



Compliance & Transparency - Petroleum

CTP 3.0

Project Assessment and Implementation
Guidelines (PAIG) for SAP QCI Legacy Quantity
Conversions

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	2017-03-31	Initial Release
01	2017-11-11	S/4HANA 1709 validity added
02	2019-02-17	S/4HANA 1809 validity added
03	2019-11-20	S/4HANA 1909 validity added
04	2021-09-24	S/4HANA 2020 / 2020_EX validity confirmed - modern QW document style applied - 30A CSP02 / 30B CSP01 changes
05	2023-11-01	30A CSP02 / 30B CSP01 changes
06	2024-03-21	Adjust references to BCP documents
07	2024-05-15	AD note 000119 test scenario screen changes

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1. Introduction

In this document we describe the proven QuantityWare project methodology that enables technical consultants to successfully renovate and configure quantity conversion solutions that run in an SAP Oil, Gas, & Energy ERP system. This methodology reflects the logical structure of the Petroleum Measurement Cockpit (PMC), whose design in turn was influenced heavily by the methodology.

The PMC is the single access point of CTP (Compliance & Transparency – Petroleum) for measurement specialists and technical consultants to the QuantityWare BCP product. CTP is an integral part of [BCP](#), delivered with QuantityWare [BCS](#). Via the PMC you design, monitor, maintain and enhance complex, measurement standard based quantity conversion implementations that run within the SAP Oil, Gas, and Energy ERP system. The PMC provides an easy to use user interface (UI), which is structured so that measurement experts and technical consultants can organize their work efficiently.

The methodology is called “Project Assessment and Implementation Guidelines”, or PAIG for short. This methodology is intended for medium to very complex requirements and/or large-scale SAP Oil, Gas, and Energy **installed base** implementations (cross country, complex product portfolio) but also provides valuable information for apparently “easy” **installed base** quantity conversion implementations.

We recommend that you always use the methodology as a QA check list for your SAP Oil, Gas, and Energy quantity conversion implementations.

By combining the PAIG methodology with the CTP QuantityWare compliance & transparency tools and options, you will be able to obtain a maximum return on investment. As quantity conversion set-up is an important part of any SAP Oil, Gas, and Energy implementation project (new installation or upgrade/change project), it should be carefully planned and is typically the first project step before business process implementation can start, since all processes are based upon a working and well-defined quantity conversion setup combined with a well-configured product/material master definition.

In installed base systems SAP QCI legacy implementations are already running and “produce numbers”, i.e. are considered as a black box, where large investments have been made with a focus on receiving external data and relying on the completeness and accuracy of such data in conjunction with the calculations made by the SAP QCI legacy conversion groups. **With CTP, transparency and compliance is also delivered for your legacy SAP QCI implementations, which you may activate for your business users, GRC officers and auditing organizations in a well-defined renovation project, following this PAIG documentation.**

Project time estimates are presented for three cases in this methodology. Legacy SAP QCI quantity conversion configurations may vary considerably owing to the following factors:

- Number of products and standards supported
- Process integration with respect to the configurable QCI user interface
- Rounding requirements for calculation models and target quantity values
- Existing BAdI implementations in use

For these reasons, three project cases are detailed in the next section of this chapter to help support the many kinds of SAP Oil, Gas, and Energy implementation projects

1.1. Definition of Project Complexity Cases

1.1.1. Low Complexity Quantity Conversion Renovation & Transparency Project:

- UoM definitions are validated, and compliance analysis is O.K.
- Relevant measurement standards are already defined for all products/conversion groups
- One country with respect to measurement standards to be considered
- Existing configuration is error free – all configuration checks are O.K.
- No usage of QuantityWare range checks is required
- No usage of quantity value synchronization is required
- Define and implement automated test scenarios

1.1.2. Medium Complexity Quantity Conversion Renovation & Transparency Project:

- UoM definitions are not validated for all UoM and compliance analysis is partially O.K.
- Relevant measurement standards are mostly defined for all products/conversion groups
- Several but similar countries with respect to measurement standards to be considered
- Existing configuration is mostly error free – configuration checks are mostly O.K.
- QuantityWare range check usage may be required
- Quantity value synchronization may be required
- Define and implement automated test scenarios

1.1.3. High Complexity Quantity Conversion Renovation & Transparency Project:

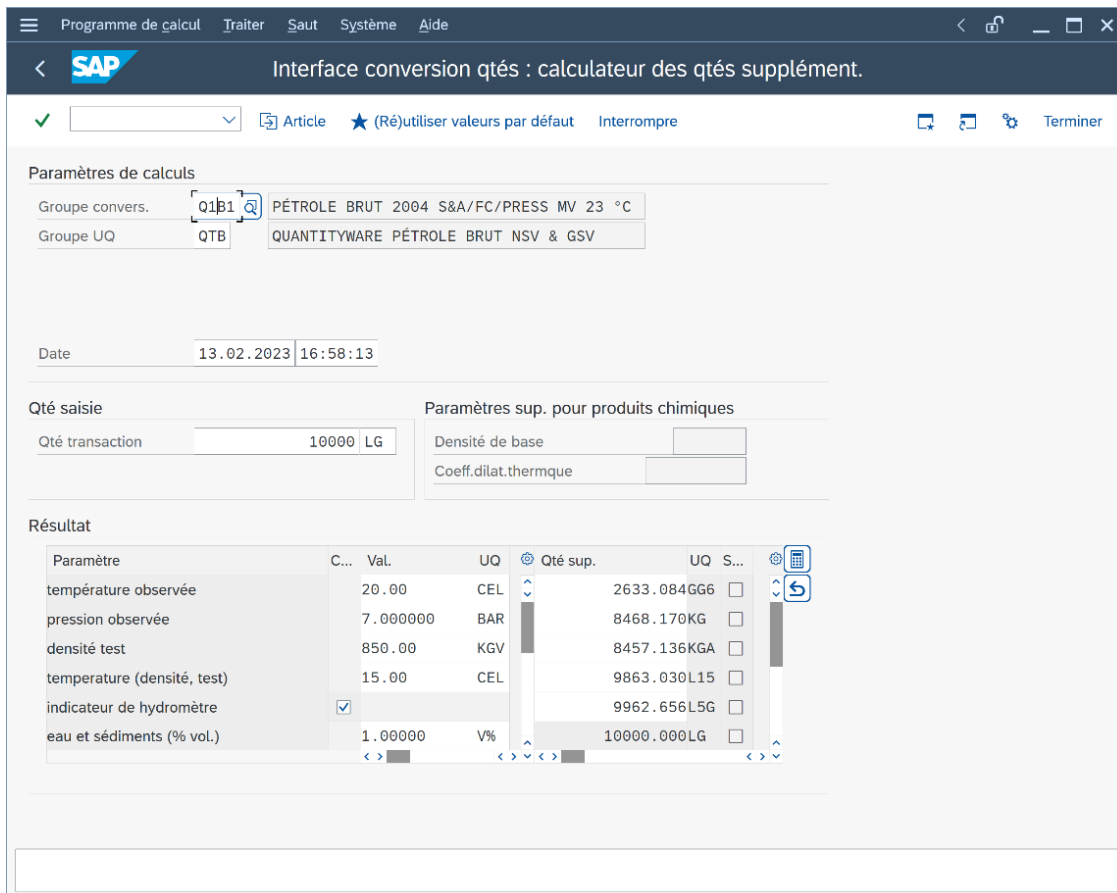
- UoM definitions are not validated for all UoM, and compliance analysis is not O.K.
- Relevant measurement standards are not defined for all products/conversion groups
- Many countries / many differences with respect to measurement standards to be considered
- Existing configuration is not error free – configuration checks are not O.K.
- Usage of QuantityWare range checks is required
- Usage of quantity value synchronization is required
- Define and implement automated test scenarios

2. Language Support

With BCP, QuantityWare ships all language dependent customizing template entries in four languages (listed in alphabetical order):

- English
- French
- Portuguese
- Spanish

Thus, all 400+ UoM definition texts, all 400+ conversion groups, more than 5000 reading group and range group entries (descriptions and parameter texts) are available in these four logon languages. The Petroleum Measurement Cockpit (PMC) UI itself is only available in English. Thus, you should perform the initial configuration work in English and make the final tests in your preferred language.



Programme de calcul Traiter Saut Système Aide

SAP Interface conversion qtés : calculateur des qtés supplément.

Article (Ré)utiliser valeurs par défaut Interrompre Terminer

Paramètres de calculs

Groupe convers. Q1B1 PÉTROLE BRUT 2004 S&A/FC/PRESS MV 23 °C

Groupe UQ QTB QUANTITYWARE PÉTROLE BRUT NSV & GSV

Date 13.02.2023 16:58:13

Qté saisie Qté transaction 10000 LG

Paramètres sup. pour produits chimiques

Densité de base

Coeff.dilat.thermique

Résultat

Paramètre	C...	Val.	UQ	Qté sup.	UQ	S...
température observée		20.00	CEL	2633.084GG6		
pression observée		7.000000	BAR	8468.170KG		
densité test		850.00	KGV	8457.136KGA		
temperature (densité, test)		15.00	CEL	9863.030L15		
indicateur de hydromètre	<input checked="" type="checkbox"/>			9962.656L5G		
eau et sédiments (% vol.)		1.00000	V%	10000.000LG		

3. Prerequisites

- You have concluded a usage agreement for BCP and the technical implementation of QuantityWare BCS has been completed successfully
- The appropriate BC set /QTYW/BCP_<30A/B/*> has been applied to client 045 (or equivalent client if client number 045 is already in use for other purposes)
- Composite Role Y_QTYW_CR_ALL must be assigned to your user to be able to work with the Petroleum Measurement Cockpit
- You have successfully executed the QuantityWare installation and post installation steps described in the QuantityWare Technical Installation Documentation

Per system, the technical installation should take:

- Study documentation: 2 hours
- Package and CSP download: 15 minutes (one time for all systems)
- Installation via SAINT: 15 minutes
- Template client copy from 000: 30 minutes to 2 hours (system dependent)
- Template BC set distribution: 30 minutes
- QuantityWare installation test: 15 minutes

In total, 3-6 hours per system.

4. Overview

As noted above, these guidelines are aligned around the QuantityWare PMC. The PMC provides all tools necessary to complete the challenging task of setting up sophisticated quantity conversion solutions. The PMC is accessible via transaction /n/QTYW/COCKPIT. More details on the PMC can be found in the [BCP 3.0 Documentation Reference Manual](#).

- Chapter 5 describes the implementation steps that need to be followed to complete the task successfully
- Chapter 6 provides a summary with effort estimates for the three project complexity cases described in Chapter 1

5. The Methodology - PAIG

In this chapter, we provide all relevant project steps of our Project Assessment and Implementation Guidelines (PAIG) in chronological order. Several steps may also be executed in parallel.

If one step is a definite prerequisite before next steps can be tackled, this is noted at the beginning of each step description.

The project steps are based upon our unique and extensive experience gained through our involvement in many customer implementations.



The completion time effort estimates are based on times for **highly skilled quantity conversion experts**.

- "L" denotes the low complexity case,
- "M" the medium complexity case,
- "H" the high complexity case.

5.1. Run BCP Installation Test in Client 045

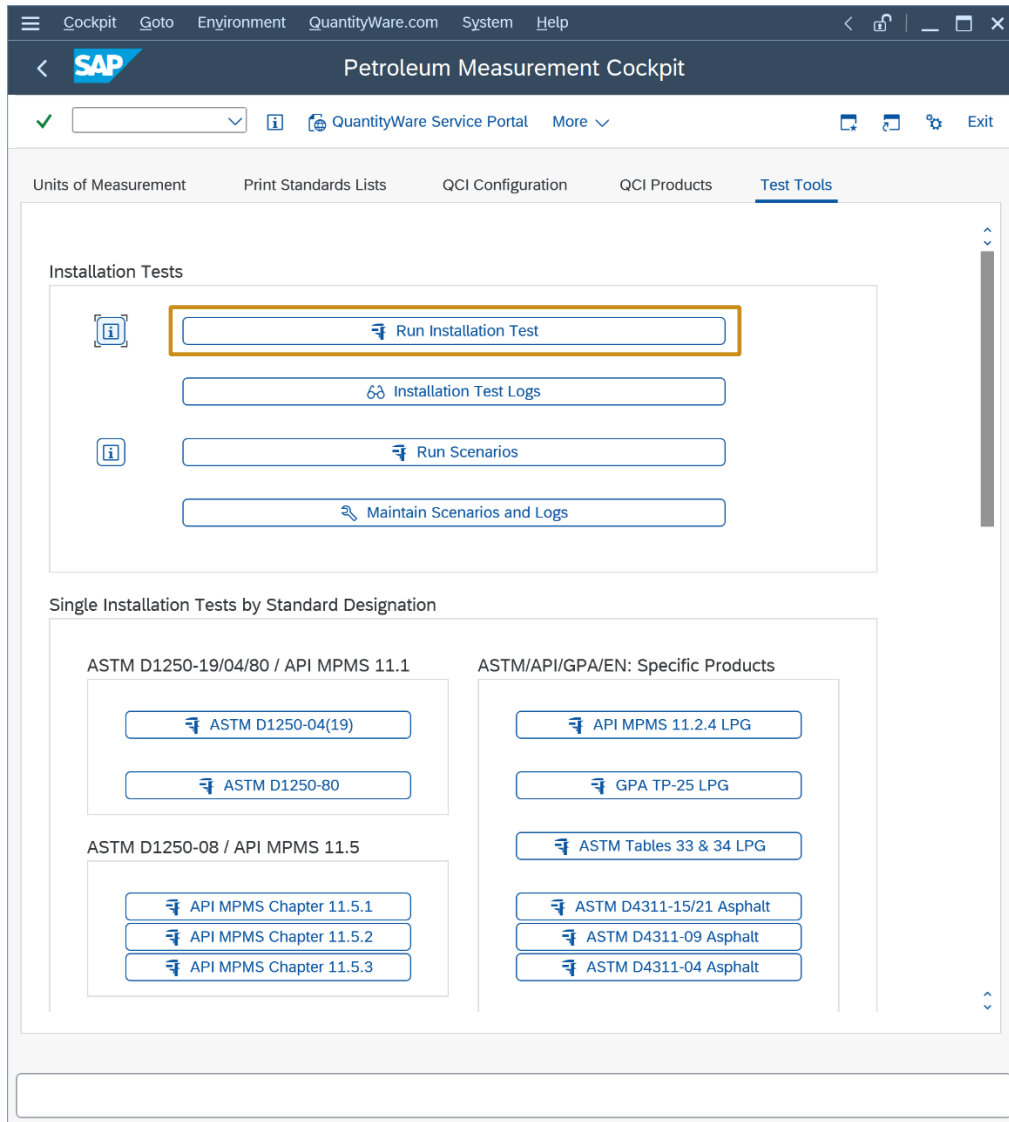
Implementation step	1
Estimated time to completion	L: 0.1 hours M: 0.2 hours H: 1 hour
Next major step	2
Related project teams	Technical SAP basis experts or certified BCP consultants

The PMC (Petroleum Measurement Cockpit) is the central access point for all QuantityWare test tools that are delivered with BCP.

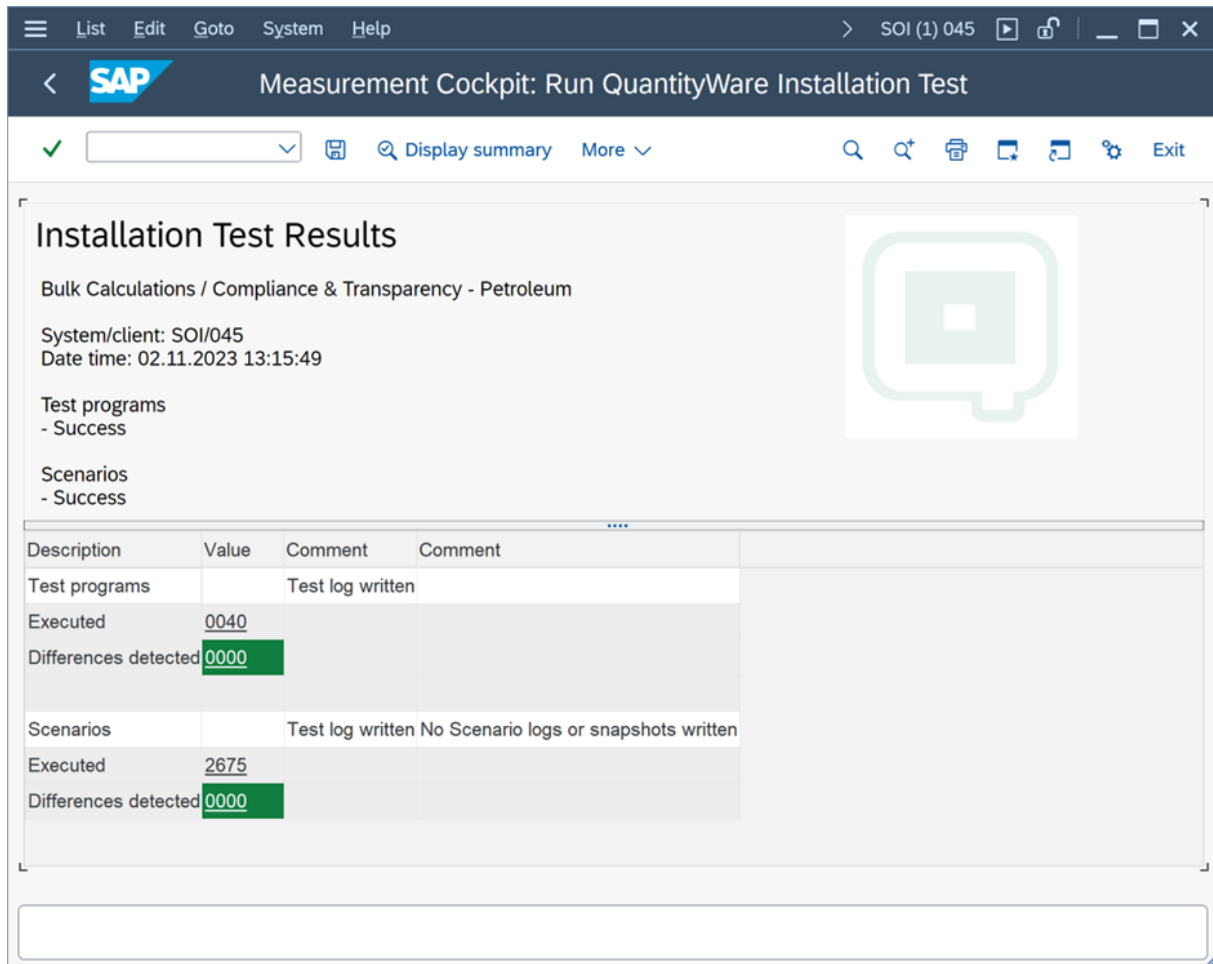
Log on to client 045 (or relevant client where the BCP BC set template is installed) and start transaction /n/QTYW/COCKPIT - The PMC is launched.

Navigate to tab strip "Test Tools":

Execute the installation test by selecting the push button: "Run Installation Test":



The complete installation test run takes typically less than one minute. You should then see the following result list on your screen:



Installation Test Results

Bulk Calculations / Compliance & Transparency - Petroleum

System/client: SOI/045
Date time: 02.11.2023 13:15:49

Test programs
- Success

Scenarios
- Success

Description	Value	Comment	Comment
Test programs		Test log written	
Executed	0040		
Differences detected	0000		
Scenarios		Test log written	No Scenario logs or snapshots written
Executed	2675		
Differences detected	0000		



Select "Display Summary", then "Export to PDF" and save the installation test results to a local PDF file which you send to QuantityWare support – [QuantityWare Service Portal](#) to confirm that your installation has been validated successfully.

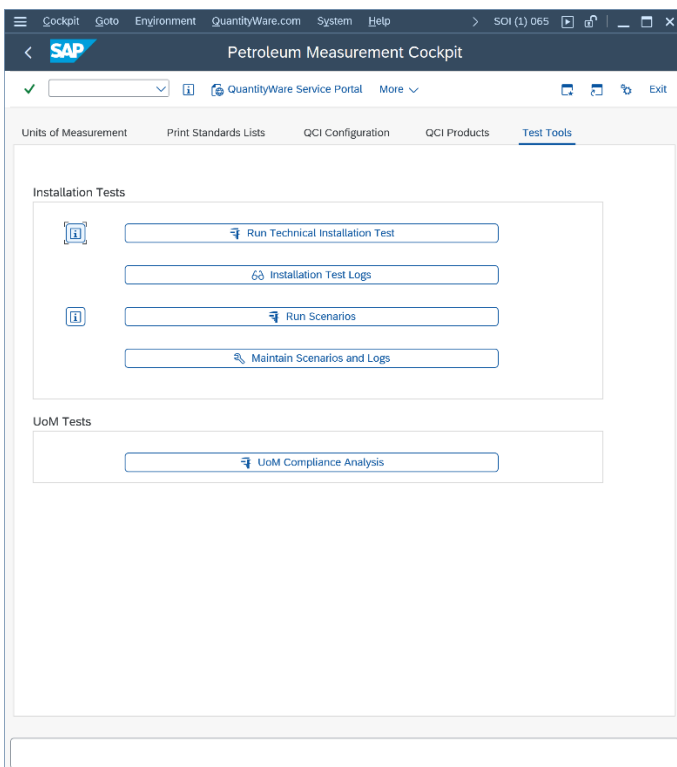
This completes the installation test. Your system is now ready for project implementation of your quantity conversion solutions.



QuantityWare recommends that you develop your own customer project specific tests scenarios that contain manually calculated results (cross checked by at least two experts), allowing an automated check of system calculations against these results. Thus, a high degree of automation is ensured, as well as system compatibility with your measurement standards during productive usage.

Alternatively, a manual test procedure with at least four test calculation scenarios for one conversion group should be developed, which serves as a base for manual quality assurance processes.

For the BCP installation test, you receive a temporary (4-week validity) usage key. After the usage key has expired, access to the full installation test (including access to all single installation tests) will no longer be available. You still have access to the Technical Installation Test, the UoM compliance test, and the test scenario tools in any client:



5.2. Check Units of Measurement - UoM

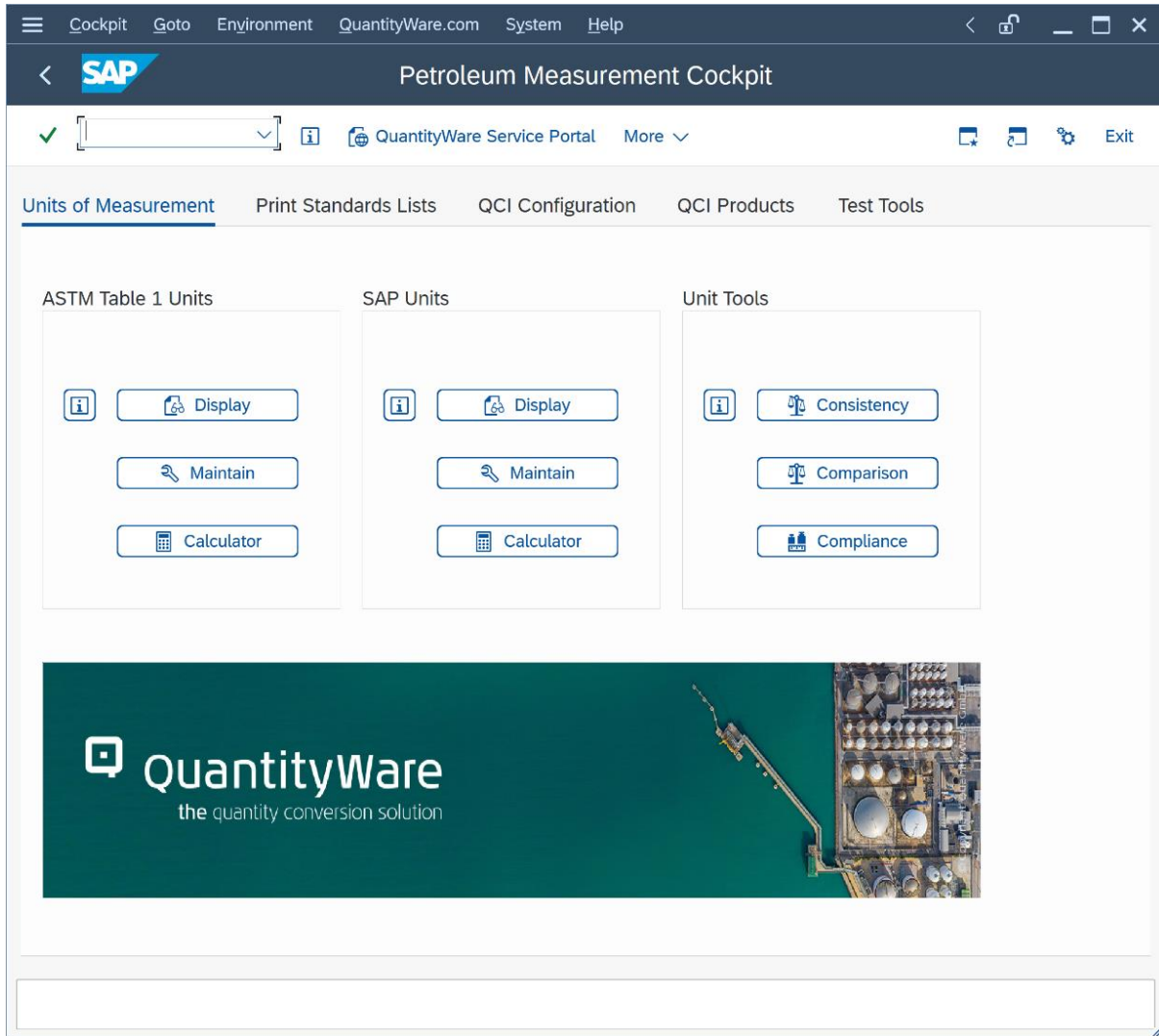
Implementation step	2
Estimated time to completion	L: 1 days M: 3 days H: 6 days
Next major step	3
Related project teams	Measurement specialists - customer and/or certified QuantityWare BCP consultant

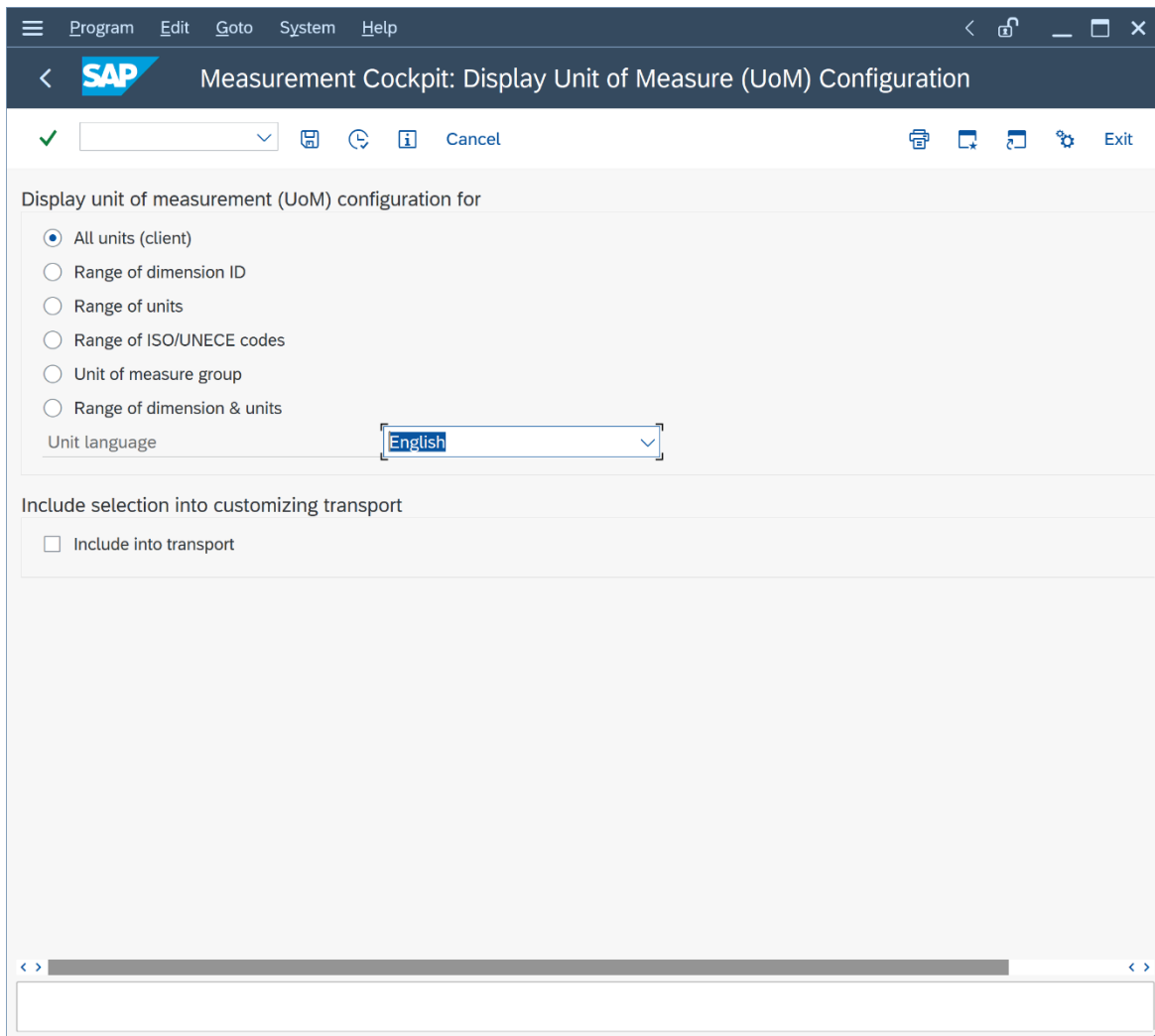
- Obtain overview of your current UoM settings
- Import QuantityWare UoM standard reference values for compliance check
- Define and execute your UoM compliance check
- Resolve potential issues
- Implement final UoM compliance check

5.2.1. Obtain UoM Overview

Implementation step	2.1.
Estimated time to completion	L: 1 hours M: 2 hours H: 4 hours
Next step	2.2
Related project teams	Measurement specialists - customer and/or certified QuantityWare BCP consultant

In **your project development client XXX**, go to the PMC tab page “Units of Measurement” and select push button “SAP Units -> Display”:





Execute the report using the default selection-options:

Measurement Cockpit: Display Unit of Measure (UoM) Configuration

Display Unit of Measure Details For my Ranges

All UoM defined in system/client: SOI 030

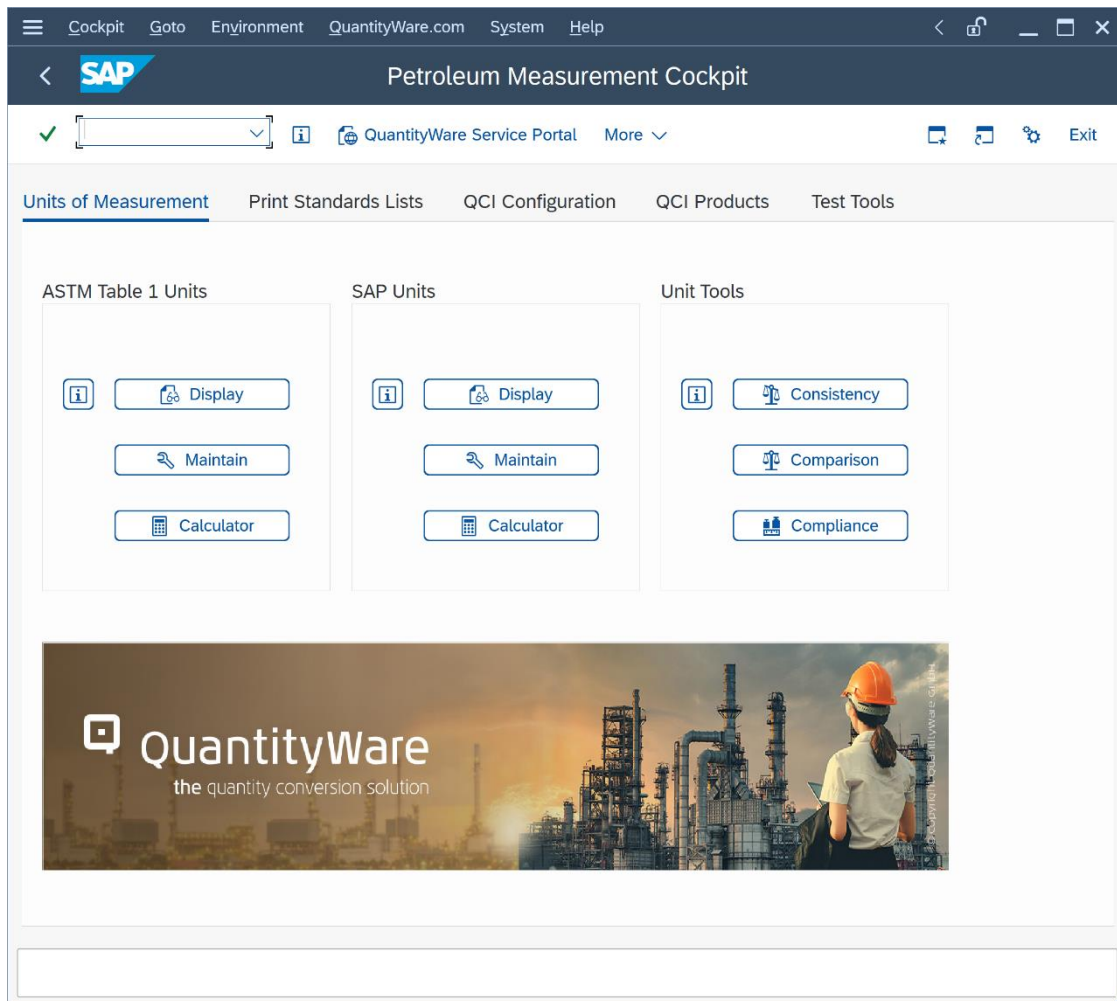
No	Dimension text	OG	ISO	P	Measurement unit text	One UoM =	Factor	SI	UoM conversion
1	proportion				one	1 ONE =	1.0000000000	ONE	UoM Conversion
2	time		DAY	X	day	1 D =	86,400.0000000000	S	UoM Conversion
3	speed		2M	X	centimeter per second	1 2M =	0.0100000000	M/S	UoM Conversion
4	speed		2X	X	meter per minute	1 2X =	0.0166666667	M/S	UoM Conversion
5	net volume NOV/NSV		4G	X	microliter	1 µL =	0.0000000010	M3	UoM Conversion
6	electric capacity		4O	X	microfarad	1 µF =	0.0000010000	F	UoM Conversion
7	electric capacity		4T	X	pikofarad	1 IB =	0.0000000000	F	UoM Conversion
8	electric current		AMP	X	ampere	1 A =	1.0000000000	A	UoM Conversion
9	electric resistance		A87	X	gigaohm	1 GOH =	1,000,000,000.0000000000	OHM	UoM Conversion
10	density		A93	X	gram per cubic meter	1 GM3 =	0.0010000000	KGV	UoM Conversion
11	area		ACR	X	acre (bsd on U.S. survey foot)	1 ACR =	4,046.8730000000	M2	UoM Conversion
12	No dimension				API gravity	1 API =	See mat. master		Not possible
13	heating value(vol.)		B0		Btu per cubic foot	1 B/F =	37,258.9413000000	JM3	UoM Conversion
14	density		B34	X	kilogram per cubic decimeter	1 KD3 =	1,000.0000000000	KGV	UoM Conversion
15	amount of substance		B45	X	kilomole	1 QML =	1,000.0000000000	MOL	UoM Conversion
16	force		B47	X	kilonewton	1 NI =	1,000.0000000000	N	UoM Conversion

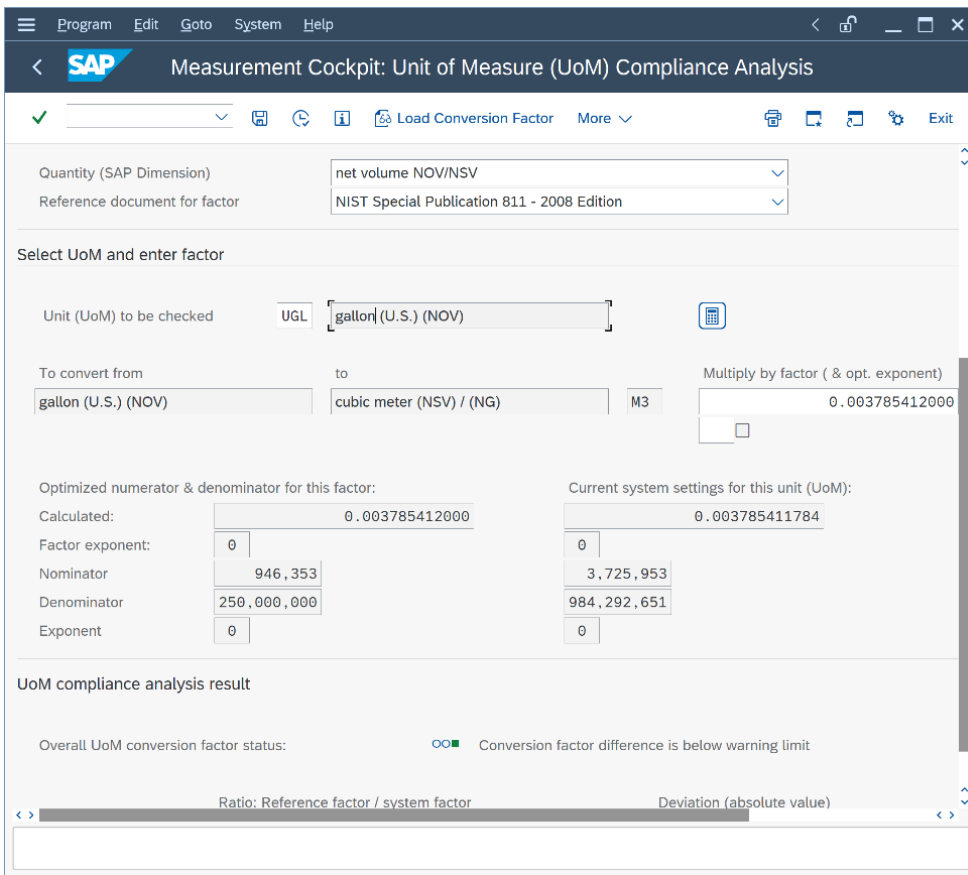
This list is your **reference client list** with all UoM defined in your system in client XXX. From this list, select all UoM for which you want to perform the UoM compliance analysis.

5.2.2. Import QuantityWare UoM Standard Reference Values

Implementation step	2.2.
Estimated time to completion	L: 5 hours M: 18 hours H: 36 hours
Next step	2.3
Related project teams	Measurement specialists - customer and/or certified QuantityWare BCP consultant

In the QuantityWare template client 045, go to PMC tab page “Units of Measurement” and select push button “Unit Tools -> Compliance”:





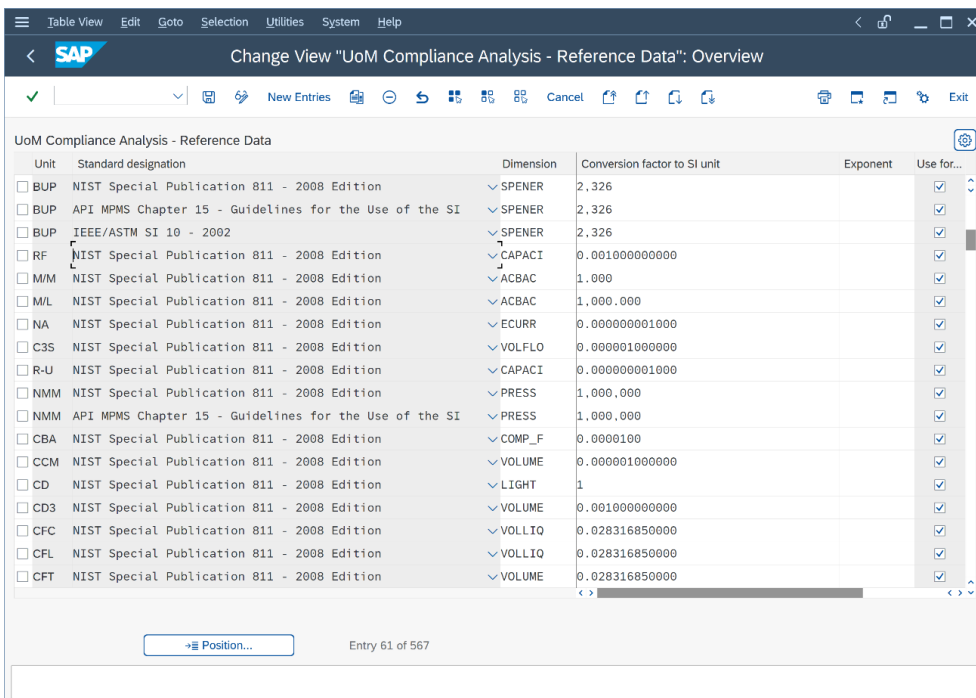
The screenshot shows the SAP Measurement Cockpit interface for Unit of Measure (UoM) Compliance Analysis. The main window title is "Measurement Cockpit: Unit of Measure (UoM) Compliance Analysis".

At the top, there is a menu bar with "Program", "Edit", "Goto", "System", and "Help". Below the menu bar, there is a toolbar with icons for "Load Conversion Factor" and "More".

The main content area is divided into several sections:

- Quantity (SAP Dimension):** A dropdown menu showing "net volume NOV/NSV".
- Reference document for factor:** A dropdown menu showing "NIST Special Publication 811 - 2008 Edition".
- Select UoM and enter factor:**
 - Unit (UoM) to be checked:** A dropdown menu showing "UGL" and a text input field containing "gallon (U.S.) (NOV)".
 - To convert from:** A dropdown menu showing "gallon (U.S.) (NOV)".
 - to:** A dropdown menu showing "cubic meter (NSV) / (NG)".
 - Multiply by factor (& opt. exponent):** A text input field containing "0.003785412000".
- Optimized numerator & denominator for this factor:**
 - Calculated:** A text input field containing "0.003785412000".
 - Factor exponent:** A text input field containing "0".
 - Nominator:** A text input field containing "946,353".
 - Denominator:** A text input field containing "250,000,000".
 - Exponent:** A text input field containing "0".
- Current system settings for this unit (UoM):**
 - Calculated:** A text input field containing "0.003785411784".
 - Factor exponent:** A text input field containing "0".
 - Nominator:** A text input field containing "3,725,953".
 - Denominator:** A text input field containing "984,292,651".
 - Exponent:** A text input field containing "0".
- UoM compliance analysis result:**
 - Overall UoM conversion factor status:** A green status indicator and the text "Conversion factor difference is below warning limit".
 - Ratio: Reference factor / system factor** and **Deviation (absolute value)** are displayed at the bottom.

Now select push button "Maintain Reference Data":



The screenshot shows the SAP Change View "UoM Compliance Analysis - Reference Data": Overview. The main window title is "Change View 'UoM Compliance Analysis - Reference Data': Overview".

At the top, there is a menu bar with "Table View", "Edit", "Goto", "Selection", "Utilities", "System", and "Help". Below the menu bar, there is a toolbar with icons for "New Entries", "Cancel", and "Exit".

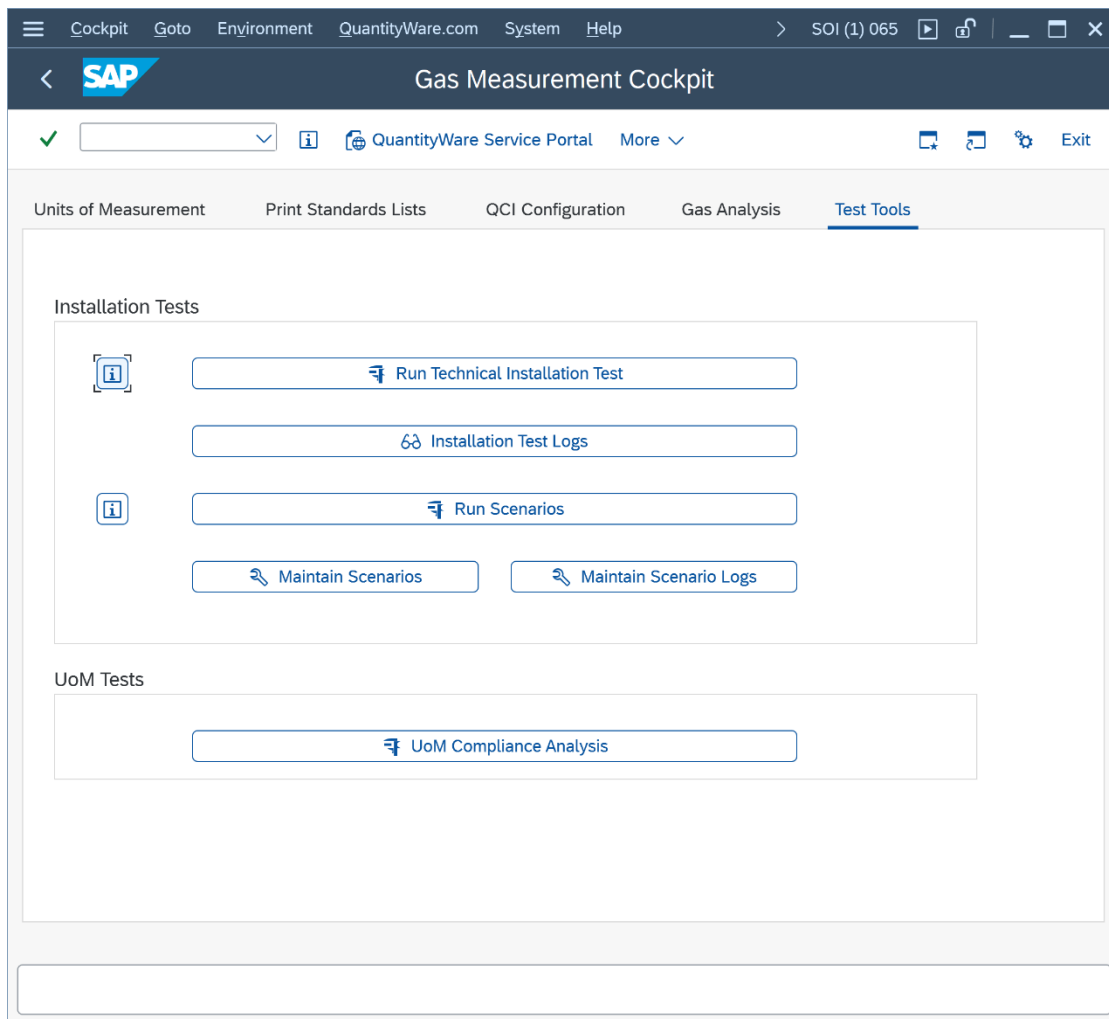
The main content area is a table titled "UoM Compliance Analysis - Reference Data". The table has the following columns: Unit, Standard designation, Dimension, Conversion factor to SI unit, Exponent, and Use for... (with a checkmark icon).

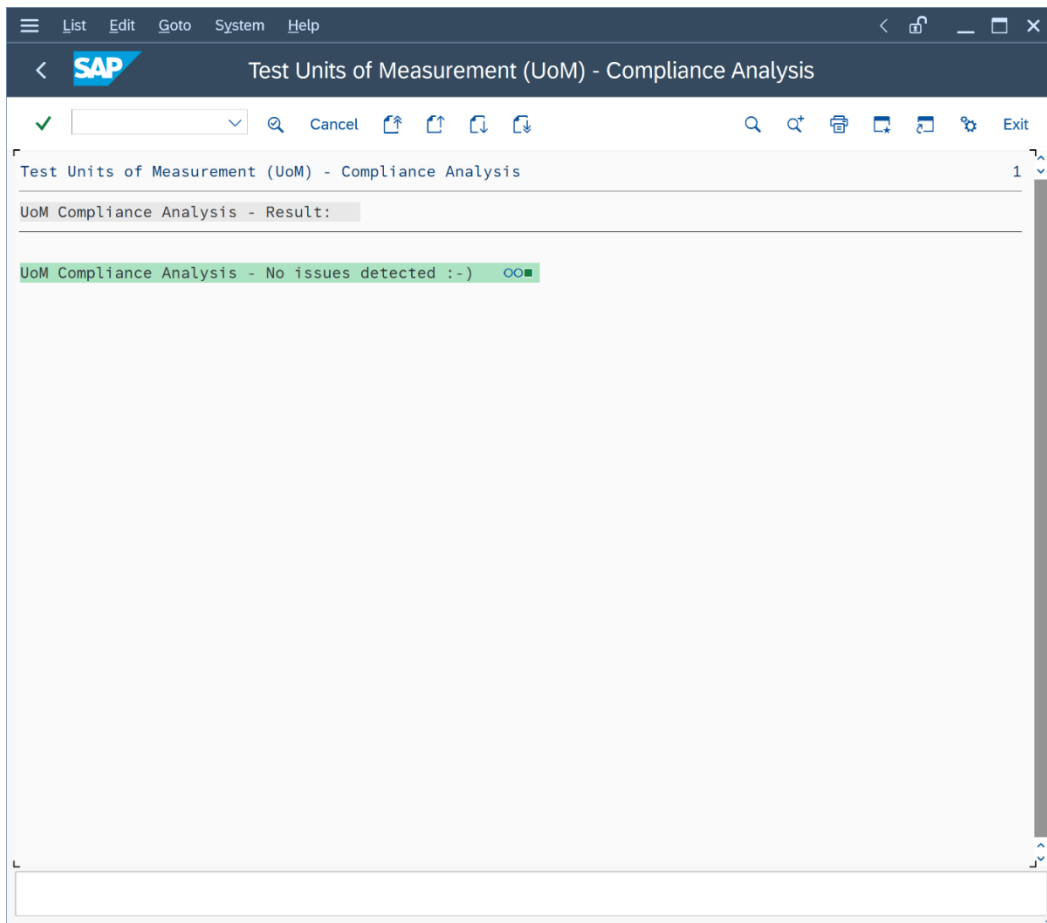
Unit	Standard designation	Dimension	Conversion factor to SI unit	Exponent	Use for...
<input type="checkbox"/> BUP	NIST Special Publication 811 - 2008 Edition	SPENER	2,326		<input checked="" type="checkbox"/>
<input type="checkbox"/> BUP	API MPMS Chapter 15 - Guidelines for the Use of the SI	SPENER	2,326		<input checked="" type="checkbox"/>
<input type="checkbox"/> BUP	IEEE/ASTM SI 10 - 2002	SPENER	2,326		<input checked="" type="checkbox"/>
<input type="checkbox"/> RF	NIST Special Publication 811 - 2008 Edition	CAPACI	0.001000000000		<input checked="" type="checkbox"/>
<input type="checkbox"/> MM	NIST Special Publication 811 - 2008 Edition	ACBAC	1,000		<input checked="" type="checkbox"/>
<input type="checkbox"/> ML	NIST Special Publication 811 - 2008 Edition	ACBAC	1,000,000		<input checked="" type="checkbox"/>
<input type="checkbox"/> NA	NIST Special Publication 811 - 2008 Edition	ECURR	0.000000001000		<input checked="" type="checkbox"/>
<input type="checkbox"/> C3S	NIST Special Publication 811 - 2008 Edition	VOLFLO	0.000001000000		<input checked="" type="checkbox"/>
<input type="checkbox"/> R-U	NIST Special Publication 811 - 2008 Edition	CAPACI	0.000000001000		<input checked="" type="checkbox"/>
<input type="checkbox"/> NMM	NIST Special Publication 811 - 2008 Edition	PRESS	1,000,000		<input checked="" type="checkbox"/>
<input type="checkbox"/> NMM	API MPMS Chapter 15 - Guidelines for the Use of the SI	PRESS	1,000,000		<input checked="" type="checkbox"/>
<input type="checkbox"/> CBA	NIST Special Publication 811 - 2008 Edition	COMP_F	0.0000100		<input checked="" type="checkbox"/>
<input type="checkbox"/> CCM	NIST Special Publication 811 - 2008 Edition	VOLUME	0.000000100000		<input checked="" type="checkbox"/>
<input type="checkbox"/> CD	NIST Special Publication 811 - 2008 Edition	LIGHT	1		<input checked="" type="checkbox"/>
<input type="checkbox"/> CD3	NIST Special Publication 811 - 2008 Edition	VOLUME	0.001000000000		<input checked="" type="checkbox"/>
<input type="checkbox"/> CFC	NIST Special Publication 811 - 2008 Edition	VOLLIQ	0.028316850000		<input checked="" type="checkbox"/>
<input type="checkbox"/> CFL	NIST Special Publication 811 - 2008 Edition	VOLLIQ	0.028316850000		<input checked="" type="checkbox"/>
<input type="checkbox"/> CFT	NIST Special Publication 811 - 2008 Edition	VOLUME	0.028316850000		<input checked="" type="checkbox"/>

At the bottom of the table, there is a button labeled "Position..." and the text "Entry 61 of 567".

In “Change” mode, select all UoM definitions which you have identified in implementation step “Obtain UoM overview” (2.1) for the UoM compliance analysis. Include the UoM with the validated reference factors into a transport and copy the reference data to **your project development client XXX**.

Run the UoM compliance analysis in your project development client XXX:





If issues are found, resolve them using the UoM compliance analysis tools in your reference and project client:


☰ List Edit Goto Settings System Help ◀ 🔍 📄 🗑️ ✖

◀ **SAP** Measurement Cockpit: Unit of Measure (UoM) Compliance Analysis

✓ ☰ ☰ 🔍 🔍 📄 🗑️ 🗑️ ⚙️ Exit

Display Unit of Measure Compliance Analysis Data

All UoM analysis data in system/client: SOI 065



No	Dimension text	UoM	Measurement unit text	SI	Standard	Ref./An.	Ref.Std.Factor	l/s	Cal.Denom.	Cal.Num.	E
25	volume	BBL	Barrels	M3	1	○○■	0.158987300000	0	10,000,000	1,589,873	◀ ▶
26	volume	BBL	Barrels	M3	3	○○■	0.158987300000	0	10,000,000	1,589,873	
27	volume	BBL	Barrels	M3	4	○○■	0.158987000000	0	1,000,000	158,987	
28	volume	BBL	Barrels	M3	5	○○■	0.158987304000	0	125,000,000	19,873,413	
29	volume	BBL	Barrels	M3	6	○○■	0.158987294928	0	259,303,135	41,225,904	
30	heating value(vol.)	BC1	BTU/Cubic Foot at 15.025/60/SD	JM3	1	○○■	37,258.941299999999	0	10,000	372,589,413	
31	heating value(vol.)	BC2	BTU/Cubic Foot at 14.73/60/SD	JM3	1	○○■	37,258.941299999999	0	10,000	372,589,413	
32	heating value(vol.)	BC3	BTU/Cubic Foot at 14.65/60/SD	JM3	1	○○■	37,258.941299999999	0	10,000	372,589,413	
33	heating value(vol.)	BC4	BTU/Cubic Foot at 15.025/60/S...	JM3	1	○○■	37,258.941299999999	0	10,000	372,589,413	
34	heating value(vol.)	BC5	BTU/Cubic Foot at 14.73/60/SW	JM3	1	○○■	37,258.941299999999	0	10,000	372,589,413	
35	heating value(vol.)	BC6	BTU/Cubic Foot at 14.65/60/SW	JM3	1	○○■	37,258.941299999999	0	10,000	372,589,413	
36	Volume per Height	BP2	Barrels per half inch	QMM	1	○○■	12.518690000000	0	100,000	1,251,869	
37	Volume per Height	BP4	Barrels per a quater of inch	QMM	1	○○■	25.037370000000	0	100,000	2,503,737	
38	Spec.act.radioac.sub	BQK	Becquerel/kilogram	BQK	1	○○■	1	0	1	1	◀ ▶

< >

5.2.3. Check Unit of Measurement Groups

Implementation step	2.3.
Estimated time to completion	L: 2 hours M: 4 hours H: 8 hours
Next step	3
Related project teams	Inventory managers customer & project experts

You have already defined a collection of UoM for all materials, which are available in a UoM group in **your production client**. The UoM group is assigned to the material master. Stock keeping is done in parallel for all UoM that are defined in the UoM group. Typically, you have already assigned at least one weight OR mass UoM, and a standardized volume UoM (e.g., L15, L20, UG6) to a UoM group. Check the semantical meaning of your mass or weight UoM.



Once a UoM group is assigned to a material and stock has been posted, it **cannot** be changed in ECC 600. Read SAP note 145824 for details. S/4HANA 1610 onwards supports the addition of a UoM to a UoM group via the utilization of a report which must be run locally in every SID.

5.3. Define Product Measurement Standards

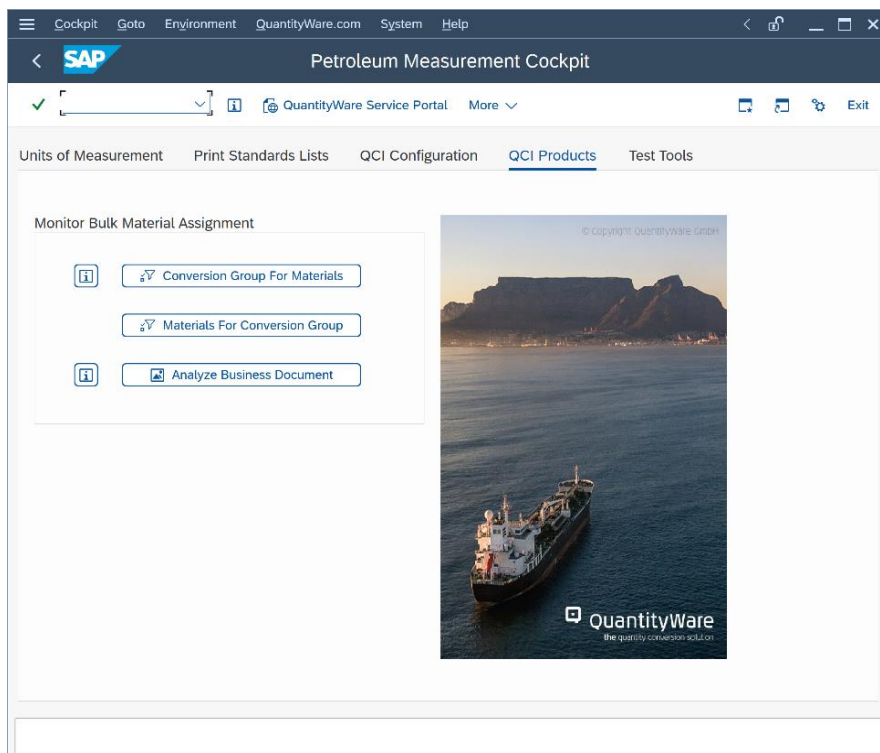
Implementation step	3
Estimated time to completion	L: 1 days M: 3 days H: 5 days
Next major step	4
Related project teams	Master data team – material master

Establish expert team (consultants and company business experts). Align with master data team

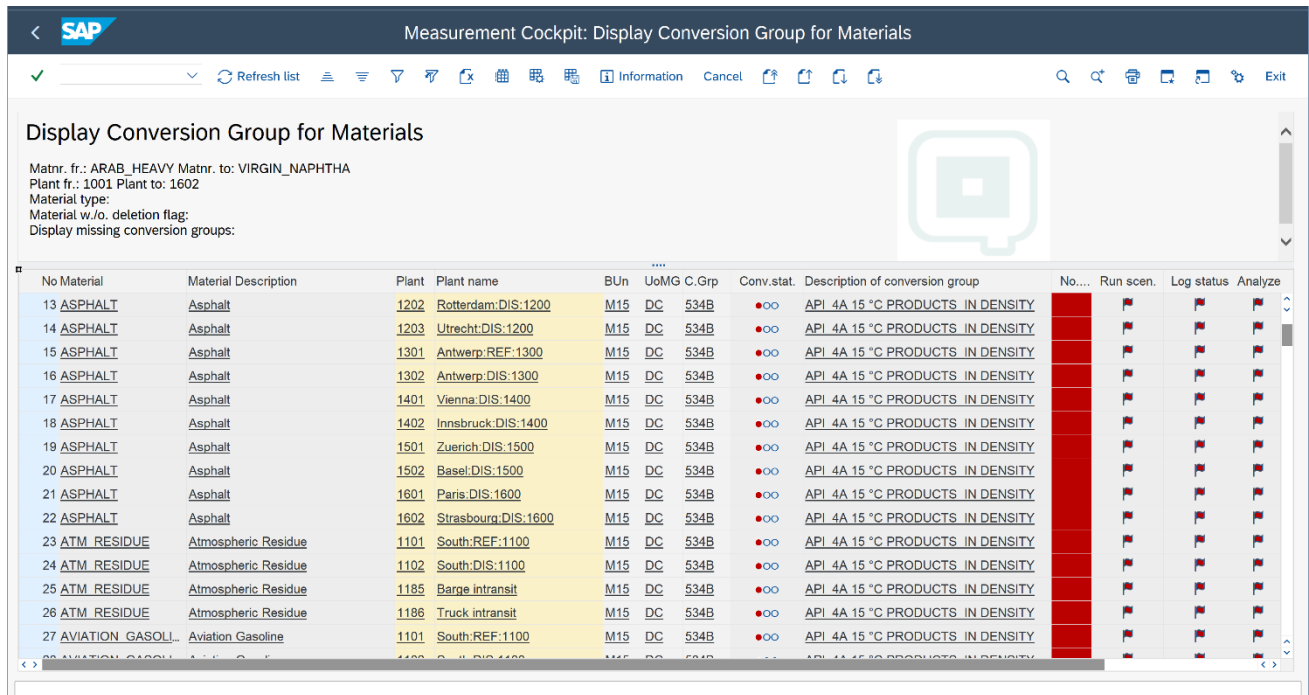
5.3.1. Define Production Material Data List

Implementation step	3.1.
Estimated time to completion	L: 2 hours M: 6 hours H: 10 hours
Next step	3.2
Related project teams	Master data team – material master

In your development reference client where you define and maintain your production configuration, launch the PMC, and navigate to the “QCI Products” tab:



Select push button “Conversion Group for Materials” to obtain lists of all bulk oil materials that are configured with your SAP QCI legacy conversion groups:



No. Material	Material Description	Plant	Plant name	BU	UoMG	C. Grp	Conv. stat.	Description of conversion group	No. ...	Run scen.	Log status	Analyze
13	ASPHALT Asphalt	1202	Rotterdam:DIS:1200	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
14	ASPHALT Asphalt	1203	Utrecht:DIS:1200	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
15	ASPHALT Asphalt	1301	Antwerp:REF:1300	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
16	ASPHALT Asphalt	1302	Antwerp:DIS:1300	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
17	ASPHALT Asphalt	1401	Vienna:DIS:1400	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
18	ASPHALT Asphalt	1402	Innsbruck:DIS:1400	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
19	ASPHALT Asphalt	1501	Zuerich:DIS:1500	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
20	ASPHALT Asphalt	1502	Basel:DIS:1500	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
21	ASPHALT Asphalt	1601	Paris:DIS:1600	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
22	ASPHALT Asphalt	1602	Strasbourg:DIS:1600	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
23	ATM_RESIDUE Atmospheric Residue	1101	South:REF:1100	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
24	ATM_RESIDUE Atmospheric Residue	1102	South:DIS:1100	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
25	ATM_RESIDUE Atmospheric Residue	1185	Barge intransit	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
26	ATM_RESIDUE Atmospheric Residue	1186	Truck intransit	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				
27	AVIATION_GASOLINE Aviation Gasoline	1101	South:REF:1100	M15	DC	534B	●○○	API 4A 15 °C PRODUCTS IN DENSITY				

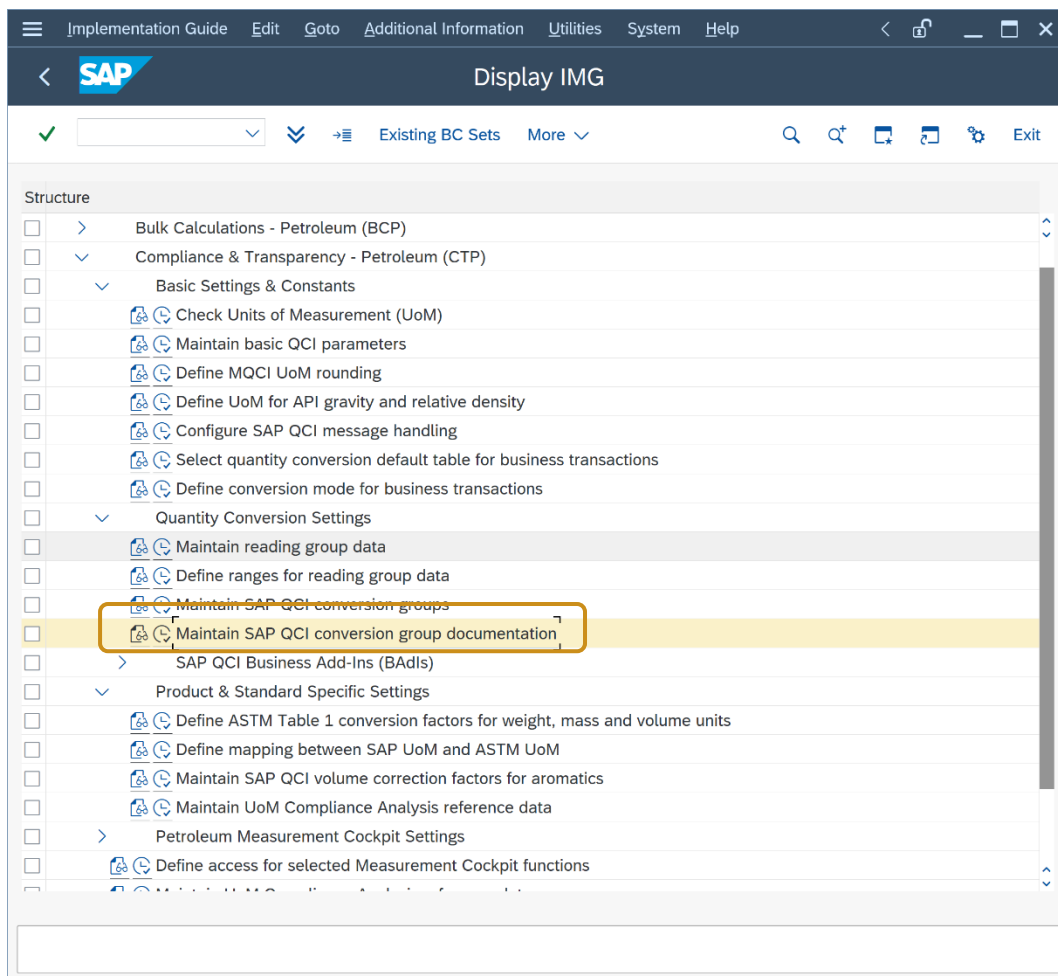
Since you have not defined test scenarios for your legacy conversion groups, the status display is “red” for all materials. Also, the conversion group configuration status check is typically “red”.

Confirm the assignment of conversion groups to products.

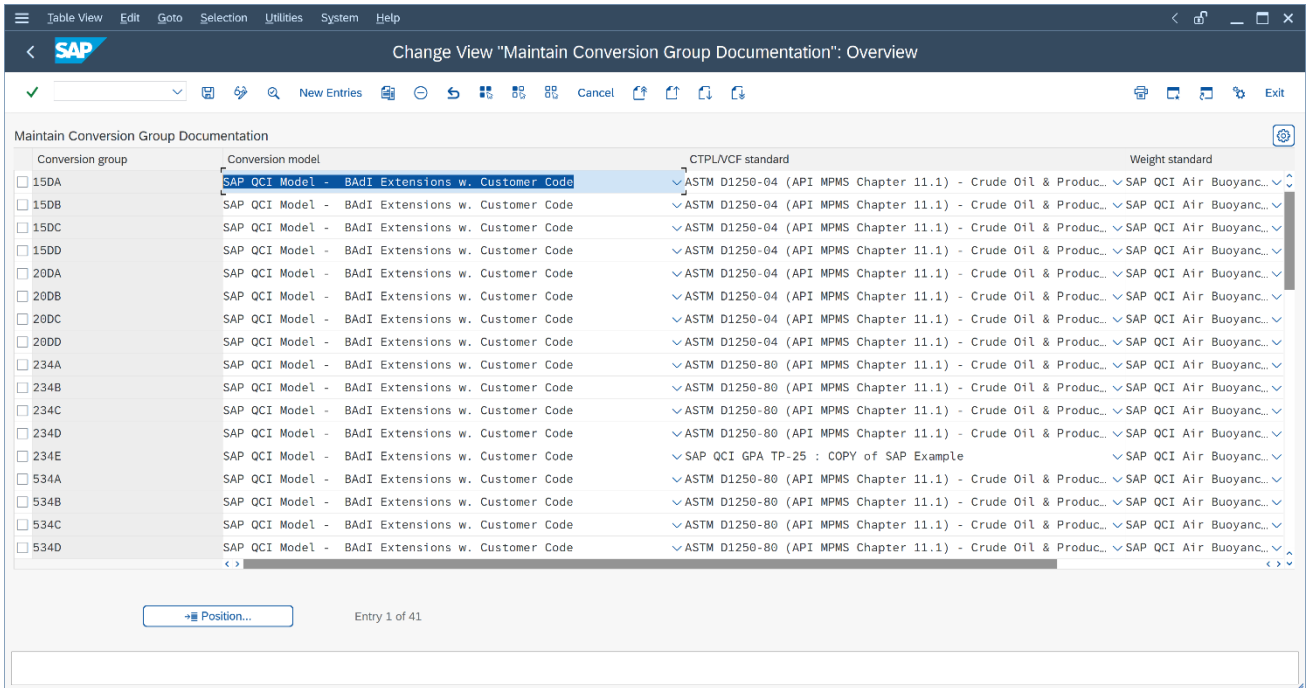
5.3.2. Assign & Confirm – Standard Documentation for Products

Implementation step	3.2.
Estimated time to completion	L: 2 hours M: 6 hours H: 10 hours
Next step	3.3.
Related project teams	Measurement specialists - customer and/or certified QuantityWare BCP consultants

Define the relevant measurement standard documentation for your legacy SAP QCI conversion groups in **your project development reference client XXX where you maintain and correct your production configuration**. Access the **CTP** customizing node and select: Quantity Conversion Settings - > Maintain SAP QCI conversion group documentation:



For all conversion groups that you utilize in production, maintain the CTPL standard, Weight standard and Conversion model standard:



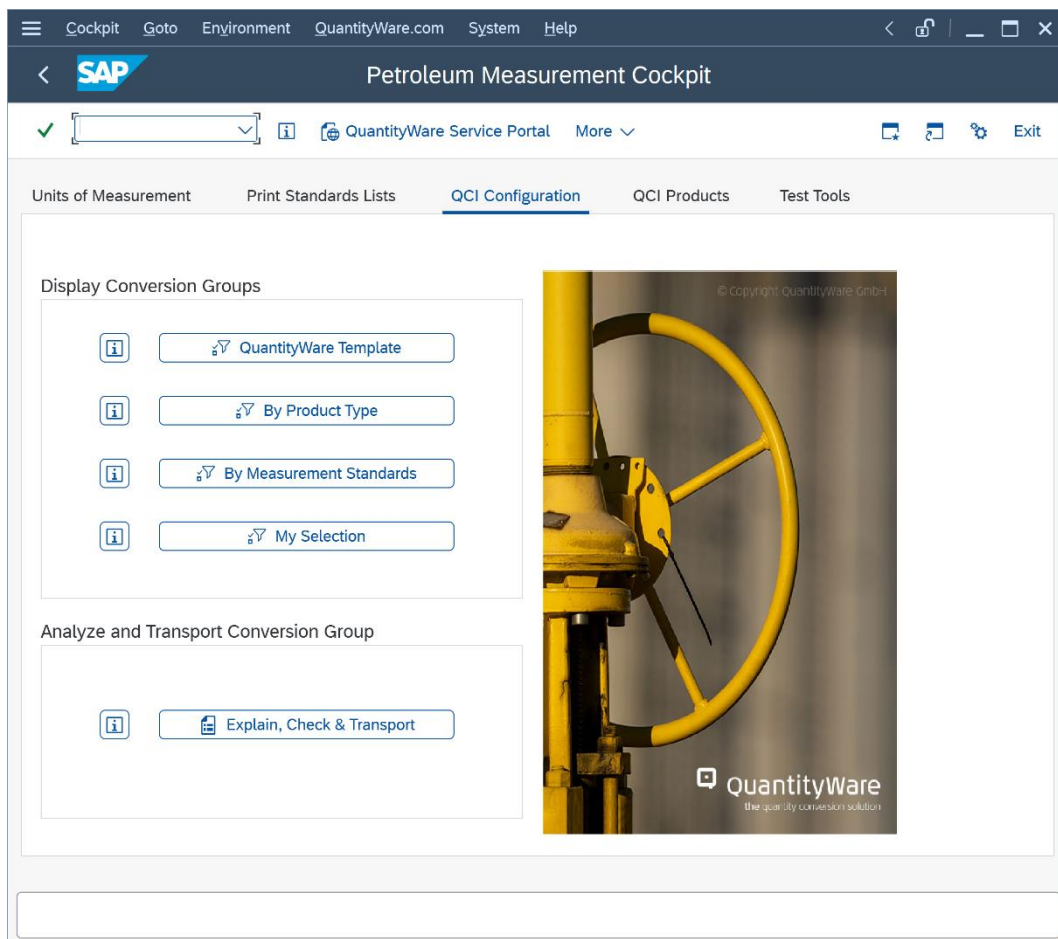
Conversion group	Conversion model	CTPL/VCF standard	Weight standard
15DA	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-04 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
15DB	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-04 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
15DC	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-04 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
15DD	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-04 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
20DA	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-04 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
20DB	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-04 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
20DC	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-04 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
20DD	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-04 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
234A	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-80 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
234B	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-80 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
234C	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-80 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
234D	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-80 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
234E	SAP QCI Model - BAdI Extensions w. Customer Code	SAP QCI GPA TP-25 : COPY of SAP Example	SAP QCI Air Buoyanc...
534A	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-80 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
534B	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-80 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
534C	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-80 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...
534D	SAP QCI Model - BAdI Extensions w. Customer Code	ASTM D1250-80 (API MPMS Chapter 11.1) - Crude Oil & Produc...	SAP QCI Air Buoyanc...

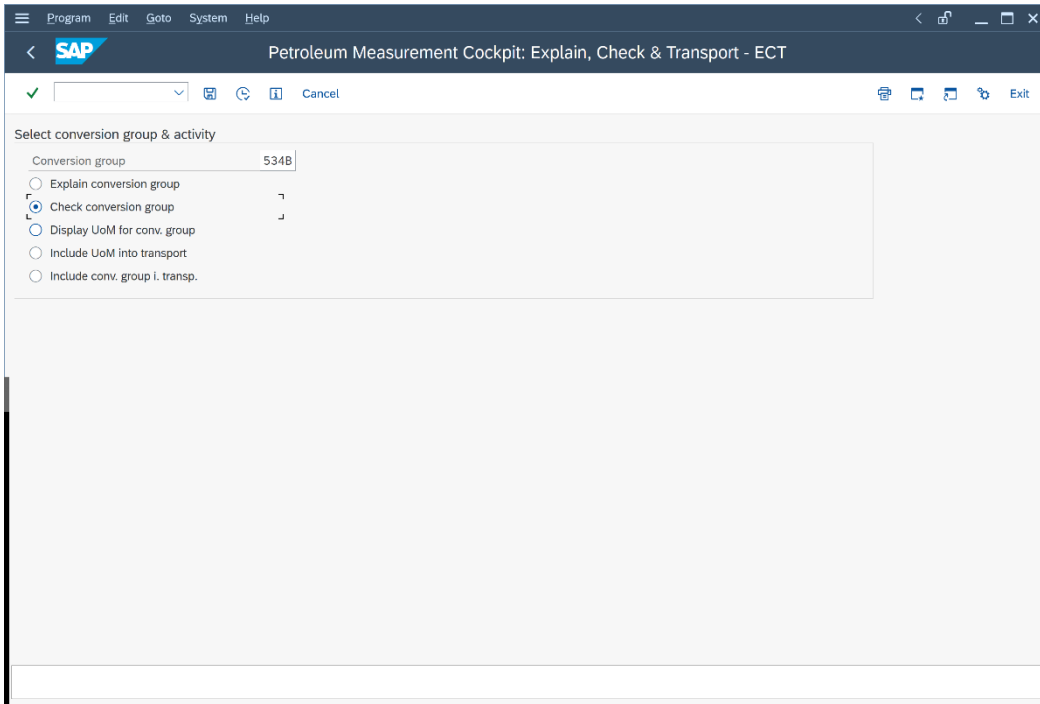
- The Conversion model of the SAP QCI is always “SAP QCI model – BAdI extensions w. customer code”
- The Weight standard is always “SAP QCI air buoyancy factor – material master”
- The CTPL standard is one of the following:
 - ASTM D1250-80
 - ASTM D1250-04
 - SAP QCI TP-25 – copy of SAP example
 - SAP QCI ASTM D4311-96 – copy of SAP example
 - SAP QCI ASTM D1555 – Table values maintained by customer
 - Customer specific Z* function
 - No CTPL standard assigned - base conversion only

5.3.3. Run Conversion Group and Reading Group Check

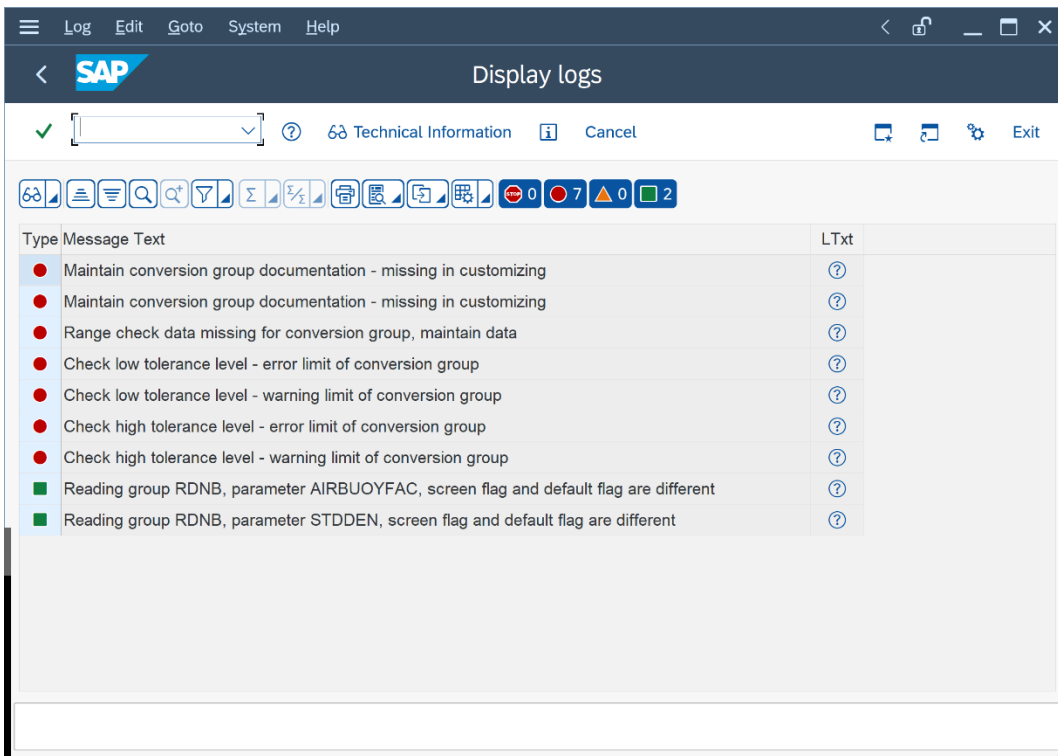
Implementation step	3.3.
Estimated time to completion	L: 2 hours M: 6 hours H: 10 hours
Next step	3.4.
Related project teams	Measurement specialists - customer and/or certified QuantityWare BCP consultants

In your project development reference client **XXX**, via the PMC, got to tab page “QCI Configuration” and select push button “Explain Check & Transport”:





Execute the check for each SAP QCI legacy conversion group and rectify any reported issues.

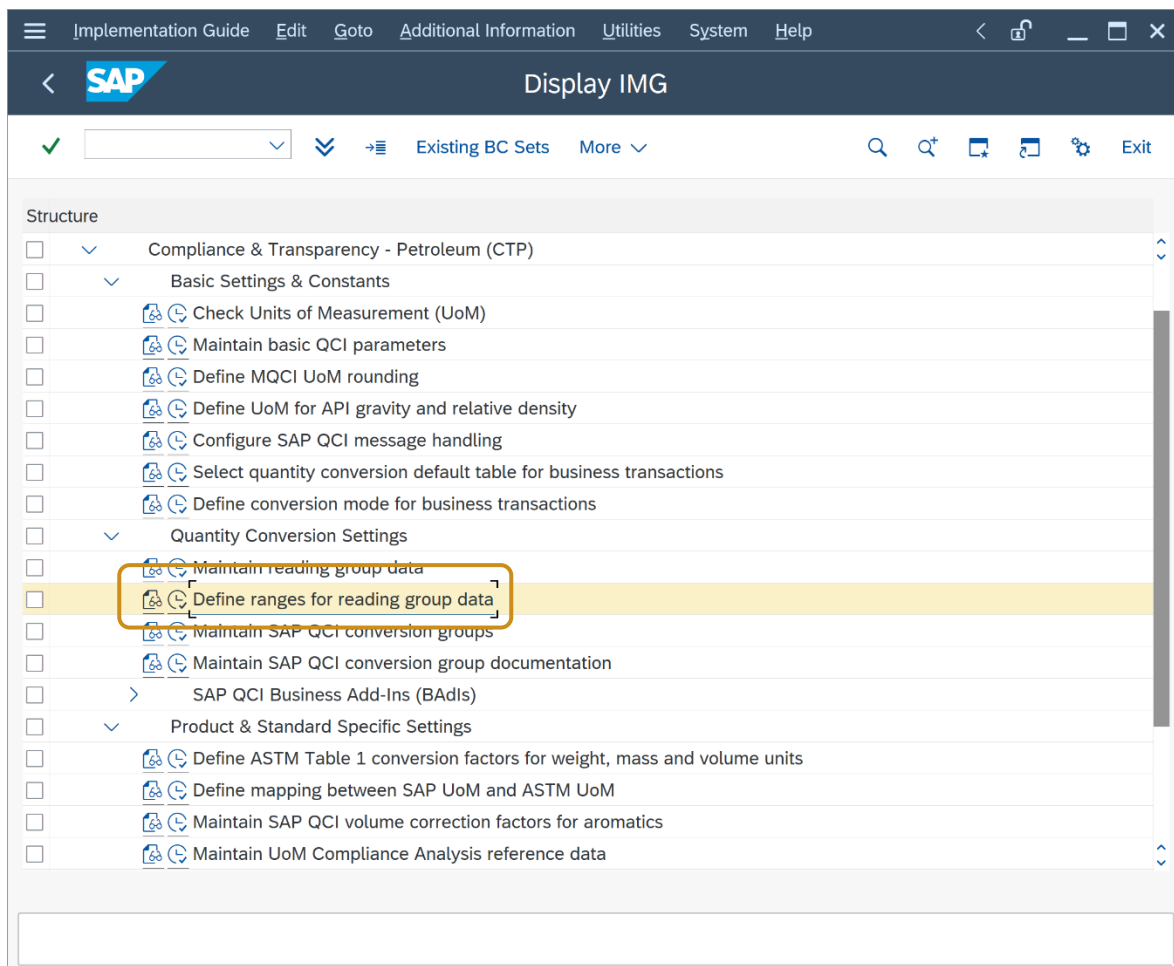


Read the message long text documentation and follow the guidance provided therein.

5.3.4. Define Reading Group Ranges

Implementation step	3.4.
Estimated time to completion	L: 2 hours M: 6 hours H: 10 hours
Next step	4
Related project teams	Measurement specialists - customer and/or certified QuantityWare BCP consultants

In your project development client **XXX**, for your SAP QCI legacy reading groups, define range groups via the PMC customizing:





The reading group is linked to a conversion group and defines which parameters (temperature, density, etc.) are required for the conversion. It also defines which results are displayed to a user (base density in air, VCF, etc.). The range group is an extension of the reading group (identical key) and defines the allowed values for calculation parameters (observed densities, observed temperatures, etc.)



You must assign function /QTYW/CHECK_PARAM_RANGES to the SAP QCI legacy conversion groups where you want the range checks to be active!

5.4. Define Test Calculation Matrix & Test

Implementation step	4
Estimated time to completion	L: 1 day M: 2 days H: 3 days
Next step	5
Related project teams	Master data team – material master

For each conversion group, define at least 10 test calculations (e.g., with varying observed temperature values, for all UoM in the UoM group) in your **project development client XXX** and calculate the expected results using e.g., a pocket calculator or PC calculator (64-bit FLTP processor).



The PMC provides list printouts of all relevant measurement standards. Use these printouts to obtain the VCF (volume correction factors) for your example calculations (QuantityWare standard implementations are validated in the implementation step). QuantityWare also recommends that you obtain your own measurement standard copy from the relevant standard organization as a reference and to allow the validation to be cross-checked.

The list of sources for standards can be found in QuantityWare [Note 000008](#)

Calculate all expected results and have them cross-checked by a second expert. Document your results. The next step is to compare the expected results with the results obtained from the Oil & Gas test calculator, which can be accessed from the PMC. Document the degree of similarity. If deviations are found, analyze the conversions (manual and system) to determine the reason for deviation.



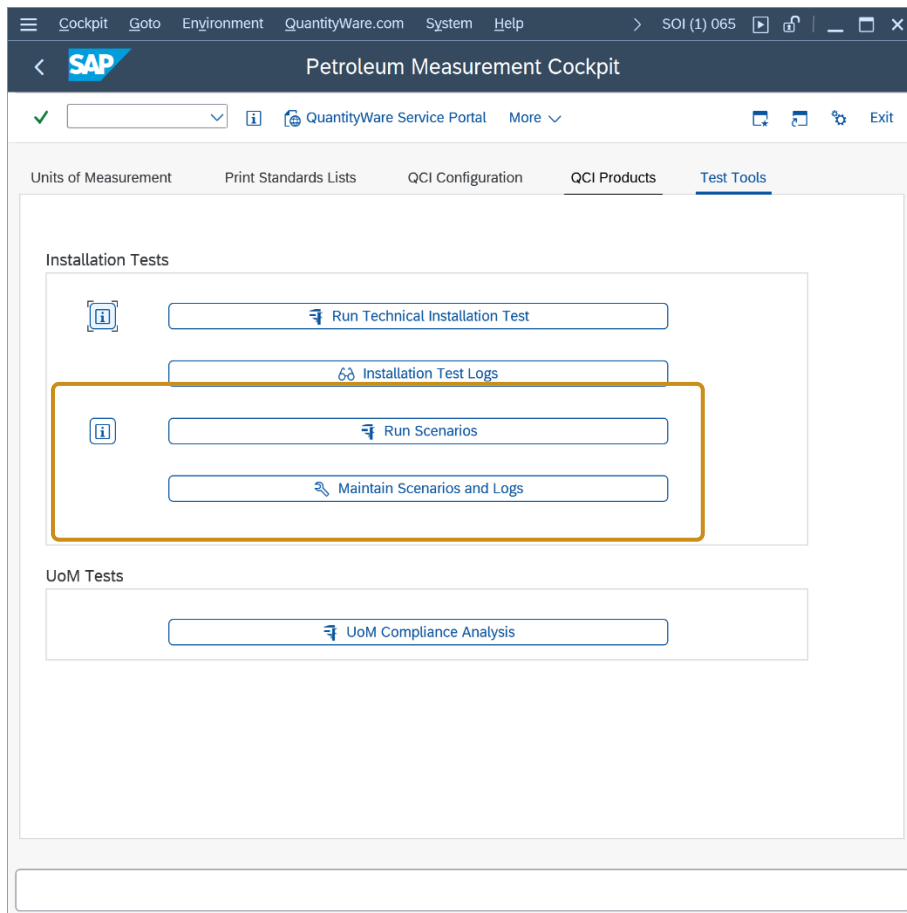
If you have already validated your current system calculations, you may simply accept the system calculated values for your test scenarios

5.5. Define Test Calculation Quality Procedure

Implementation step	5
Estimated time to completion	L: 2 days M: 4 days H: 8 days
Next step	6
Related project teams	Master data team – material master

Develop fully automated test scenarios (e.g., using a spreadsheet for each calculation) and then use the QuantityWare test tool to store your tests in the system. Transport the test scenarios to any required system and run them at any desired point in time in that system.

In the PMC, you access the test tool via Tab strip “Test Tools”, Push button: “Maintain Scenarios and Logs”. A more detailed description of the Test Scenario Tool can be found in the BCP Documentation Reference Manual and the BCP Test Manual.



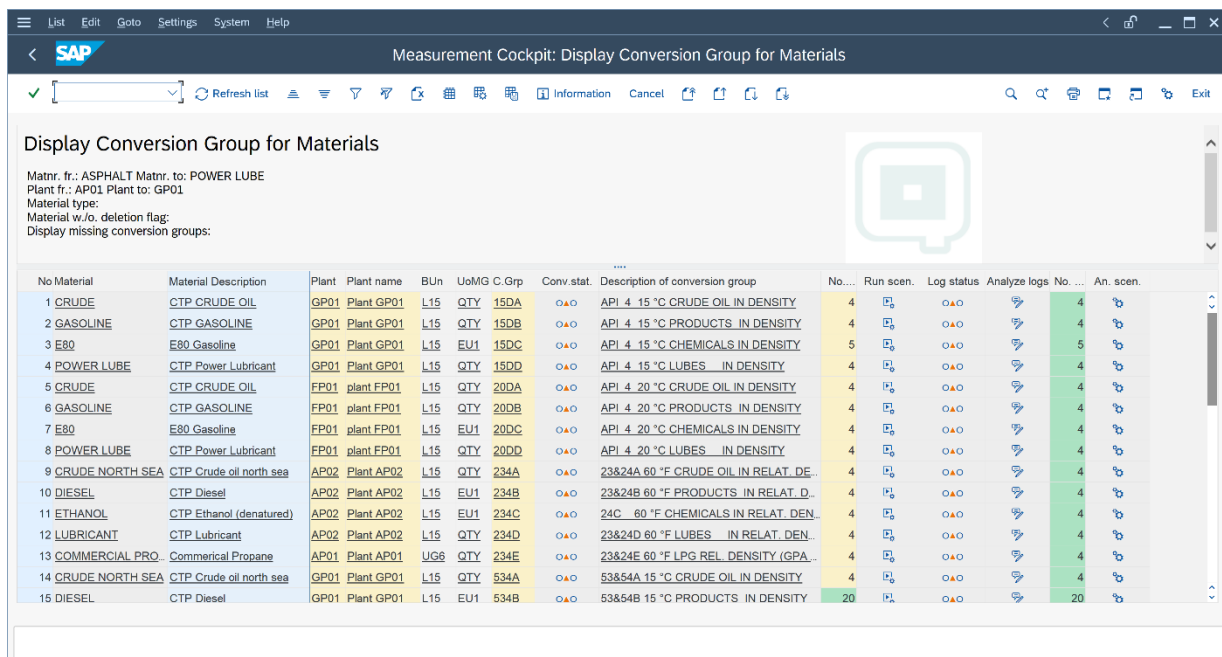


For the development of test scenarios based upon your test example definitions, an experienced measurement consultant requires 2 to 8 days (Low to High complexity case), including definition of the test scenarios in the system, which is included in the figures above. It is assumed that the results provided by your SAP QCI legacy implementations will be considered as correct!

5.6. Check Production Material Data List

Implementation step	6
Estimated time to completion	L: 0.25 days M: 1 day H: 2 days
Next step	-
Related project teams	Master data team – material master

Repeat the steps from implementation step “Define Production Material Data List” (5.3.1) and check the final production material list. All lights should now be “green”, if you have defined test scenarios, executed the scenarios with the option to save a configuration snapshot and resolved all conversion group and reading group configuration issues:



No Material	Material Description	Plant	Plant name	BU	UoMG C. Grp	Conv. stat.	Description of conversion group	No...	Run scen.	Log status	Analyze logs	No...	An. scen.
1	CRUDE	CTP CRUDE OIL	GP01 Plant GP01	L15	QTY 15DA	0.00	API 4 15 °C CRUDE OIL IN DENSITY	4	0.00	0.00	0.00	4	0.00
2	GASOLINE	CTP GASOLINE	GP01 Plant GP01	L15	QTY 15DB	0.00	API 4 15 °C PRODUCTS IN DENSITY	4	0.00	0.00	0.00	4	0.00
3	E80	E80 Gasoline	GP01 Plant GP01	L15	EU1 15DC	0.00	API 4 15 °C CHEMICALS IN DENSITY	5	0.00	0.00	0.00	5	0.00
4	POWER LUBE	CTP Power Lubricant	GP01 Plant GP01	L15	QTY 15DD	0.00	API 4 15 °C LUBES IN DENSITY	4	0.00	0.00	0.00	4	0.00
5	CRUDE	CTP CRUDE OIL	FP01 plant FP01	L15	QTY 20DA	0.00	API 4 20 °C CRUDE OIL IN DENSITY	4	0.00	0.00	0.00	4	0.00
6	GASOLINE	CTP GASOLINE	FP01 plant FP01	L15	QTY 20DB	0.00	API 4 20 °C PRODUCTS IN DENSITY	4	0.00	0.00	0.00	4	0.00
7	E80	E80 Gasoline	FP01 plant FP01	L15	EU1 20DC	0.00	API 4 20 °C CHEMICALS IN DENSITY	4	0.00	0.00	0.00	4	0.00
8	POWER LUBE	CTP Power Lubricant	FP01 plant FP01	L15	QTY 20DD	0.00	API 4 20 °C LUBES IN DENSITY	4	0.00	0.00	0.00	4	0.00
9	CRUDE NORTH SEA	CTP Crude oil north sea	AP02 Plant AP02	L15	QTY 234A	0.00	23&24A 60 °F CRUDE OIL IN RELAT. DE...	4	0.00	0.00	0.00	4	0.00
10	DIESEL	CTP Diesel	AP02 Plant AP02	L15	EU1 234B	0.00	23&24B 60 °F PRODUCTS IN RELAT. D...	4	0.00	0.00	0.00	4	0.00
11	ETHANOL	CTP Ethanol (denatured)	AP02 Plant AP02	L15	EU1 234C	0.00	24C 60 °F CHEMICALS IN RELAT. DEN...	4	0.00	0.00	0.00	4	0.00
12	LUBRICANT	CTP Lubricant	AP02 Plant AP02	L15	QTY 234D	0.00	23&24D 60 °F LUBES IN RELAT. DEN...	4	0.00	0.00	0.00	4	0.00
13	COMMERCIAL PRO	Commerical Propane	AP01 Plant AP01	UG6	QTY 234E	0.00	23&24E 60 °F LPG REL. DENSITY (GPA...	4	0.00	0.00	0.00	4	0.00
14	CRUDE NORTH SEA	CTP Crude oil north sea	GP01 Plant GP01	L15	QTY 534A	0.00	53&54A 15 °C CRUDE OIL IN DENSITY	4	0.00	0.00	0.00	4	0.00
15	DIESEL	CTP Diesel	GP01 Plant GP01	L15	EU1 534B	0.00	53&54B 15 °C PRODUCTS IN DENSITY	20	0.00	0.00	0.00	20	0.00

Via this list, you can now easily validate that the quantity conversion status is “green” in production. You can execute test scenarios for any specific material at any point in time with one click, monitor the log of your periodical scenario runs and ensure high data quality with respect to your quantity conversions.

6. Summary

After you have completed the test calculation procedure based on your test conversion matrix and established functional correctness of your conversion configuration, you can hand over your work to the overall project team. You have now established a fully renovated state-of-the-art quantity conversion solution for the project, which can be tested, monitored (and extended in the same way as described previously) via the PMC.

The time estimates for low, medium and high complexity projects are summarized in the list below (rounded to full working days):

Complexity	Low	Medium	High
Effort estimate (days):	5	13	24

As noted above, these estimates assume that an **experienced** and certified BCP consultant leads these tasks and the quantity conversion implementation sub-project is well embedded into the overall implementation project, with established communication and decision channels.

The overheads of geographic separation and differing organization-internal procedures are not considered in the figures

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