

SAP Cloud ALM and test management for everyday use, using SAP DM as an example

Whitepaper





About the whitepaper:

This whitepaper shows how SAP Cloud ALM supports efficient implementation, testing, and operation of SAP Digital Manufacturing (SAP DM). It explains how the platform's integrated test management and Tricentis automation help manufacturers manage rapid quarterly releases, complex system landscapes, and critical shop floor processes.

Using SAP DM as an example, we highlight concircle's approach with preconfigured processes, change impact analysis, and SAP Activate integration—ensuring structured project delivery, effective regression testing, and continuous process stability from go-live through ongoing operations.

About the author:



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Konrad is a passionate consultant for MES and production-related processes across many industries. He has already been able to accompany many international clients on their individual digitalization path in production. As Team Leader Manufacturing, he tries to inspire young people for industrial production and its challenges.

About concircle:

concircle is a technology consulting and software development company headquartered in Vienna, with subsidiaries in Germany, Switzerland and Slovakia. The company specializes in the implementation of SAP-solutions and development of tailor-made software solutions for companies of all sizes, from start-ups to large corporations. concircle's service offering ranges from Digital Supply Chain, through Digital Enterprise Core and Digital Manufacturing, to Test Automation.



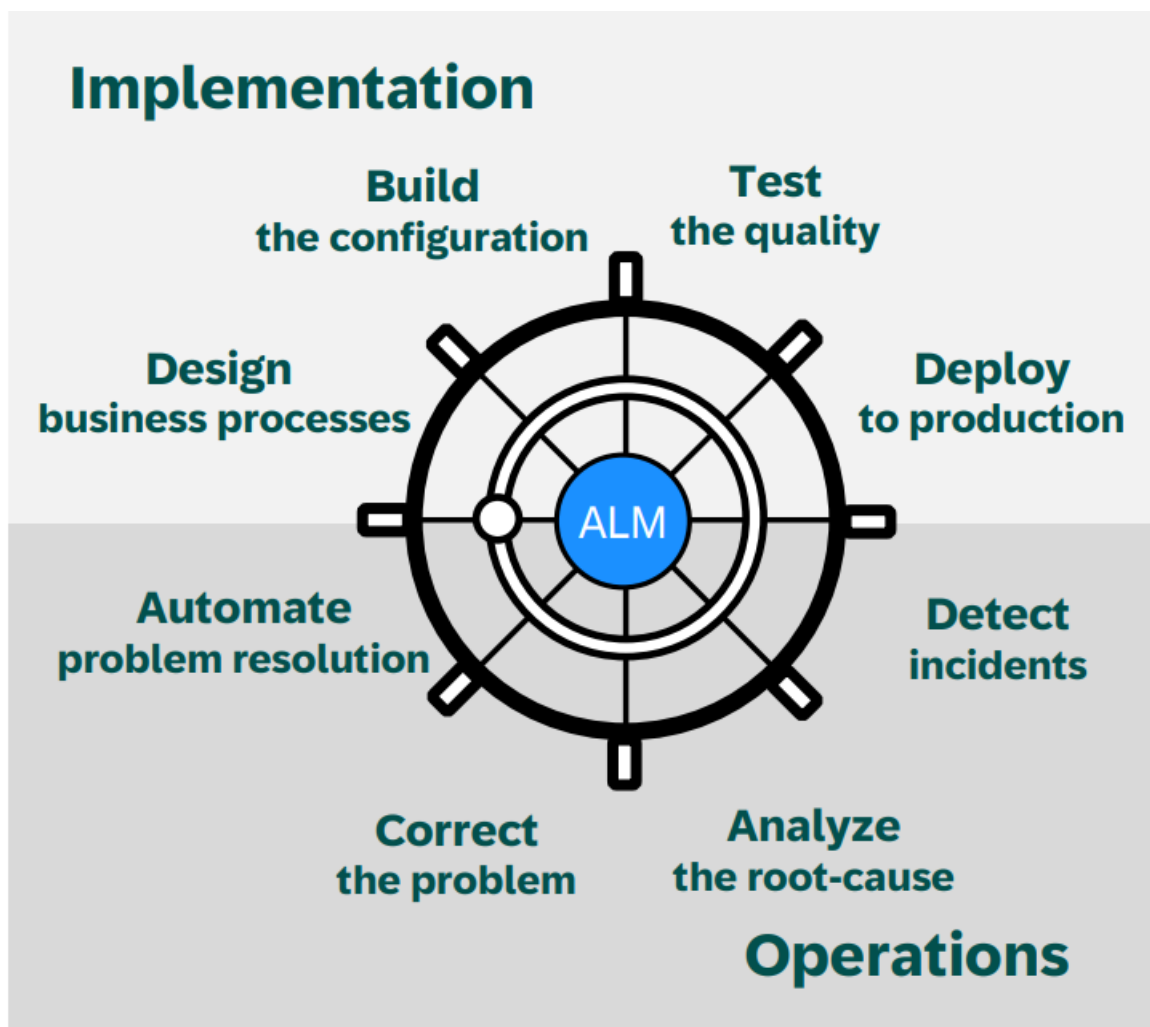


Chapter 1: SAP Cloud ALM

SAP Cloud ALM provides application lifecycle management with test management and an integrated test automation solution (TTA Tricentis Test Automation for SAP, restricted version, STA full version, with additional license).

SAP Cloud ALM (Application Lifecycle Management) is a cloud solution that has been specially developed for managing and monitoring SAP applications. It is a comprehensive solution for managing the entire lifecycle of SAP applications in the cloud and is used when companies need to manage SAP implementations or updates.

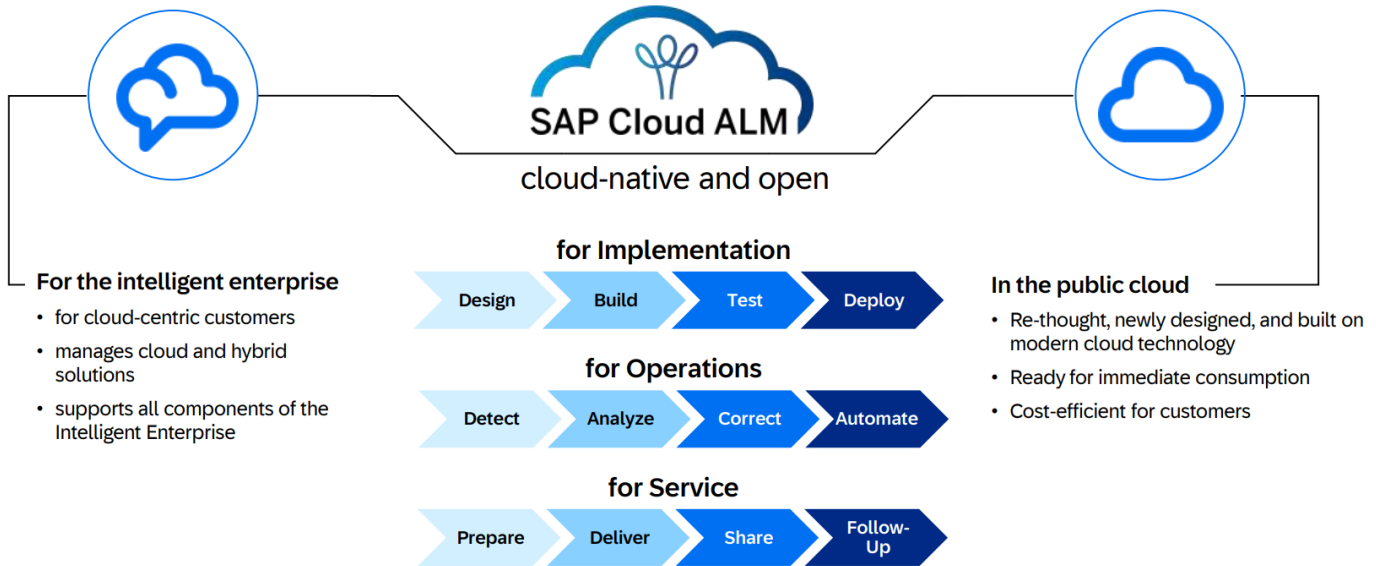
This provides Cloud ALM with a complete solution for test management, including test automation. It includes everything a test management tool needs, from test case implementation for manual or automated tests, test planning, test execution, and defect handling to reporting on test results.



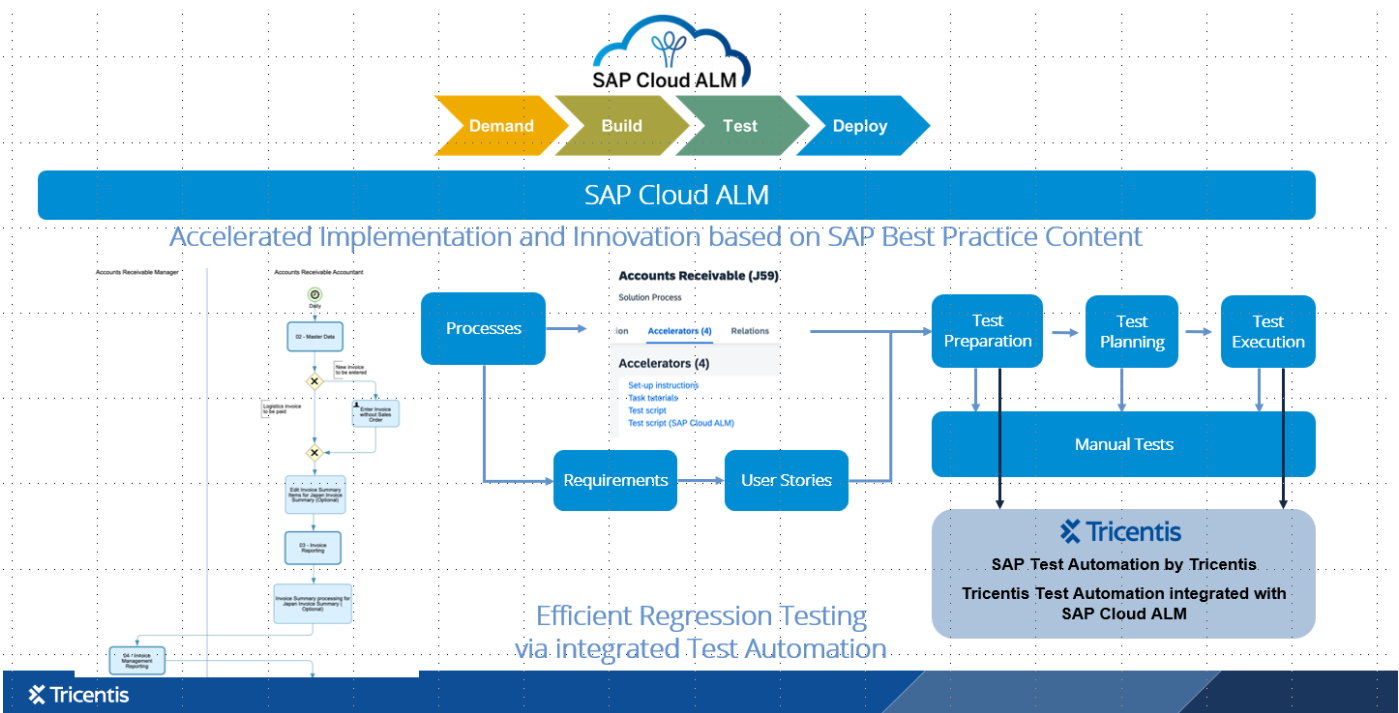


The areas of implementation, monitoring, and services are supported based on standard ALM processes.

Implementation is supported by SAP Activate, best practice content, project management, test management, deployment and release planning, and comprehensive reporting.



The processes to be implemented are defined in a process hierarchy or taken from the best practice content. The processes are described in solution documentation and tested using test cases. The test results are then used to determine when the system is ready for production. The processes can be transferred from the SAP Best Practice processes or adapted. Test cases are also provided as accelerators for the SAP Best Practice processes for S/4HANA.



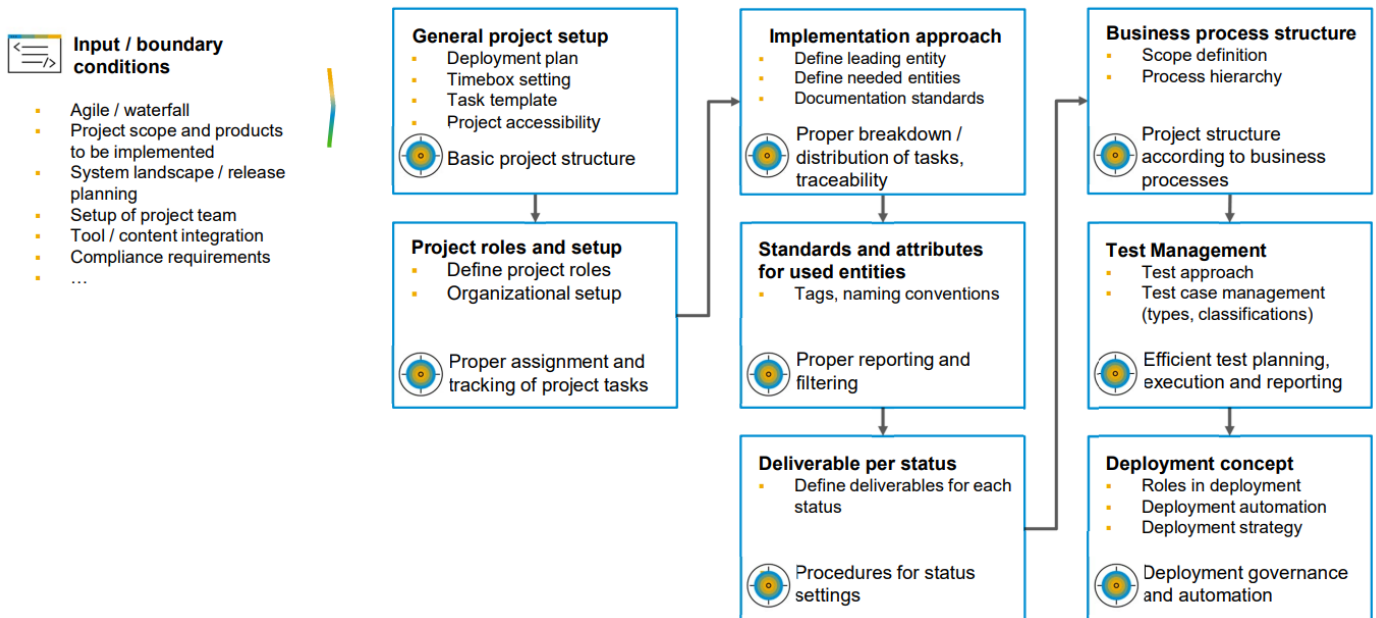


SAP Cloud ALM supports various use cases for implementations for SAP and non-SAP systems. There are several workflows for the different implementation approaches. SAP recommends adhering to the existing workflows in order to ensure end-to-end monitoring and traceability.

A few basic settings are necessary to use SAP Cloud ALM with the integrated workflows or parts thereof. These should be made from the outset and will then facilitate the integration of the work steps.

Essential steps to successfully use SAP Cloud ALM

SAP Cloud ALM for Implementation – key steps [preparing the usage](#) of SAP Cloud ALM





Chapter 2: SAP DM

SAP Digital Manufacturing – The cloud-based MES from SAP

SAP Digital Manufacturing (SAP DM) is SAP's cloud-based MES solution and forms the central backbone for the digital shop floor. As the modern successor to the on-premise solutions SAP ME and SAP MII, SAP DM supports companies in digitizing and harmonizing their manufacturing processes. The solution provides real-time insights into production, enables end-to-end integration with ERP and IIoT systems, and supports data-driven decisions directly at the point of value creation.

Thanks to its cloud architecture, manufacturing companies benefit from continuous innovation through quarterly updates, high scalability, and improved transparency. SAP DM is therefore the strategic platform for the connected, flexible, and intelligent manufacturing of the future.

Why use SAP Cloud ALM for SAP DM?

In the area of implementation, SAP Cloud ALM offers a stable and consistent structure for efficiently planning, controlling, and implementing SAP DM projects. Project managers can define tasks, track progress, set milestones, and integrate individual processes and tests into the overall process. Centralized management of all activities throughout the project lifecycle ensures transparency and traceability – regardless of whether it is an initial implementation or preparation for upcoming releases.

Compared to other SAP cloud solutions such as S/4HANA, SAP Digital Manufacturing currently lacks official best practice content from SAP. Nevertheless, SAP Cloud ALM enables a structured approach – primarily through integrated test management with manual and automated tests (TTA/STA) that can ensure the continuous delivery of new functions.

We will show how companies can still benefit from standardized content later on using our concircle approach with preconfigured processes and test cases.

For the operation of SAP DM, SAP Cloud ALM provides specific functions that go beyond the generic ALM offering:

- Integration & Exception Monitoring enables process and interface errors to be detected early and rectified in a targeted manner – a decisive advantage in a production-oriented environment.





- Job & Automation Monitoring ensures that automated background processes within SAP DM run smoothly and can be quickly analyzed and optimized as needed.

This combination of a standardized project approach and targeted operational monitoring makes SAP Cloud ALM the ideal complement to SAP DM – both in the implementation phase and during ongoing operations. Companies thus ensure process stability, continuous development, and maximum transparency throughout the entire lifecycle of their manufacturing processes.

Release cycles in SAP DM and test automation

SAP Digital Manufacturing is a cloud-based MES that is characterized by continuous innovation and quarterly updates. On the one hand, this high update frequency offers a constant stream of new functions and improvements – on the other hand, it presents companies with special challenges in release and test management.

Compared to traditional on-premise solutions, a quarterly release cycle means extremely tight schedules: Companies usually have only a few weeks to evaluate new features, check adjustments, and perform regression tests before the next production release is due. A typical test period is two weeks – with high complexity and limited resources.

Requirements are increasing in particular due to:

- Cloud-native architecture: SAP DM is developed centrally and updated automatically – customers must continuously adapt to new system statuses.
- Heterogeneous system landscapes: SAP DM is closely integrated with S/4HANA, IIoT, third-party applications, and APIs – any change can affect multiple components.
- Production-related applications: Functions such as production operator dashboards, shop floor control logic, and production data acquisition (e.g., feedback) require precise testing to ensure process stability and availability.

For this reason, structured regression testing is of central importance. Both functional tests (e.g., of user interfaces or business logic) and technical tests (e.g., APIs or background processes) must be run regularly and efficiently. Without automation, this is almost impossible to achieve within the specified time frame.

This is where test automation with Tricentis comes into play: Recurring test scenarios can be efficiently mapped using TTA (Tricentis Test Automation), which is integrated into SAP Cloud ALM, or the licensed full version STA (SAP Enterprise Continuous Testing). This reduces time and resource commitments – a clear competitive advantage in the fast-paced world of cloud releases.

Further details on implementation can be found in chapter 3 of this white paper.





Concircular's toolbox for managing cloud innovations

A structured and transparent release process is crucial for the success of SAP Digital Manufacturing – especially given the high release frequency and business-critical processes on the shop floor. Concircular has developed a holistic methodology that addresses these challenges and enables companies to operate SAP DM securely and efficiently.

Change Impact Analysis – Identify relevant changes before they become critical

We start the release process with a change impact analysis: For each new SAP DM release, we evaluate the more than 80 changes it contains and automatically compare them with the process steps used in the customer project. This is based on a comparison between the SAP release notes and the best practice processes used by customers.

This analysis shows at a glance which changes are relevant for the company – and which are not. This enables targeted prioritization of tests and saves valuable time. The effects are evaluated directly in relation to productive processes – with the goal of reducing effort, lowering risk, and increasing quality.

Best Practice Explorer – processes, test cases, and updates under control

The second pillar is our concircular Best Practice Explorer. This provides a collection of preconfigured, tried-and-tested SAP DM processes, including documented workflows, modeled process hierarchies in SAP Cloud ALM, and associated test cases. These processes are based either on SAP DM standard functionality (e.g., plugins, APIs, services) or on concircular's own enhancements such as the conMILL Suite.

What makes this special is that each process step is linked to a service ID from the SAP DM Service Catalog. This allows processes to be automatically updated and synchronized with the latest release information. The connection to SAP Cloud ALM is established via dedicated nodes, enabling seamless integration into the ALM project, including links to test cases for manual or automated execution.

Integration along the SAP Activate method

Our approach consistently follows the SAP Activate methodology – from the initial evaluation to continuous improvement after go-live. In the prepare phase, we use the conDM Discovery Assessment (conDM-DA) to identify the relevant processes, deltas, and customizing requirements based on best practices.

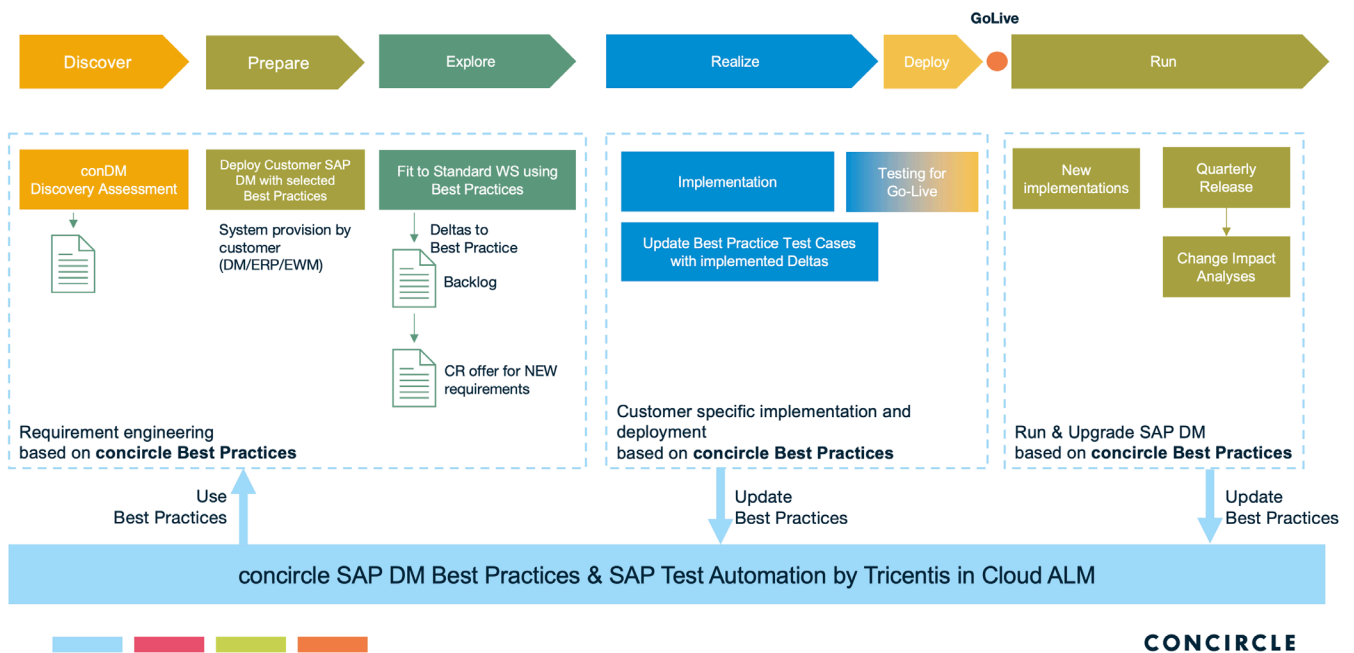




In the Explore phase, suitable processes are selected, anchored in the system, and initial test scenarios are created.

The Realize and Deploy phases involve implementation, testing, and handover to operations—accompanied by automated test plans, versioning of test cases, and continuous updating of process models.

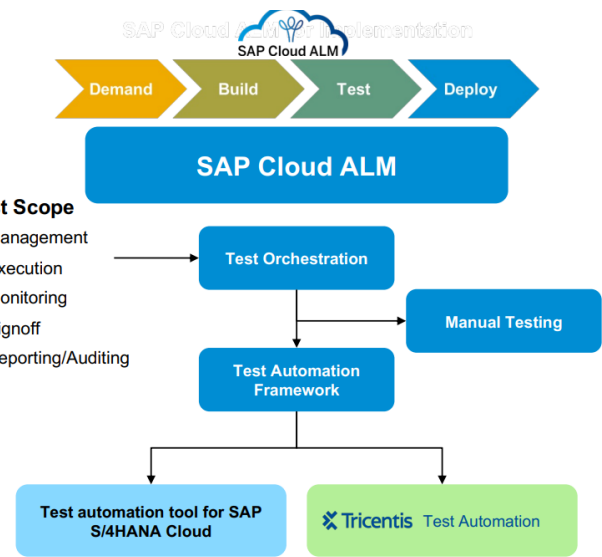
Activate SAP DM with concircle Best Practices





CHAPTER 3 – TEST MANAGEMENT

Test management in SAP Cloud ALM with integrated test automation from Tricentis provides the necessary tools for regression testing in a central location. However, these are not only required for recurring quality assurance measures, but are also integrated into the Cloud ALM processes for software development and software deployment. This gives test management a central role in the go-live of projects or maintenance work (upgrades, updates) for SAP systems.



Easy to consume solution.

Open to support all products in the future:

- Cloud and On-Premise
- SAP and non-SAP

Test Orchestration

- Structure Test Cases via Scopes and Processes
- Manual Functional Testing
- Automated Functional Testing
- Multiple Test Cycles via Test Plans
- Traceability

Test Automation:

- Integration of Cloud-based Test Automation providers:
- Test automation tool for SAP S/4 HANA Cloud, public edition
- Tricentis Test Automation for SAP Cloud ALM

Test management

Central test management in SAP Cloud ALM can be used for cloud and on-premise, for SAP and non-SAP systems.

Manual and automated test cases can be created and linked to the processes and process hierarchy through integration. Test cases are created via central test management, where it is determined whether they will be manual or automated and linked to the project, scope, and solution process.

The following functions are also available in test management:

Test planning

This lays the foundation for all subsequent activities. First, the test strategy is defined, which specifies the objectives, scope, and approaches for testing. A well-thought-out test strategy helps to make the test process structured and goal-oriented. Test plans are then created that cover the various test phases, test types, and test environments.





In test planning, different test packages are defined for the different use cases. For example, there may be one test plan for technical upgrades (SP installation) and another plan for releases or for defined projects. The same test case can be included in several test plans.

Test design

In this step, the specific test cases and test data are prepared. This includes test case development and test data management. The latter is crucial to ensure that all tests use realistic and consistent data.

The test cases are created centrally in test management with reference to the processes. The test case is classified as a manual or automated test. Manual test cases are processed and created directly in test management. Automated test cases are transferred to the Tricentis test automation tool via synchronization and are available there for further processing.

Test execution

In this step, the prepared test cases are actually executed. Manual tests are performed by testers who execute the test cases manually and document the results. This is particularly useful for tests that require human judgment or are difficult to automate. Automated testing, on the other hand, uses test automation tools to perform repeatable and extensive tests more efficiently. It is valuable for regression testing because it can be performed regularly and quickly.

Test monitoring and control

Test monitoring and control ensures that everything runs according to plan and that any problems that arise are quickly resolved. Test progress tracking continuously monitors the progress of test execution to ensure that tests are running according to plan. This includes tracking completed test cases, open defects, and test results.

Test evaluation and reporting

The evaluation and reporting of test results are crucial for quality assurance and transparency. In result analysis, test results are analyzed to evaluate the quality of the tested systems.

Cloud Alm is included with the limited version TTA for SAP customers with a cloud subscription and Enterprise Support. A separate license (Cloud ALM Extension) is required for the full version of test automation (STA).



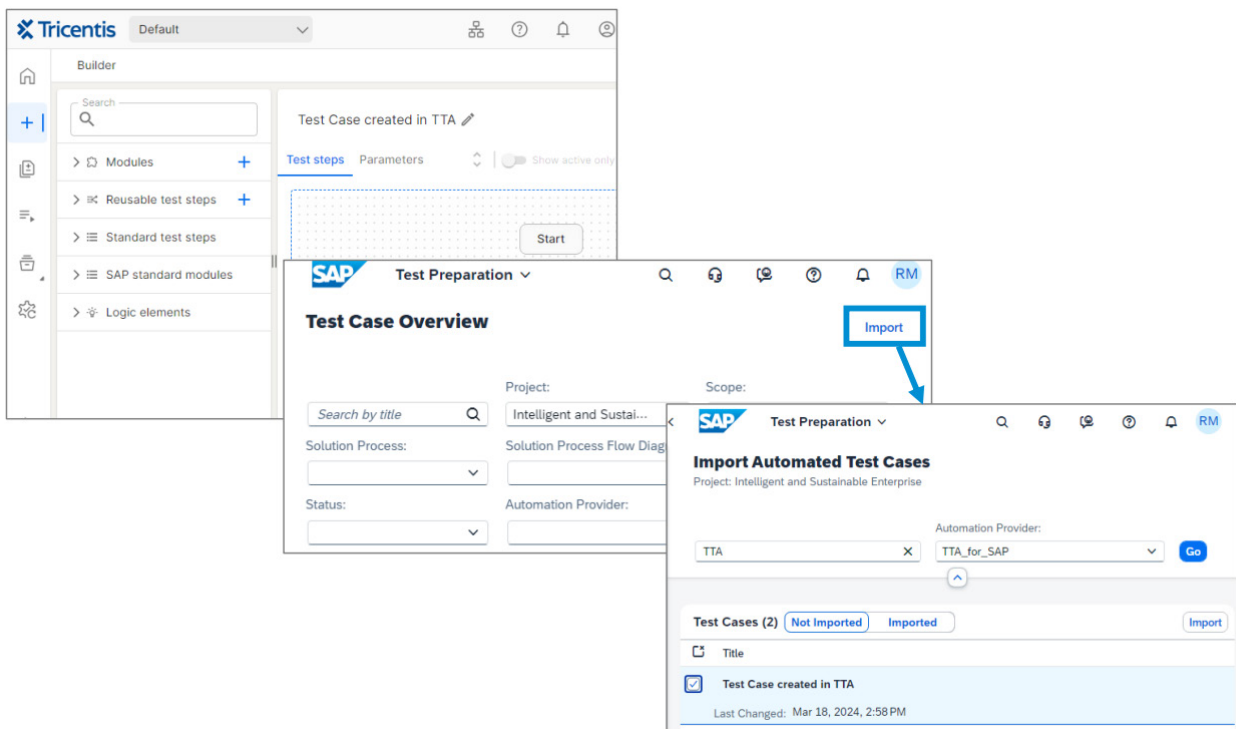


Integrated test management offers the following advantages:

- Higher quality of the SAP system through regression testing.
- Less risk through timely identification of defects close to development
- Reduction of manual testing
- Traceability of test results
- More efficient collaboration between teams

Best practice test cases

The best practice test cases can be updated to the best practice processes by uploading a file. The test cases are uploaded using the import function; the corresponding xls file must be available in the correct structure.



A bulk upload function has also recently been added, including a template.





Upload

Select the spreadsheet file that contains test cases.

Once the file has been uploaded, new test cases are created.

If required, use the [template](#).

Scope: *

Select a file

Upload
Cancel

Multiple test cases can be uploaded in a single file, which greatly speeds up further processing, as all the necessary test steps for the test case are created here.

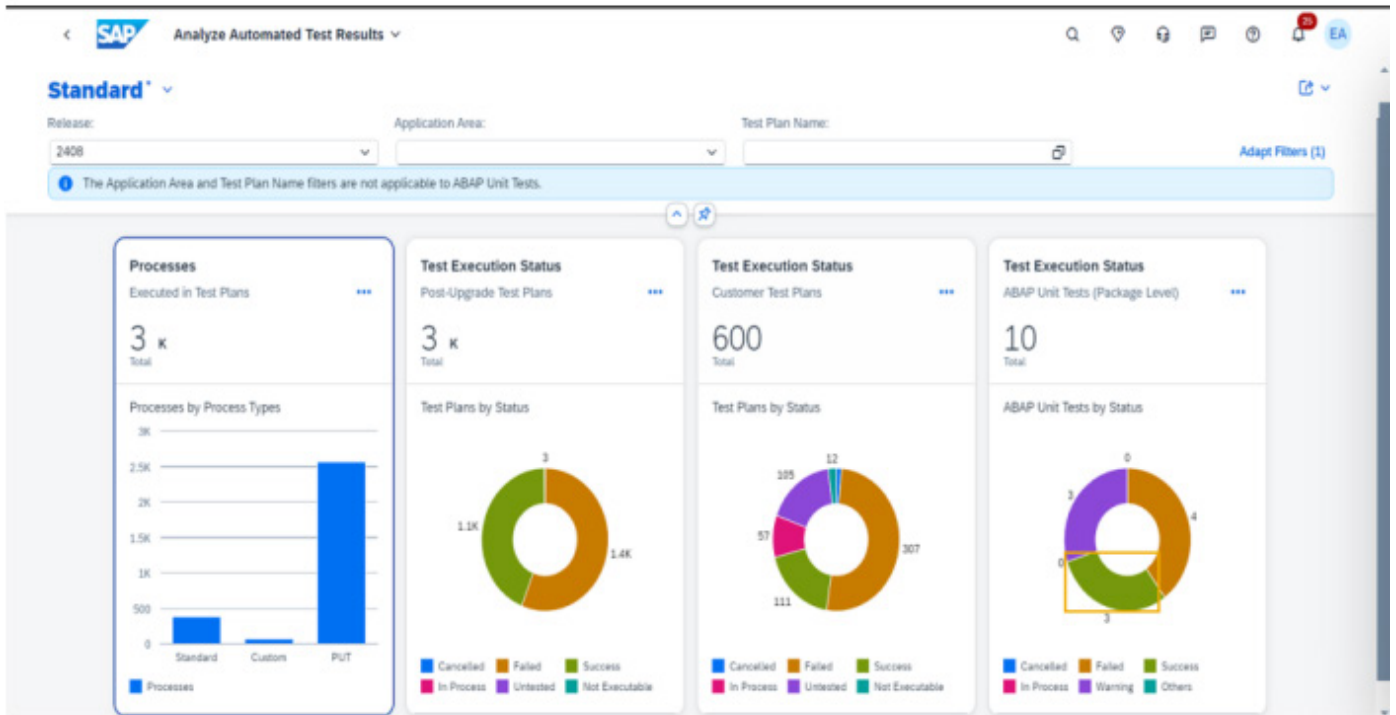
	A	B	C	D	E	F	G	H	I	J	
1	Test Case Name	Test Case Status	Test Case Priority	Test Case References	Test Case Owner	Tag	Activity Title	Activity Target Name	Activity Target URL	Action Title	Action Instructions
2	Test Case 1	In Preparation	Medium	[SAP](https://sap.com) [Example](https://example.com/path/to/resource?param1=value1)	owner@sap.com	Tag1	Activity 1	Application 1	https://sap.com	Action Logon	I1 - Lorem ipsum dolor sit amet, con
3						Tag2	Activity 2			Action Check	I2 - Lorem ipsum dolor sit amet, con
4	Test Case 2	Prepared	Very High	[SAP](https://sap.com) [Example](https://example.com/path/to/resource?param1=value1)		TagA	Activity 1	Application 1	https://sap.com	Action Logon	I3 - Lorem ipsum dolor sit amet, con
5							Activity 2	Application 2	https://help.sap.com	Action Check	I4 - Lorem ipsum dolor sit amet, con
6							Activity 2			Action Calculate	I5 - Lorem ipsum dolor sit amet, con
7							Activity 2			Action Post	I6 - Lorem ipsum dolor sit amet, con

Reporting

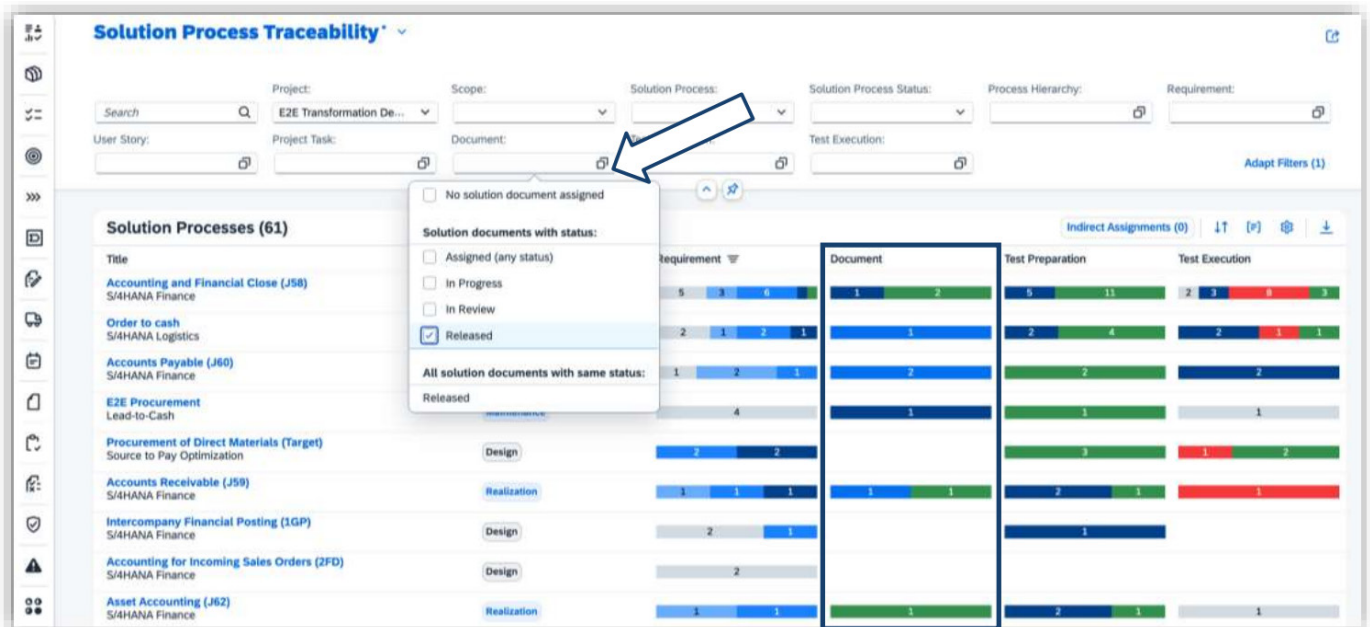
Essential information about important parameters is made visible through reporting. How many requirements have already been processed or implemented, are the necessary and defined documents available, are the test cases available, and what is the result of the test run at the process level? This allows valid statements to be made and decisions to be made based on the current status. The reports show which process was tested with which result, both for automated and manual tests. A go-live decision is then secure, transparent, and traceable based on this information.

The test results can then be analyzed using the analyses provided. The analysis uses the reference to the process or process hierarchy, i.e., the test results refer to the tested process. This means that you always have a clear picture of the test status of the implementation in terms of the tests performed (test coverage) and the test results.





The test results for the processes are displayed in the reporting, and several test cases can test one process. However, further information on the status of the processes with regard to implementation is also available.



For more information, visit: <https://support.sap.com/en/alm/sap-cloud-alm/calm4grow.html>





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