



# Refinery Reactors SIG Update

**4<sup>th</sup> European CAPE-OPEN Conference  
Heidelberg, 9 March 2007**

CO<sub>2</sub> LaN



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# Current Members

- ◆ Ignasi Palou-Rivera, BP
- ◆ Ray Dickinson, Shell Global Solutions
- ◆ David Jerome, SimSci
- ◆ Jasper van Baten, AmsterCHEM
- ◆ Ensheng Zhao, Honeywell
- ◆ Hiren Shethna, Aspentech
- ◆ David Cameron, Fantoft
- ◆ Jean-Charles de Hemptinne, IFP
- ◆ Michel Pons, CO-LaN



# Special Interest Group Refinery Reactors

## ◆ Charter:

- ⇒ Revise and develop the necessary CAPE-OPEN interface standards for the use of Refinery Reactor models in Process Modelling Environments

## ◆ Key Responsibilities:

- ⇒ Develop required extensions to existing interface specifications necessary to implement refinery reactor models as CAPE OPEN units. This may lead to the creation of new interfaces.
- ⇒ Initiate implementation of petroleum fractions in PMEs and PMCs.
- ⇒ Deliver results back to the existing SIGs whereon this SIG can be closed.

## ◆ Deliverables for 2006:

- ⇒ Advise unit and thermo SIG on modifications required for petroleum fractions.
- ⇒ Define scenarios to cover functionality required for prototyping.
- ⇒ Draft revision of the petroleum fractions interface specification.
- ⇒ Develop two independent prototypes for demonstration at the 2007 AGM.



# 2006 Accomplishments

- ◆ Initial advise to unit and thermo SIG on modifications required for petroleum fractions.
- ◆ Definition of scenarios to cover functionality required for prototyping.
- ◆ Draft revision of the petroleum fractions interface specification.
- ◆ Developed one partial prototype for demonstration at the 2007 AGM.

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# 2007 Objectives

## From 2007 SIG Charter:

- ◆ Engage unit and thermo SIG on modifications required for petroleum fractions.
- ◆ Further refine scenarios to cover functionality required for implementation.
- ◆ Initiate approval process of the petroleum fractions interface specification.
- ◆ Finalize two independent prototypes for demonstration at the 2008 AGM.

# Specific Issues

- ◆ Specific definition and extension of "bulk" and "curve" properties: list, user defined, ...
- ◆ Final decision on need for GetUnitType method in ICapeUnit interface
- ◆ Specification of need and definition of "volume basis"
- ◆ Glossary
- ◆ "Characterization" component
  
- ◆ Extension of SIG scope to petroleum fractions and properties not just "refinery reactors"

# Prototypes

- ◆ **CO “Refinery Reactor”**: UO interacting with compounds defined by modifiable (petroleum) properties
  - ⇒ Sulfur, Viscosity, RON, TBP, metals content
- ◆ **Proto#1**:
  - ⇒ Shell, AmsterCHEM, SimSci
  - ⇒ Property Calculator - Sulphur
  - ⇒ Demo
- ◆ **Proto#2**:
  - ⇒ BP, SAIC, AspenTech, Honeywell
  - ⇒ Mixer/blender and RON calculator
  - ⇒ In development