



# Compliance & Transparency – Gas CTG 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
03	2020-07-11	Editorial update
04	2021-06-01	Modern QW document style applied - 30A CSP02 / 30B CSP01 changes
05	2023-11-01	30A CSP03 / 30B CSP02 changes
06	2024-03-21	Adjust references to BCG documents
07	2024-05-15	AD note 000119 test scenario screen changes

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## 1. Introduction

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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 Gas Measurement Cockpit (GMC), whose design in turn was influenced heavily by the methodology.

The GMC is the single access point of CTG (Compliance & Transparency – Gas) for measurement specialists and technical consultants to the QuantityWare BCG product. CTG is an integral part of [BCG](#), delivered with QuantityWare [BCS](#). Via the GMC 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 GMC 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 CTG 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, & 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 CTG, 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, & Energy implementation projects.

## 1.1. Definition of Project Complexity Cases

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### 1.1.1. Low Complexity Quantity Conversion Renovation & Transparency Project:

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- 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:

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- 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:

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- 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

## 2. Language Support

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With BCG, QuantityWare ships all UI relevant and 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 as references in these four logon languages. The GMC UI is only available in English. Thus, you should perform the configuration work in English and make the final tests in your preferred language(s).

### 3. Prerequisites

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- You have concluded a usage agreement for BCG and the technical implementation of QuantityWare BCS has been completed successfully
- The appropriate BC set /QTYW/BCG\_<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 Gas 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

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As noted above, these guidelines are aligned around the QuantityWare Gas Measurement Cockpit (GMC). The GMC provides all tools necessary to complete the challenging task of setting up sophisticated quantity conversion solutions. The GMC is accessible via transaction /n/QTYW/COCKPIT\_GAS. More details on the GMC can be found in the [BCG 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

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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**.

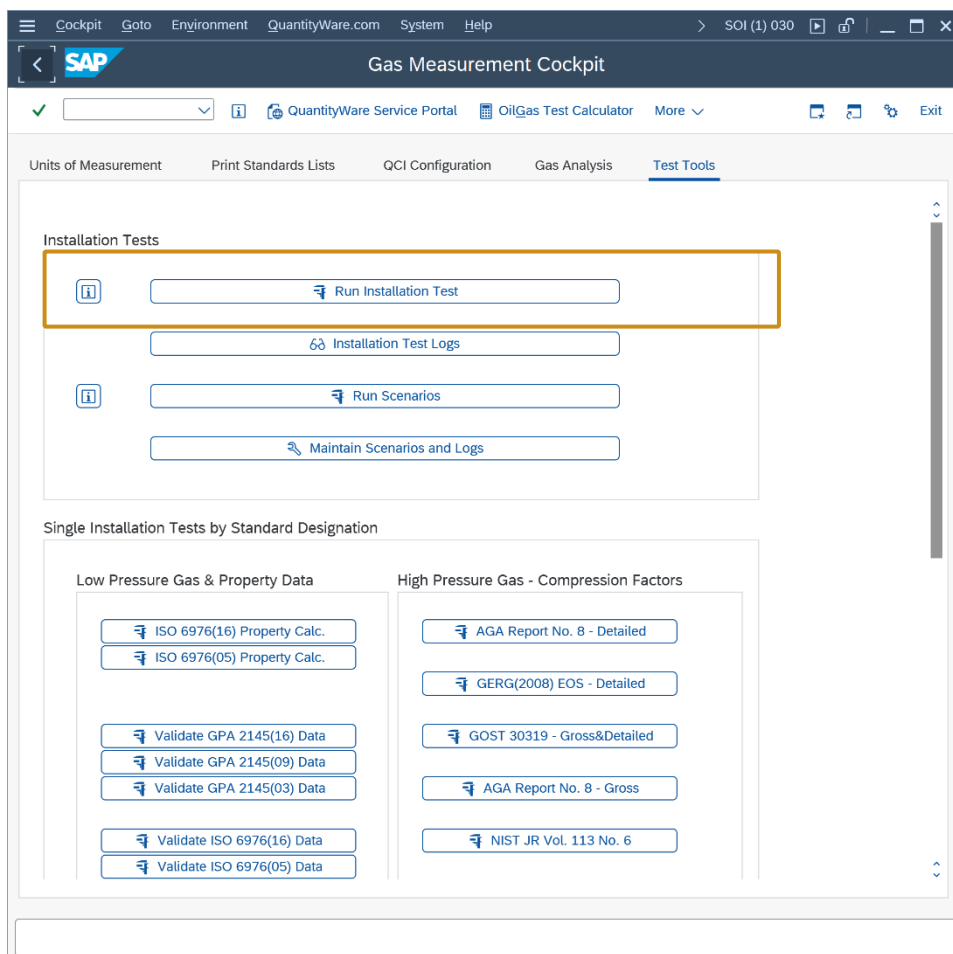
- "L" denotes the low complexity case,
- "M" the medium complexity case,
- "H" the high complexity case.

## 5.1. Run BCG Installation Test in Client 045

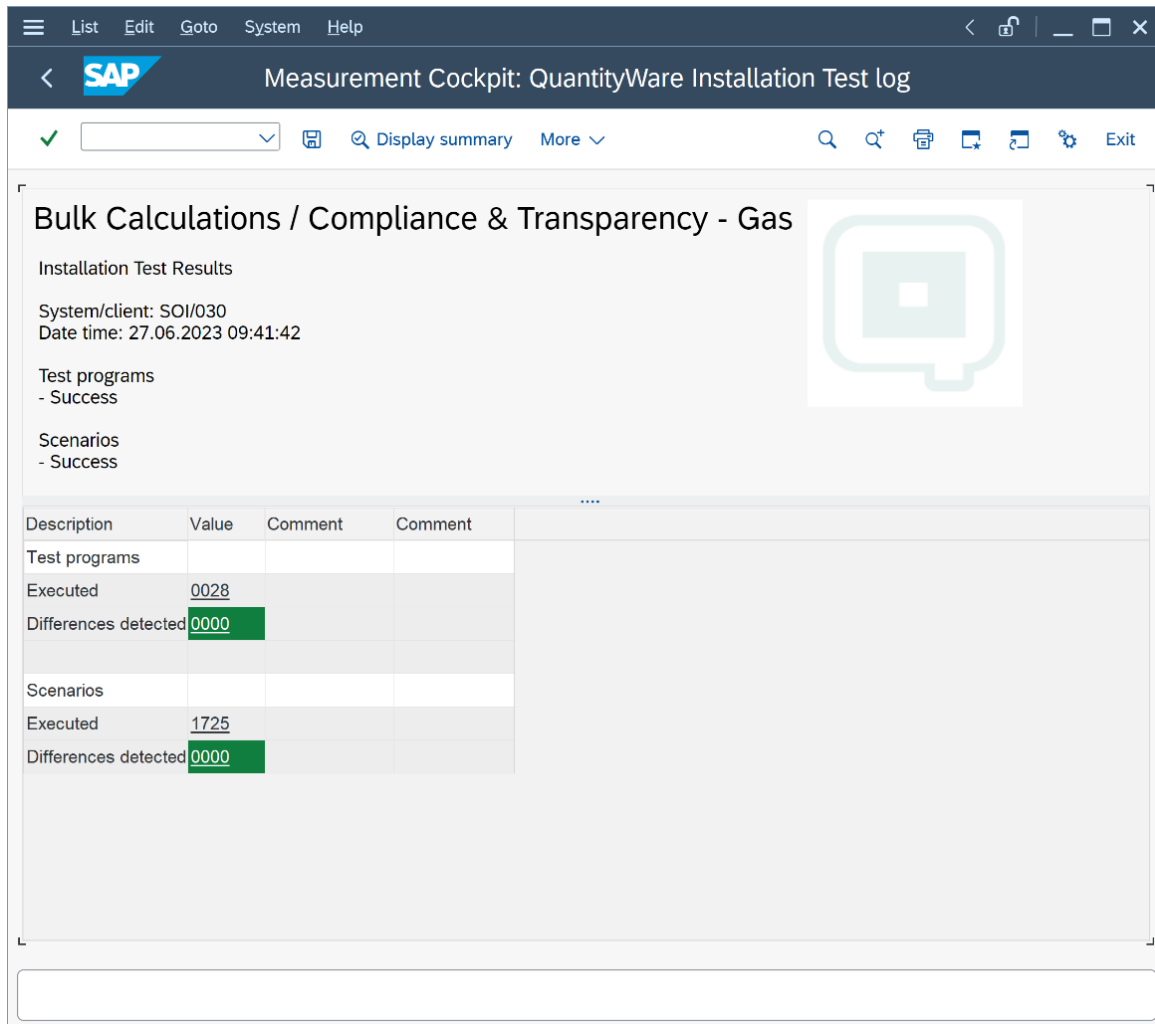
<b>Implementation step</b>	1
<b>Estimated time to completion</b>	L: 0.1 hours M: 0.2 hours H: 1 hour
<b>Next major step</b>	2
<b>Related project teams</b>	Technical SAP basis experts or certified BCG consultants

The GMC (Gas Measurement Cockpit) is the central access point for all QuantityWare test tools that are delivered with BCG.

- Log on to client 045 (or relevant client where the BCG BC set template is installed) and start transaction /n/QTYW/COCKPIT\_GAS - The GMC 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:



**Bulk Calculations / Compliance & Transparency - Gas**

Installation Test Results

System/client: SOI/030  
Date time: 27.06.2023 09:41:42

Test programs  
- Success

Scenarios  
- Success

Description	Value	Comment	Comment
<b>Test programs</b>			
Executed	0028		
Differences detected	0000		
<b>Scenarios</b>			
Executed	1725		
Differences detected	0000		



Select "Display Summary" and 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.

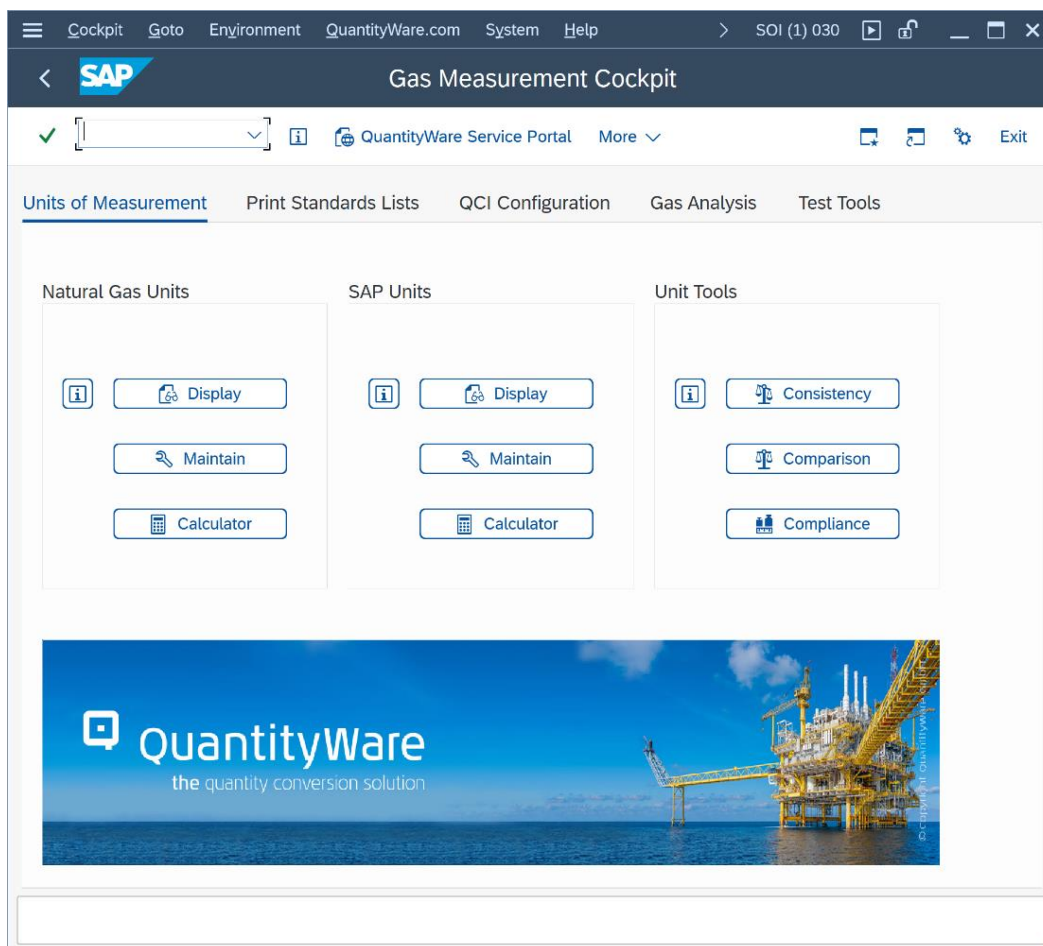


QuantityWare recommends that you develop your own customer project specific tests scenarios that contain manually calculated results (cross checked by at least two experts), allowing an automated check of system calculations against these results. Thus a high degree of automation is ensured, as well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

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

## 5.2. Check Definition of Units if Measurement

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

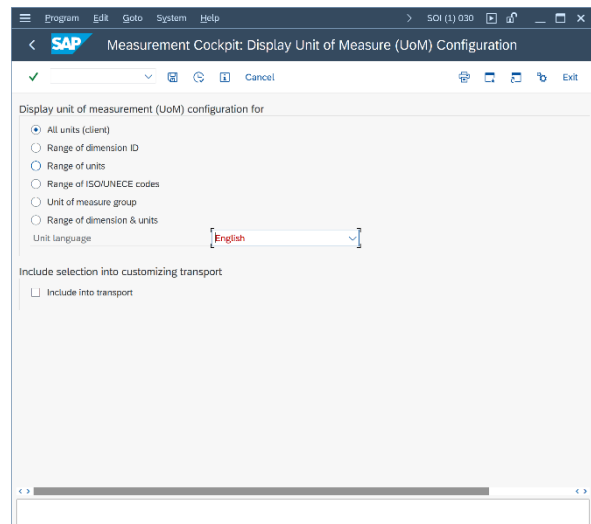
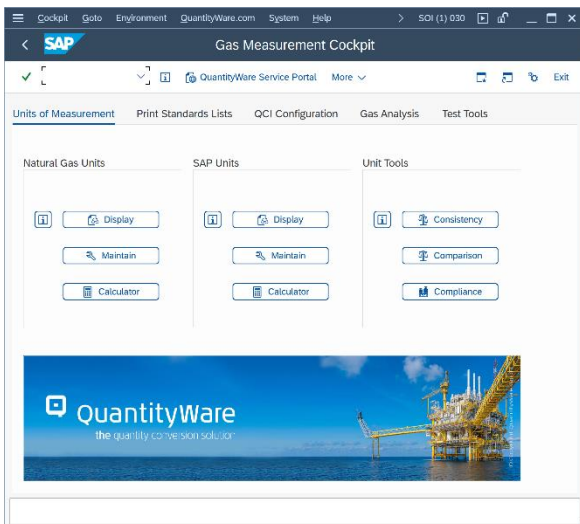


- Obtain overview of your current UoM settings
- Import QuantityWare UoM standard reference values for compliance check
- Define and execute your UoM compliance check
- Resolve potential issues
- Implement final UoM compliance check

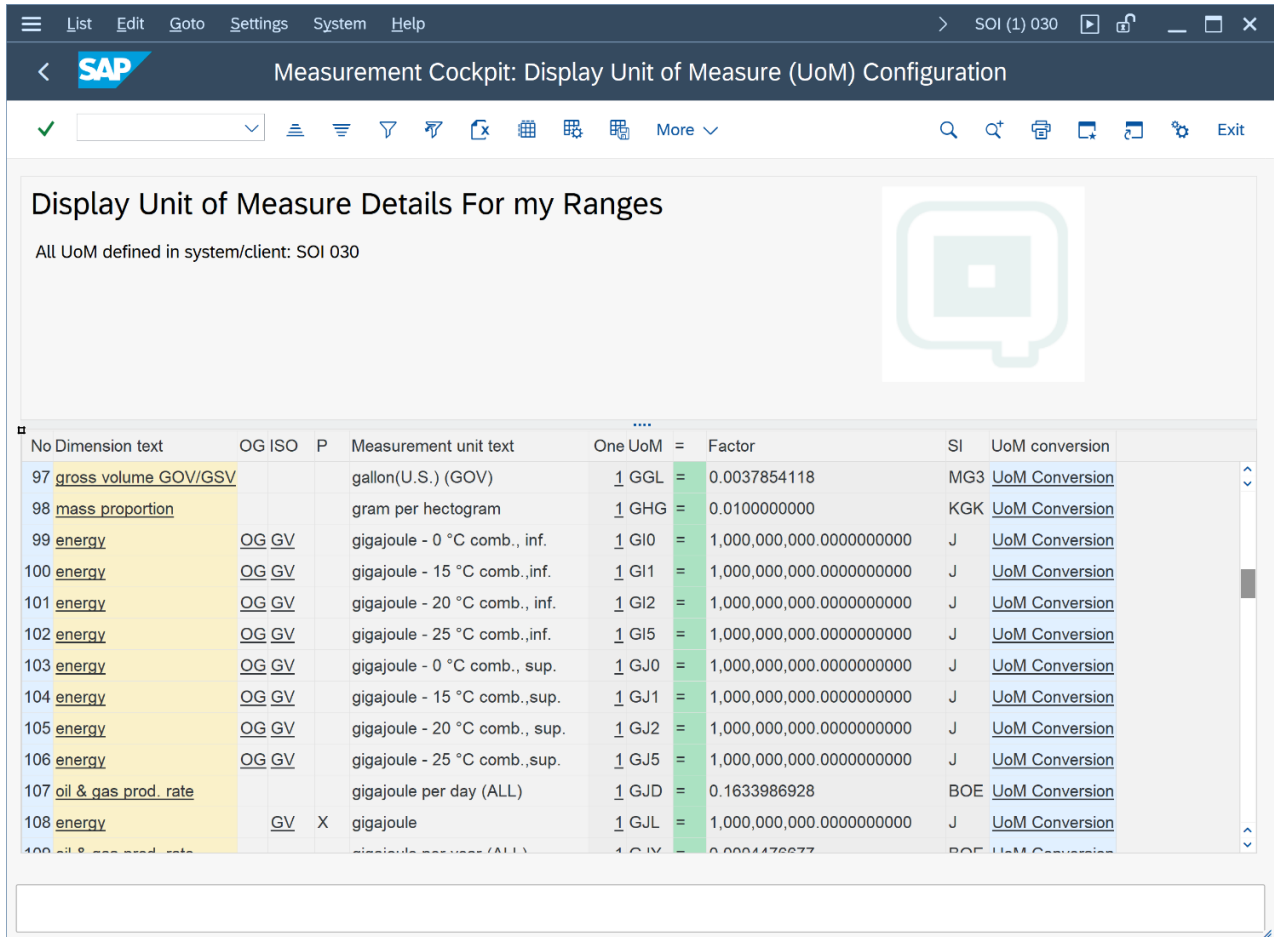
### 5.2.1. Obtain UoM Overview

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

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



Execute the report using the default selection-options:



No	Dimension text	OG ISO	P	Measurement unit text	One UoM	Factor	SI	UoM conversion
97	gross volume GOV/GSV			gallon(U.S.) (GOV)	1 GGL =	0.0037854118	MG3	<a href="#">UoM Conversion</a>
98	mass proportion			gram per hectogram	1 GHG =	0.0100000000	KGK	<a href="#">UoM Conversion</a>
99	energy	OG GV		gigajoule - 0 °C comb., inf.	1 GI0 =	1,000,000,000.0000000000	J	<a href="#">UoM Conversion</a>
100	energy	OG GV		gigajoule - 15 °C comb., inf.	1 GI1 =	1,000,000,000.0000000000	J	<a href="#">UoM Conversion</a>
101	energy	OG GV		gigajoule - 20 °C comb., inf.	1 GI2 =	1,000,000,000.0000000000	J	<a href="#">UoM Conversion</a>
102	energy	OG GV		gigajoule - 25 °C comb., inf.	1 GI5 =	1,000,000,000.0000000000	J	<a href="#">UoM Conversion</a>
103	energy	OG GV		gigajoule - 0 °C comb., sup.	1 GJ0 =	1,000,000,000.0000000000	J	<a href="#">UoM Conversion</a>
104	energy	OG GV		gigajoule - 15 °C comb., sup.	1 GJ1 =	1,000,000,000.0000000000	J	<a href="#">UoM Conversion</a>
105	energy	OG GV		gigajoule - 20 °C comb., sup.	1 GJ2 =	1,000,000,000.0000000000	J	<a href="#">UoM Conversion</a>
106	energy	OG GV		gigajoule - 25 °C comb., sup.	1 GJ5 =	1,000,000,000.0000000000	J	<a href="#">UoM Conversion</a>
107	oil & gas prod. rate			gigajoule per day (ALL)	1 GJD =	0.1633986928	BOE	<a href="#">UoM Conversion</a>
108	energy	GV	X	gigajoule	1 GJL =	1,000,000,000.0000000000	J	<a href="#">UoM Conversion</a>

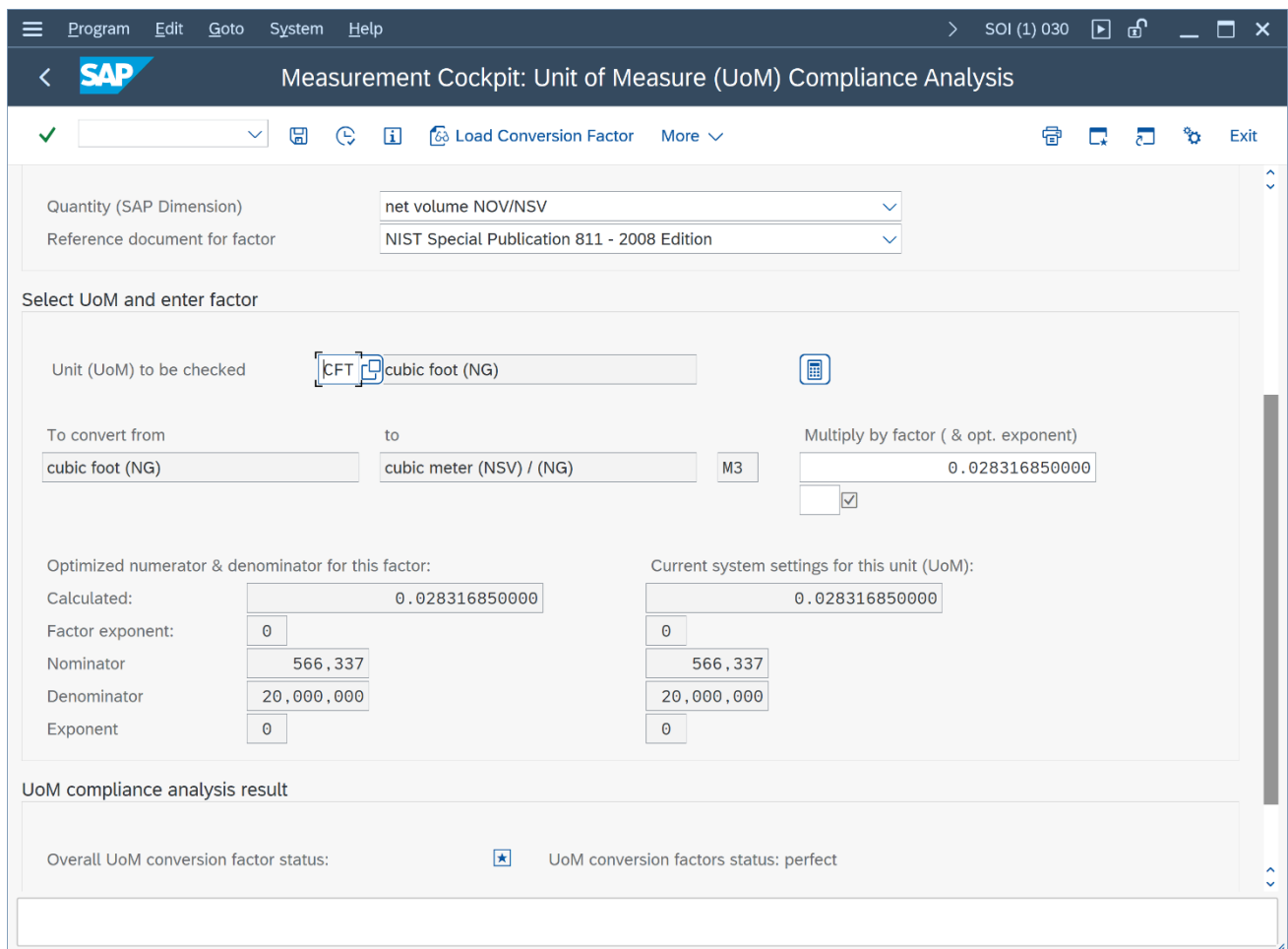
This list is your **reference client list** with all UoM defined in **your system in client XXX**. From this list, select all UoM for which you want to perform the UoM compliance analysis.



### 5.2.2. Import QuantityWare UoM Standard Reference Values

<b>Implementation step</b>	2.2.
<b>Estimated time to completion</b>	L: 5 hours M: 18 hours H: 36 hours
<b>Next step</b>	2.3
<b>Related project teams</b>	Measurement specialists customer and/or QuantityWare experts

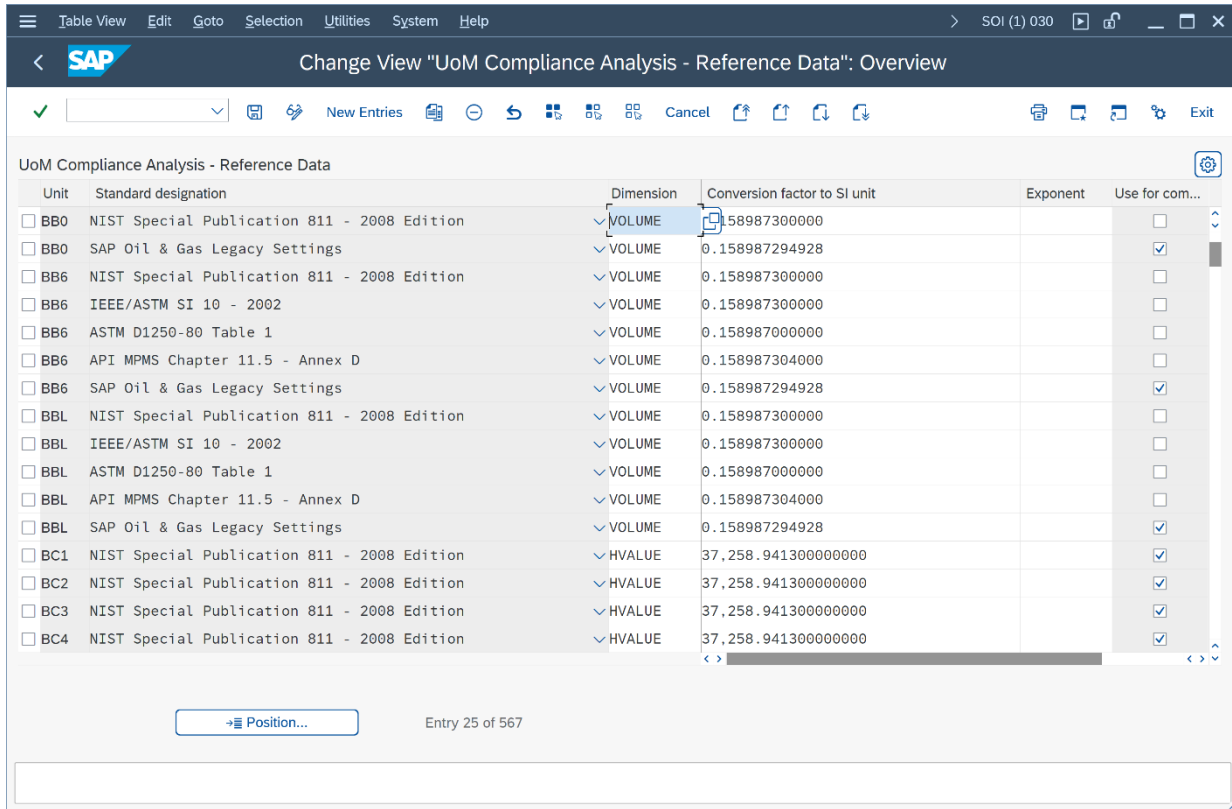
In the QuantityWare template client 045, go to GMC tab page "Units of Measurement" and select push button "Unit Tools -> Compliance":



The screenshot shows the SAP Measurement Cockpit interface for Unit of Measure (UoM) Compliance Analysis. The window title is "Measurement Cockpit: Unit of Measure (UoM) Compliance Analysis". The interface includes a menu bar with "Program", "Edit", "Goto", "System", and "Help". The main content area is divided into several sections:

- Quantity (SAP Dimension):** net volume NOV/NSV
- Reference document for factor:** NIST Special Publication 811 - 2008 Edition
- Select UoM and enter factor:**
  - Unit (UoM) to be checked:** CFT cubic foot (NG)
  - To convert from:** cubic foot (NG)
  - to:** cubic meter (NSV) / (NG)
  - Multiply by factor ( & opt. exponent):** 0.028316850000
- Optimized numerator & denominator for this factor:**
  - Calculated: 0.028316850000
  - Factor exponent: 0
  - Nominator: 566,337
  - Denominator: 20,000,000
  - Exponent: 0
- Current system settings for this unit (UoM):**
  - 0.028316850000
  - 0
  - 566,337
  - 20,000,000
  - 0
- UoM compliance analysis result:**
  - Overall UoM conversion factor status:  UoM conversion factors status: perfect

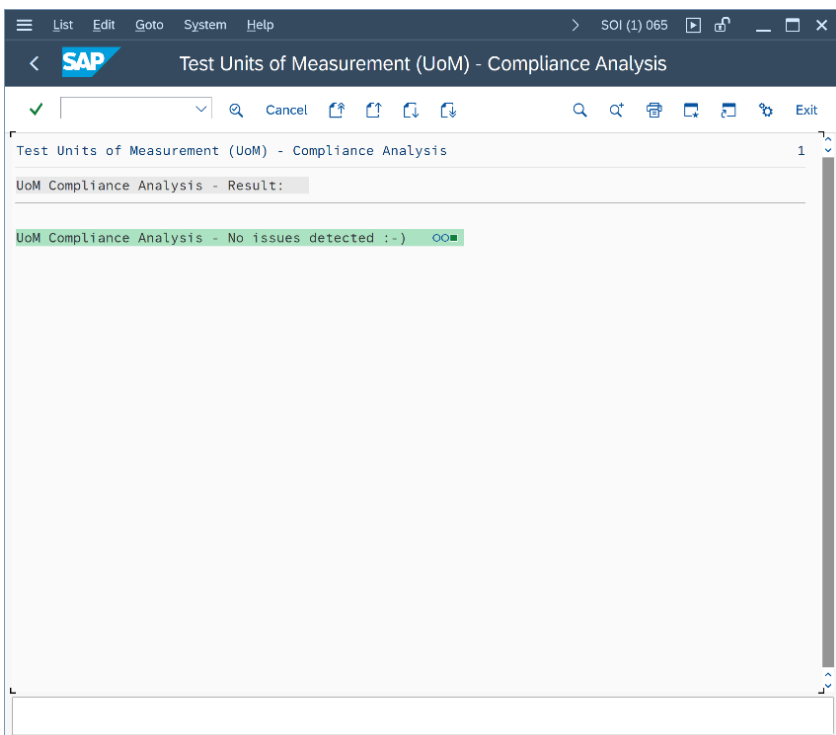
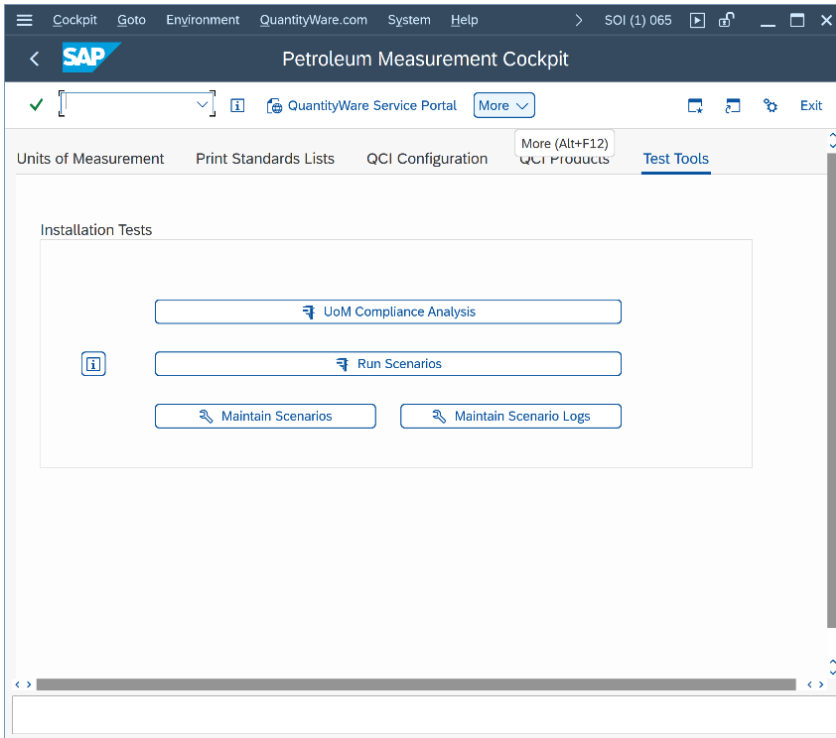
Now choose push button “More -> Maintain Reference Data”:



Unit	Standard designation	Dimension	Conversion factor to SI unit	Exponent	Use for com...
<input type="checkbox"/> BB0	NIST Special Publication 811 - 2008 Edition	✓ VOLUME	0.158987300000		<input type="checkbox"/>
<input type="checkbox"/> BB0	SAP Oil & Gas Legacy Settings	✓ VOLUME	0.158987294928		<input checked="" type="checkbox"/>
<input type="checkbox"/> BB6	NIST Special Publication 811 - 2008 Edition	✓ VOLUME	0.158987300000		<input type="checkbox"/>
<input type="checkbox"/> BB6	IEEE/ASTM SI 10 - 2002	✓ VOLUME	0.158987300000		<input type="checkbox"/>
<input type="checkbox"/> BB6	ASTM D1250-80 Table 1	✓ VOLUME	0.158987000000		<input type="checkbox"/>
<input type="checkbox"/> BB6	API MPMS Chapter 11.5 - Annex D	✓ VOLUME	0.158987304000		<input type="checkbox"/>
<input type="checkbox"/> BB6	SAP Oil & Gas Legacy Settings	✓ VOLUME	0.158987294928		<input checked="" type="checkbox"/>
<input type="checkbox"/> BBL	NIST Special Publication 811 - 2008 Edition	✓ VOLUME	0.158987300000		<input type="checkbox"/>
<input type="checkbox"/> BBL	IEEE/ASTM SI 10 - 2002	✓ VOLUME	0.158987300000		<input type="checkbox"/>
<input type="checkbox"/> BBL	ASTM D1250-80 Table 1	✓ VOLUME	0.158987000000		<input type="checkbox"/>
<input type="checkbox"/> BBL	API MPMS Chapter 11.5 - Annex D	✓ VOLUME	0.158987304000		<input type="checkbox"/>
<input type="checkbox"/> BBL	SAP Oil & Gas Legacy Settings	✓ VOLUME	0.158987294928		<input checked="" type="checkbox"/>
<input type="checkbox"/> BC1	NIST Special Publication 811 - 2008 Edition	✓ HVALUE	37,258.941300000000		<input checked="" type="checkbox"/>
<input type="checkbox"/> BC2	NIST Special Publication 811 - 2008 Edition	✓ HVALUE	37,258.941300000000		<input checked="" type="checkbox"/>
<input type="checkbox"/> BC3	NIST Special Publication 811 - 2008 Edition	✓ HVALUE	37,258.941300000000		<input checked="" type="checkbox"/>
<input type="checkbox"/> BC4	NIST Special Publication 811 - 2008 Edition	✓ HVALUE	37,258.941300000000		<input checked="" type="checkbox"/>

In “Change” mode, select all UoM definitions which you have identified in implementation step “Obtain UoM overview” (3.1) for the UoM compliance analysis. Include the UoM with the validated reference factors into a customizing 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 the issues using the UoM compliance analysis tool in your reference client.

### 5.2.3. Check UoM Croups

<b>Implementation step</b>	2.3.
<b>Estimated time to completion</b>	L: 2 hours M: 4 hours H: 8 hours
<b>Next step</b>	3
<b>Related project teams</b>	Inventory mangers customer & project experts & certified BCG consultants

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 mass UoM (e.g., TO), an energy UoM (e.g., GJ5) and a standardized volume UoM (e.g., CM5) to a UoM group.



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 SAP expert report which must be run locally in every SID.

### 5.3. Define Product Measurement Standards

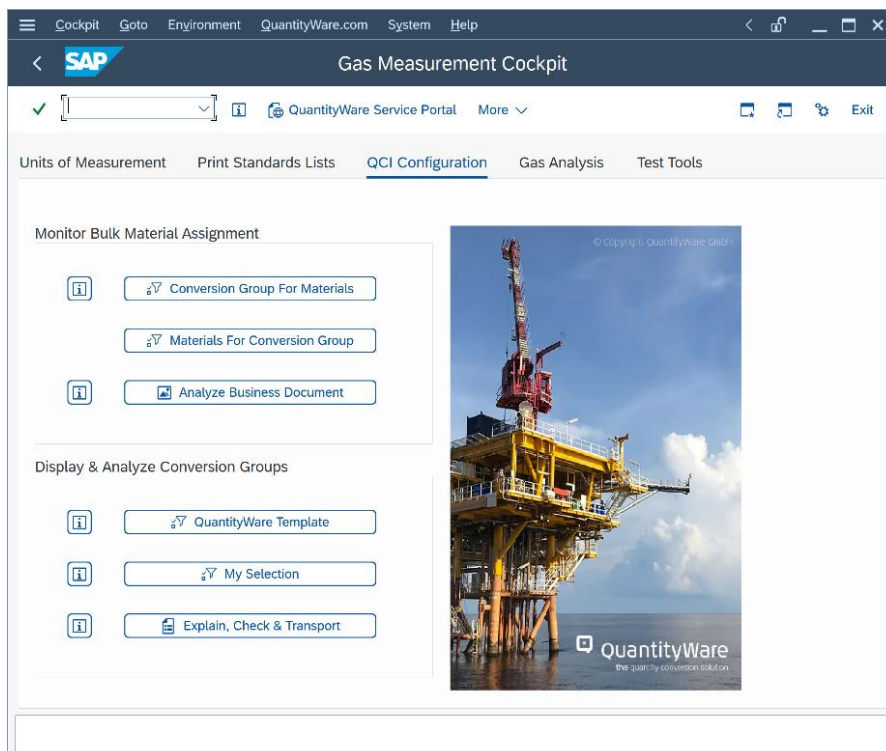
<b>Implementation step</b>	3
<b>Estimated time to completion</b>	L: 1 days M: 3 days H: 5 days
<b>Next major step</b>	4
<b>Related project teams</b>	Master data team – material master & certified BCG consultants

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

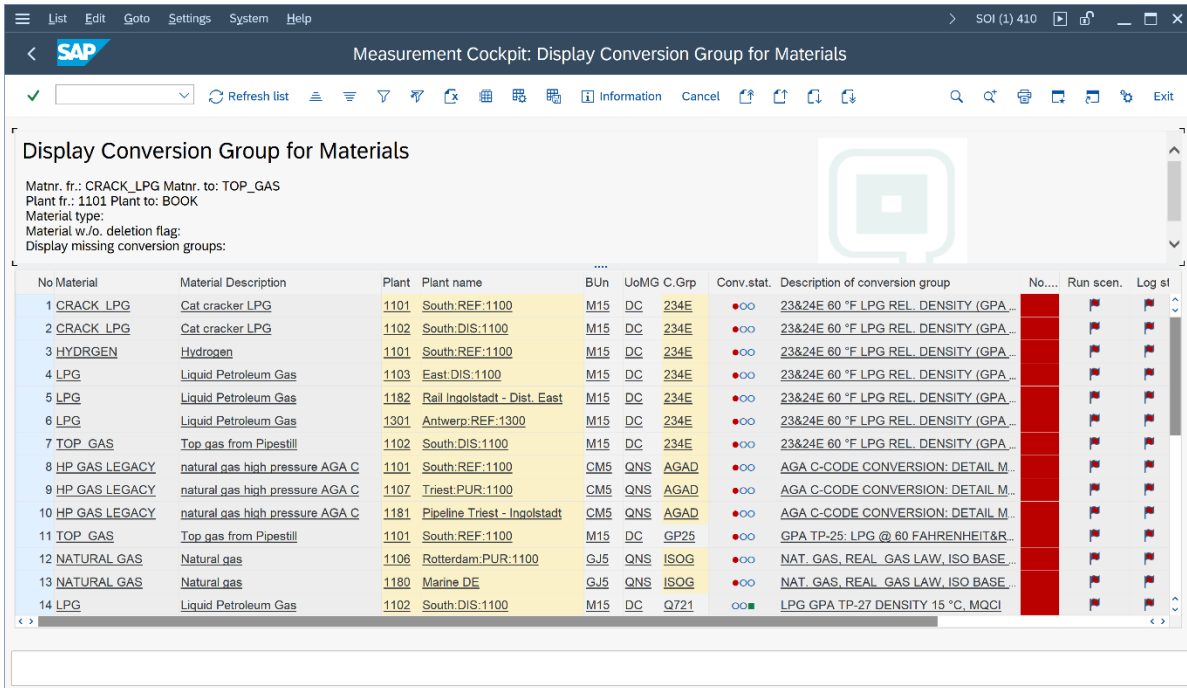
#### 5.3.1. Define Production Material Data List

<b>Implementation step</b>	3.1.
<b>Estimated time to completion</b>	L: 2 hours M: 6 hours H: 10 hours
<b>Next step</b>	3.2
<b>Related project teams</b>	Master data team – material master - certified BCG consultants

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



Select push button “Conversion Group for materials” to obtain lists of all NGL and natural gas materials that are configured with your SAP QCI legacy conversion groups:



No Material	Material Description	Plant	Plant name	BUn	UoMG	C. Grp	Conv. stat.	Description of conversion group	No....	Run scen.	Log st
1	CRACK LPG	1101	South.REF:1100	M15	DC	234E	●○○	23&24E 60 °F LPG REL. DENSITY (GPA...			
2	CRACK LPG	1102	South.DIS:1100	M15	DC	234E	●○○	23&24E 60 °F LPG REL. DENSITY (GPA...			
3	HYDRGEN	1101	South.REF:1100	M15	DC	234E	●○○	23&24E 60 °F LPG REL. DENSITY (GPA...			
4	LPG	1103	East.DIS:1100	M15	DC	234E	●○○	23&24E 60 °F LPG REL. DENSITY (GPA...			
5	LPG	1182	Rail Ingolstadt - Dist. East	M15	DC	234E	●○○	23&24E 60 °F LPG REL. DENSITY (GPA...			
6	LPG	1301	Antwerp.REF:1300	M15	DC	234E	●○○	23&24E 60 °F LPG REL. DENSITY (GPA...			
7	TOP GAS	1102	South.DIS:1100	M15	DC	234E	●○○	23&24E 60 °F LPG REL. DENSITY (GPA...			
8	HP GAS LEGACY	1101	South.REF:1100	CM5	QNS	AGAD	●○○	AGA C-CODE CONVERSION: DETAIL M...			
9	HP GAS LEGACY	1107	Triest.PUR:1100	CM5	QNS	AGAD	●○○	AGA C-CODE CONVERSION: DETAIL M...			
10	HP GAS LEGACY	1181	Pipeline Triest - Ingolstadt	CM5	QNS	AGAD	●○○	AGA C-CODE CONVERSION: DETAIL M...			
11	TOP GAS	1101	South.REF:1100	M15	DC	GP25	●○○	GPA TP-25: LPG @ 60 FAHRENHEIT&R...			
12	NATURAL GAS	1106	Rotterdam.PUR:1100	GJ5	QNS	ISOG	●○○	NAT. GAS. REAL. GAS LAW. ISO BASE...			
13	NATURAL GAS	1180	Marine DE	GJ5	QNS	ISOG	●○○	NAT. GAS. REAL. GAS LAW. ISO BASE...			
14	LPG	1102	South.DIS:1100	M15	DC	Q721	○○■	LPG GPA TP-27 DENSITY 15 °C, MQCI			

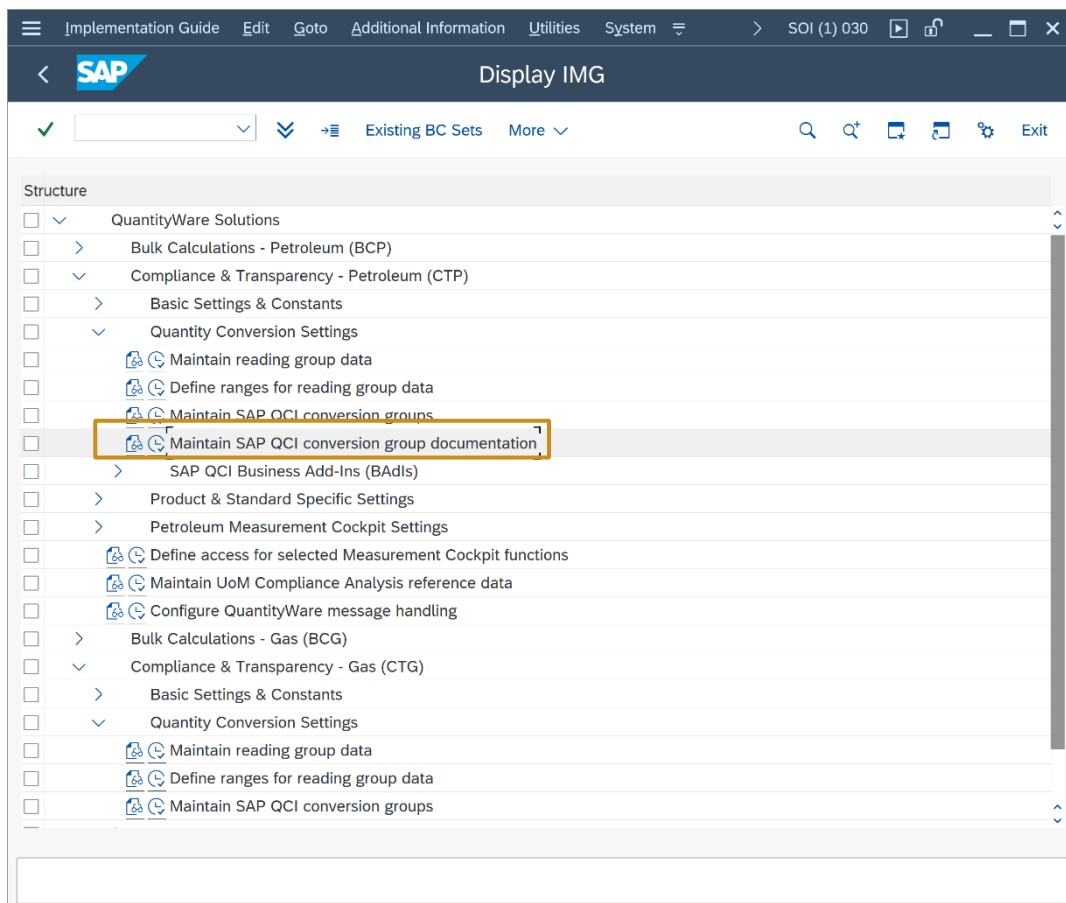
Since you have not defined test scenarios for your legacy conversion groups, the status display is typically “red” for all materials. Also, the conversion group configuration status check is typically “red”.

Confirm the assignment of conversion groups to products.

### 5.3.2. Assign & Confirm – Standard Documentation for Products

<b>Implementation step</b>	3.2.
<b>Estimated time to completion</b>	L: 2 hours M: 6 hours H: 10 hours
<b>Next step</b>	3.3.
<b>Related project teams</b>	Measurement specialists - customer and/or certified BCG consultant

Define the relevant measurement standard documentation for your legacy LPG/NGL 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 LPG/NGL conversion groups that you utilize in production, you now maintain the CTPL standard, Weight standard and Conversion model standard:

- 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
  - SAP QCI TP-25 – copy of SAP example
  - Customer specific Z\* function
  - No CTGL standard assigned - base conversion only

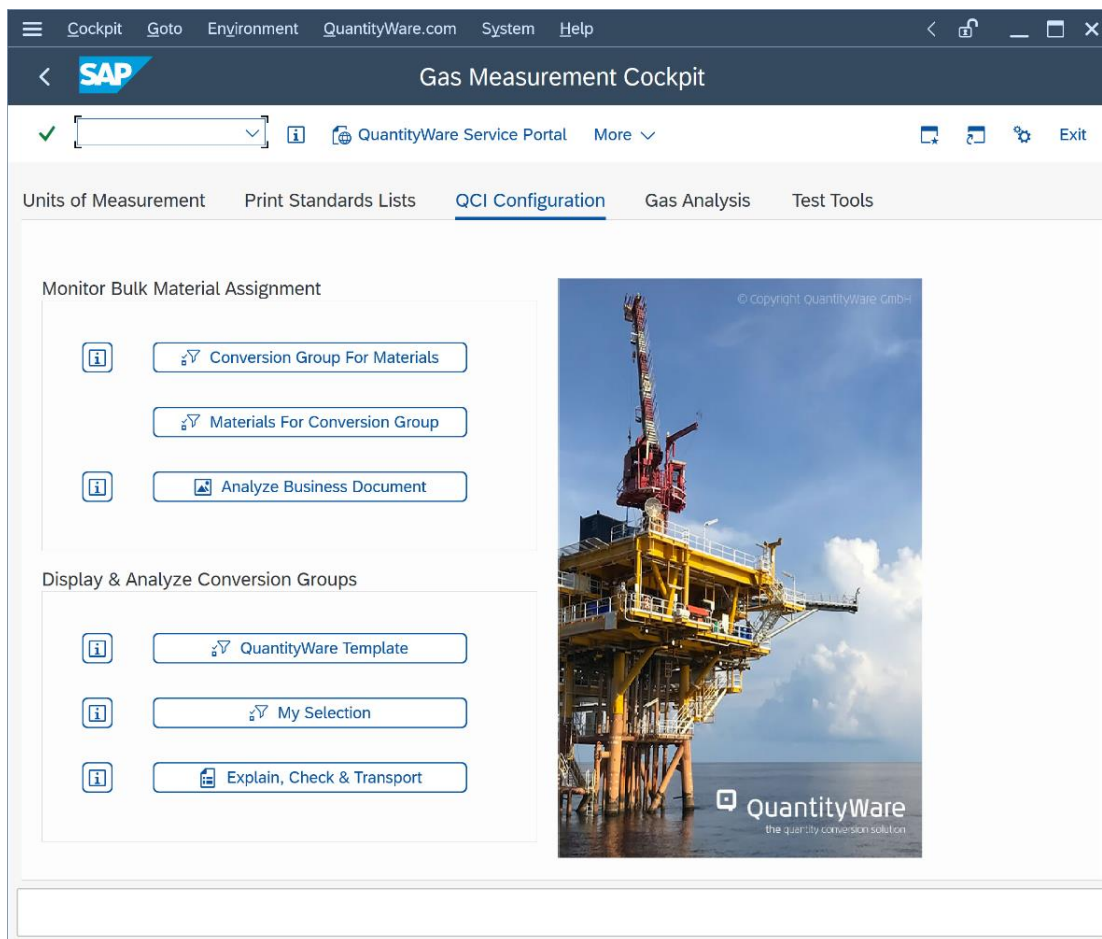
Low pressure natural gas legacy conversion groups **do not require this documentation**, since they are uniquely identified by the conversion group settings.

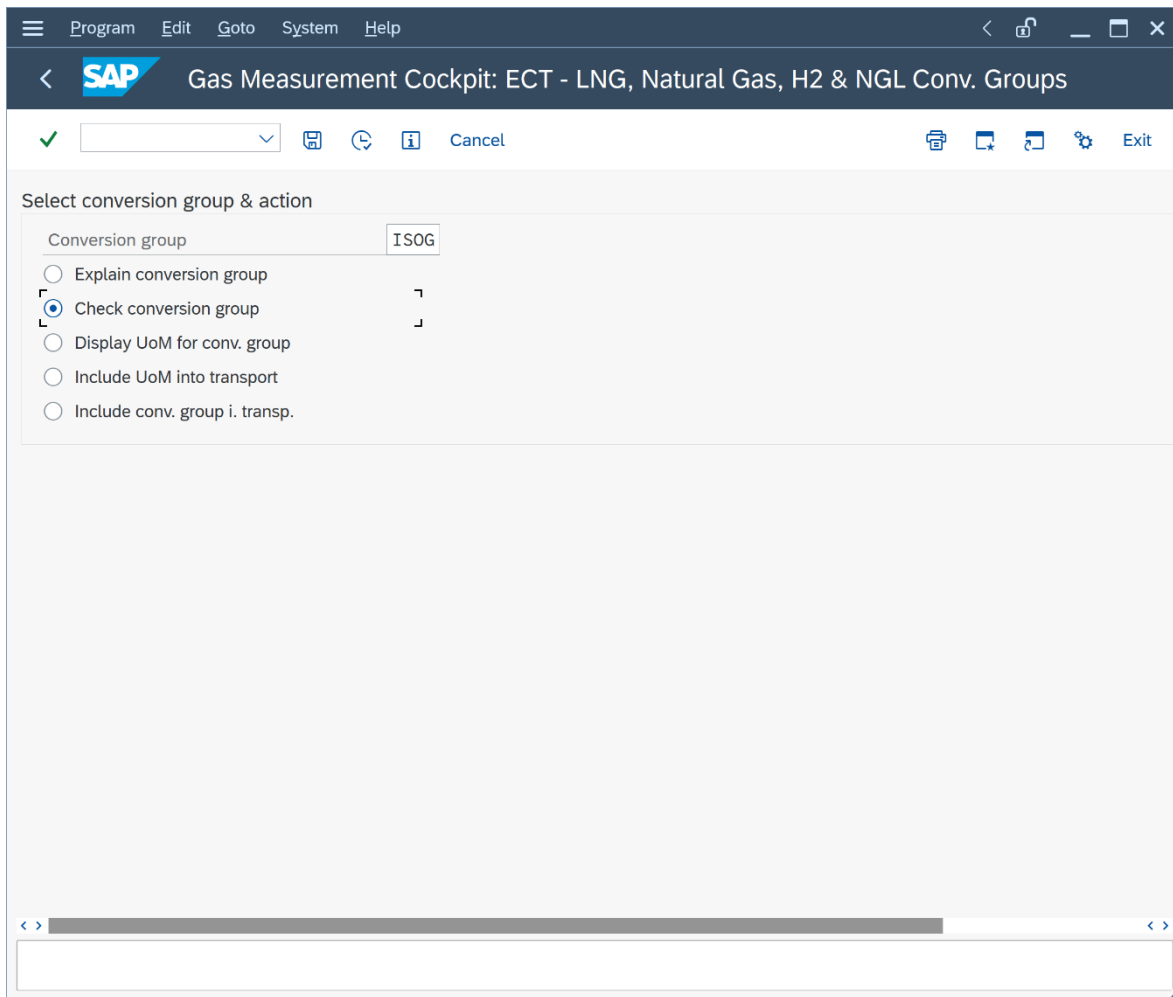


### 5.3.3. Run Conversion Group and Reading Group Check

<b>Implementation step</b>	3.3.
<b>Estimated time to completion</b>	L: 2 hours M: 6 hours H: 10 hours
<b>Next step</b>	3.4.
<b>Related project teams</b>	Measurement specialists customer and/or QuantityWare experts

In your project development reference client **XXX**, via the GMC, 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:

Log Edit Goto System Help > SOI (1) 065

**SAP** Display logs

✓ [dropdown] ? Technical Information [i] Cancel [star] [refresh] [gear] Exit

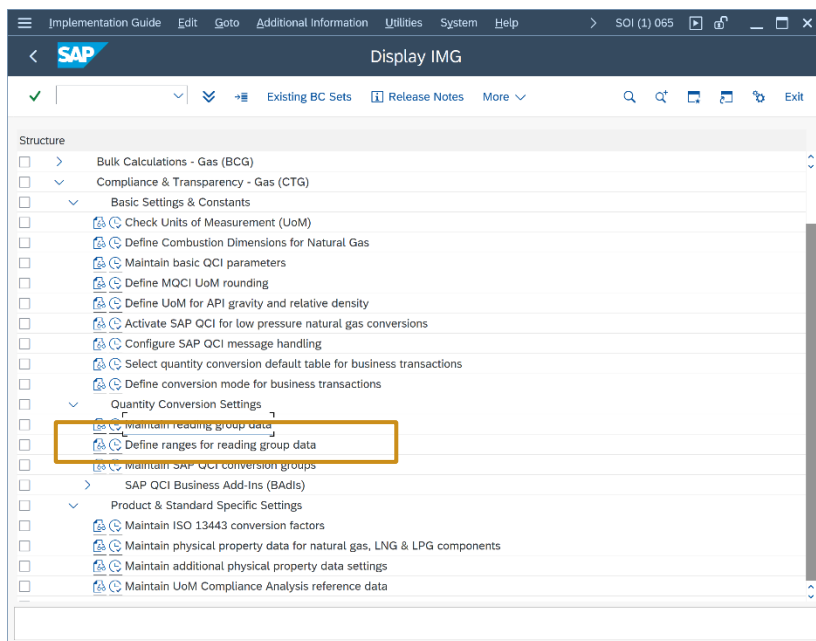
[undo] [redo] [list] [search] [filter] [sum] [math] [print] [copy] [paste] [table] [error 0] [warning 0] [info 22] [success 26]

Type	Message Text	LTxt
■	Reading group RNGS, parameter N-NONANE, screen flag and default flag are different	?
■	Reading group RNGS, parameter N-OCTANE, screen flag and default flag are different	?
■	Reading group RNGS, parameter N-PENTANE, screen flag and default flag are different	?
■	Reading group RNGS, parameter NITROGEN, screen flag and default flag are different	?
■	Reading group RNGS, parameter OXYGEN, screen flag and default flag are different	?
■	Reading group RNGS, parameter PROPANE, screen flag and default flag are different	?
■	Reading group RNGS, parameter STDDEN, screen flag and default flag are different	?
■	Reading group RNGS, parameter STDHVAL, screen flag and default flag are different	?
■	Check high tolerance level - warning limit of conversion group	?
▲	In reading group RNGS, parameter ARGON has no UoM assigned	?
▲	In reading group RNGS, parameter CDIOXIDE has no UoM assigned	?
▲	In reading group RNGS, parameter CMONOXIDE has no UoM assigned	?
▲	In reading group RNGS, parameter ETHANE has no UoM assigned	?
▲	In reading group RNGS, parameter HELIUM has no UoM assigned	?
▲	In reading group RNGS, parameter HYDROGEN has no UoM assigned	?
▲	In reading group RNGS, parameter HYDSULFIDE has no UoM assigned	?
▲	In reading group RNGS, parameter ISOBUTANE has no UoM assigned	?
▲	In reading group RNGS, parameter ISOPENTANE has no UoM assigned	?
▲	In reading group RNGS, parameter METCORFAC has no UoM assigned	?

### 5.3.4. Define Reading Group Ranges

<b>Implementation step</b>	3.4.
<b>Estimated time to completion</b>	L: 2 hours M: 6 hours H: 10 hours
<b>Next step</b>	4
<b>Related project teams</b>	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 GMC 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

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

For each conversion group, define at least four 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 GMC provides list printouts of all relevant natural gas, LNG and NGL/LPG measurement standards. Use these printouts to obtain the VCF (volume correction factors) and compression 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 GMC. Document the degree of similarity. If deviations are found, analyze the conversions (manual and system) to determine the reason for deviation.

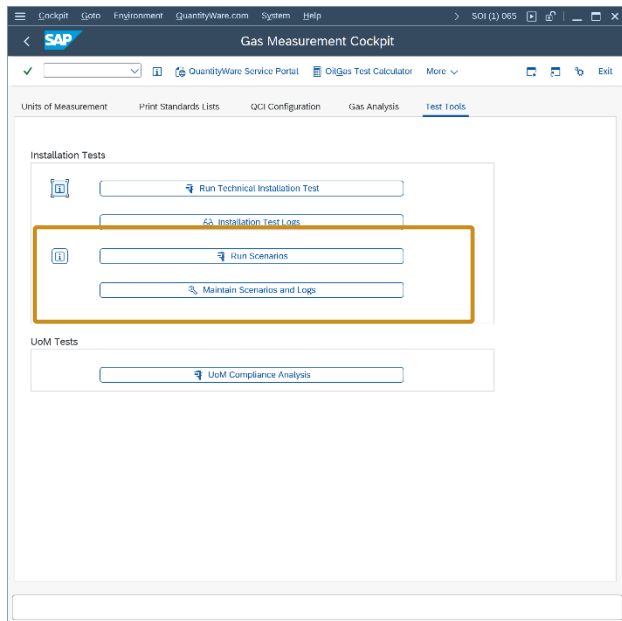


**If you have already validated your current system calculations, you may simply accept the system calculated values for your test scenarios**

## 5.5. Define Test Calculation Quality Procedure

<b>Implementation step</b>	5
<b>Estimated time to completion</b>	L: 2 days M: 4 days H: 8 days
<b>Next step</b>	6
<b>Related project teams</b>	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.



A more detailed description of the Test Scenario Tool can be found in the BCG 3.0 Documentation Reference Manual and the BCG Test Manual.

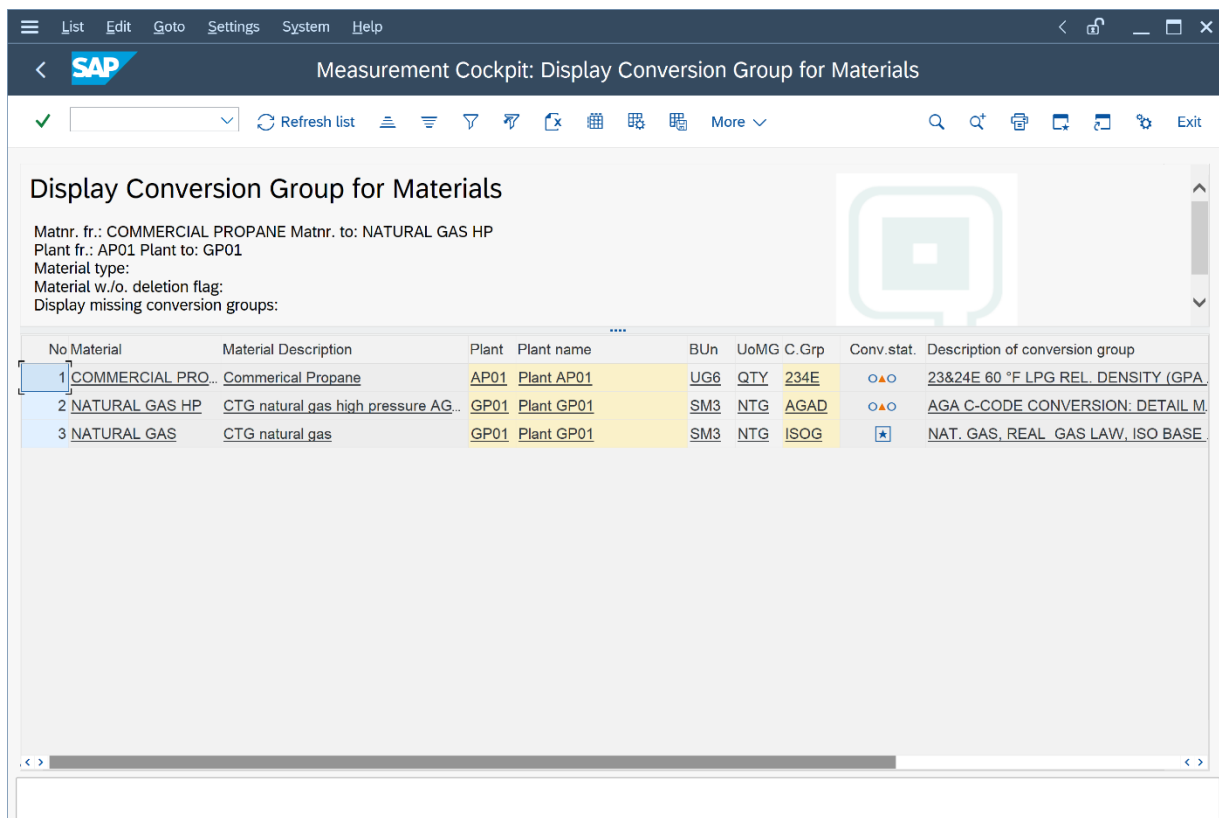


For the development of test scenarios based upon your test example definitions, an experienced measurement consultant requires 2 to 8 days (Low to High complexity case), including definition of the test scenarios in the system, which is included in the figures above. It is assumed that the results provided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

## 5.6. Check Production Material Data List

<b>Implementation step</b>	6
<b>Estimated time to completion</b>	L: 0.25 day M: 1 days H: 2 days
<b>Next step</b>	-
<b>Related project teams</b>	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 all test scenarios and resolved all conversion group and reading group configuration issues. 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 of your quantity conversions.



The screenshot shows the SAP Measurement Cockpit interface for displaying conversion groups for materials. The title bar reads "Measurement Cockpit: Display Conversion Group for Materials". Below the title bar, there is a search bar and a "Refresh list" button. The main content area displays the following information:

Matnr. fr.: COMMERCIAL PROPANE Matnr. to: NATURAL GAS HP  
 Plant fr.: AP01 Plant to: GP01  
 Material type:  
 Material w./o. deletion flag:  
 Display missing conversion groups:

No Material	Material Description	Plant	Plant name	BU	UoMG	C.Grp	Conv.stat.	Description of conversion group
1	COMMERCIAL PRO.. Commerical Propane	AP01	Plant AP01	UG6	QTY	234E	○▲○	23&24E 60 °F LPG REL. DENSITY (GPA
2	NATURAL GAS HP CTG natural gas high pressure AG..	GP01	Plant GP01	SM3	NTG	AGAD	○▲○	AGA C-CODE CONVERSION: DETAIL M.
3	NATURAL GAS CTG natural gas	GP01	Plant GP01	SM3	NTG	ISOG	★	NAT. GAS, REAL GAS LAW, ISO BASE.

## 6. Summary

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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 GMC.

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 ( <b>days</b> ):	5	13	24

As noted above, these estimates are based on the assumption that an **experienced** quantity conversion 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 taken into account in the figures.



## Legal Notices

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