Note: 000101

Overview

Number	**000101**
Description	**Measurement Standards - Development Planning**
Version	**02 from 05.10.2021**
Status	**Released to Customer**
Language	**EN**
Responsible	**Markus Seng**
Product	**BCS**
Category	**Documentation**

Symptom

QuantityWare develops implementations of petroleum and natural gas measurement standards delivered within the BCS solution. Measurement standard organizations issue and constantly update/revise standard documents via a defined revision and balloting process - typically every 5 to 10 years.

QuantityWare keeps track of existing standards changes and continuously monitors appropriate sources for new standards, thereby extending the portfolio of supported measurement standards for BCS.

In this note, we list all measurement standards which are under consideration for addtion into the supported standards portfolio, or have been revised and require additional developments.

Cause

Development planning.

Solution

The following measurement standards will be added into the BCS supported standards portfolio:

1. High pressure hydrogen quantity conversions: Although a complete and well defined measurement standard defining all required quantity conversions - including a precise implementation instruction - for such calculations is currently not available, QuantityWare is planning - in response to strong industry demands - to deliver a basic solution for high pressure hydrogen gas - considering hydrogen density and compressibility factors as defined **in J. Res. Natl. Inst. Stand. Technol. 113 , 341-350 (2008) - Revised Standardized Equation for Hydrogen Gas Densities for Fuel Consumption Applications.**
   This solution will be made available as an advanced development (AD) in Q3 2022.

2. Anhydrous ammonia (NH_3): a national standard document from Measurement Canada, based on experimental data, is available for the liquid phase product – the experimental data is defined in "The Thermodynamic Properties of Ammonia, by L. Haar and S.J. Gallagher, Journal of Physics Chemistry Ref. Data, Volume 7, No. 3, 1978." . Currently, a solution is available based on a ASTM D1250-04 regression analysis of this data. QuantityWare is planning to deliver a solution, which utilizes all VCF table values of this national standard, as an advanced development (AD) in Q3 2022.

The following measurement standards have been revised and require additional developments:

1. ISO 6976: The third edition of the standard "ISO 6976 Natural gas – Calculation of calorific values, density, relative density and Wobbe indices from composition" was issued in 2016. Through technical revision, it cancels and replaces the second edition from 1995. As stated in the third editions' introduction, adoption of the revisions detailed in this standard will not be without cost, as instrumental (and ERP business) software will need updating. QuantityWare has carefully analyzed this third edition. The major technical changes are:

   a. New method to calculate ideal and real molar-based calorific value and thus subsequent calorific values (mass and volume based)
   b. Introduction of net Wobbe index
   c. New component data (n-dodecane, n-tridecane, n-tetradecane, n-pentadecane)
   d. Completely updated physical property data and auxiliary constants
   e. Harmonization with GPA 2172 and related U.S. customary based standards – Provision of different reference pressures in all formulas of ISO 6976

This new version will be made available with the next BCS 3.0 CSP - BCS 30B-02 / BCS 30A-03. Planned shipment of this CSP is Q4 2022.

Transport Reference

No SAP-based transport

Validity

SAP Release	From SP	To SP	In SP Shipment
ECC600	ALL	ALL	
S/4 HANA	ALL	ALL	