3rd US Annual CAPE-OPEN meeting
as AIChE 2006 Annual meeting
Topical Conference

Presentation at 10e Programming Meeting
Tuesday Nov 1st, 2005
- **CAPE-OPEN / CO-LaN**
- **Previous events in the US**
  - 1st and 2nd US Annual CAPE-OPEN meetings
- **Proposed Topical Conference**
  - Organization
  - Sessions
- **Conclusion**
A freely available industry standard for interfaces between software components making up process simulation tools

The success of a collaboration between software vendors, end-users and academics

A proven technology implemented in most process simulation tools

A growing adhesion by process simulation market leaders

CO-LaN: a group of end users taking responsibility for putting resources together to support ongoing work on the standard
August 24-25, 2004 in Cincinnati, OH

Generously hosted by US EPA (Bill Barrett)

25 participants

- 9 from universities (36%)
- 9 from industrial end-user organizations (36%)
- 3 from Federal agencies (12%)
- 4 from software vendors (16%)

10 different lecturers

26 presentations in 8 sessions

- Collected on a CD handed to all participants
## Excerpt of detailed agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Description</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0830-1000</td>
<td>Opening remarks, Introduction to CAPE-OPEN from the End User’s Perspective</td>
<td>Opening remarks</td>
<td>US EPA, Irons</td>
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<tr>
<td>08h30</td>
<td>1.1 Opening</td>
<td>Opening remarks</td>
<td>US EPA, Irons</td>
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<td>09h00</td>
<td>1.2 Introduction to CO</td>
<td>Introduction to CO and colan</td>
<td>Braunschweig</td>
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<tr>
<td>09h30</td>
<td>1.3 End users perspective</td>
<td>End user’s perspective</td>
<td>Pons, Irons</td>
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<tr>
<td>1000-1020</td>
<td>Break</td>
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</tr>
<tr>
<td>1020-1200</td>
<td>CAPE-OPEN Concepts and Value Generation Opportunities</td>
<td>CAPE-OPEN Concepts, usages</td>
<td>Braunschweig</td>
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<tr>
<td>10h20</td>
<td>2.1 CO concepts</td>
<td>CAPE-OPEN Concepts, usages</td>
<td>Braunschweig</td>
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<td>10h45</td>
<td>2.2 ATOFINA Example</td>
<td>Atofina example</td>
<td>Pons</td>
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<tr>
<td>11h45</td>
<td>2.3 Compliant Components</td>
<td>Current compliant components</td>
<td>Pons</td>
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<tr>
<td>1200-1250</td>
<td>Lunch</td>
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<tr>
<td>1250-1420</td>
<td>Architecture of a Chemical Process Simulator and How CAPE-OPEN Fits In</td>
<td>AspenTech implementation of CAPE-OPEN</td>
<td>Mc Gough</td>
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<tr>
<td>12h50</td>
<td>3.1 AspenTech CO</td>
<td>AspenTech implementation of CAPE-OPEN</td>
<td>Mc Gough</td>
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<tr>
<td>13h20</td>
<td>3.2 PSE CO</td>
<td>PSE implementation</td>
<td>Keeping</td>
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<td>13h50</td>
<td>3.3 SimSci CO</td>
<td>SimSci-Esscor implementation</td>
<td>Bluck</td>
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<tr>
<td>1420-1440</td>
<td>Break</td>
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May 25-26, 2005 in Morgantown, WV

- Generously hosted by US DOE (Steve Zitney)
- Co-sponsored by Fluent Inc.

50 participants (up from 25 the previous year)
- 16 from universities/research institutes (32%)
- 10 from industrial end-user organizations (20%)
- 14 from federal agencies (28%)
- 10 from software vendors (20%)

15 lecturers (up from 10 the previous year)

28 presentations in 8 sessions
- Collected on a CD handed to all participants
Outline of 2nd US Annual CAPE-OPEN meeting

- Introduction to NETL, CAPE-OPEN and CO-LaN
- CO Concepts, Components and Demonstrations
- CO-Compliant Process Simulators
- CO-Compliant Process Components
- Applications/Demos of CO interoperability
- Experiences/How-to Advice on CO implementation
- Support Tools for CO Component development
- CO Future directions and general discussion
3rd US CAPE-OPEN Annual 2006 =

- AIChE 2006 Annual Topical Conference

Four sessions
- CAPE-OPEN Advances and extensions
- Implementations and uses of CO UNIT interfaces
- Implementations and uses of CO THRM interfaces
- Implementations and uses of CO NUMR interfaces

General purpose
- Show the value brought to end-users by CAPE-OPEN technology
- Most recent CO implementations in commercial and non-commercial software tools
A distinctive shift in goal:
- Eliminates historical background
- Eliminates tutorial aspects

Focus on what has been realized lately
- Chemstations CO compliant Chemcad (PME)
- Cosmologic CO compliant component (PMC)
- IFP PLATINA platform as CO compliant PME
- UNIT socket in gPROMS
- Aspen Plus implementation of THRM 1.1
- DTU MoT tool with its CAPE-OPEN wrapper
- UOP usage of COM Thermo in their unit operation models
- Air Liquide usage of Simulis Thermodynamics
- ....
Topical conference chairs
- Michel Pons, CO-LaN
- Werner Merk, The Dow Chemical Company

Session chairs: 20+ papers altogether
- CAPE-OPEN Advances and extensions
  - Michel Pons, CO-LaN
  - Bill Barrett, US EPA
- CAPE-OPEN UNIT interface implementations and uses
  - Fernando Aguirre, HTRI
  - Ross Taylor, Clarkson University
- CAPE-OPEN THRM interface implementations and uses
  - Sanjoy Saha, Honeywell
- CAPE-OPEN NUMR interface implementations and uses
  - Steve Zitney, NETL, US DOE
  - Larry Biegler, Carnegie Mellon University
Conclusion

- **CAPE-OPEN focus is part of 10e focus**
- **Success of previous US CAPE-OPEN events**
  - Significant growth in participation
- Have shown potential for setting up four sessions
  - 20+ papers at both previous events
  - Need to augment number of authors
- Several US organizations already committed to help
  - US EPA, US DOE, HTRI, Honeywell, Dow
- European participation possible
  - Denmark Technical University, Cosmologic GmbH, Process Systems Enterprise, ...
- **CO-LaN is definitely seeking CAST 10e approval for a co-sponsored Topical Conference**