

- General Information
- Software download
- Standard Specification
- CO-LaN Catalog
- CO Support
- Requests for Bids
- News
 - Newslist
 - CO Update Issues
 - CO Update 06
 - CO Update 07
 - CO Update 08
 - CO Update 09
 - CO Update 10
 - > CO Update 11
 - Editorial
 - Latest News
 - Member Profiles
 - Technical Articles
 - SIG reports
 - Inner workings
 - User tips
- Links
- Home

CAPE-OPEN UPDATE, Volume 11

CAPE-OPEN UPDATE is a publication of the CAPE-OPEN Laboratories Network (CO-LaN), a non-profit consortium for the development of the CAPE-OPEN standard.

STAFF LISTING:

Kerry Irons, Editor

Editorial Board: Peter Banks, Jacques Bousquet, Bertrand Braunschweig, Ray Dickinson, Ronald-Alexander Klein, Werner Merk, Michel Pons, Jens Schmidt, Marcel Van Maasdam, Malcolm Woodman

CONTENTS

Editorial

- *CAPE-OPEN in Cannes*

Latest News

- *CAPE-OPEN Conference at San Francisco AIChE meeting*
- *ProSim training for CAPE-OPEN developers*

Member Profiles

- *The University of Tulsa*
- *Zhejiang University*
- *SimTech*
- *AixCAPE e.V.*
- *Caspeo*

Technical Information

- *Abstracts from key presentations at Cannes meeting*
- *REACTOR Special Interest Group formed*

SIG Reports

- *Special Interest Group charters and progress reports*

CO-LaN Board of Management and Annual Meeting minutes

- *Update on the inner workings of CO-LaN*

User tips and current issues

=====

CAPE-OPEN Update Subscription

If you want to «subscribe» or «unsubscribe» to CAPE-OPEN Update, please send an email to technologyofficer@colan.org with subscribe or unsubscribe as subject, respectively. If you need to contact the CO-LaN about the distribution list (if you have trouble unsubscribing or have questions about the list itself), please contact technologyofficer@colan.org.

- General Information
- Software download
- Standard Specification
- CO-LaN Catalog
- CO Support
- Requests for Bids
- News
 - Newslist
 - CO Update Issues
 - CO Update 06
 - CO Update 07
 - CO Update 08
 - CO Update 09
 - CO Update 10
 - CO Update 11
 - >Editorial
 - Latest news
 - Member profiles
 - Technical articles
 - SIG reports
 - Inner workings
 - User tips
- Links
- Home

CAPE-OPEN UPDATE, Volume 11

CAPE-OPEN UPDATE is a publication of the CAPE-OPEN Laboratories Network (CO-LaN), a non-profit consortium for the development of the CAPE-OPEN standard.

EDITORIAL

CAPE-OPEN in Cannes

Each year, the CAPE-OPEN Laboratories Network (CO-LaN) conducts its Annual Meeting, with several goals in mind. This year's meeting in Cannes, France was no exception! On March 9 and 10, the CO-LaN Management Board held its 2006 CAPE-OPEN Interoperability Showcase and Workshop events in conjunction with the CO-LaN Annual General Meeting. More than 50 people attended these events.

Feedback from those in attendance shows the very high value of meetings like this - our survey shows that participants gained a lot of insight and value from the presentations and workshops. The Interoperability Showcase is always a popular segment of CO-LaN meetings, and the Cannes session was (again) no exception. Discussions covered the full range of implementation including user examples, newly compliant software, and standards extension across the range of project types, users, and industrial segments. The application of CO compliant software continues to expand.

The CO-LaN Special Interest Groups (SIGs) reported their progress (details later in this issue) and a new REACTOR SIG is forming to work on this key area. Those interested in participating should contact Ignasi Palou-Rivera (ignasi.palou-rivera@bp.com), or Ray Dickinson (Ray.Dickinson@shell.com).

Another highlight of the Cannes meeting was the recognition of Fernando Aguirre, Heat Transfer Research, Inc, with the CAPE-OPEN Award for 2005. HRTI implemented the CAPE-OPEN Unit interface in their specialized engineering software suite - a globally used software package.

On a personal note, this will be my last issue as editor of the CO Update. I first became involved in CAPE-OPEN in 1998/99, when approached by Peter Edwards (DuPont) on the importance of Dow joining the Global CAPE-OPEN project (GCO). With Werner Merk's encouragement, I became Dow's representative for GCO, and following on, became editor of the CO Update for the CO-LaN. Since my retirement from Dow in 2004, I have continued in this role as a personal commitment to my CO-LaN colleagues. With time, however, my contact with the process world has become more distant, and so in the natural course of things my relevance has declined! So, I have taken the decision that CO Update needs an editor who is more active in CAPE and the CO effort. I've enjoyed bringing the news of CAPE-OPEN to you all, and I hope you have found it useful. I'm confident that the CO-LaN will continue to drive forward, bringing the best of interoperability to the CAPE community. Cheers to all!

Kerry Irons, Editor

=====

CAPE-OPEN Update Subscription

If you want to «subscribe» or «unsubscribe» CAPE-OPEN Update, please send an email to technologyofficer@colan.org with subscribe or unsubscribe as subject, respectively. If you need to contact the CO-LaN about the distribution list (if you have trouble unsubscribing or have questions about the list itself), please contact technologyofficer@colan.org

(c) CO-LaN, 2001-2006. All rights are reserved unless specifically stated otherwise.

- General Information
- Software download
- Standard Specification
- CO-LaN Catalog
- CO Support
- Requests for Bids
- News
 - Newslist
 - CO Update Issues
 - CO Update 06
 - CO Update 07
 - CO Update 08
 - CO Update 09
 - CO Update 10
 - CO Update 11
 - Editorial
 - Latest news
 - Member profiles
 - Technical articles
 - SIG reports
 - Inner workings
 - User tips
- Links
- Home

CAPE-OPEN UPDATE, Volume 11

CAPE-OPEN UPDATE is a publication of the CAPE-OPEN Laboratories Network (CO-LaN), a non-profit consortium for the development of the CAPE-OPEN standard.

LATEST NEWS

3rd US CAPE-OPEN Conference at the San Francisco AIChE Annual Meeting

The American Institute of Chemical Engineers Annual Meeting will be held in San Francisco, California on 12-17 November, 2006. The CO-LaN has planned its 3rd Annual US CAPE-OPEN conference to be a component of this meeting. As with past US CO Conferences (at US-EPA in Cincinnati, OH and at NETL in Morgantown, WV), there will be a broad range of presentations and discussions for CO users and developers. There will be opportunities for those new to the CO standards to learn where they can apply them and gain value. Those who have obtained success in implementation will be sharing their stories. Those who offer software solutions will demonstrate the power of interoperability. This will be an excellent opportunity to network with other CAPE professionals, learn how to capitalize on CO compliant software, share progress, and catch a glimpse of the future of this key industry standard.

If you have an idea for a presentation, go to the [AIChE website](#) and choose Topical D to submit abstracts till May 15. Next step is to register for the meeting and attend the CAPE-OPEN Conference.

ProSim training for CAPE-OPEN developers

ProSim, Toulouse, France, February 2006 - Press Release: created for Rhodia a training session on CAPE-OPEN interface implementation. In order to progress with implementing CAPE-OPEN interfaces in their software tools, Rhodia asked ProSim SA to develop a specific training session based on ProSim experience in both the PPDB and the THRM interface specifications.

This training session was specifically created for Rhodia and mainly addressed CAPE-OPEN interfaces relative to physico-chemical properties databases and thermodynamic calculation servers. While relying on ProSim's experience in the domain (ProSim finalized the PPDB tester for CO-LaN and developed the property server Simulis Thermodynamics), this training aimed at providing Rhodia engineers the necessary know-how to integrate CAPE-OPEN in the development of in-house applications. The session covered the fundamental notions of COM middleware, the specifications common to objects and domains covered by the CAPE-OPEN standards, the PPDB specification used to access pure components databases as well as the "Thermo" specification used to access thermodynamic calculations. *"The expertise brought by ProSim allows us to consider future developments within the framework of an industry recognised standard"* say Patrick Auvray, World Simulation Manager at Rhodia.

ProSim is an active member of CO-LaN and contributes to the development of the CAPE-OPEN standards, in particular through its software component Simulis Thermodynamics, dedicated to thermodynamic property calculation and phase equilibrium.

About ProSim

ProSim is an independent company, founded in 1989, with headquarters in Labège (Toulouse – France). The company provides state of the art simulation and optimization software that allows the process industries to increase their efficiency and their return on investment. ProSim solutions are designed for applications in the chemical, refining, gas treatment, and specialty chemical industries as well as in the pharmaceutical, food processing, and energy industries. ProSim also provides engineering process consulting and custom software development.

ProSim solutions are used to improve process design, increase plant efficiency and reduce their impact on environment. 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.

The success of the company comes from the efficiency and the robustness of the solutions and of the calculation packages it offers and from the quality of the services it provides. The expertise and the know-how of ProSim personnel covers vast domains, including thermodynamics, physico-chemical phenomenon modeling, process simulation, energy integration, optimization techniques, numerical methods, software architecture, and GUI development. ProSim is active in 43 countries around the world, with over 500 customers including major users like Air Liquide, Akzo Nobel, Alfa Laval, Arkema, Braskem, Ciba, Cognis, EDF, Linde, Pharmacia, Praxair, Schering, Sintef, Sanofi-Synthelabo, Technip, Total, and Wacker. For more information, please visit: <http://www.prosim.net>.

Contact :

Gilles HAMEURY

ProSim SA

Stratège Bâtiment A

BP 2738

F-31312 LABEGE Cedex

FRANCE

Tel.: +33 (0)5 62 88 24 30

Fax: +33 (0)5 62 88 24 39

[e-mail : info@prosim.net](mailto:info@prosim.net)

=====
CAPE-OPEN Update Subscription

If you want to «subscribe» or «unsubscribe» CAPE-OPEN Update, please send an email to technologyofficer@colan.org with subscribe or unsubscribe as subject, respectively. If you need to contact the CO-LaN about the distribution list (if you have trouble unsubscribing or have questions about the list itself), please contact technologyofficer@colan.org

(c) CO-LaN, 2001-2006. All rights are reserved unless specifically stated otherwise.

- General Information
- Software download
- Standard Specification
- CO-LaN Catalog
- CO Support
- Requests for Bids
- News
 - Newslist
 - CO Update Issues
 - CO Update 06
 - CO Update 07
 - CO Update 08
 - CO Update 09
 - CO Update 10
 - CO Update 11
 - Editorial
 - Latest News
 - > Member Profiles
 - Technical Articles
 - SIG reports
 - Inner workings
 - User Bss
- Links
- Home

CAPE-OPEN UPDATE, Volume 11

CAPE-OPEN UPDATE is a publication of the CAPE-OPEN Laboratories Network (CO-LaN), a non-profit consortium for the development of the CAPE-OPEN standard.

MEMBER PROFILES

The University of Tulsa

The University of Tulsa and especially its research activities in the domain of petroleum engineering has been approved for membership by the CO-LaN Management Board. The University's Department of Petroleum Engineering leading and participating in projects like TUWAX (Wax Deposition in Pipelines), TUFFP (Fluid Flow in Pipelines), and TUHDP (Hydrate Deposition in Pipeline & Wells). Contact Professor Cem Sarica (cem-sarica@utulsa.edu phone 1-918-631-5154) or www.pe.utulsa.edu.

Zhejiang University

The Intelligent Plant Group within the National Key Laboratory of Industrial Control Technology at Zhejiang University, Hangzhou, People's Republic of China is involved in a project called Internet-based Virtual Factory Integrating Process Simulation with Enterprise Simulation.

The project intends to establish a virtual refinery that integrates process simulation with enterprise simulation and can be used by remote users through internet or intranet. In this virtual factory, process simulation platform, which contains hardware-in-the-loop simulation, provides an open environment for modelling and simulating various industrial processes, while enterprise simulation platform which consists of methods and tools for enterprise modelling and analysis, supports the running of MES and ERP software. Further more, virtual reality technology is introduced to develop the user interface of the system.

The project will develop an open modelling environment so that users can model any unit and equipment operations or enterprise business in a refinery. The project intends to use the CAPE-OPEN standards in order to offer the potential to couple different modelling tools more flexibly.

Contact Prof. Dr. Rong Gang: grong@iipc.zju.edu.cn.

SimTech

SimTech was founded in 1991 as a spin-off from Graz University of Technology, applying several years of research and development in the area of modelling and analysis of power processes. In 1992 Simtech started to commercialize the heat balance code IPSE. IPSE made it possible to create process models graphically by choosing components from a menu. IPSE was the first and for several years the only Microsoft Windows based heat balance code commercially available. In 1996 SimTech expanded their activity by introducing the modelling package IPSEpro. IPSEpro is a completely open modelling environment. In 1997 IPSE has been merged with IPSEpro, making IPSEpro SimTech's key product. In 2000 SimTech installed the first on-line optimization system based on IPSEpro. This was the first step in extending the focus of IPSEpro to the entire lifecycle of plants.

SimTech is considering introducing CAPE-OPEN interfaces in IPSEPro in order to boost IPSEPro openness. Contact: www.simtechnology.com/english/SimTech.php

AixCAPE e.V.

The AixCAPE consortium (www.aixcape.org) supports the use of research results not available in commercial software today. Technology assessment and benchmarking are performed against cases of industrial relevance in close collaboration with industrial and academic partners. As a result, industrial end users gain deeper knowledge about the potential of novel methods.

Several projects to improve academic prototypes and better integrate them into engineering work processes have been carried out in cooperation with member companies AirProducts, BASF, Bayer, Degussa, Dow, Lanxess, Shell, and Arkema/Total. Major activities are in the areas of data analysis, process synthesis, process model management, and tool integration including the use of CAPE-OPEN technologies.

As a result of one of those projects, an academic shortcut model developed at Systems Engineering (Prof. Dr.-Ing. W. Marquardt, RWTH Aachen - www.lpt.rwth-aachen.de) for quick assessment of feasibility and minimum energy demand of distillation columns has been made available as a CAPE-OPEN compliant unit operation.

AixCAPE has been in close contact with CO-LaN since AixCAPE foundation in 2003 and part of the work for the shortcut unit operation project was carried out as a consultancy action together with CO-LaN and Aspen Technology.

Lars von Wedel (vonwedel@aixcape.org) is responsible for tool integration and CAPE-OPEN technologies at AixCAPE and has worked in the European CAPE-OPEN and Global CAPE-OPEN projects. Lars is interested in further developing standards for simulation software as part of the AixCAPE membership in CO-LaN. It is expected AixCAPE will have an important role in the Methods&Tools SIG recently created. Contact AixCAPE: info@aixcape.org

Caspeo

Caspeo (www.caspeo.net) is providing services and products implementing innovative techniques in the field of process analysis and destined to industries of raw material transformation. The activity of Caspeo is centered on Material Balance Engineering. In the processing industries, a good balance of the manipulated, transported and processed material gives a more accurate picture of the process operation. The balance is based on different types of process measurements. These measurements are often obtained through sampling the material. The data reconciliation technique by statistically coherent material balance, improves the quality and the range of the measurement. The predictive material balance using modelling and numerical simulation is an efficient tool for process design and optimization.

Contact: info@caspeo.net

=====

CAPE-OPEN Update Subscription

If you want to «subscribe» or «unsubscribe» CAPE-OPEN Update, please send an email to technologyofficer@colan.org with subscribe or unsubscribe as subject, respectively. If you need to contact the CO-LaN about the distribution list (if you have trouble unsubscribing or have questions about the list itself), please contact technologyofficer@colan.org

(c) CO-LaN, 2001-2006. All rights are reserved unless specifically stated otherwise.

CAPE-OPEN UPDATE, Volume 11

CAPE-OPEN UPDATE is a publication of the CAPE-OPEN Laboratories Network (CO-LaN), a non-profit consortium for the development of the CAPE-OPEN standard.

SIG Charters and Progress Reports

The CO-LaN Special Interest Groups (SIGs), are up and running to refine existing standards, expand them as needed, and define new standards. The current SIGs, SIG leaders, and current focus areas are:

- **INTEROPERABILITY** - Peter Banks, BP. Interoperability Support for testing software interoperability.
- **UNIT OPERATIONS** - Richard Baur, Shell Global Solutions B.V.. For implementation, maintenance, and management of existing interfaces. Expansion into dynamics.
- **THERMODYNAMICS** - Werner Drewitz, BASF AG. For implementation, maintenance, and management of existing interfaces. Expansion into polymers and solids.

INTEROPERABILITY SIG - contact Peter Banks, BP

Interoperability SIG Members:

- Michael Gobler - AspenTech
- Malcolm Woodman; Peter Banks - BP
- Pascal Roux - IFP
- Costas Pantelides - PSE
- David Bluck; David Jerome - SimSci
- Michel Pons - CO-LaN

Interoperability SIG Main Activities in 2005

- Develop a specification for the first production version of the CO Logging and Testing Tool (COLTT)
- Provide a comprehensive suite of tests for COLTT
- 77 combinations of PME and PMC
- Appoint SHMA to work with the CTO on COLTT
- Continue to carry out interoperability testing using the CO-LaN testing environment.

Current status of COLTT

- 42 of 77 scenarios have been set up and run with COLTT prototype
- Two problems have been identified
 - Threading - solved
 - Persistence – being resolved
- Latest version of COLTT will be available at the Workshop

Interoperability SIG Plans for 2006

- Apply the full set of test scenarios to the production version of COLTT and revise as necessary
- Review the other interoperability facilitation tools, eg Testers, Wizards, etc., and make plans accordingly
- Continue to carry out interoperability testing using the CO-LaN testing environment, where appropriate

UNIT OPERATIONS SIG - contact Richard Baur, Shell Global Solutions B.V.

UNIT SIG Members:

- David Cameron - Fantoft Process
- Tommi Karhela - VTT
- Ben Keeping - Process Systems Enterprise (PSE) Ltd.
- Costas Pantelides - PSE and Imperial College
- Pascal Roux - IFP
- Didier Paen - Realisation en Systemique Industrielle
- Donald Perreira - BP plc
- Marcel van Maasdam - Shell Global Solutions B.V.
- Richard Baur - Shell Global Solutions B.V.

UNIT SIG Charter: Develop, maintain and promote unit operation interface specifications

UNIT SIG Key Responsibilities:

- Maintain and manage existing interface specifications (revisions to improve design, performance/speed and robustness based on user input)
- Assess and prioritize expansions of interface specifications
- Prioritize registered issues and give recommendations on how they may be resolved
- Promote and support the use of the CAPE OPEN interface for Unit Operations

Unit SIG 2005 Priorities & Status

Dynamic Unit

- Pilot implementation in INDISS (RSI): Didier Paen
 - IFP pipe model is running in INDISS
- Pilot implementation in D-SPICE (Fantoft Process): David Cameron
 - first version of the interface
- Complete specification document (PSE Ltd): Ben Keeping
 - Done. Ready for publication

Steady State Unit

- UNIT implementation in gPROMS (PSE)
 - CAPE-OPEN Unit socket applied in the VPDM project
 - gPROMS in Aspen Plus
- UNIT implementation in UniSim
 - CAPE-OPEN Thermo & Unit Operation
- Testing environment COCO (AmsterChem)
 - Interoperability tests: e.g. ChemSep
- Open Source PMCs & PME (US EPA)
 - Based on .Net technology

Dissemination

- WCCE7 paper (World Congress of ChemEngng 7, Glasgow): Presentation by Didier Paen

Unit SIG 2006 Plan

- Publishing of the interface specifications for dynamic unit operations
- Finalization of D-Spice Cape-Open interface
 - demo including dynamic units
- Reviewing and possibly extending the standards
 - equation oriented unit operations
 - termination, tracing, reporting and interrupts

THERMO SIG - contact Werner Drewitz, BASF AG

THERMO SIG Members

- Michael Halloran - AspenTech
- Werner Drewitz - BASF
- Jens Schmidt GL till Sept - Dow Chemical
- Richard Szczepanski - Infochem Computer Services
- Matthias Pogodda - Tech. Univ. Hamburg-Harburg
- Alan Scott - TUV NEL (PPDS)
- Eric Hendriks - Shell Global Solutions

- Richard Baur - Shell Global Solutions
- Michel Pons - CO-LaN
- Jasper van Baten - AmsterChem
- Suphat Watanasiri - AspenTech
- Jean-Charles de Hemptinne - IFP

THERMO SIG Phone confs and meetings

5 Phone Conferences and a face to face meeting in London

THERMO SIG - New Charter: Develop, maintain and promote thermodynamic interface specifications

THERMO SIG – Key Responsibilities:

- Maintain and manage existing interface specifications (revisions to improve design, performance/speed and robustness based on user input)
- Assess and prioritize on expansions of interface specifications
- Manage the development of the agreed upon expansions
- Help organizations to develop implementations of the Thermo standards

THERMO SIG – 2005 Achievements

- Broad Testing of THERMO Standard V 1.0 and V 1.1
- XSupporting organisations implementing Thermo 1.0
- Finalizing of THERMO Standard V 1.1
- Started to handle PetroFrac Matters

THERMO SIG –Goals for 2006

- Launch Review of Standard V 1.1 to CO community to become officially finalized
- Commercial Implementations of V 1.1
 - ASPEN
 - Multiflash
 - ...and many others
- Incorporation of Petroleum Interface in Thermo Standard
 - more participation of oil companies is needed

THERMO SIG – Deliverables for 2006:

- Version 1.1 of the Thermodynamic and Physical Properties interface specification
- Revised Petroleum Fractions interface specification for Refinery Reactor models

=====

CAPE-OPEN Update Subscription

If you want to «subscribe» or «unsubscribe» CAPE-OPEN Update, please send an email to technologyofficer@colan.org with subscribe or unsubscribe as subject, respectively. If you need to contact the CO-LaN about the distribution list (if you have trouble unsubscribing or have questions about the list itself), please contact technologyofficer@colan.org

(c) CO-LaN, 2001-2006. All rights are reserved unless specifically stated otherwise.

CAPE-OPEN UPDATE, Volume 11

CAPE-OPEN UPDATE is a publication of the CAPE-OPEN Laboratories Network (CO-LaN), a non-profit consortium for the development of the CAPE-OPEN standard.

TECHNICAL ARTICLES

Abstracts of the CO-LaN Interoperability Showcase

[Interoperability Support SIG achievements in 2005](#) by Peter Banks (BP)

[A look into the CAPE-OPEN kitchen of COCO](#) by Dr Jasper van Baten (Amsterchem)

Abstract: COCO by AmsterCHEM is a component based CAPE-OPEN simulation environment. It implements a flow sheeting environment, unit operations, a thermodynamics package, and a reaction package manager. The presentation shows an overview, test cases and demonstrates interoperability. COCO has proven to be a valuable tool for development and interoperability testing.

[HiDiC in Aspen Plus](#) by Gregor Fernholz (PSE Ltd) and Michel Pons (CO-LaN CTO)

Abstract: One of the major achievements of CAPE-OPEN is certainly the enhanced interoperability of simulation software packages enabling the end user to simultaneously take full advantage of the strengths of several software packages and to minimise the model implementation effort at the same time. This presentation demonstrates how a rigorous state-of-the-art model of a heat integrated distillation column (HiDiC) is implemented and simulated in gPROMS, exported into a CAPE-OPEN Unit plug and finally used in an Aspen Plus flowsheet.

[Beyond compliance](#) by Joseph Holmes (HTRI)

Abstract: The focus of the talk is to encourage the software vendors and CO-LaN itself to look at issues beyond technical compliance with the CAPE-OPEN standards to drive acceptance of these interfaces in the marketplace. The paper presents some examples of work HTRI is doing in this direction.

[CAPE and Property Packages: Air Liquide approach](#) by Philippe Arpentinier (Air Liquide)

Abstract: The presentation summarizes first the evolution of the Air Liquide demand for thermodynamic properties (pure substances and mixtures) since the beginning of the nineties and the main difficulties currently encountered in R&D as well as in the Engineering Department for the estimation of thermodynamic properties and more generally on the level of process simulation due to the large variety of situations met with a lack of structure and tools for storage and re-use of information. Then the main actions decided to answer to the evolution of the demand for thermodynamic properties and to solve the current difficulties are presented: i) adoption of a thermodynamic standard usable at each step of the cycle of development of a process (pure substances: DIPPR; mixtures: Simulis-Prosim), ii) development of the concept of open "thermodynamic property package" dedicated to an application (interoperability of models, reproducibility of results, perpetuation of the in-house knowledge, improvement of the quality of accessible information for a relevant later re-use), iii) adaptation of the existing tools and development of the new tools with the CAPE-OPEN standard.

[UniSim CAPE-OPEN Thermo and Unit Operation](#) by Murugesh Palanisamy (HTSL)

Abstract: With UniSim CAPE-OPEN as an extension to UniSim Design Suite, simulation solutions will be enhanced providing customers to access other chemical process models built based on the CAPE-OPEN interface standard. UniSim CAPE-OPEN comprises UniSim CAPE-OPEN Socket and UniSim CAPE Thermo Plug In. UniSim CAPE-OPEN socket allows any third party CAPE-OPEN compliant Thermo packages and Unit Operations to plug and play within UniSim Flow sheeting environment. For example, a complex unit operation model built using gPROMS can be plugged into UniSim steady state design suite with which process capabilities of gPROMS could be used. Further, UniSim flow sheet can also leverage other vendor thermo property packages like InfoChem MultiFlash equilibrium package capabilities through UniSim CAPE Thermo Socket interface. Besides, UniSim's powerful advanced thermo engine can be packaged and exported as CAPE compliant Thermo component and can be made available to other simulator vendor's packages.

[INDISS with Thermo and Unit](#) by Didier Paen (RSI)

Abstract: RSI is involved in CAPE-OPEN Unit SIG and has developed inside INDISS Process Modelling Environment an implementation of dynamic CAPE-OPEN unit operations. The latest development done is the steady state resolution with CAPE-OPEN unit operations. Steady state resolution is adapted for initialization of dynamic simulation, but the switch to dynamic resolution requires some specific constraints on network. After steady state resolution, the dynamic mode can be activated to test transient behaviour. This feature has been used with IFP CAPE-OPEN pipelines. Tests have been done also with external thermodynamic packages as Simulis Thermodynamics from Prosim SA and we are now evaluating testing solutions with CO-LaN support.

[Thermodynamic SIG achievements in 2005 by Werner Drewitz \(BASF AG\)](#)

[The CAPE-OPEN interface to COSMO-RS, a novel a priori predictive method for solution phenomena and fluid phase thermodynamics](#) by Frank Eckert

(Cosmologic), Jasper van Baten (Amsterchem), Richard Baur (Amsterchem)

Abstract: The CAPE-OPEN interface to the COSMOtherm program is presented. COSMOtherm is the premium software of the COSMO-RS method [1], which is a novel method for the a priori prediction of activity coefficients and vapor pressures of almost arbitrary chemical compounds in liquid solvents and mixtures.

[SolidSim - A novel simulation system makes use of the CAPE-OPEN standard](#) by

M.Pogodda, C. Reimers, D. Schwier, E.-U. Hartge, J. Werther, G. Gruhn (Hamburg Technical University)

Abstract: To improve the acceptance of the novel simulation system SolidSim interoperability with established simulation systems and thermodynamic packages was an important point. This presentation gives a short summary on how this was achieved using the CAPE-OPEN standards. The difficulties which originate from the fact SolidSim is focusing on processes including solids are outlined. Special focus is put on the integration of physical property packages since simulations can only be performed if all necessary physical properties are available. By way of example the interoperability with Multiflash using the 1.1 CAPE-OPEN thermo standard is demonstrated.

[An industrial case study for the upgrade of an existing software interface to the CAPE-OPEN standard](#) by Alan Scott (TÜV-NEL)

Abstract: This presentation describes a project involving TÜV NEL Ltd (suppliers of PPDS software), ABB Engineering Solutions (suppliers of PEL software) and INEOS Fluor (licencees of PEL and ASPEN Plus software). INEOS Fluor is a leading supplier of specialist services in Fluorine based processes. For many years the company has licenced modules from the PEL software suite for general applications, and also use Aspen Plus for some simulation projects. Specific thermo models have been developed within the PEL software for some key processes. To access these models, an interface was written (by ABB-PEL) to provide this information to Aspen Plus in the form of User Models. More recently the PEL software has been adapted to use the PPDS ThermoServer as the property and phase equilibrium calculation engine. The new models were also added to the PPDS code. Although the Aspen Plus interface could

have been rewritten, it was decided that this provided an excellent opportunity to use the CAPE-OPEN methodology to provide a flexible and easily maintainable interface. The presentation gives a full example of creating a Property Package, and running a typical calculation directly in PEL-PhysPack and then the same calculation within a simulation in Aspen Plus through the CAPE-OPEN interface.

[Beyond VLE – a CO Thermo 1.1 Property Package using MultiFlash](#) by Richard Szczepanski (Infochem)

Abstract: One of the important objectives of the latest CO 1.1 Thermo standard is to extend and generalize the types of phase equilibrium calculations that can be handled. This presentation reports on the practical experience of producing a Property Package implementing the new standard and show examples of calculations involving multiple liquid and solid phases.

[UNIT SIG achievements in 2005](#) by Richard Baur (Shell Global Solutions)

[gPROMS CAPE-OPEN Unit socket as applied in the VPDM project](#) by Thomas Williams (PSE Ltd)

Abstract: The Virtual Plant Demonstration Model (VPDM) Project is a major on-going collaborative R&D initiative in the UK power industry. Its main aim is to support "arms-length" inter-organisational collaborative modelling, allowing companies to make their models available in a strictly controlled manner to collaborating organisations, with which they may potentially be competitors in different contexts. VPDM has adopted the CAPE-OPEN standards. The presentation describes three software packages that PSE have developed to support this project: a CAPE-OPEN unit socket for gPROMS, a simple framework for making legacy unit codes CAPE-OPEN compliant and a framework for making CAPE-OPEN units available securely over the internet.

[ChemSep in motion](#) by Harry Kooijman (ChemSep)

Abstract: Report is made of the progress on the interoperability of the ChemSep CAPE-OPEN Unit Operation with commercial flowsheeting packages Aspen Plus (AspenTech), PRO/II (SIMSCI), and Aspen HYSYS (AspenTech), as well as with the flowsheeting package COCO (AmsterCHEM) which was designed completely from CAPE-OPEN principles. A simple C3/C4 splitter with a purity specification is used as a test case. Tested was the capability to run the ChemSep column unit operation in the flowsheet, whether it was possible to obtain thermodynamics and pure component data from the flowsheet, and whether the flowsheet allowed changing the ports of the unit (that is feeds/products of the column). All column operations give very similar numerical answers for the C3/C4 splitter test case. ChemSep LITE is now CAPE-OPEN and available for free, download it from www.chemsep.com. Interoperability of ChemSep-LITE and COCO was illustrated by simulation of a complete three column cryogenic Air Separation Unit with crude Argon production, using exclusively CAPE-OPEN unit operations and thermodynamics.

[Custom Process Unit Models in a Flowsheet Simulator - User Experiences](#) by Wilma Hensen, Jan Willem Verwijs, Philippe Hayot (Dow)

Abstract: A study has been done to incorporate generic custom models of a membrane unit and a trickle bed reactor (gPROMS, ACM) in an Aspen Plus flowsheet simulation. The presentation highlights experiences with respect to model initialisation and model re-initialisation (during flowsheet convergence iterations).

[The use of CAPE-OPEN modules – demonstrated in Aspen Plus](#) by Martin Breil (DTU-IVC-SEP)

Abstract: The IVC-SEP research centre has investigated and developed a thermodynamic Property Package containing four thermodynamic models. The strength of this package is that it offers its users the benefits of the CPA and PC-SAFT models. These thermodynamic models are capable of handling mixtures of compounds with strong hydrogen bonds (associating compounds), such as water, alcohols, or carboxylic acids. Besides the thermodynamic property package, the IVC-SEP has produced a unit operation that combines the built-in thermodynamic models of the process simulator with our own algorithm of the PT-flash.

[PLATINA](#) by Pascal Roux and Martin Gainville

Abstract: IFP and Total are involved in a collaborative R&D project whose aim is to develop a tool including platform and components to allow user to perform steady state and transient simulation of multiphase flow from the reservoir to the top side facilities. One of the main idea is to address the issue of consistent data set and physical models (thermodynamic and hydrodynamic) in the field of flow assurance. A live demonstration is performed on a real case. The assembly of native and CAPE-OPEN Unit operation demonstrates inter operability. Moreover, interchangeability is shown while changing thermodynamic component from INDISS native thermodynamic to MultiFlash.

[Distributed CAPE-OPEN Simulation of Oilfield Production Networks on PC Clusters](#) by Laurent Pigeon

Abstract: Process simulations are more and more evolving to characterize the transient behaviours of unit operations composing a process flowsheet. Such simulations might require a huge computational effort in order to sustain the accuracy of some of the unit operations. Pipe unit operations represent a good example of them. Depending of the requested accuracy and the complexity of their model (number of meshes, inner iteration loop to solve flow/pressure equations), the completion of one time step for only one unit operation can require several seconds. Previous results based on steady state simulations have proved that such CAPE-OPEN simulations can benefit (in terms of performance) from being launched in a distributed way using clusters of PCs oriented architecture. We will present our approach to solve this problem on CAPE-OPEN compliant dynamic simulations. We also propose a demo, based on INDISS simulator, simulating oilfield production networks on a "little cluster" of workstations.

[IFP UNIT Wizard for C++ code](#) by Pascal Roux

Abstract: IFP has developed a Wizard to help engineers in the development of CAPE-OPEN Unit Operations. This tool was developed for internal use and it seemed worthwhile to give it to CO-LaN. The presentation focuses on the motivations of the development of such a tool and on a demonstration where a very simple unit operation is created and connected into PRO/II.

[Development of a CAPE-OPEN Complaint Process Modelling Environment and Process Modelling Components in Microsoft .NET](#) by William Barrett

Abstract: The CAPE-OPEN middleware standards were created to allow process modelling components (PMCs) developed by third parties to be used in any process modelling environment (PME) utilizing these standards. The CAPE-OPEN middleware standards were originally based upon both Microsoft's Component Object Model (COM) and the Object Management Group's (OMG) Common Object Broker Architecture (CORBA). Since the inception of the CAPE-OPEN project, Microsoft updated COM to the .NET Framework. This paper discusses the implementation of PMCs in .NET and the interoperability issues associated with using COM-based CAPE-OPEN compliant PMCs in a .NET based PME, and the testing of .NET-based unit operations in the CAPE-OPEN Tester.

[Experiences on implementing CAPE-OPEN components using the .NET framework](#) by Lars von Wedel

Abstract: The .NET framework has been introduced a few years ago by Microsoft as the upcoming technology for software development on Microsoft Windows. Numerous changes and improvements over COM, the current middleware integrated into Windows, have been made available as part of this framework. The talk briefly introduces the underlying principles of the framework and important changes over current technology. Further, experiences from implementing a CAPE-OPEN compliant unit operation developed using .NET in combination with existing code written in C will be shared. Especially questions regarding infrastructural issues such as error handling, implementing persistence, and user interfaces will be discussed. The talk will summarize open issues to be resolved in order to achieve interoperability between CAPE-OPEN compliant PMEs and PMCs based on current COM an future .NET technology.

A new SIG is forming within CO-LaN. The focus is refinery reactors and reactor engineering. The leader of this SIG is Ignasi Palou-Rivera (Ignasi_Palou-Rivera@bp.com). The SIG will focus on extending the CO standard in the reactor area and developing a prototype. Please contact him if you have interest in this key technology area.

Simulation Of Refinery Reactor Scenarios

Many of the concepts in this short document have been extracted or inspired by the Open Interface Specification: Petroleum Fractions Interface version 2 in the CO-LaN website. The reader is strongly advised to refer to it as background material.

There are two different situations when using refinery reactor models in a simulation environment:

- **Continuous properties:** There is a single slate of petroleum fractions (as defined by a series of cut points) for the whole flowsheet. The properties of the petroleum fractions (MW, critical properties, and thermo properties defined from them) can change per stream. This is, the properties of NBP-XXX (petroleum fraction defined by a XXX degree cut point) might be different in stream Y than those in stream Z.
- **Non-continuous properties:** Thermodynamic properties for petroleum fractions are defined for the whole flowsheet. Multiple slates of petroleum fractions are needed in this case to compensate for the non-changing nature of the properties. When properties change (i.e. at the outlet of a refinery reactor) a new set of petroleum fractions needs to be used to compensate for the change in properties. The co-existence of several petroleum fraction slates implies the need for a mixing operation and corresponding unit.

Two scenarios will be presented to deal with the two cases above. In both cases the reactor unit needs to communicate to the simulator executive that it is a refinery unit. The simulator executive then needs to provide a material object containing petroleum fraction properties (e.g. octane number(s), distillation curves, etc.)

There is another important architectural issue related to the above two cases: whether the reactor model needs to be made aware of the simulator's ability to support continuous properties or not. Naturally this is a non-issue when the simulator does support continuous properties. When continuous properties are not supported by the simulator, any adjustments could be made in two different places:

- a) Refinery reactor interface wrapper on the simulator side.
- b) Refinery reactor interface wrapper on the reactor side.

Case a) provides a cleaner architectural solution as it keeps the reactor side independent from any non continuous property support. However, the implementation of this solution might be more involved especially in the case of a reactor with more than one differently defined inlet. This situation is addressed in more detail in scenario 2. see below.

Continuous Properties Scenario

Conceptually this is a simple scenario:

- a) When the reactor is initialized, it tells the simulation executive of its refinery nature so that it has access to all specific refinery properties in the material object.
- b) The reactor inlets are defined by the simulator. The inlets' composition is expressed by a single set of components: some of them real pure components, some "representative" pure components, and a single slate of petroleum fractions. In this scenario there is no problem with a refinery reactor having more than one inlet as they are defined using the same composition basis.
- c) The reactor performs its calculations (possibly using the refinery material

object from the simulator executive), and then defines its outlets. All of the material outlets will be defined using the same component set as the inlets. The refinery outlets will also redefine the properties of the petroleum fraction components present in the flowsheet.

Non-Continuous Properties Scenario

- a) Same as a) in scenario 1.
- b) As in the continuous properties case the simulator defines the inlets to the reactor. However depending on the reactor's awareness of the simulator's support of continuous properties, different scenarios are supported:
 - i. Reactor is not aware of lack of support for continuous properties: any unit would expect all the inlets to be defined using the same composition basis. Therefore when the unit has more than one inlet and they are using different petroleum fraction slates one of two operations need to be performed by the simulator:
 - a. Mixing the inlets creating a new slate of petroleum fractions and then use it to express the mixed inlet stream.
 - b. Create a new slate of petroleum fractions to use in expressing the composition of all the inlets, but leaving the inlet streams unmixed. (Calculating the new slate of fractions is indeed a mixing operation, but the inlet streams are then left unmixed.)
 - ii. Reactor is aware of lack of support for continuous properties: the reactor model takes care of the inlet compositions and any transformation.
- c) Similar to c) for the continuous properties case. However, the outlet composition definition would be different depending on the reactor's awareness:
 - i. Reactor is not aware of lack of support for continuous properties: the simulator interprets the command to re-define the petroleum fractions properties as needing to create a new slate of petroleum fractions with the specified properties and express the outlet compositions using this new slate of petroleum fractions.
 - ii. Reactor is aware of lack of support for continuous properties: the reactor takes care of the creation of the new slate of petroleum fractions with their own properties and expressing the outlet composition using these petroleum fractions.

A fundamental point of the two ii scenarios is that the refinery reactor model would be unchanged and unaware of its residence in a continuous or non-continuous properties simulation executive. The simulation executive would be responsible for interpreting the reactor requests (e.g. update of petroleum fraction properties) in the appropriate way, and to provide the necessary facilities (e.g. special mixer), including their inclusion in the flowsheet, for the use of refinery reactors. Support for continuous properties is a characteristic of the simulation executive and therefore all responsibilities derived from them would stay with the simulator.

Chemical Characterization

Petroleum fractions do a physical characterization of the oil composition. Pure component compositions are both physical and chemical characterizations of the oil. Representative pure components are an approximate physical and chemical characterization. Historically petroleum fraction representations were created for modelling non-reactive operations (e.g. crude unit) where a chemical characterization is not needed. In refinery reactor operations a chemical characterization of the oil is needed. Therefore when the inlet oil is characterized by petroleum fractions (and representative components too, to a lesser degree) a chemical representation of the oil should accompany its physical representation. Although in widespread use in specialized refinery reactor models, these chemical characterizations are not incorporated into existing simulators and currently need to be adapted using user-defined variables. It is necessary that the refinery reactor interface provides an explicit implementation of a general chemical characterization array for any oil stream.

One possible way to incorporate this chemical would be to extend the petroleum fractions interface, both in scope and in name. These extended fractions should encompass petroleum definitions both at the physical and chemical levels.

Refinery Reactor Prototypes

Two different units should be used in order to prototype the implementation of the refinery reactor interface: the first one is a complex mixer/splitter used to test any issues with combining, and updating (or creating) petroleum fractions and chemical characterizations of oils; the second one is a simple lumpers/de-lumper used to test issues when changing the basis for the oil's characterizations.

Complex Mixer/Splitter:

This unit could be implemented either as a single complex unit, or as two simple connected units. Its implementation in a non-continuous properties situation would specifically test the issues described in 10. above. An important advantage of using a mixer/splitter, instead of a proper chemical reactor, is avoiding any IP-related issues without sacrificing any testing goals.

Lumper/De-Lumper:

It would be possible to test the change of the composition basis (decreasing, lumping, or increasing, de-lumping, the number of components in the basis) using the unit prototype. However this would result in a quite complex prototype and would complicate identifying and resolving any issues. Therefore, it is recommended that a second prototype unit is included: a simple lumping/de-lumping unit.

=====

CAPE-OPEN Update Subscription

If you want to «subscribe» or «unsubscribe» CAPE-OPEN Update, please send an email to technologyofficer@colan.org with subscribe or unsubscribe as subject, respectively. If you need to contact the CO-LaN about the distribution list (if you have trouble unsubscribing or have questions about the list itself), please contact technologyofficer@colan.org

(c) CO-LaN, 2001-2006. All rights are reserved unless specifically stated otherwise.

- General Information
- Software download
- Standard Specification
- CO-LaN Catalog
- CO Support
- Requests for Bids
- News
 - Newslist
 - CO Update Issues
 - CO Update 06
 - CO Update 07
 - CO Update 08
 - CO Update 09
 - CO Update 10
 - CO Update 11
 - Editorial
 - Latest News
 - Member Profiles
 - Technical Articles
 - SIG reports
 - > Inner workings
 - ACM 2006
 - User tips
- Links
- Home

CAPE-OPEN UPDATE, Volume 11

CAPE-OPEN UPDATE is a publication of the CAPE-OPEN Laboratories Network (CO-LaN), a non-profit consortium for the development of the CAPE-OPEN standard.

CO-LaN INNER WORKINGS: MANAGEMENT BOARD

Meetings Summary - to be completed

The Management Board in these meetings: Peter Banks (BP), Jacques Bousquet (Total), Bertrand Braunschweig (IFP), Celeste Colantonio (Shell), Ray Dickinson (Shell), Ronald-Alexander Klein (BASF), Werner Merk (Dow), Hans Pinggen (Shell), Michel Pons (CO-LaN), Jens Schmidt (Dow), Marcel Van Maasdam (Shell), Malcolm Woodman (BP)

=====

CAPE-OPEN Update Subscription

If you want to «subscribe» or «unsubscribe» to CAPE-OPEN Update, please send an email to technologyofficer@colan.org with subscribe or unsubscribe as subject, respectively. If you need to contact CO-LaN about the distribution list (if you have trouble unsubscribing or have questions about the list itself), please contact technologyofficer@colan.org

(c) CO-LaN, 2001-2006. All rights are reserved unless specifically stated otherwise.

- General Information
 - Software download
 - Standard Specification
 - CO-LaN Catalog
 - CO Support
 - Requests for Bids
 - News
 - Newslist
 - CO Update Issues
 - CO Update 06
 - CO Update 07
 - CO Update 08
 - CO Update 09
 - CO Update 10
 - CO Update 11
 - Editorial
 - Latest News
 - Member Profiles
 - Technical Articles
 - SIG reports
 - Inner workings
 - > AGM 2006
 - User tips
- Links
- Home

CAPE-OPEN UPDATE, Volume 11

CAPE-OPEN UPDATE is a publication of the CAPE-OPEN Laboratories Network (CO-LaN), a non-profit consortium for the development of the CAPE-OPEN standard.

CAPE-OPEN Laboratories Network. Annual General Meeting. 9-10 March 2006

Cannes, France

Attendees: Philippe Arpentinier, Air Liquide; Lars Von Wedel, AixCAPE e.V.; Jasper Van Baten, AmsterCHEM; Michael Gobler, AspenTech; Ronald Klein, BASF; Werner Drewitz, BASF; Peter Banks, BP; Malcolm Woodman, BP; Stéphane Brochot, CASPEO; Harry Kooijman, ChemSep; Michel Pons, CO-LaN; Frank Eckert, Cosmologic; George Spyrou, CPERI; Jan Verwijs, Dow Benelux B.V.; Wilma Hensen, Dow Benelux B.V.; David Cameron, Fantoft; Isidoro Hernandez, Honeywell; Ensheng Zhao, Honeywell; Joe Holmes, HTRI; Mark Lichtenauer, HTRI; Fernando Aguirre, HTRI; Murugesh Palanisamy, HTSL; Bertrand Braunschweig, IFP; Martin Gainville, IFP; Pascal Roux, IFP; Jean-Charles de Hemptinne, IFP; Sylvie Cauvin, IFP; Laurent Pigeon, IFP; Dominique Guerillot, IFP; Richard Szczepanski, Infochem; Thierry Gautier, INRIA; David Jerome, Invensys Process Systems; Martin Peter Breil, IVCSEP; Nicolas von Solms, IVCSEP; Alain Vacher, ProSim SA; Olivier Baudoin, ProSim SA; Ben Keeping, PSE; Gregor Fernholz, PSE; Thomas Williams, PSE; Didier Paen, RSI; Ray Dickinson, Shell Global Solutions; Richard Baur, Shell Global Solutions; Erhard Perz, SimTech; Fatima Dargam, SimTech; Werner Merk, The Dow Chemical Company; Mathias Pogodda, TUHH; Alan Scott, TÜV-NEL; William Barrett, US EPA; Hans-Horst Mayer

Overall Agenda

- Meeting introduction, [report on CO-LaN activities](#), [2006 proposals](#), [Management Board election](#)
- Interoperability Showcase
- Presenting the 2005 CAPE-OPEN award to Fernando Aguirre
- Interoperability Workshop

Status Report – Werner Merk

Membership : CO-LaN has 7 Full Members and 46 Associate Members. This represents a gain of 11 Associate Members. The Full Members are: Air Liquide, BASF AG, BP, Dow, IFP, Shell and TOTAL. The Associate Members break down into the following categories, showing the new additions this year:

- 28 software providers
- 14 universities
- 2 US Federal agencies
- 2 individuals

Management Board: The Board members in 2005, plus invited SIG leaders were:

Dow	W. Merk	President
IFP	B. Braunschweig	Treasurer
BP	P. Banks	Secretary
BASF	R. Klein	Member
Shell Global Solutions	R. Dickinson	Member
Total	J. Bousquet	Member
Dow	K. Irons	Member
BP	M. Woodman	Member

The Board had monthly phone conferences and quarterly physical meetings, which dealt with the 5

missions of CO-LaN, votes for new members and general decision making. During the year, the CO-LaN Mission Statement has been agreed.

Expanding Process Modelling Capability through Software Interoperability Standards

SIG Management:

- Unit SIG
- Thermo SIG
- Interoperability Support SIG
- Methods & Tools SIG (Bertrand Braunschweig). Created with initial focus on .NET
- Refinery Reactor Model SIG (Ignasi Palou-Rivera) Scope developed

Contracts and Services:

- Awarded by CO-LaN
 - Michel Pons Technologie for CTO activities in 2006
 - SHMA for CO Logging & Testing Tool development
- Licenses formally granted to CO-LaN for testing and demo purposes
 - A+, HYSYS, Distil, ComThermo renewed by AspenTech
 - VALI by BelSim SA
 - UniSim Design by Honeywell
 - MultiFlash by Infochem
 - gPROMS by Process Systems Enterprise
 - SIMULIS Thermodynamics by ProSim SA
 - INDISS by RSI
 - PRO/II renewed by SimSci-Esscor
 - PPDS by TÜV-NEL
- Other software (e.g. COCO, SolidSim, IVCSEP)

Consultancy Services:

- Objectives
 - Assist developers
 - Secure CAPE-OPEN expertise
- Accomplishments in 2005
 - CO Logging & Testing Tool specification
 - CosmoTHERM
- Available capacity for 2006. Use it!

Marketing & Dissemination:

- CAPE-OPEN Award 2004
- CO Update #10
- Conference participation
 - ESCAPE-15: Consultancy scheme
 - PSE User Meeting: gO:CAPE-OPEN
 - ICheAp-7: Support tools
 - AIChE Annual Meeting (Cincinnati): CO Simulis and MATLAB
 - EUROKIN workshop
 - World Congress of Chemical Engineering: dynamic UNIT spec
- 2nd US CAPE-OPEN Meeting at US NETL
- Journal papers by CO-LaN
 - NPT Procestecnologie, Oil&Gas Science Technology Journal
- Visits (some funded directly by TOTAL)
 - NETRAL, Akzo Nobel Chemicals, Scandpower, Petroleum Experts, Rhodia, Gaz de France, CEA, The University of Tulsa
- A substantial number of papers about CAPE-OPEN were published at World Congress of Chemical Engineering, ESCAPE-15 and in Computers & Chemical Engineering Journal.

Website:

- Successful move to new hosting provider
 - Minimum disruption of service
- Expansion of members area
 - Management Board page
 - Highlights of monthly meetings
 - Pages for each SIG
 - Minutes of meetings
 - Issues discussion board (Thermo)
 - Downloadable material (Interoperability)
- Updating of public pages
 - 29 News items in 2005

Training: ProSim SA delivered a CAPE-OPEN training session to Rhodia. There was no direct participation from CO-LaN.

The meeting endorsed the Status Report.

Proposals for 2006

- Contract MPT for technical leadership activities
- Complete AspenTech consultancy actions
- Development & maintenance of support tools
- Polish and publish existing SIGs work
 - Dynamic UNIT and Thermo 1.1
- Creation of new SIGs
 - Methods & Tools
 - Refinery Reactor Model
- Dissemination policy
 - Maintain and develop US
 - Identify Asia and Middle East opportunities
 - Engineering contractors

Proposals for Dissemination in 2006 are:

- ***AIChE Annual Meeting, San Francisco, US***
 - Topical Conference (4 sessions)
 - Overall progress
 - Unit interfaces
 - Thermo interfaces
 - Numerical interfaces
 - As 3rd US CAPE-OPEN Annual Meeting
 - Consider sending Proposals to Present till May 1
- ***Others***
 - PSE Annual Meeting
 - SIMO'2006

The Cannes Interoperability showcase and SIG reports are detailed earlier in this edition of CO Update.

The meeting endorsed the 2006 budget.

Elections of Management Board for 2006

The Board elected for 2006 was:

Dow: Werner Merk (President)
BP: Peter Banks (Secretary), Malcolm Woodman (Member)
TOTAL: Jacques Bousquet (Member)
IFP: Bertrand Braunschweig (Treasurer)
Shell: Ray Dickinson (Member)
BASF: Ronald Klein (Member)

Companies with more than one member on the Board only have one vote, in accordance with the By-laws of CO-O-LaN.

CAPE-OPEN Award 2005 : the CAPE-OPEN 2005 award was presented to Fernando Aguirre (HTRI) for HTRI successful commercial implementation of the CAPE-OPEN UNIT interface in a specialized engineering software suite with a global user base.

=====

CAPE-OPEN Update Subscription

If you want to «subscribe» or «unsubscribe» to CAPE-OPEN Update, please send an email to technologyofficer@colan.org with subscribe or unsubscribe as subject, respectively. If you need to contact the CO-LaN about the distribution list (if you have trouble unsubscribing or have questions about the list itself), please contact technologyofficer@colan.org

(c) CO-LaN, 2001-2006. All rights are reserved unless specifically stated otherwise.

- General Information
- Software download
- Standard Specification
- CO-LaN Catalog
- CO Support
- Requests for Bids
- News
 - Newslist
 - CO Update Issues
 - CO Update 06
 - CO Update 07
 - CO Update 08
 - CO Update 09
 - CO Update 10
 - CO Update 11
 - Editorial
 - Latest News
 - Member Profiles
 - Technical Articles
 - SIG reports
 - Inner workings
 - > User tips
- Links
- Home

CAPE-OPEN UPDATE, Volume 11

CAPE-OPEN UPDATE is a publication of the CAPE-OPEN Laboratories Network (CO-LaN), a non-profit consortium for the development of the CAPE-OPEN standard.

USER TIPS

Remember to visit the [standard specification section](#) of CO-LaN web site to better understand both the method and the opportunity of implementing CO standards. If you are a CAPE software developer, you will find [CO testers](#) and the CO standards documentation. If you are a CAPE software user, you will find guidance on the use of CAPE tools in a CO-compliant environment. There is a great deal of information on the web site to guide you and offer insight.

Feel free to contact a CO-LaN member to help you focus your activities. These people can answer questions, discuss the philosophy of CO standards, direct you to CO standards experts, and give you a glimpse of current and future activities.

CURRENT ISSUES

The CO-LaN Special Interest Groups (SIGs), are up and running to refine existing standards, expand them as needed, and define new standards. The current SIGs, SIG leaders, and current focus areas are:

- INTEROPERABILITY - Peter Banks, BP. Interoperability Support for testing software interoperability.
- THERMODYNAMICS - Werner Drewitz, BASF AG. For implementation, maintenance, and management of existing interfaces. Expansion into polymers and solids.
- UNIT OPERATIONS - Richard Baur, Shell Global Solutions. For implementation, maintenance, and management of existing interfaces. Expansion into dynamics.
- REACTOR - Ignasi Palou-Rivera, BP. For the extension of CO interface standard in the refinery reactor domain.
- METHODS & TOOLS - Bertrand Braunschweig, IFP. Initial focus on .NET

BACK ISSUES OF CAPE-OPEN UPDATE

You can view [back issues](#) of CAPE-OPEN UPDATE on the CO-LaN web site.

COMING EVENTS AND OTHER CURRENT NEWS

Visit CO-LaN website then click News for the latest information!

CO tours are designed to show an organization's technical professionals and technical leaders how to implement CO standards for their CAPE. Feel free to request one for your organization.

Wizards have been developed for Unit Operations and Thermodynamics and are available through AspenTech, and through the CO-LaN web site.

The CO COSE (CAPE-OPEN Simulation Executive) tester is available on the CO-LaN web site.

=====

CAPE-OPEN Update Subscription

If you want to «subscribe» or «unsubscribe» to CAPE-OPEN Update, please send an email to technologyofficer@colan.org with subscribe or unsubscribe as subject, respectively. If you need to contact the CO-LaN about the distribution list (if you have trouble unsubscribing or have questions about the list itself), please contact technologyofficer@colan.org

(c) CO-LaN, 2001-2006. All rights are reserved unless specifically stated otherwise.