QuantityWare

QuantityWare BCP 3.0 Implementation in Legacy Environments

Project Guidelines and Check List

Documentation of Activities

Notes

The latest version of this documentation can be found in the QuantityWare Knowledge Base. All documentation is kept current for the combinations of latest BCS release with the latest supported SAP Oil, Gas, & Energy release. For all currently supported combinations see Note #000086 “Support and Release (Lifecycle) details” page 2, “Release Lifecycle”.

Your release level can be determined via:

“/o/QTYW/COCKPIT” -> “Cockpit” -> “Support Package Level”

Version History

Version	Date	Description
00	2017-08-02	Initial Version
01	2017-11-10	Editorial update
02	2019-06-25	Editorial update
03	2021-09-24	S/4HANA 2020 / 2020_EX validity confirmed - modern QW document style applied - 30A CSP02 / 30B CSP01 changes
04	2023-11-01	30A CSP03 / 30B CSP02 changes

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1. Introduction

How can a QuantityWare BCP customer easily migrate its legacy quantity conversion calculations (e.g., API c-code implementation) to the QuantityWare BCP solution?

QuantityWare BCP customers fall into two categories:

- **Type 1**: Customers performing a new ERP installation with QuantityWare BCP - "Greenfield Project"
- **Type 2**: Customers adding QuantityWare BCP to their existing ERP system which already contains a legacy quantity conversion solution (e.g., with API c-codes in place) - "Brownfield Project"

"**Type 2**" customers may run their legacy quantity conversion solution in parallel with their new QuantityWare BCP solution. This flexibility is enabled by the fundamental SAP design.

A conversion group is assigned to an SAP material, the conversion group defines which quantity conversion solution is utilized for the complex oil & gas conversion. Since QuantityWare delivers QuantityWare own conversion groups in a new, dedicated template client, **existing material – conversion group configurations are not affected by the installation of QuantityWare BCP**.

"**Type 1**" customers typically have expert consultants (certified QuantityWare BCP Consultants are recommended) available during the implementation project, who follow the proven QuantityWare BCP Project Assessment and Implementation Guidelines.

"**Type 2**" customers typically consider QuantityWare BCP usage because their legacy quantity conversion routines do not fill new requirements – the customer requires support for additional measurement standards, e.g., for asphalt or LPG products. In this case, a BCP implementation for new products should also follow the BCP Project Assessment and Implementation Guidelines, while no special attention must be paid to the legacy conversion group configuration and implementation for other products.

Another motivational reason for "**Type 2**" customers to implement the QuantityWare BCP solution is a strategic decision to replace their existing legacy quantity conversion routines as part of a business process renovation project with targets in the field of quantity conversions such as:

- Legal compliance

- ROI extension
- Definition of business “Best Practices”
- Introduce transparency of all calculation data
- GRC support at a fundamental level
- Compliance with respect to SAP platform guidelines

“**Type 2**” customers may also run into the situation that their legacy API c-code implementation stops working, e.g., due to hardware / OS changes of their system landscape – **emergency replacement.**

For the strategic replacement, QuantityWare provides a clear and simple migration project methodology, which utilizes the QuantityWare BCP Petroleum Measurement Cockpit to easily accomplish implementation with a minimum effort and a maximum of quality assurance.

This migration project methodology can be divided into two major project steps:

- The methodology described in the CTP (Compliance and Transparency – Petroleum) PAIG documentation – the recommended first phase of the migration project
- The methodology defined in this document – Migration from API C to QuantityWare ABAP – the second phase once the decision has been made to replace legacy c-code implementations

QuantityWare has validated that the BCP - ABAP based - ASTM D1250-80 calculation results are identical when compared with the legacy API c-code results, and documented the validation results in a working paper available in our Knowledge Base at www.quantityware.com.

It is strongly recommended, that a certified QuantityWare BCP consultant is involved in a migration project as described in this document.

For the **emergency replacement**, the methodology suggested is reduced to usage of the migration tool (see Chapter 2.3) and a manual calculation validation.

2. API C to QuantityWare ABAP - Migration Project Methodology

The QuantityWare Petroleum Measurement Cockpit contains a sophisticated and unique Test Scenario Tool, which enables the definition of thousands of single automated test scenarios based on a conversion group. Details on the Test Scenario Tool can be found in the BCP Documentation Reference Manual.

When deciding to replace your legacy quantity conversion solution with BCP, simply install BCP in your development system and perform the following high-level 10-point plan:

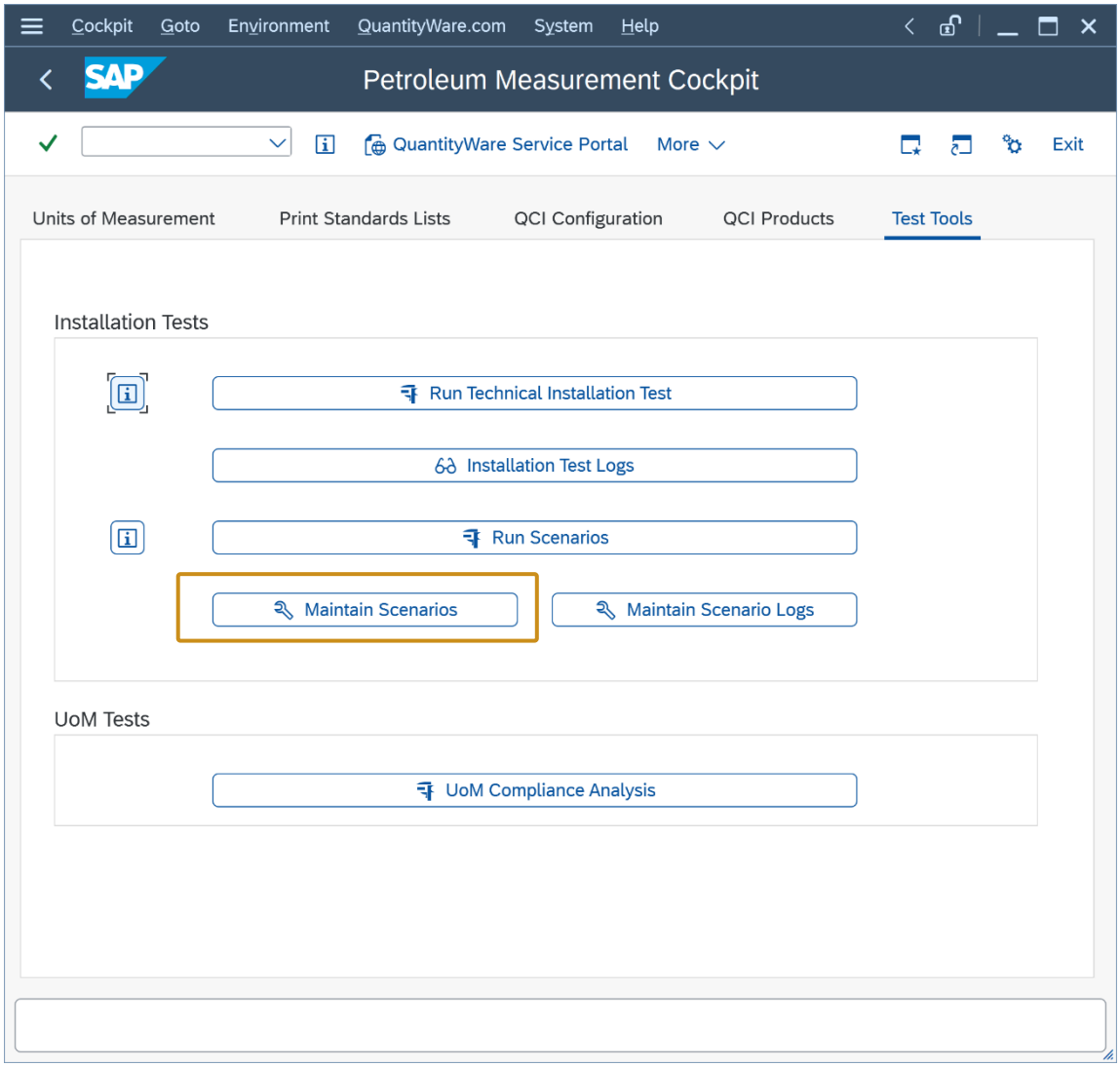
(The average effort estimates for each step are based on project experience)

2.1. Validation Definition – Development

16 – 60 Hours - Depending on number of conversion groups defined for your legacy quantity conversion

Define 20 to 100 test scenarios in your development system for each legacy conversion group – since the results must have been validated beforehand, simply utilize the actual results as expected results.

- If your legacy (e.g., API c-code) implementation is no longer working -> use quantity conversion data from your productive system to define these scenarios and proceed with step 3
- If you have already performed a CTP (Compliance and Transparency – Petroleum) PAIG project where test scenarios have already been defined in your systems - proceed with step 3


Cockpit
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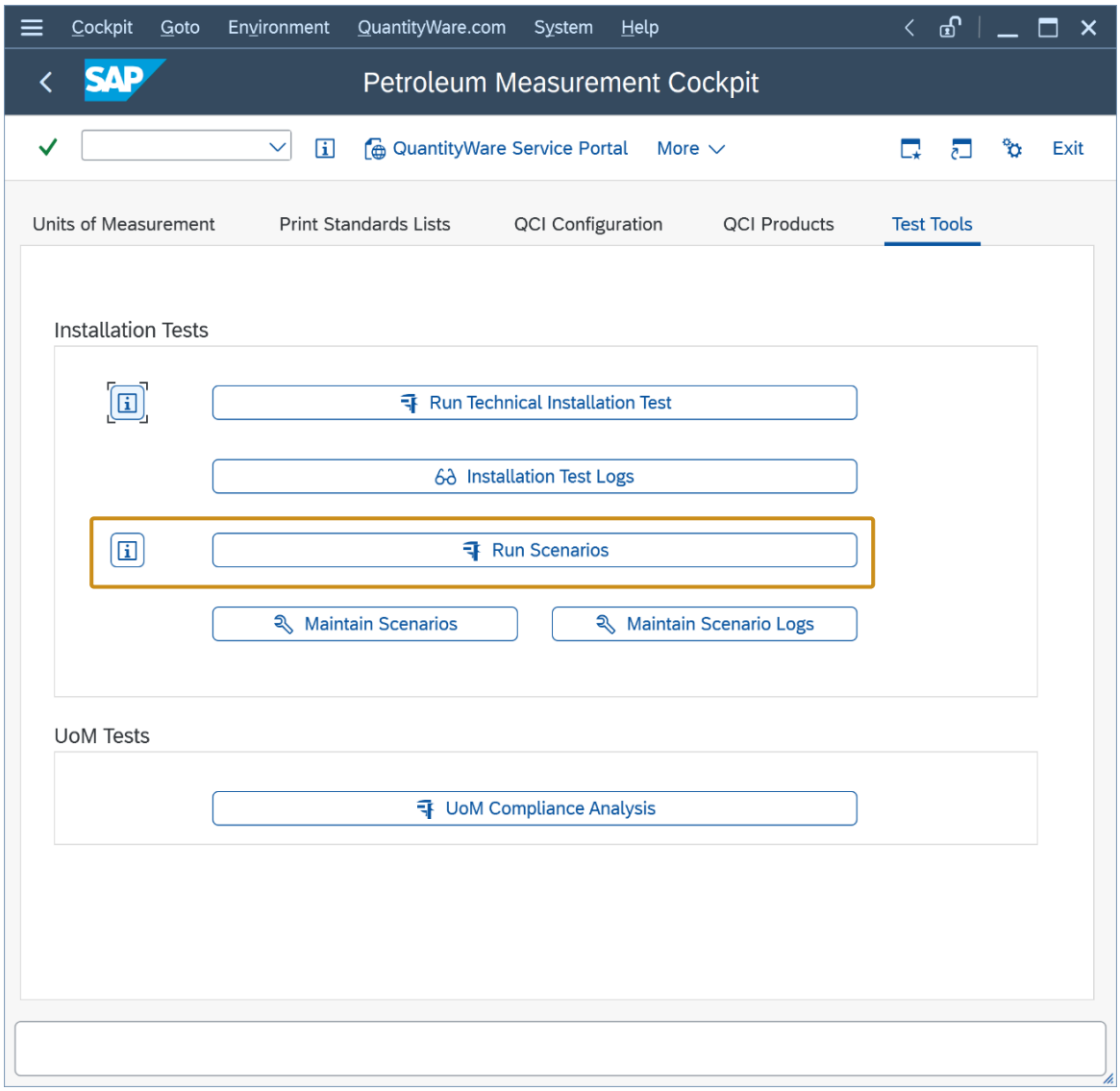
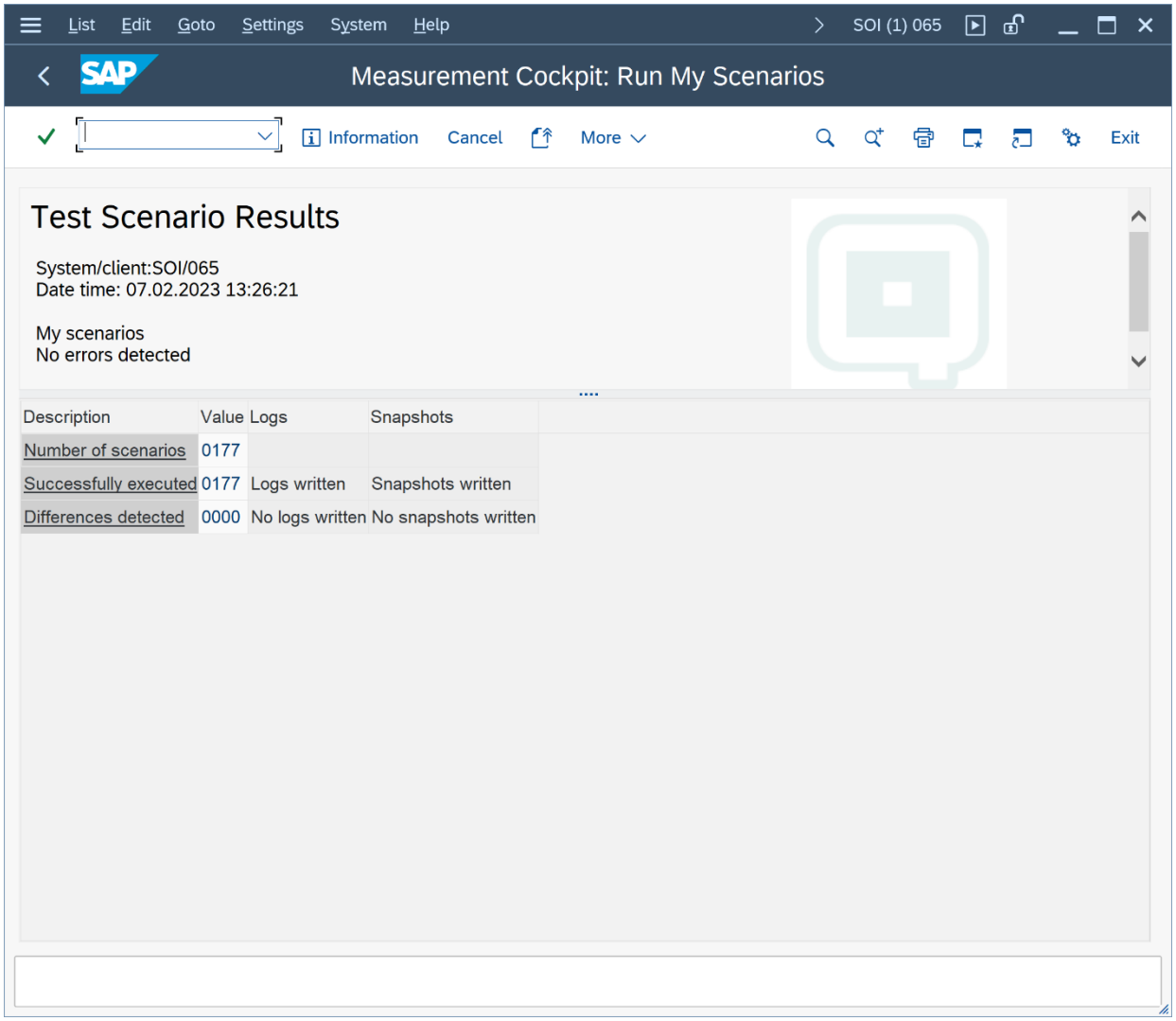
More
Exit
Units of Measurement
Print Standards Lists
QCI Configuration
QCI Products
Test Tools
Installation Tests
Run Technical Installation Test
Installation Test Logs
Run Scenarios
Maintain Scenarios
Maintain Scenario Logs
UoM Tests
UoM Compliance Analysis

2.2. Run Validation – Development

15 Minutes

Run the test scenarios in your development system. All lights should be green.

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My scenarios
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Description
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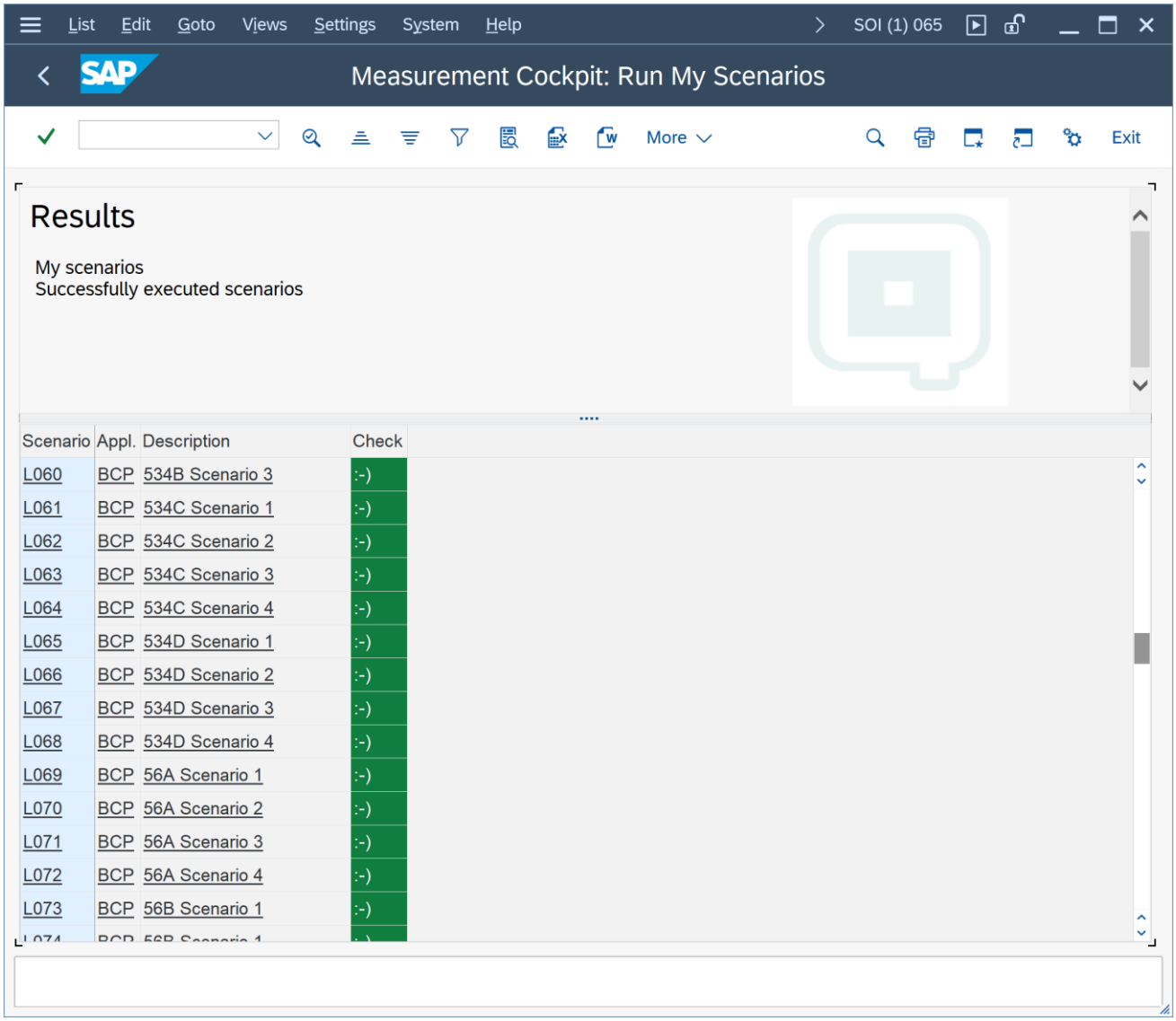
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Results
My scenarios
Successfully executed scenarios
Scenario Appl. Description Check
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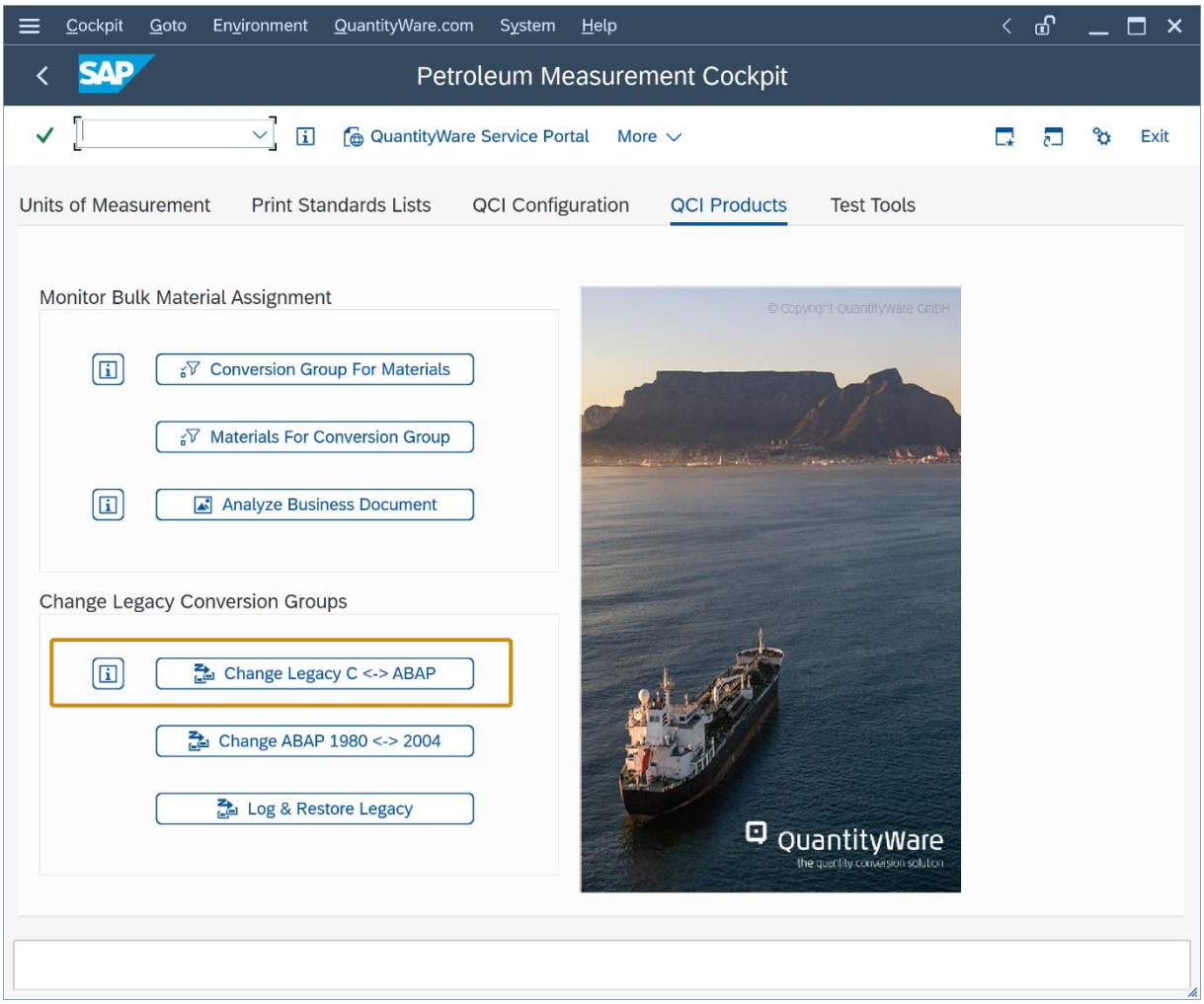
L061 BCP 534C Scenario 1 :-)
L062 BCP 534C Scenario 2 :-)
L063 BCP 534C Scenario 3 :-)
L064 BCP 534C Scenario 4 :-)
L065 BCP 534D Scenario 1 :-)
L066 BCP 534D Scenario 2 :-)
L067 BCP 534D Scenario 3 :-)
L068 BCP 534D Scenario 4 :-)
L069 BCP 56A Scenario 1 :-)
L070 BCP 56A Scenario 2 :-)
L071 BCP 56A Scenario 3 :-)
L072 BCP 56A Scenario 4 :-)
L073 BCP 56B Scenario 1 :-)

2.3. Use Migration Tool – Development

15 Minutes - 8 Hours (Depending on complexity - SAP legacy standard utilized for legacy conversion groups are simple and fast, customer-specific conversion groups take longer – see Legacy Migration FAQ for details).

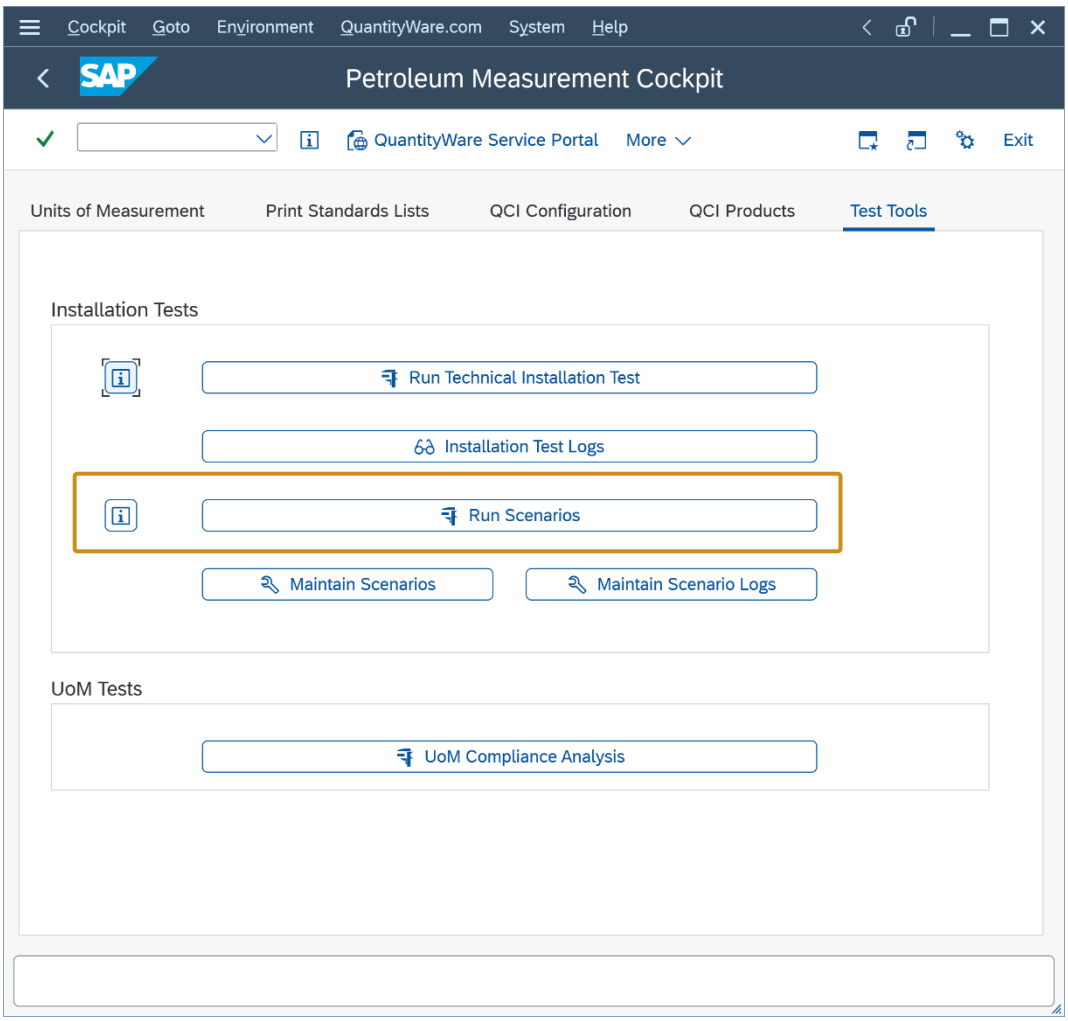
Use the QuantityWare BCP Migration Tool (accessible via the Petroleum Measurement Cockpit) to change the configuration of your legacy quantity conversion - conversion groups to the appropriate QuantityWare BCP conversion group - Read Appendix C for manual mapping information.

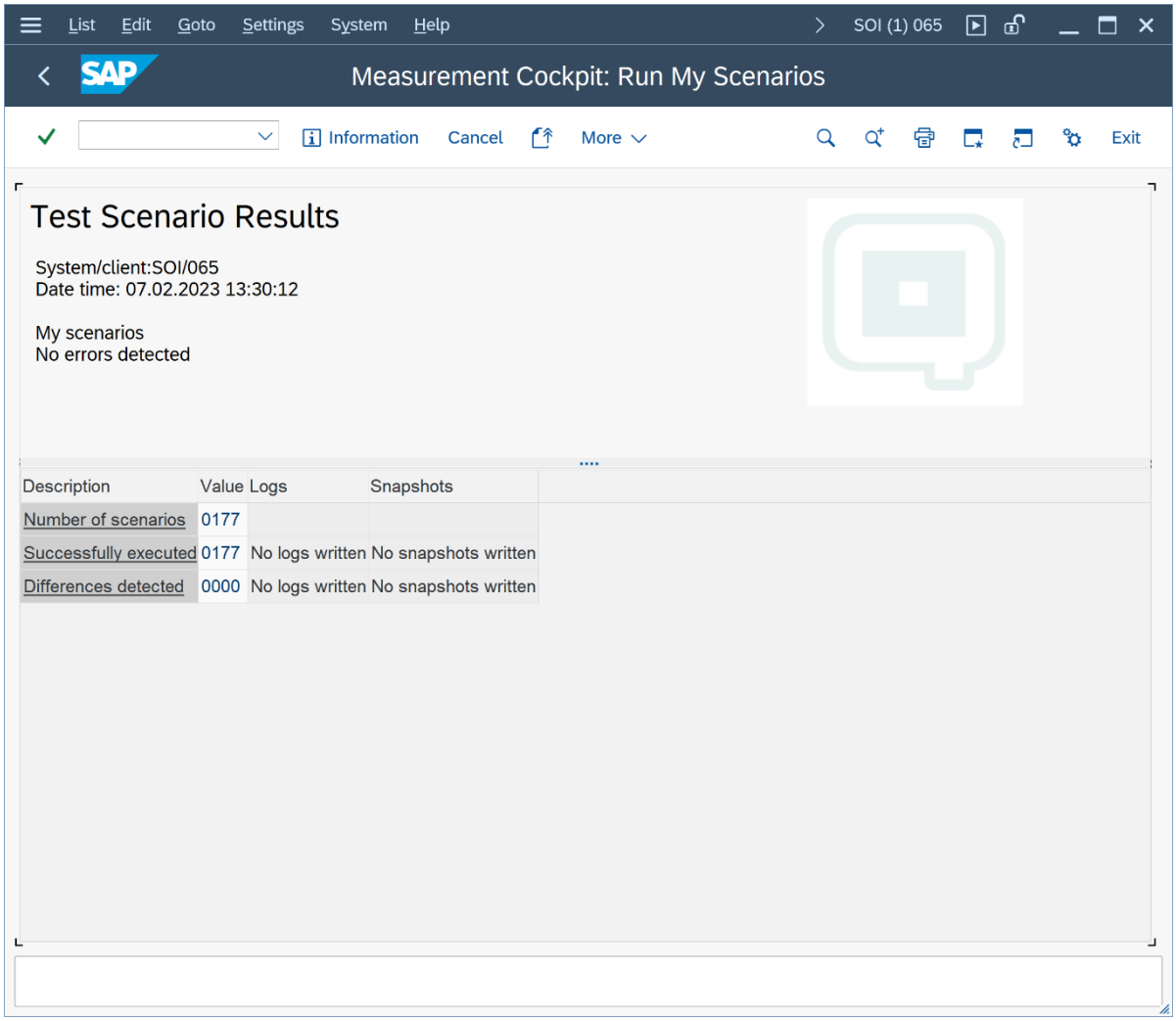


2.4. Run Validation – Development

15 Minutes – 16 Hours (from no issues to complex issue resolution)

Run the test scenarios in your development system. All lights should be green, since QuantityWare conversion groups are validated to produce the identical results as with e.g., the API c-codes. If errors are encountered, they can be readily analyzed and rectified by petroleum measurement experts in conjunction with application team members.

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Test Scenario Results
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Date time: 07.02.2023 13:30:12
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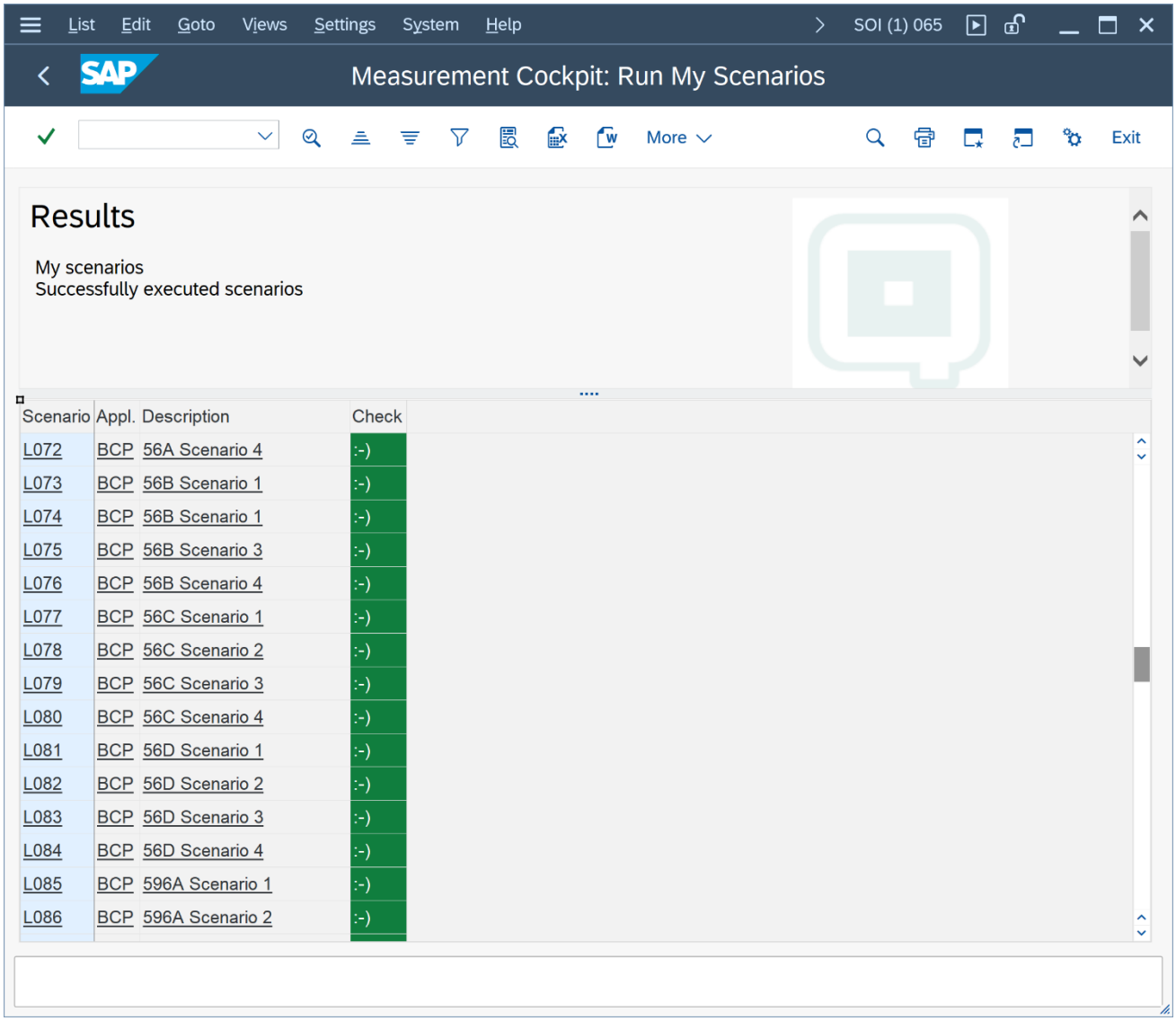
Differences detected 0000 No logs written No snapshots written


List Edit Goto Views Settings System Help
SOI (1) 065
Measurement Cockpit: Run My Scenarios
More
Exit
Results
My scenarios
Successfully executed scenarios
Scenario Appl. Description Check
L072 BCP 56A Scenario 4 :-)
L073 BCP 56B Scenario 1 :-)
L074 BCP 56B Scenario 1 :-)
L075 BCP 56B Scenario 3 :-)
L076 BCP 56B Scenario 4 :-)
L077 BCP 56C Scenario 1 :-)
L078 BCP 56C Scenario 2 :-)
L079 BCP 56C Scenario 3 :-)
L080 BCP 56C Scenario 4 :-)
L081 BCP 56D Scenario 1 :-)
L082 BCP 56D Scenario 2 :-)
L083 BCP 56D Scenario 3 :-)
L084 BCP 56D Scenario 4 :-)
L085 BCP 596A Scenario 1 :-)
L086 BCP 596A Scenario 2 :-)

2.5. Validation & Install BCP – Quality Assurance

2 Hours – 16 Hours (from no issues to complex issue resolution)

Now that the migration has been successfully performed in your development system, install BCP, transport and run the proven test scenarios into your QAS (Quality Assurance System). All test scenario results should be 'green'. If errors are encountered, they can be readily analyzed and rectified by the petroleum measurement experts of the consulting team. The most probable cause of any error detected at this stage will be pre-existing basic configuration mismatches between Development and the QAS. If all test scenario results are 'green' and import new conversion group configuration from development to your QAS.

2.6. Run Validation – Quality Assurance

15 Minutes

Run the test scenarios in your quality assurance system. All results should be green.

2.7. Define Plan – Production

Time required dependent on internal processes

Define "cutover" day and time for the production system switch and organize a production system backup (snapshot).

2.8. Install BCP & Transport Test Scenarios – Production

2 Hours

Now that the migration has been successfully completed in your quality assurance system, at the pre-defined time, BCP must be installed in production and the proven test scenarios imported.

2.9. Run Validation – Production

15 Minutes

Run the test scenarios in your production system. All results should be green. If this is not the case, there is a fundamental inconsistency in the existing QAS / production configuration. This is a serious situation which is not usually expected and must be resolved using your standard landscape and project GRC procedures.

2.10. Transport Settings - Production

15 Minutes

Transport the new conversion group configuration to production in a small 'downtime' and run the Test scenarios in your production system again. All lights will be green.

Congratulations!

You have successfully converted your legacy quantity conversion solution to QuantityWare BCP.

3. Summary

In an SAP Oil, Gas, and Energy system, it is possible to migrate standard API 'C' bulk material calculations to QuantityWare BCP calculations, in around five days elapsed time, increasing transparency, security, reliability and enforcing GRC.

In this document we have, at a high level, described the proven project methodology which can be used to migrate your legacy quantity conversion solution to the QuantityWare BCP quantity conversion solution.

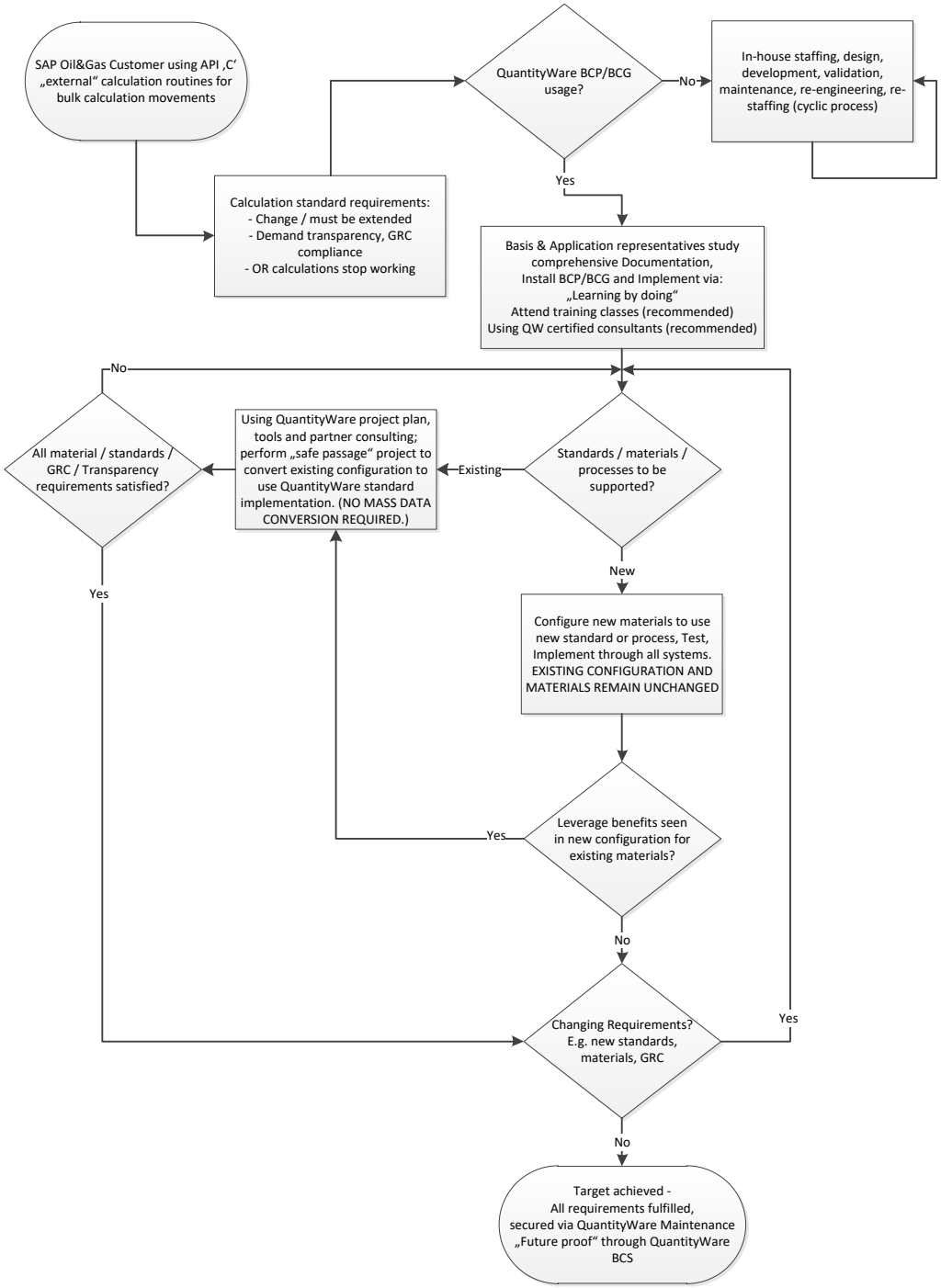
Detailed effort estimates are provided in a template project GANTT chart (Appendix).

In this project, the quality and flexibility of the QuantityWare Petroleum Measurement Test Scenario Tool is leveraged to allow execution based upon four major 'motivators':

- Simplicity
- Transparency
- Quality assurance
- Future proofing

Appendix A.

Flow chart



Appendix B.

GANTT Project Plan

In the Knowledge Base at www.quantityware.com a PDF-format high-level GANTT time-line for the project is available. The plan must be amended for customer lead-times and internal procedures. It defines the minimum time example required in a procedurally low-overhead organization. The timelines are identical for all BCP releases.

The original Microsoft Project© file can be downloaded from the QuantityWare support portal "DataLounge"-area.

Appendix C.

C to ABAP - Conversion Group Mapping Table

The QuantityWare BCP C to ABAP Migration Tool is designed to automatically map and convert SAP template "C" conversion groups to the corresponding QuantityWare ABAP conversion groups (configuration change). If customers utilize their own Z* "C" conversion groups, this mapping and conversion needs to be done manually, still following the migration methodology described in this document methodology. To support the manual process, the following table provides the mapping of the template conversion groups (C to ABAP):

SAP QCI legacy API C	QuantityWare SAP QCI	"German rounding"
Relative Density, 60 °F:		
234A	Q105	
60RA	Q109	
234B	Q205	
60RB	Q209	
234C	Q303	
60RC	Q307	
234D	Q405	
60RD	Q409	
Density, 15 °C:		
534A	Q100	Q101
15DA	Q106	
534B	Q200	Q201
15DB	Q206	
534C	Q300	
15DC	Q304	
534D	Q400	Q401
15DD	Q406	

API Gravity, 60 °F:		
56A	Q104	
60GA	Q108	
56B	Q204	
60GB	Q208	
56C	Q302	
60GC	Q306	
56D	Q404	
60GD	Q408	
Density, 20 °C:		
596A	Q102	Q103
20DA	Q107	
596B	Q202	Q203
20DB	Q207	
596C	Q301	
20DC	Q305	
596D	Q402	Q403
20DD	Q407	

Read QuantityWare Notes 000068 and 000069 for additional details.

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