

# AIChE®

## Short Course

### CAPE-OPEN main concepts and implementation

AIChE's Annual Meeting  
November 12, 2006  
San Francisco, CA / United States

*Instructors:*

- **Michel PONS**, Chief Technology Officer, **CO-LaN**
- **Alain VACHER**, IT Manager, **ProSim**



The CAPE-OPEN  
Laboratories Network



## ProSim

Software and Services  
In Process Simulation

## Course Objective

Usage of simulation and calculation software (commercial, academic or developed in-house) is now common in the process industries. The general evolution of these types of software leads toward the integration of detailed expertise in dedicated applications of relatively small size.

The requirement for improved interoperability and easier integration of these applications is increasingly important as the engineer wishes to be able to choose the most reliable and relevant elements according to the issues he/she is working on, and to assemble them to create a tailored process simulator.

CAPE-OPEN is the industry standard that defines rules and interfaces that allow applications or software components to interoperate.

The objective of this course is to introduce the main concepts of the CAPE-OPEN standard and to provide software developers with a first insight into how to implement it. The course addresses in particular the specifications common to software objects and domains, as well as the specifications required to access thermodynamic and unit operation calculations.

This course is particularly relevant for the people involved in software development who wish to make their existing codes comply with the CAPE-OPEN standard, in order to allow them to interact with other applications developed in-house, by universities, by third parties or commercially available.

For educators and researchers who are interested in simulation, this course will help in understanding the fundamental aspects of CAPE-OPEN technologies that constitute the basis of tomorrow's calculation tools.

# Agenda

## **A - CAPE-OPEN Generalities**

Presentation of the goal, scope and history of CAPE-OPEN. A number of methods and tools used throughout the design of CAPE-OPEN standards are explained. The CO-LaN organization will also be briefly described.

## **B - CAPE-OPEN Common Specifications**

CAPE-OPEN common specifications are reviewed in detail. CAPE-OPEN types and constants are listed and each CAPE-OPEN common concept (identification, parameters...) is explained.

## **C - CAPE-OPEN Thermodynamic Specifications**

The CAPE-OPEN thermodynamic interface is described. Practical elements (objects, packages, systems...) are provided to help attendees evaluate how to implement the specifications. Finally, available commercial and academic implementations are listed.

## **D - CAPE-OPEN Unit Operation Specifications**

CAPE-OPEN unit operation specifications are discussed and illustrated with scenarios and practical examples.

## **E - Tools for implementation support**

Different support tools used to help CAPE-OPEN implementation are reviewed, in particular the CAPE-OPEN Tester Suite, CAPE-OPEN Wizards and CAPE-OPEN Logging and Testing Tool (COLTT).

## CAPE-OPEN standards

CAPE-OPEN is the industry standard for achieving interoperability of process simulation software. It establishes a set of rules and interfaces that allow communication between software components from different sources (software and equipment vendors, universities, or companies).

CAPE-OPEN standards are based on universally recognized software technologies such as COM and CORBA. Furthermore, they are open, multiplatform, uniform and available free of charge.

For more information, please consult the CO-LaN web site: <http://www.colan.org>.

## About the Instructors

### **Michel PONS, Chief Technology Officer, CO-LaN**

Michel worked for over 20 years at TOTAL oil & gas company, serving in his last position as process simulation manager within the Engineering Division of the chemical branch. He has been involved in CAPE-OPEN activities for the last 10 years on behalf of the TOTAL group and is now working for CO-LaN, the organization supporting the CAPE-OPEN standards. Author of more than 60 publications, recipient of the Recent Achievement Award of the European Federation of Chemical Engineering CAPE Working Party.

### **Alain VACHER, IT Manager, ProSim**

Alain is in charge of software architecture and development and of maintaining ProSim's software at the highest technological level. His competences in the information technology field and his sound understanding of chemical engineering software architecture make him a recognized expert in the European industry.

## About AIChE's Annual Meeting



**November 12-17, 2006.**

**San Francisco, United States.**

**06 AIChE**  
Annual Meeting, San Francisco, CA

For R&D professionals, AIChE's Annual Meeting provides an open forum to present papers to fellow engineers and scientists from around the world. For students, the national conference is the ideal place to learn, network and receive recognition.

An emphasis of the meeting will be globalization and the diversity of industries the chemical engineering profession serves.

<http://www.aiche.org>

## About CO-LaN



**CO LaN**

CO-LaN (the CAPE-OPEN Laboratories Network) is a neutral industry and academic association promoting open interface standards in process simulation software. CO-LaN members are committed to making Computer Aided Process Engineering (CAPE) easier, faster and less expensive by achieving complete interoperability of CO compliant commercial CAPE software tools. CO-LaN supports and maintain CAPE-OPEN interface standards.

[technologyofficer@colan.org](mailto:technologyofficer@colan.org)

<http://www.colan.org>

## About ProSim



**ProSim**

ProSim provides state of the art simulation and optimization software designed for applications in the chemical, the refining, the gas treatment and the specialties chemical industries as well as in the pharmaceutical, the food processing and the energy industries. Its activities also comprise engineering process consulting and custom software development. Thanks to long term partnerships with major research centers and to substantial investment in R&D, ProSim continuously develops innovative software and has become a recognized player on the international market.

[info@prosim.net](mailto:info@prosim.net)

<http://www.prosim.net>

## Registration

**AIChE®** *Please contact AIChE for registration.  
All information is made available on their  
web site ("Event/Annual Meeting" section).*

### **AIChE**

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## Additional information



### **CO-LaN**

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**ProSim**

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