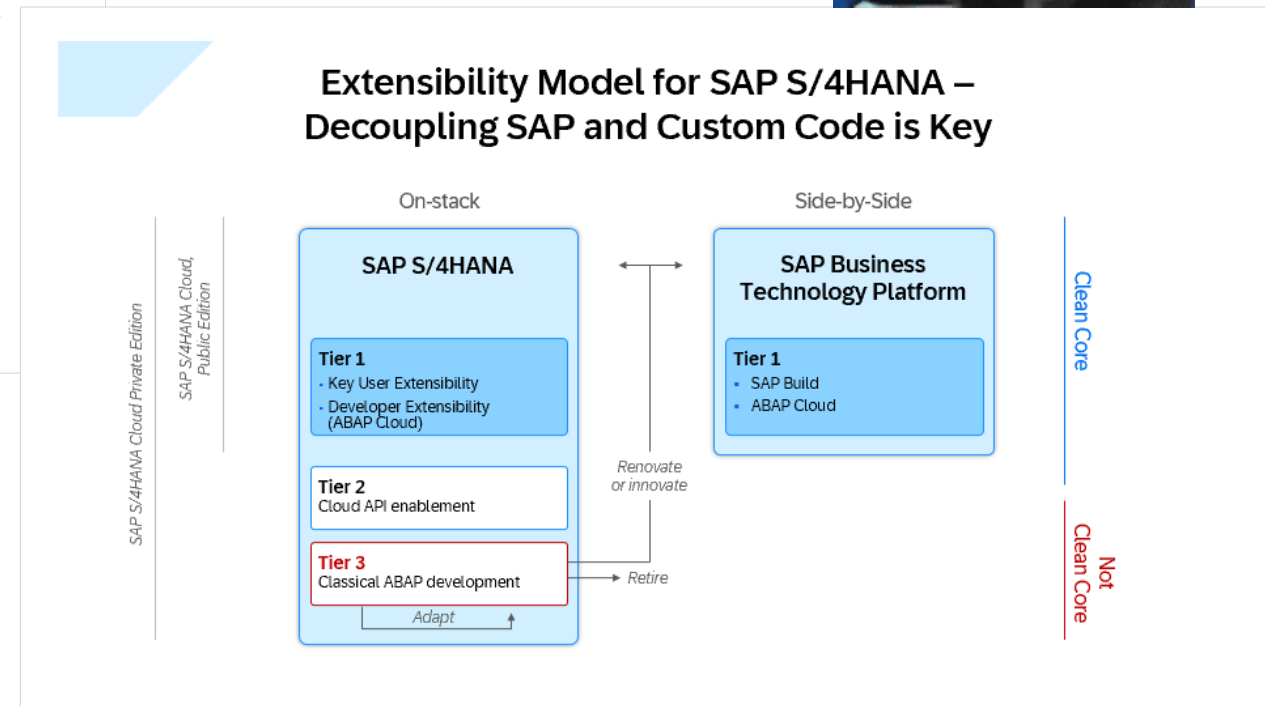
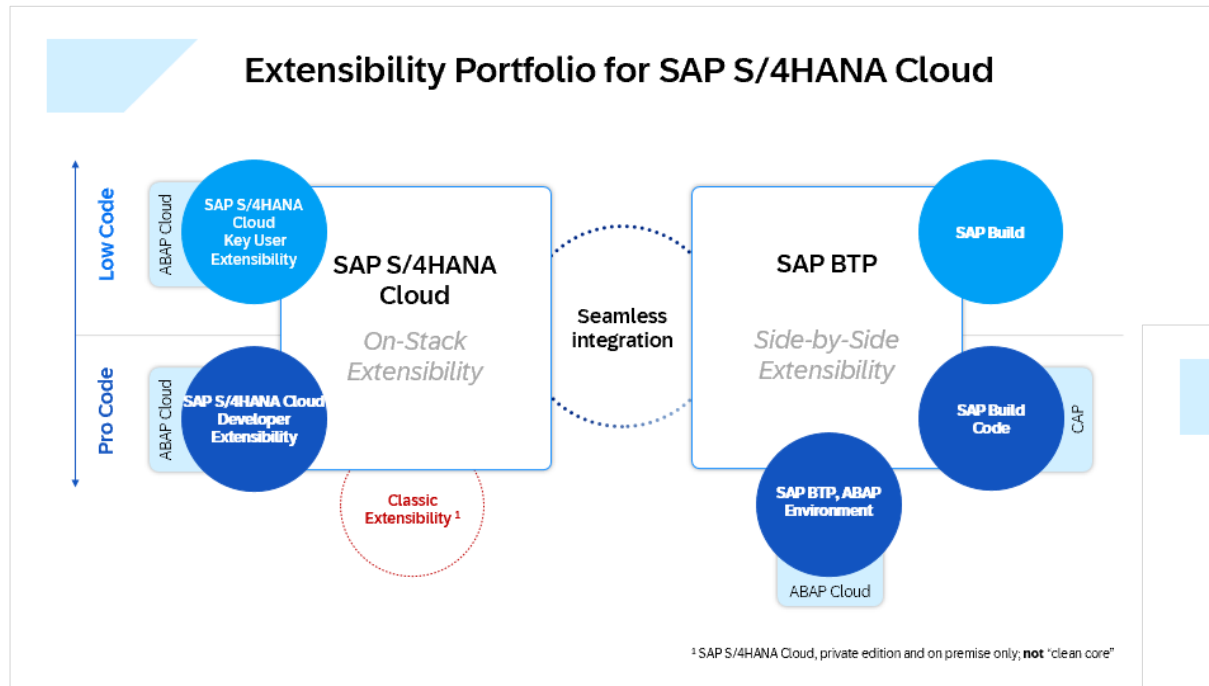
Legacy Code

and **THE UGLY**

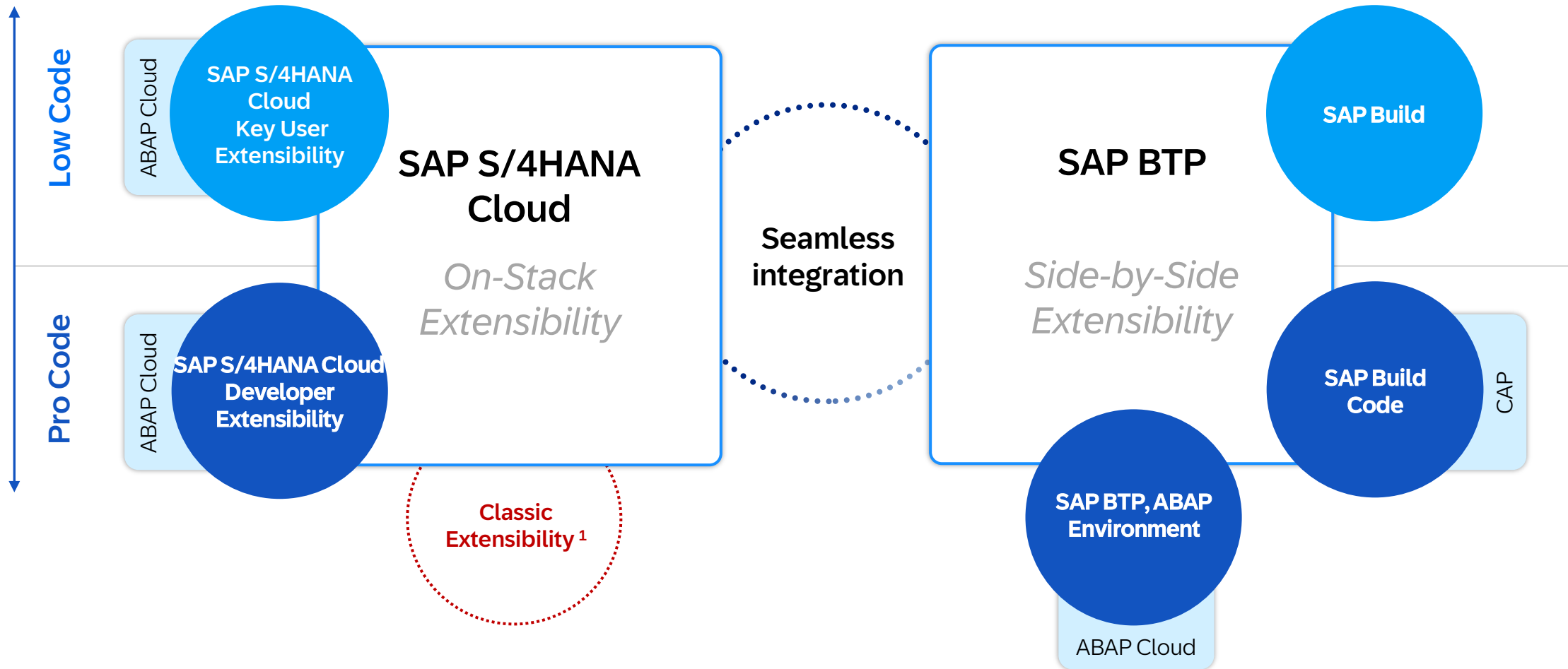


THE GOOD..

Extensibility Models – welcome to SAPPHIRE!

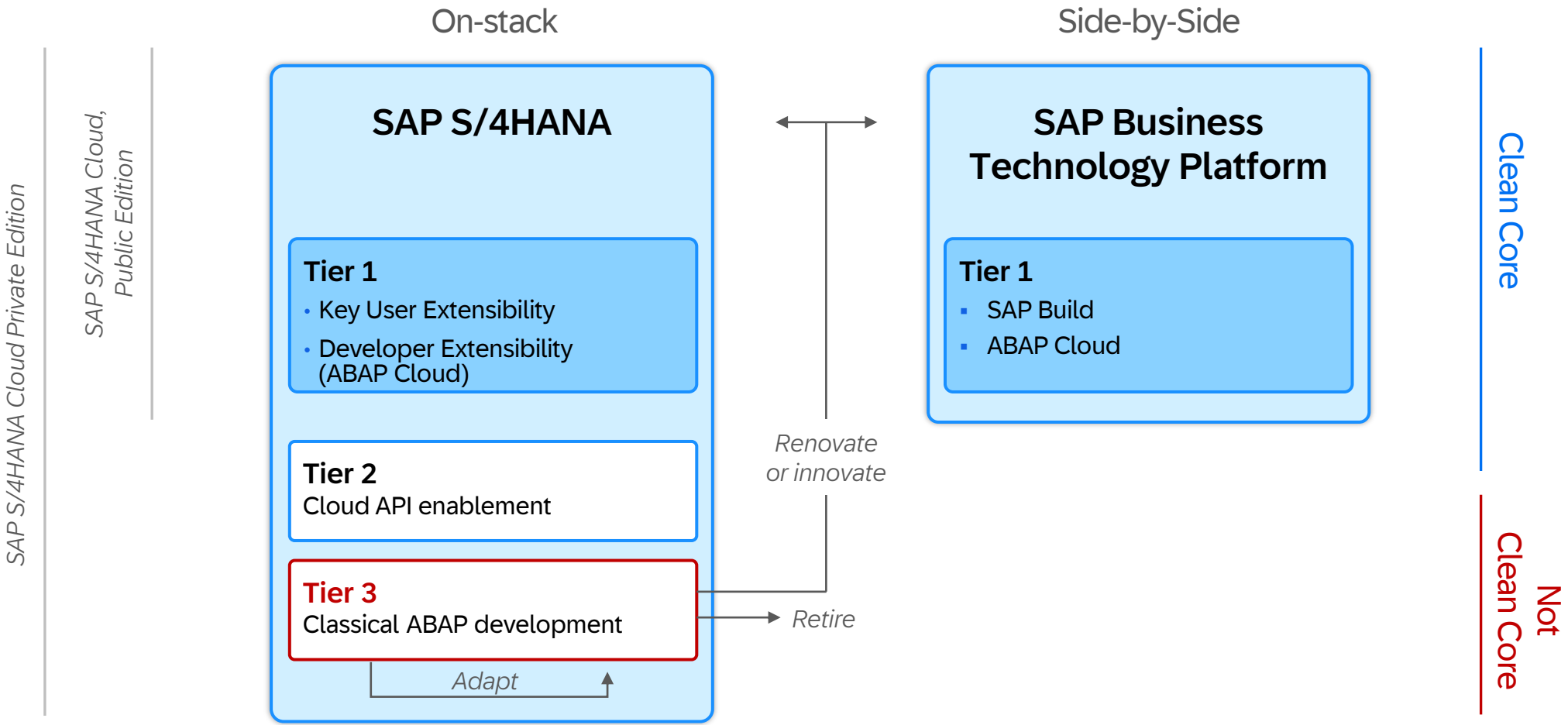


Extensibility Portfolio for SAP S/4HANA Cloud



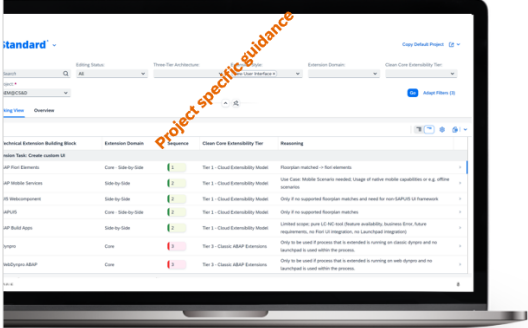
¹ SAP S/4HANA Cloud, private edition and on premise only; **not** "clean core"

Extensibility Model for SAP S/4HANA – Decoupling SAP and Custom Code is Key




The details – governance and “when to choose what”?

SAP Application Extension Methodology



Project specific guidance

SAP Application Extension Methodology



- The [SAP Application Extension Methodology](#) helps you to define, document and execute an enterprise extension strategy for your organization.

Technical Extension Building Block	Extension Domain	Release	Class Core Extensibility Tier	Prerequisite	
SAP Fiori Extensions	Core	Side-by-Side	Green	Tier 1 - Class Extensibility Model	Prerequisite matched - No prerequisites
SAP Mobile Services	Side-by-Side	Side-by-Side	Green	Tier 1 - Class Extensibility Model	Core Class - Mobile Services needed. Usage of other mobile capabilities (e.g. offline capabilities)
SAP Management	Side-by-Side	Side-by-Side	Green	Tier 1 - Class Extensibility Model	Only if no supported Extension matches and used for non-SAPUI5 UI Frameworks
SAPUI5	Core	Side-by-Side	Green	Tier 1 - Class Extensibility Model	Only if no supported Extension matches
SAP Build Apps	Side-by-Side	Side-by-Side	Green	Tier 1 - Class Extensibility Model	Supports usage of SAP Fiori and SAPUI5 capabilities. Business Event, Action requirements, no Fiori UI integration, no Launchpad integration
Forms	Core	Side-by-Side	Red	Tier 2 - Class ABAP Extensions	Only for ABAP extensions that is compatible to existing on-premise systems and not supported to extend other systems
Middleware ABAP	Core	Side-by-Side	Red	Tier 2 - Class ABAP Extensions	Only for use if proven that is extended to existing on-premise systems and not supported to extend other systems



SAP Application Extension Methodology

Standard

Copy Default Project

Editing Status: All Three-Tier Architecture: Extension Style: New User Interface x Extension Domain: Clean Core Extensibility Tier:

Search Q

Project: MEM@CS&D

Go Adapt Filters (3)

Project specific guidance

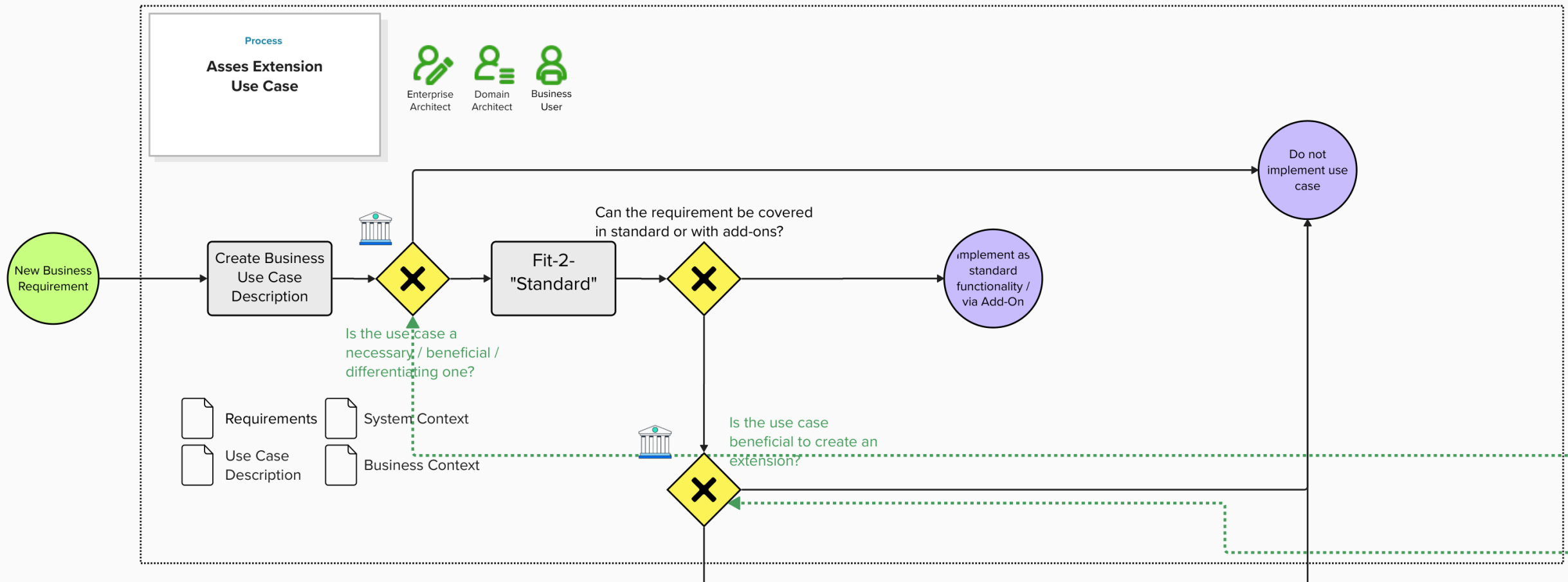
Technical Extension Building Block	Extension Domain	Sequence	Clean Core Extensibility Tier	Reasoning
Extension Task: Create custom UI				
SAP Fiori Elements	Core - Side-by-Side	1	Tier 1 - Cloud Extensibility Model	Floorplan matched -> fiori elements
SAP Mobile Services	Side-by-Side	2	Tier 1 - Cloud Extensibility Model	Use Case: Mobile Scenario needed; Usage of native mobile capabilities or e.g. offline scenarios
SAP UI5 Webcomponent	Side-by-Side	2	Tier 1 - Cloud Extensibility Model	Only if no supported floorplan matches and need for non-SAPUI5 UI framework
SAPUI5	Core - Side-by-Side	2	Tier 1 - Cloud Extensibility Model	Only if no supported floorplan matches
SAP Build Apps	Side-by-Side	2	Tier 1 - Cloud Extensibility Model	Limited scope; pure LC-NC-tool (feature availability, business Error, future requirements, no Fiori UI integration, no Launchpad integration)
Dynpro	Core	3	Tier 3 - Classic ABAP Extensions	Only to be used if process that is extended is running on classic dynpro and no launchpad is used within the process.
WebDynpro ABAP	Core	3	Tier 3 - Classic ABAP Extensions	Only to be used if process that is extended is running on web dynpro and no launchpad is used within the process.

8

SAP Application Extension Methodology

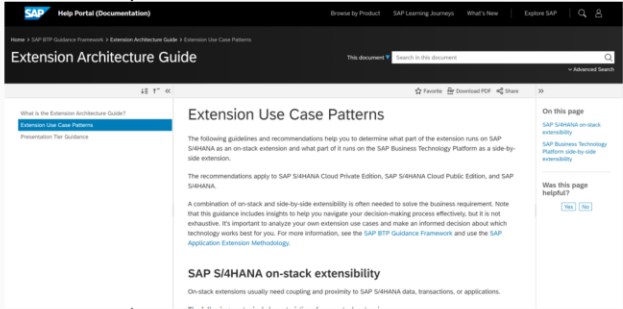


- The [SAP Application Extension Methodology](#) helps you to define, document and execute an enterprise extension strategy for your organization.



Process

Assess Extension Technology and Define Extension Target Solution



Map Requirements to Extension Tasks

Decide on Extension Domain (on-stack, side-by-side or mixed)

Map extension tasks to Technical Building Blocks

Technical Extension Building Block	Extension Domain	Sequence	Clear Core Extensibility Tier	Reusability
Extension Task: Create custom UI				
SAP Fiori Elements	Core - Side-by-Side	1	Tier 1 - Cloud Extensibility Model	Reception matched → Fiori elements
SAPUI5	Core - Side-by-Side	2	Tier 1 - Cloud Extensibility Model	Only if no supported Reception matches and need for non-SAPUI5 UI framework
UI5 WebComponent	Side-by-Side	2	Tier 1 - Cloud Extensibility Model	Only if no supported Reception matches and need for non-SAPUI5 UI framework
SAP Build Apps	Side-by-Side	2	Tier 1 - Cloud Extensibility Model	Limited scope, some LC-NC tool (feature availability, business error, future requirements, no Fiori UI integration, no Launchpad integration)
SAP Mobile Services	Side-by-Side	2	Tier 1 - Cloud Extensibility Model	Use Case: Mobile Scenarios needed; Usage of native mobile capabilities or e.g. offline scenarios
Webdynpro (SAP)	Core	3	Tier 3 - Classic ABAP Extensions	Only to be used if process that is extended is running on web dynpro and no SAPUI5 is used within the process.
Dynpro	Core	3	Tier 3 - Classic ABAP Extensions	Only to be used if process that is extended is running on classic dynpro and no SAPUI5 is used within the process.

Is the value of the extension higher than the technical debt?



Create Target Architecture

Extension Target Solution Diagrams & Icons

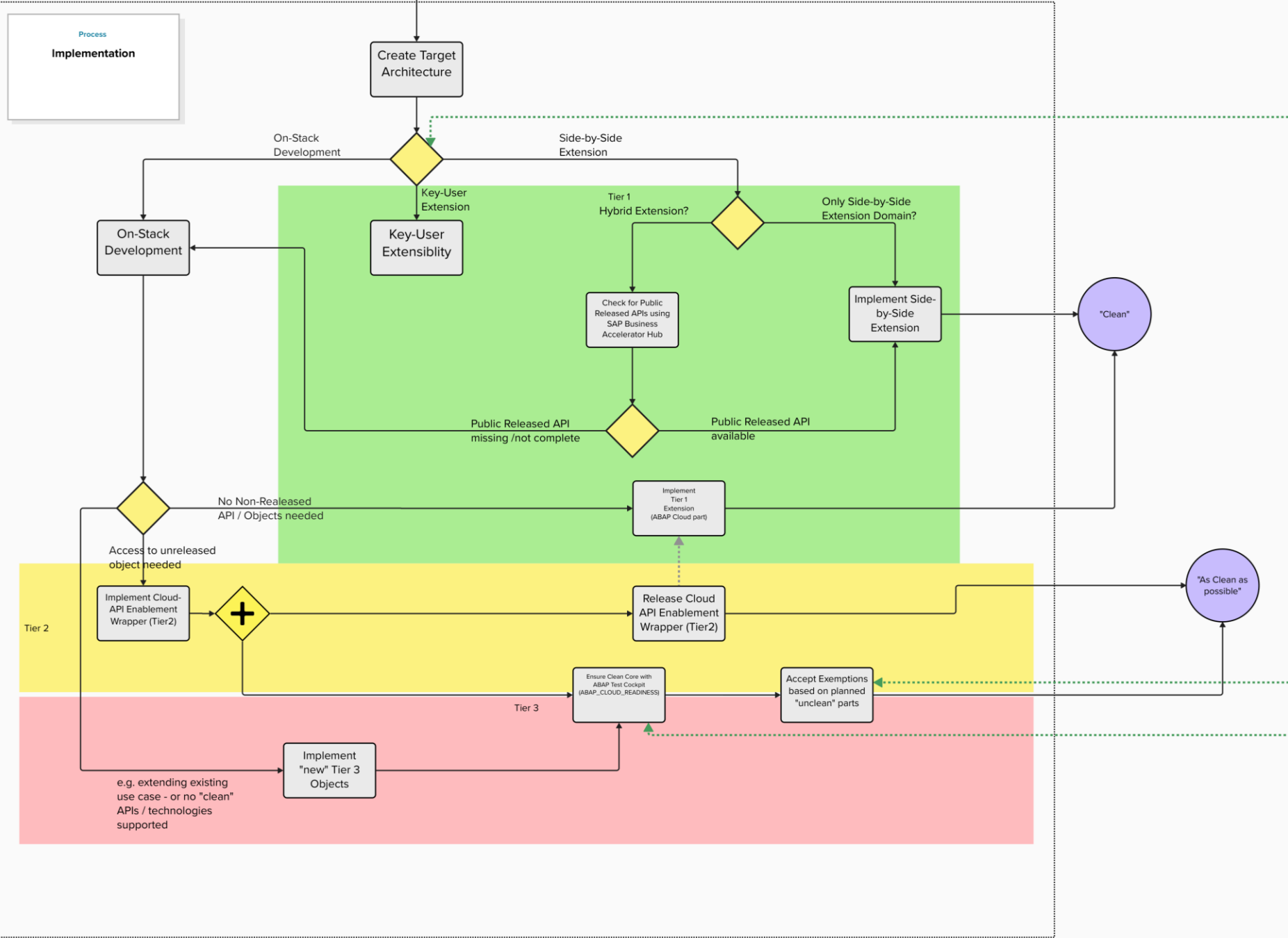
SAP Business Technology Platform Solution Diagrams & Icons

With the official set of icons, design guidelines and sample diagrams you can create your own SAP Business Technology Platform solution diagrams using MS PowerPoint.

They are intended to reach a better and faster understanding of SAP Business Technology Platform end-to-end solution scenarios as customer, partner, client, solution architect, project lead or developer by using graphical diagrams for visual learning.

[Learn more about BTP Solution Diagrams here](#)

The diagram illustrates the integration between SAP BTP Cloud Foundry Environment and SAP S/4HANA. It shows various components like SAP Fiori, SAP S/4HANA, and SAP BTP, with arrows indicating data flow and integration points.



Process



Governance Board



Enterprise Architect



Domain Architect



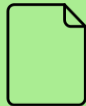
Business User

Extensibility Governance Board (e.g. Solution Standardization Board)

Gap Governance

Technical Architecture Governance

Development Governance



Guides and Documentation (e.g. on what exception will be allowed)

Important guides for Implementation




PUBLIC

Extend SAP S/4HANA in the cloud and on premise with ABAP based extensions
Guidelines for extension project managers, key users, and ABAP developers

VERSION 2.0 / MAY 2023




Overview, comparison of extensibility options, introduction to ABAP Cloud and 3-tier development model.




PUBLIC

ABAP Cloud API Enablement Guidelines for SAP S/4HANA Cloud, private edition, and SAP S/4HANA
Guidelines for administrators and ABAP developers

VERSION 1.0 / MAY 2023




How to leverage tier 2 of the 3-tier development model



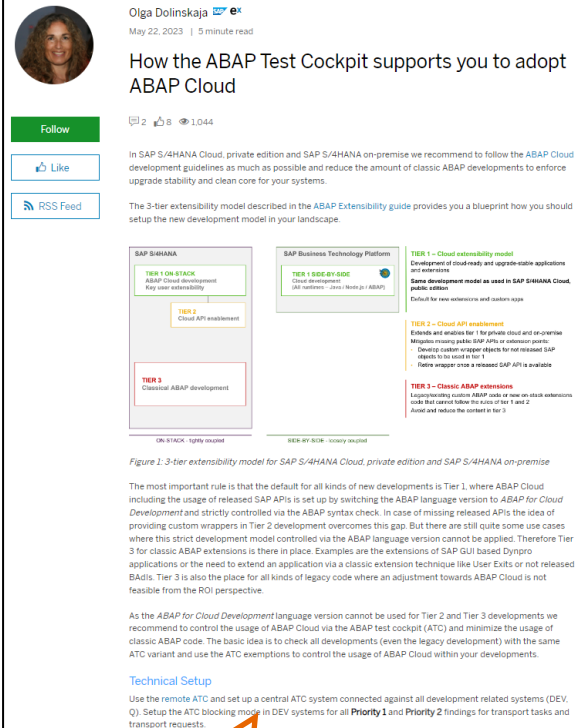
PUBLIC

ABAP Cloud
Technical use cases and recommended technologies

Version 1.0 / May 2023



How the old, tier 3 / classic ABAP world maps to the new, tier 1 / ABAP Cloud world



Olga Dolinskaja

May 22, 2023 | 5 minute read

How the ABAP Test Cockpit supports you to adopt ABAP Cloud

In SAP S/4HANA Cloud, private edition and SAP S/4HANA on-premise we recommend to follow the ABAP Cloud development guidelines as much as possible and reduce the amount of classic ABAP developments to enforce upgrade stability and clean core for your systems.

The 3-tier extensibility model described in the ABAP Extensibility guide provides you a blueprint how you should setup the new development model in your landscape.

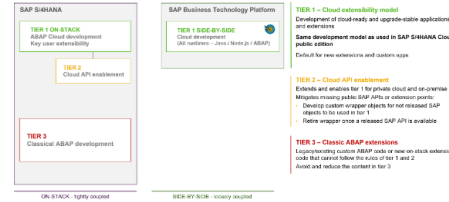


Figure 1: 3-tier extensibility model for SAP S/4HANA Cloud, private edition and SAP S/4HANA on-premise

The most important rule is that the default for all kinds of new developments is Tier 1, where ABAP Cloud including the usage of released SAP APIs is set up by switching the ABAP language version to ABAP for Cloud Development and strictly controlled via the ABAP syntax check. In case of missing released APIs the idea of providing custom wrappers in Tier 2 development overcomes this gap. But there are still quite some use cases where this strict development model controlled via the ABAP language version cannot be applied. Therefore Tier 3 for classic ABAP extensions is there in place. Examples are the extensions of SAP GUI based Dynpro applications or the need to extend an application via a classic extension technique like User Exits or not released BAdIs. Tier 3 is also the place for all kinds of legacy code where an adjustment towards ABAP Cloud is not feasible from the ROI perspective.

As the ABAP for Cloud Development language version cannot be used for Tier 2 and Tier 3 developments we recommend to control the usage of ABAP Cloud via the ABAP test cockpit (ATC) and minimize the usage of classic ABAP code. The basic idea is to check all developments (even the legacy development) with the same ATC variant and use the ATC exemptions to control the usage of ABAP Cloud within your developments.

Technical Setup
Use the remote ATC and set up a central ATC system connected against all development related systems (DEV, Q). Setup the ATC blocking mode in DEV systems for all **Priority 1** and **Priority 2** findings for transport tasks and transport requests.

How to check compliance with the ABAP Cloud and 3-tier development model

Additional information and blog posts linked at <https://community.sap.com/topics/s4hana-cloud-abap-environment>


THE BAD...

The bad... expectation management




Clean Core is a journey

Establish a strategy and governance model that fosters clean core principles.



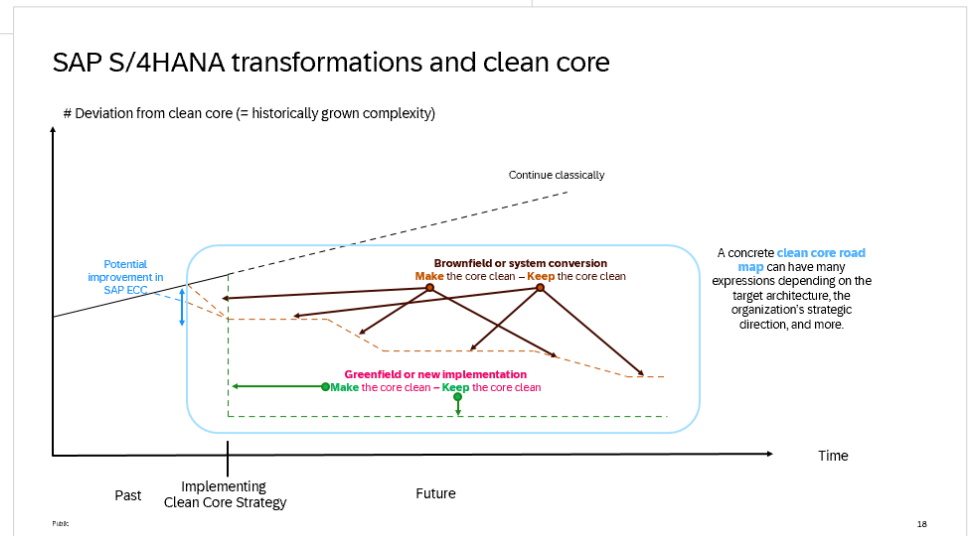
Greenfield

- Unique opportunity
- Follow Clean Core principles right from the beginning.
- Establish strong governance



Brownfield

- Establish Clean Core principles for every NEW development.
- Plan your journey towards a clean core and follow an iterative approach.
- Clean Core does **not** happen over night.



Clean Core is a journey

Establish a strategy and governance model that fosters clean core principles.



Greenfield

- Unique opportunity
- Follow Clean Core principles right from the beginning.
- Establish strong governance

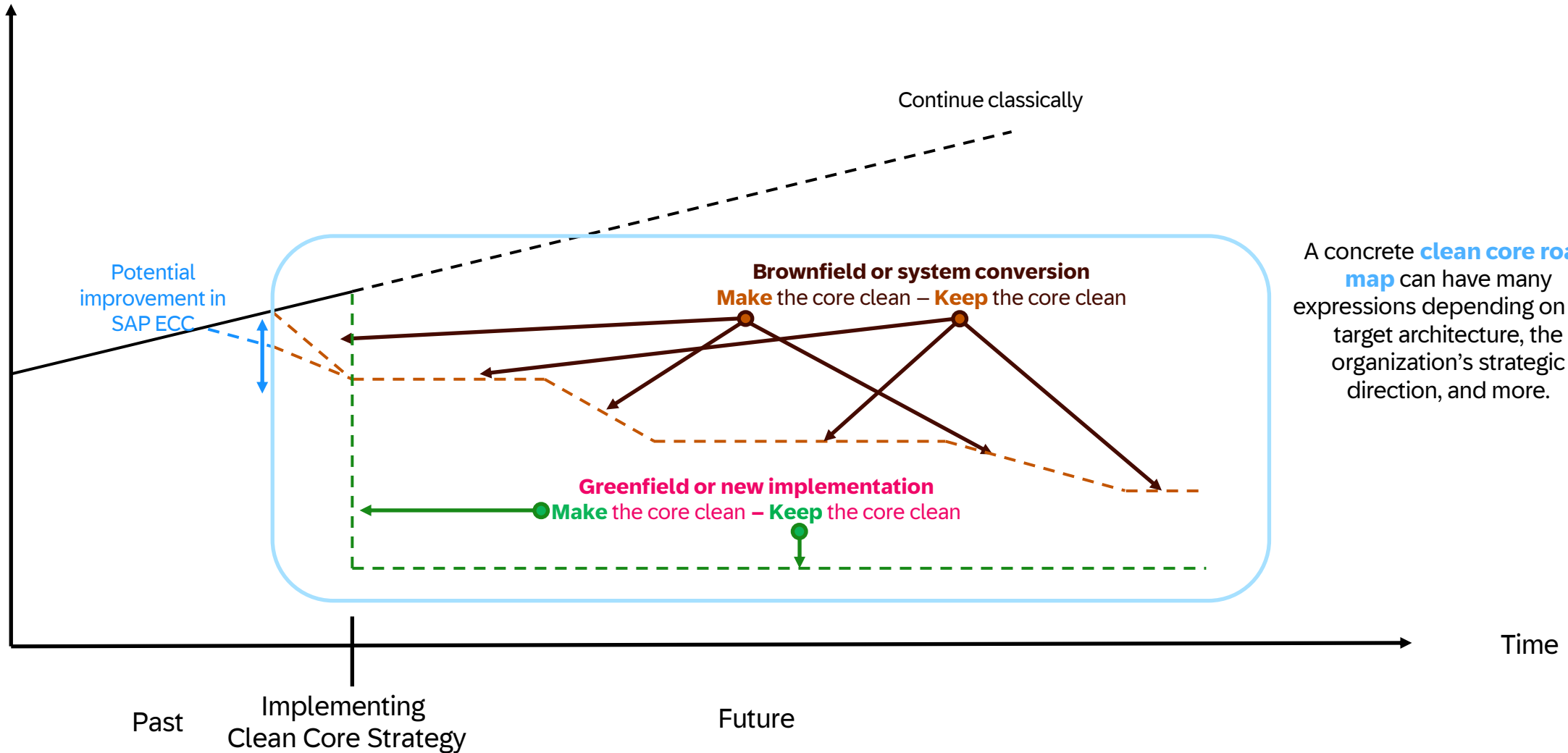


Brownfield

- Establish Clean Core principles for every NEW development.
- Plan your journey towards a clean core and follow an iterative approach.
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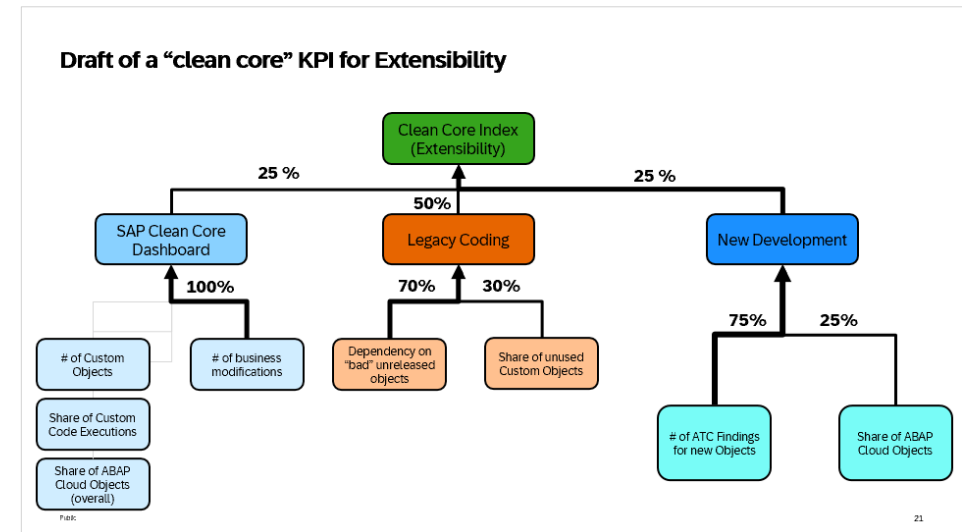
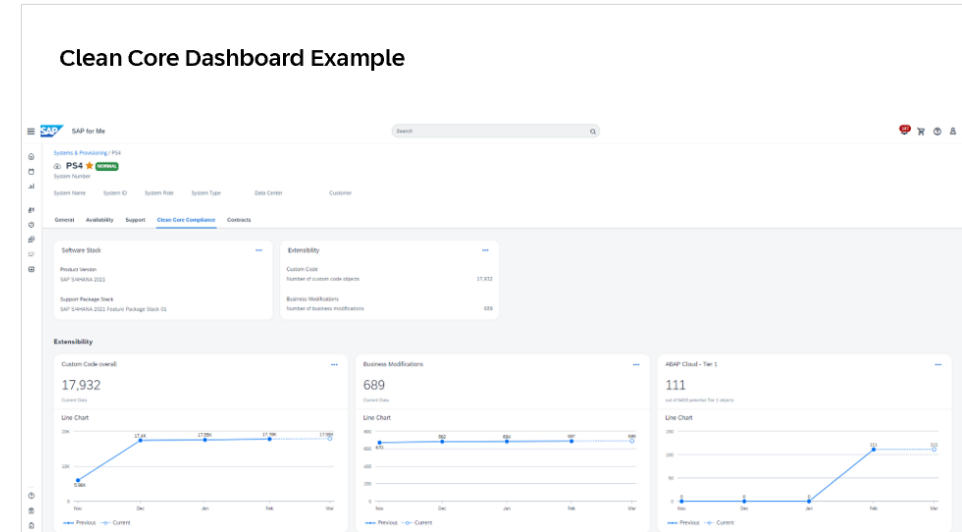
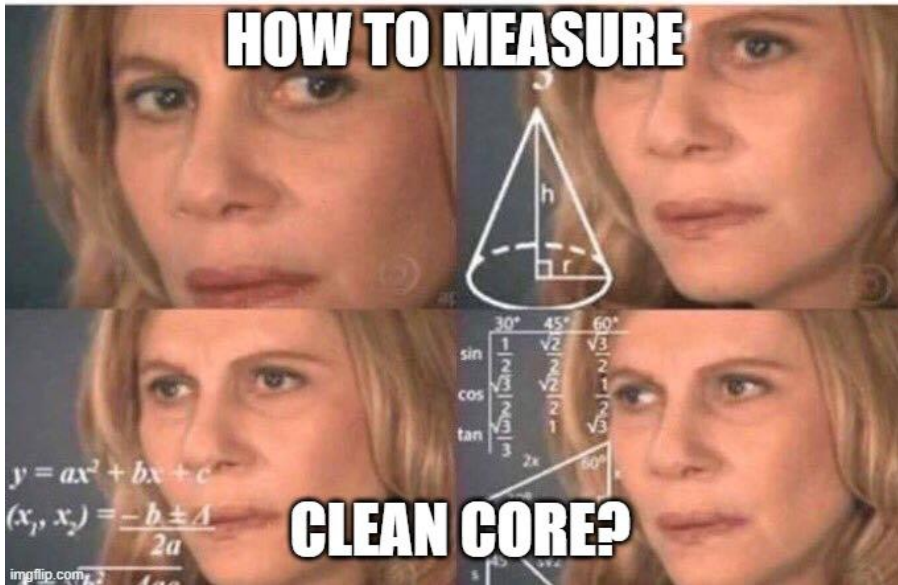
SAP S/4HANA transformations and clean core

Deviation from clean core (= historically grown complexity)



A concrete **clean core road map** can have many expressions depending on the target architecture, the organization's strategic direction, and more.

The bad... measurability



Clean Core Dashboard Example

SAP for Me Search 187 ? 👤

Systems & Provisioning / PS4

PS4 ★ NORMAL

System Number

System Name	System ID	System Role	System Type	Data Center	Customer
-------------	-----------	-------------	-------------	-------------	----------

General Availability Support **Clean Core Compliance** Contracts

Software Stack

Product Version
SAP S/4HANA 2021

Support Package Stack
SAP S/4HANA 2021 Feature Package Stack 01

Extensibility

Custom Code
Number of custom code objects: 17,932

Business Modifications
Number of business modifications: 689

Extensibility

Custom Code overall

17,932

Current Data

Line Chart

Month	Value
Nov	5.98K
Dec	17.4K
Jan	17.55K
Feb	17.78K
Mar	17.93K

Business Modifications

689

Current Data

Line Chart

Month	Value
Nov	670
Dec	682
Jan	684
Feb	687
Mar	689

ABAP Cloud - Tier 1

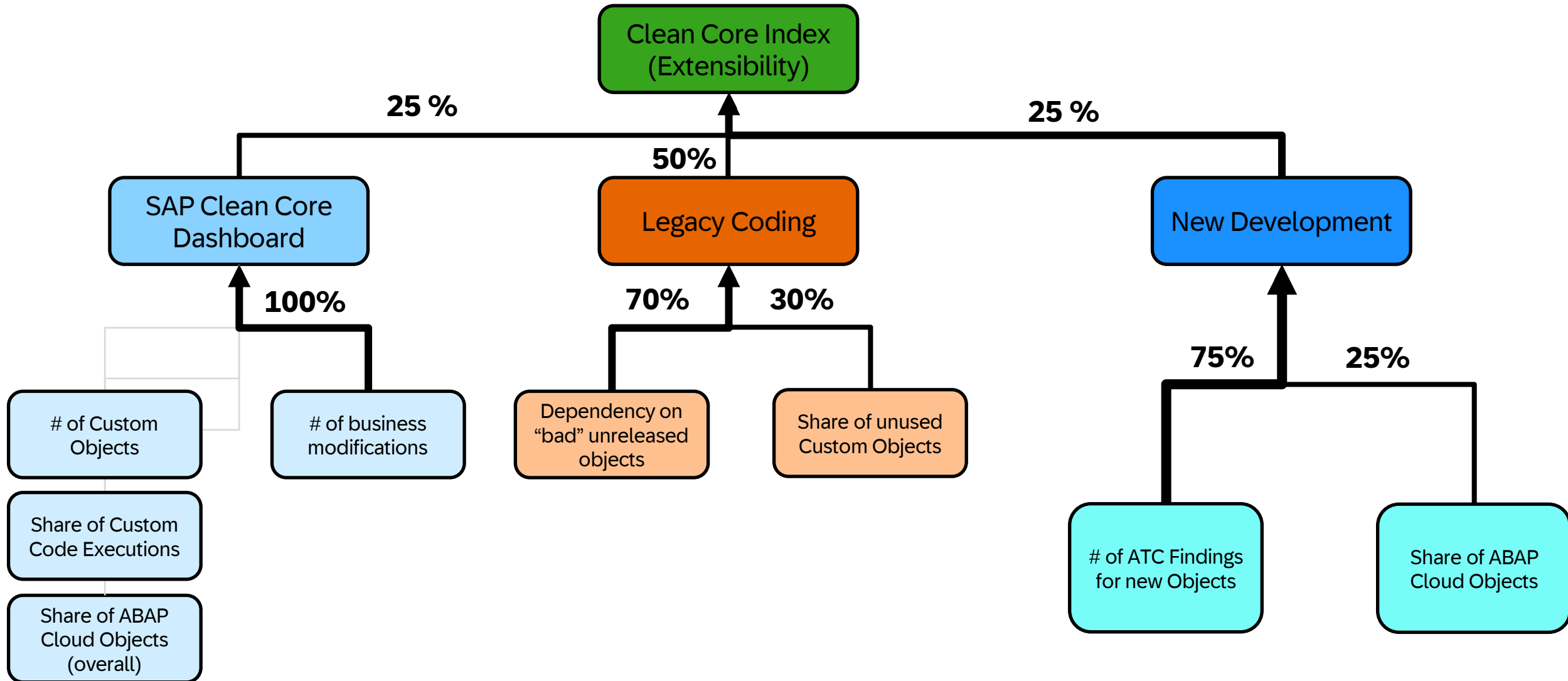
111

out of 6403 potential Tier 1 objects

Line Chart

Month	Value
Nov	0
Dec	0
Jan	0
Feb	111
Mar	111

Draft of a “clean core” KPI for Extensibility



The bad... “clean core developers”



2.2 → Decision Tree & priority of options



Extensibility decision tree supports in selection of the right approach and confirms exception for extensions inside the S/4 program. Prime aspect of the program is to **keep the CORE clean** by utilization of standard functionalities and avoid building custom objects as much as possible.

Sl.No	Best Practices
1	Standard coding guidelines for ABAP to be followed while writing codes inside any enhancements
2	First option should be to use New BAdIs/Classic BAdIs
3	If BAdIs are not available, then only we will go with Customer Exits
4	Implicit enhancements are the last option
5	If any standard tables are modified using APPEND or CI Includes, add the fields in the underlying CDS views as well or follow the process to adjust the dependent structures

Overview after few months:
 >5.000 Objects in ABAP Standard
 <100 Objects in ABAP Cloud

CERTIFICATION
C_ABAPD
STAY CERTIFIED

SAP Certified Associate - Back-End Developer - ABAP Cloud

80 Questions
3 hrs
65% cut score
[View sample questions](#)

Overview

This certification verifies that you possess ABAP programming language the cores based on ABAP RESTful Application Programming Model on SAP Business Technology Platform and principles of building custom extensions in SAP S/4HANA Cloud required of the back-end developer profile and proves that you have an overall understanding and in-depth skills to participate as a member of project team in a mentored role.

Roles

Developer

Available Languages

- English
- Spanish
- Japanese
- Portuguese
- French
- German
- Chinese
- Korean

How to ensure “clean core” in projects?

SAP Activate Methodology for RISE with SAP S/4HANA Cloud Private Edition

Overview **Content** Accelerators

- > User Experience Strategy and Workshops
- > Fit-to-Standard Preparation For Specific Features
- > Fit-to-Standard Analysis Preparation
- > Fit-to-Standard System Preparation
- > **Clean Core Quality Gate 1**

3. Explore [↗](#)

- > Fit-to-Standard Workshops for Specific Features
- > Fit-to-Standard Workshops
- > Customer Execution of Standard Processes
- > Fit-to-Standard Analysis Documentation
- > Design Workshops and Documentation
- > Business Process Performance Planning and Design

7 Extensibility

7.1 More information is required to ensure that development guidelines include Clean Core principles

A Clean Core is a system that is as close to standard as possible, while running cloud-compliant extensions and integrations. It allows you to adapt your system to changing business requirements and to adopt new capabilities.

In the area of extensibility there are 5 main aspects to clean core:

- Extensions should be avoided when possible.
- Create cloud-compliant extensions – that is, in a way that they would work in the cloud (3-tier model) – by setting up a strong governance.
- Custom extensions do not break an upgrade and upgrades do not break an extension – separate extensions by leveraging released APIs.
- Leverage the full capabilities of extensibility on the stack as well as side-by-side with SAP BTP.
- Create technical debts only as an informed decision.

Ensuring the adoption of these principles enables you, as a customer or solution owner, to future-proof your solution by deploying upgrade-stable custom code.

Figure: Clean Core What makes extensions clean core compliant

Check ID	Title	Description	Answer
!2-EX01	Extensibility: Does your governance process (SSB) ensure that extensions are only created if needed / valuable? (including business and technical validation)	For example, you have a process to define when an extension/modification/enhancement is business critical or when an extension/modification/enhancement is a "nice to have"	We are planning to setup such governance processes, but additional information would be useful
!3-EX02	Extensibility: Do you plan to create development guidelines following the clean core principles?	For example, based on SAP Application Extension Methodology	We are NOT aware of the clean core principles
!4-EX03	Extensibility: Are you aware of the SAP S/4HANA Extensibility framework and SAP BTP Extensibility paradigms?	For example, you are aware of the on-stack extensibility options in SAP S/4HANA and the side-by-	No, we are not aware



The bad... “APIfication process”



Explore Categories

Explore all the resources available from SAP and its partners

[View All Categories](#)

<h3>APIs</h3> <p>Find APIs to integrate and extend.</p> <ul style="list-style-type: none">1592 OData APIs1398 REST APIs1068 SOAP APIs20 Policy Templates4 GraphQL APIs	<h3>Events</h3> <p>Explore all events in the SAP Business Accelerator Hub.</p> <ul style="list-style-type: none">377 Event Objects	<h3>Graph</h3> <p>One connection to all business data.</p> <p>Build extensions with a single OData v4 API exposing a consolidated data graph with thousands of connected entities supporting SAP S/4HANA, SAP SuccessFactors and SAP Sales Cloud.</p>	<h3>Adapters</h3> <p>Discover prebuilt adapters and connectors from SAP and Partners for seamless integration</p> <ul style="list-style-type: none">176 REST APIs55 Adapters
<h3>Process Automation</h3> <p>Explore all live process content packages from SAP Build Process Automation and SAP Workflow Management.</p> <ul style="list-style-type: none">100 Decisions81 Visibility Scenarios59 Processes6 Business Rules	<h3>Business Add-Ins (BAIs)</h3> <p>Explore Business Add-Ins (BAIs) that can be used for developer extensibility.</p> <ul style="list-style-type: none">903 Business Add-Ins	<h3>Business Object Interfaces</h3> <p>Explore business object interfaces that can be used for developer extensibility.</p> <ul style="list-style-type: none">320 Business Object Interfaces	<h3>CDS Views</h3> <p>Explore CDS view content from SAP.</p> <ul style="list-style-type: none">13835 CDS Views

SAP S/4HANA Cloud Private Edition for Extensibility and Integration (APIs)

API for confirming transfer order

Request ID: 322879, Category: Digital Supply Chain (TM, EWM)

Vote: Status: **Not Planned** Submitted on: May 15, 2024 Author: [Rene Hoelterling](#)

Follow: Decision: **Product strategy - will not be developed** Changed on: May 27, 2024 Co-Author: [Dennis Rohde](#)

Coach: [Tymur Raisov](#)

[DETAILS](#) [ATTACHMENTS](#) [COMMENTS](#) [VOTES \(2\)](#) [RELATED REQUESTS](#) [PEOPLE](#) [ACTIVITY LOG](#)

Description:

What is the opportunity/problem the request will address?

Dear experts,

we need an odata-api for confirming transfer order analog to SAP Standard transaction LT11/12.

in SAP R3 the L_TO_CONFIRM function module solves the case.

What is the expected benefit?

Decision Details

Decision Maker:

[Tymur Raisov](#)

Decision Date:

2024-05-27

Decision Reason:

Product strategy - will not be developed

Comment (limited to 500 chars):

Hello

The bad... but how to avoid?

Manage the expectation between top management and developers but also between realistic goals and budget!

Based on this expectation, identify ways to measure the improvement!

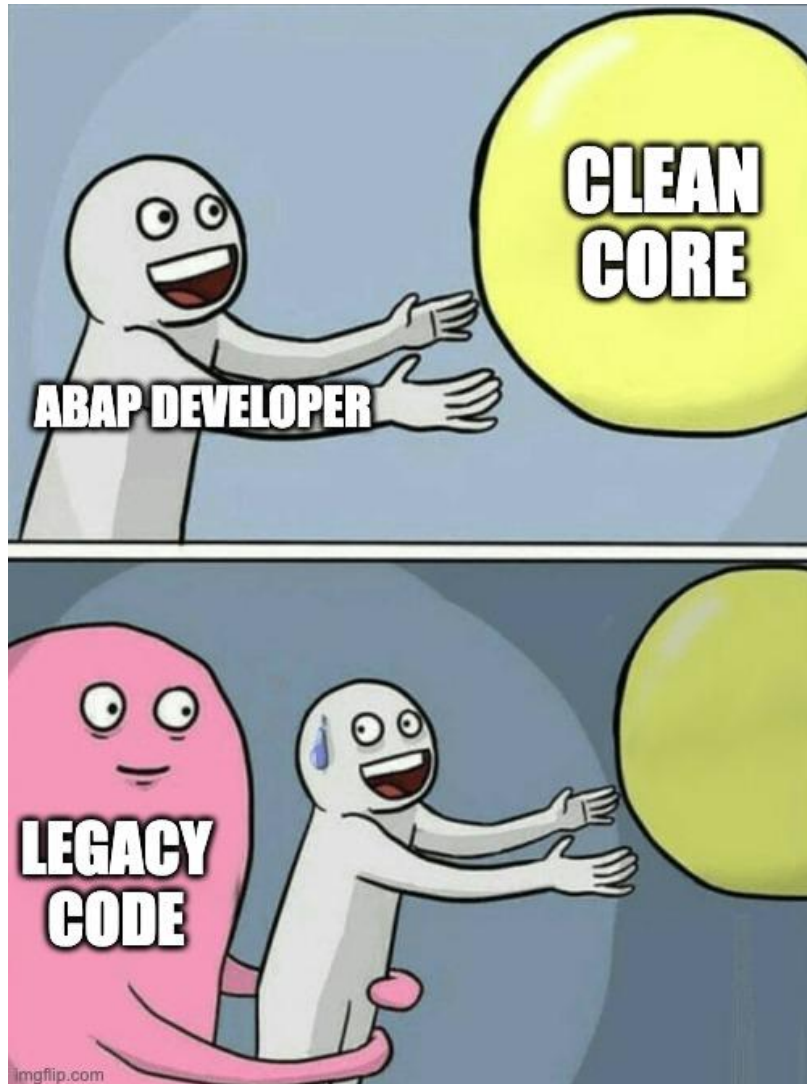
Ensure change management with involved architects and developers to ensure awareness for the “new way” of extensibility!

Leverage tools and templates available to live “efficient” processes for clean core development!

Identify the APIs you need – and mitigate and request if APIs are missing!

THE UGLY...

The ugly... legacy code!



Which object is “expensive” when it comes to upgrades?

- Development efforts?
- Testing Efforts?
- Bugs and Tickets?

...collect any data available on this create transparency

Code analysis can be a valuable source, but not the only source of information!

The ugly... checking legacy code for ABAP Cloud readiness

Prog	ZFI_EXAMPLE_CLEANCORE	227
Usage of Released APIs		227
INTF-IF_SALV_OBJ_OM TABLE_INFO		31
CLASS-CL_SALV_COLUMNS		31
CLASS-CL_SALV_COLUMN		31
TYPE-SON		9
DTEL-SORTTEXT_S		8
DTEL-SORTTEXT_M		8
DTEL-SORTTEXT_L		8
DTEL-CFM_PACKAGE_KEY		6
CLASS-CL_FINS_PL_LOG		6
DTEL-CHAR100		6
TYPE-SSCR		5
CLASS-CL_FINS_MASS_DATA_TEST		5
TABLE-TSEL		4
TABLE-BAL_S_MSGR		4
CLASS-CL_SALV_LAYOUT		3
DTEL-MONAT		3
DTEL-AWAYS		3
CLASS-CL_SALV_COLUMN_LIST		2
TABLE-ACCIT		2
TYPE-VRM		2
CLASS-CL_SALV_NOT_FOUND		2
CLASS-CL_SALV_TABLE		2
CLASS-CX_SALV_MSG		2
DTEL-BUINS_SENDER		2
DTEL-CHAR3		2
INTF-IF_SALV_C_CELL_TYPE		2
DTEL-CHAR10		2
DTEL-RLDNR		2
TABLE-CFM_ACCIT		2
TABLE-IRSG		2
DTEL-FINS_MASS_SET_ID		2
TABLE-SRBI		2
DTEL-FINS_MASS_STEP_ID		2
DTEL-KCON_D		2

new labels	Sum of Counter
Check Usage of Released Objects	188473
Usage of not released application API	1308435
Usage of not released ABAP Platform APIs	427622
Usage of object in other customer software component	79366
Usage of API that will not be released	49555
Usage of not released API from SAP UI layer	15411
Usage of deprecated API	4681
ABAP Language Version (Syntax)	150028
Syntax warning in restricted language scope (SY fields)	60067
Syntax error in restricted language scope	29315
Syntax error in restricted language scope (SY fields)	18029
Syntax error in restricted language scope (forms)	9258
Syntax error in restricted language scope (CPKC)	8710

The ugly... checking legacy code for ABAP Cloud readiness

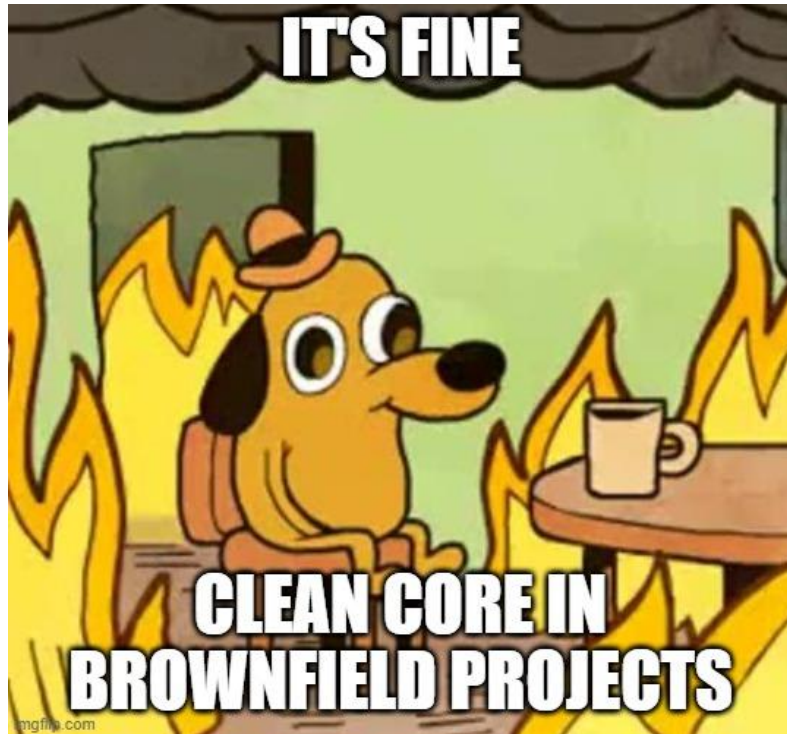
3	Row Labels	Sum of Counter_
4	[-] Check Usage of Released Objects	1884873
5	⊕ Usage of not released application API	1308435
6	⊕ Usage of not released ABAP Platform APIs	427622
7	⊕ Usage of object in other customer software component	79169
8	⊕ Usage of API that will not be released	49555
9	⊕ Usage of not released API from SAP UI layer	15411
10	⊕ Usage of deprecated API	4681
11	[-] ABAP Language Version (Syntax)	150028
12	⊕ Syntax warning in restricted language scope (SY fields)	60067
13	⊕ Syntax error in restricted language scope	29315
14	⊕ Syntax error in restricted language scope (SY fields)	18029
15	⊕ Syntax error in restricted language scope (forms)	9258
16	⊕ Syntax error in restricted language scope (CPIC)	8710

PROG - ZFI_EXAMPLE_CLEANCORE	227
Usage of Released APIs	227
INTF-IF_SALV_GUI_OM_TABLE_INFO	33
CLAS-CL_SALV_COLUMNS	33
CLAS-CL_SALV_COLUMN	31
TYPE-ICON	9
DTEL-SCRTEXT_S	8
DTEL-SCRTEXT_M	8
DTEL-SCRTEXT_L	8
DTEL-CFIN_PACKAGE_KEY	6
CLAS-CL_FINS_FI_LOG	6
DTEL-CHAR100	6
TYPE-SSCR	5
CLAS-CL_FINS_MASS_DATA_TEST	5
TABL-T881	4
TABL-BAL_S_MSGR	4
CLAS-CL_SALV_LAYOUT	3
DTEL-MONAT	3
DTEL-AWSYS	3
CLAS-CL_SALV_COLUMN_LIST	2
TABL-ACCIT	2
TYPE-VRM	2
CLAS-CX_SALV_NOT_FOUND	2
CLAS-CL_SALV_TABLE	2
CLAS-CX_SALV_MSG	2
DTEL-BUKRS_SENDER	2
DTEL-CHAR01	2
INTF-IF_SALV_C_CELL_TYPE	2
DTEL-CHAR10	2
DTEL-RLDNR	2
TABL-CFIN_ACCIT	2
TABL-BSEG	2
DTEL-FINS_MASS_SET_ID	2
TABL-SKB1	2
DTEL-FINS_MASS_STEP_ID	2
DTEL-ICON D	2

How to handle legacy code?

Decide on your own "Clean Core" goals (e.g. Upgrade stability/ Cloud Readiness / Fiori coverage) and prioritize

- Clean legacy code when you have to touch it anyway
- Define "lighthouse" projects to create transparency
- Measure the "right" KPIs for your goal!



SUMMARY

Takeaways



There is no reason NOT to aim for the cleanest development possible*

Do not fall into “death by planning” antipattern – but “hope is not a strategy” as well!

Challenge your project team (architects, developers, business experts, management) if clean core was considered reasonably

There is a lot of useful stuff available – leverage it!

* especially as of SAP S/4HANA >2022

Thank you.

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Important guides



PUBLIC


Extend SAP S/4HANA in the cloud and on premise with ABAP based extensions

Guidelines for extension project managers, key users, and ABAP developers

VERSION 2.0 / MAY 2023



Overview, comparison of extensibility options, introduction to ABAP Cloud and 3-tier development model.




PUBLIC


ABAP Cloud API Enablement Guidelines for SAP S/4HANA Cloud, private edition, and SAP S/4HANA

Guidelines for administrators and ABAP developers

VERSION 1.0 / MAY 2023



How to leverage tier 2 of the 3-tier development model




PUBLIC

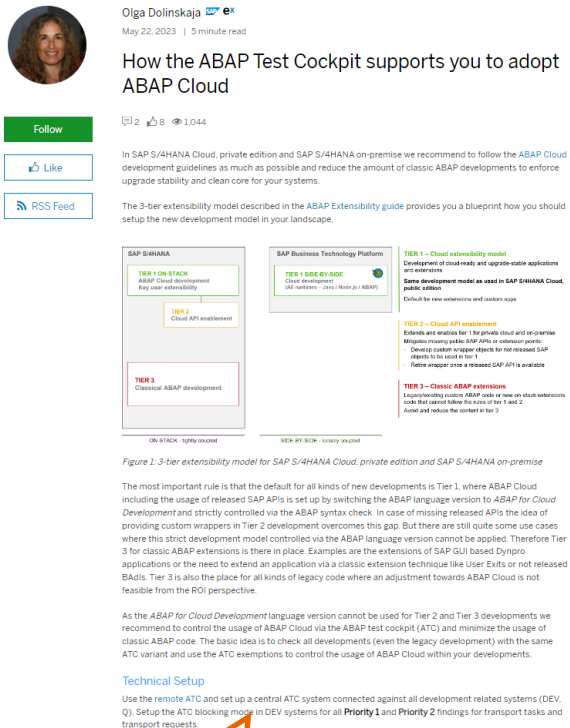
ABAP Cloud

Technical use cases and recommended technologies

Version 1.0 / May 2023



How the old, tier 3 / classic ABAP world maps to the new, tier 1 / ABAP Cloud world



Olga Dolinskaja

May 22, 2023 | 5 minute read

How the ABAP Test Cockpit supports you to adopt ABAP Cloud

In SAP S/4HANA Cloud, private edition and SAP S/4HANA on-premise we recommend to follow the ABAP Cloud development guidelines as much as possible and reduce the amount of classic ABAP developments to enforce upgrade stability and clean core for your systems.

The 3-tier extensibility model described in the ABAP Extensibility guide provides you a blueprint how you should setup the new development model in your landscape.

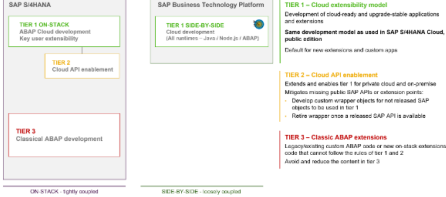


Figure 1: 3-tier extensibility model for SAP S/4HANA Cloud, private edition and SAP S/4HANA on-premise

The most important rule is that the default for all kinds of new developments is Tier 1, where ABAP Cloud including the usage of released SAP APIs is set up by switching the ABAP language version to ABAP for Cloud Development and strictly controlled via the ABAP syntax check. In case of missing released APIs the idea of providing custom wrappers in Tier 2 development overcomes this gap. But there are still quite some use cases where this strict development model controlled via the ABAP language version cannot be applied. Therefore Tier 3 for classic ABAP extensions is there in place. Examples are the extensions of SAP GUI based Dynpro applications or the need to extend an application via a classic extension technique like User Exits or not released BAdIs. Tier 3 is also the place for all kinds of legacy code where an adjustment towards ABAP Cloud is not feasible from the ROI perspective.

As the ABAP for Cloud Development language version cannot be used for Tier 2 and Tier 3 developments we recommend to control the usage of ABAP Cloud via the ABAP test cockpit (ATC) and minimize the usage of classic ABAP code. The basic idea is to check all developments (even the legacy development) with the same ATC variant and use the ATC exemptions to control the usage of ABAP Cloud within your developments.

Technical Setup

Use the remote ATC and set up a central ATC system connected against all development related systems (DEV, Q). Setup the ATC blocking mode in DEV systems for all **Priority 1** and **Priority 2** findings for transport tasks and transport requests.

How to check compliance with the ABAP Cloud and 3-tier development model

Additional information and blog posts linked at <https://community.sap.com/topics/s4hana-cloud-abap-environment>