

# CAPE-OPEN at TOTAL

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Francis Luck

5th CAPE-OPEN European Conference

April 3, 2008 - Cambridge, UK



**TOTAL**

# Outline

- ▶ **CAPE-OPEN in TOTAL Upstream branch**
- ▶ **CAPE-OPEN in TOTAL Petrochemicals branch**
- ▶ **Needs**

# CAPE-OPEN in TOTAL Upstream branch

## ► PME and PMCs: joint R&D project with IFP

- Period 2001-2007
  - Platform integrating software components for the steady-state and transient simulation oil&gas production networks from wellbore to export facilities: TINA
  - Specialized Unit Operations: pipe (steady-state and transient)
  - Results presented by IFP in Cannes, Heidelberg and Salt Lake City

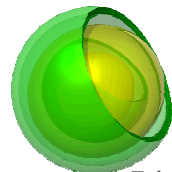
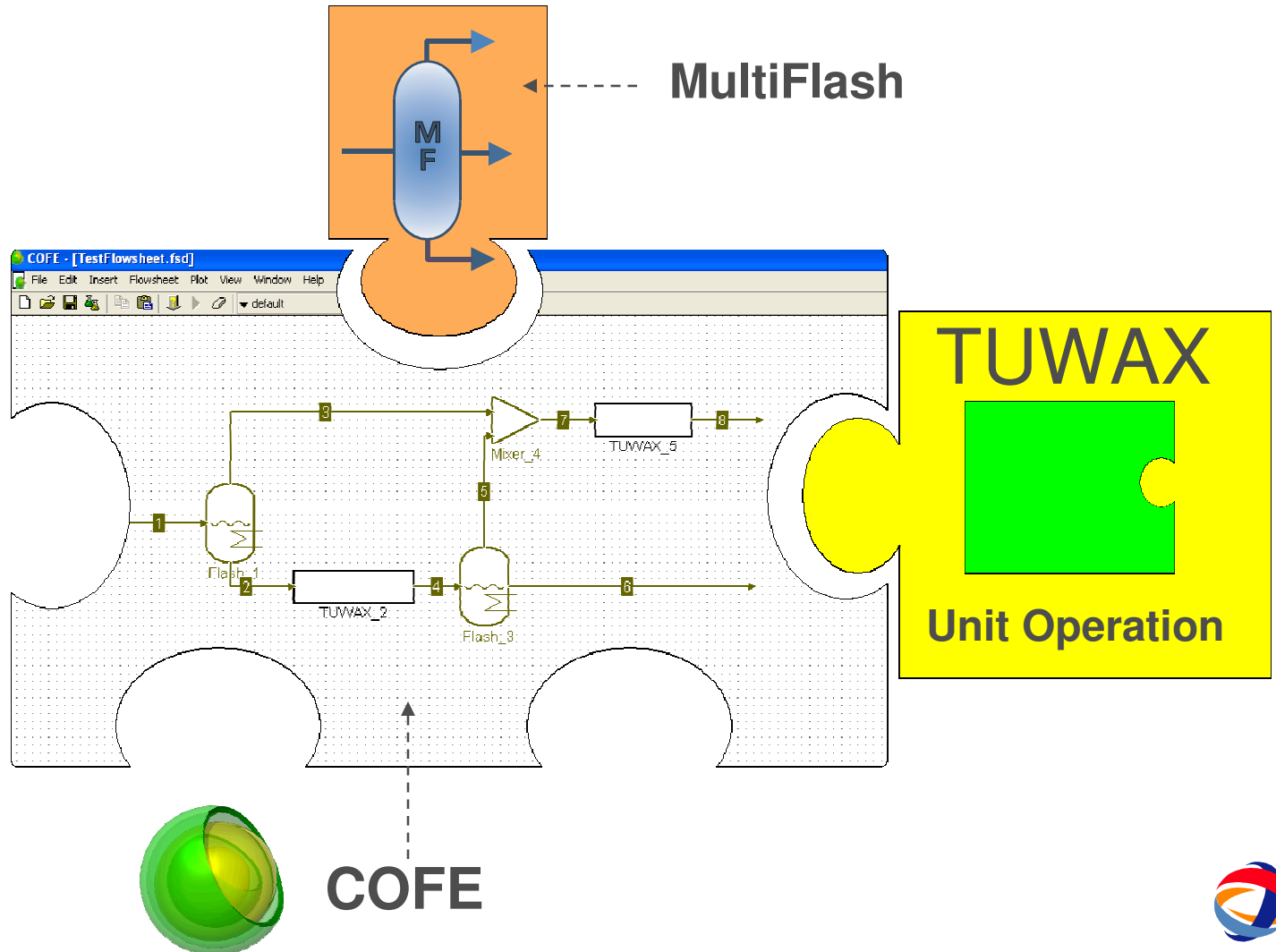
## ► Dedicated PMCs

- Results from R&D projects at the University of Tulsa
  - TUWAX: brought to CO compliance
  - GLCC: being brought to CO compliance

## ► Development of software tools to achieve these goals

- ThermoWrapper library: FORTRAN 90 thermodynamic functions
- FORTRAN 90 Unit Operation Wizard (for thermo 1.1 thermo)

# TUWAX (demoed in Salt Lake City)



**COFE**

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# CAPE-OPEN in TOTAL Petrochemicals branch

## ► Dedicated PMC: reactor model

- Current action at Feluy Engineering and Research Center, Belgium

## ► Means to achieve this goal

- Sent one person to CAPE-OPEN training session in Salt Lake City
- On-site training session by ProSim SA on CAPE-OPEN
- Upgrade of FORTRAN 90 UO Wizard to handle thermo 1.0 interfaces

# TOTAL needs CAPE-OPEN

## ► Needs CAPE-OPEN compliance from a variety of software vendors:

- PRO/II from Invensys SimSci-Esscor
- MultiFlash from Infochem Computer Services Ltd
- Aspen Plus, Aspen Hysys from Aspentech
- INDISS from RSI
- Simulis Thermodynamics from ProSim SA
- gPROMS and gO:CAPE-OPEN from Process Systems Enterprise
- ....

## ► Has several in-house R&D projects on-going using CAPE-OPEN technology

## ► Fosters development of additional CAPE-OPEN compliant components

- Ready to release software tools to CO-LaN community
- Push for CAPE-OPEN adoption by its major software providers