UNIT SIG report

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Shell Technology Centre Amsterdam, Netherlands

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Outline

- **Report Period: Sep 2014 till Oct 2015**

- **Key responsibilities**

- **Members**

- **Errata & Clarifications for Unit Operation specification 1.0**

- **Review of Petroleum Fractions specification**

- **Objectives for 2015/2016**

Responsibilities

- **Maintain and publish the standard**

- **Respond to issues raised by developers and users**

- **Prioritize registered issues and give recommendations on solutions**

- **Promote and support the use of the CAPE-OPEN interface for Unit Operations**

Unit SIG Members

- **Members:**
  - **Krishna Murthy Penukonda (Schneider Electric)**
  - **Michel Pons (CO-LaN)**
  - **Richard Baur (Shell Global Solutions)**
  - **Jasper van Baten (AmsterCHEM)**
  - **Michael Hlavinka (Bryan Research & Engineering)**

- **Join? Contact Krishna Murthy Penukonda**

- **Monthly phone meetings**

Errata & Clarifications for Unit Operation specification 1.0 (Version 1.0.0015)

- **Errata:**
    - **Reset Unit Operations**

- **Clarifications:**
    - **Modal Dialogs**

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Errata & Clarifications for Unit Operation specification 1.0 (Version 1.0.0015)

- **Reset Unit Operations**

    - **Issue:**

        - **Notify UOs that the Flowsheet has been reset to its initial state**

        - **Unit Operations can perform internal reset actions such as removing initial guesses.**

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Errata & Clarifications for Unit Operation specification 1.0 (Version 1.0.0015)

- ## Reset Unit Operations

  - ### Recommendation:
    - a Boolean named value "ResetOnValidate" may be exposed by ICapeCOSEUtilities

    - Once the PME has changed the value of ResetOnValidate to TRUE, the PME will call Validate on each Unit Operation.

    - Unit Operations that support resetting check for the named value within their Validate method. If the named value is present and is TRUE, the UO internally performs a reset.

    - Once Validate has been called on each Unit Operation, the named value is set to FALSE.

    - During normal validation, the PME should make sure that ResetOnValidate (if exposed) has a value of FALSE.

Errata & Clarifications for Unit Operation specification 1.0 (Version 1.0.0015)

- ## Modal dialogs

  - **Issue:**

    - **In single-threaded operations, unexpected interruption of the flow of events (especially for units in recycles)**

    - **In multi-threaded operations, modal dialogs can lead to a dead-lock of an application**

    - **In headless operations (operation without a monitor, for example scheduled runs on cloud computers, SaaS – Software as a Service, etc…), dialogs must be avoided altogether.**

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Errata & Clarifications for Unit Operation specification 1.0 (Version 1.0.0015)

- **Modal dialogs**

    - **Clarification:**

        - **PMCs including Unit Operations not show modal dialogs**

        - **Exception: during ICapeUtilities::Edit.**

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Petroleum Fractions specification

- **Review of Petroleum Fractions specification is on going**

  - **Removed support for "curve properties"**

    - **Inspection property curves may require blending functionality to be exposed by PME to Unit. *Not part of initial standard* due to complexity**

    - **Yield curves may require correlation to be exposed by PME to Unit. *Not part of initial standard* due to complexity pending business cases.**

  - **Unit Operations are expected to operate on per-compound data where possible, bulk data otherwise.**

Objectives for 2015/16

- **Publish Petroleum Fractions specification**
- **Finish dynamic standard specification**
- **Look for expertise on equation oriented unit operations**