

The CPS Virtual Organization

An Overview

4th Oct 2011

by

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<http://cps-vo.org/>

Co-PI: Professor Gabor Karsai

High-Level Goals

- ▶ Community Building
- ▶ Collaboration Support
 - ▶ Provide technology to encourage and facilitate cooperation between geographically dispersed members
- ▶ Technology Transfer & Translational Research
- ▶ International Collaboration



Specific CPS-VO Thrusts

- ▶ Continuous **Community Building** Efforts
 - ▶ Publicize events relevant to the CPS community
 - ▶ Bring people together; recruit new members (e.g. travel to related industry and academic gatherings in order to publicize VOCYPHER)
 - ▶ Promote and/or organize new, more cross-disciplinary events
- ▶ Domain-Specific **Knowledge Repository**
 - ▶ Clearinghouse of CPS knowledge
 - ▶ Publicize research findings
 - ▶ A document archival/registration service
 - ▶ Design, implement & evolve standard *ontologies* and less formal *folksonomies* for the CPS community (& sub-communities)
 - ▶ Domain-aware, semantically enabled *search* services
 - ▶ Directory Services, Matchmaking, Bookmarking Services, Personalized Alerts
 - ▶ Semantically driven, data mining services and content aggregators
- ▶ Electronic **Collaboration**
 - ▶ dynamic community formation (*a.k.a.* Communities of Interest)
 - ▶ discussion forums, mailing lists, file sharing, wikis, instant messaging, blogs/podcasts, event calendars
 - ▶ virtual meetings and electronic transcripts for related seminars/conferences
- ▶ Electronic **Experimentation**
 - ▶ Download CPS-specific Technologies and Tool Suites
 - ▶ CPS-related Challenge Problems
 - ▶ Online Experimentation (e.g. Emulab-inspired Cyber-Physical Computation/Simulation Infrastructure)
 - ▶ Publish/Review Results
 - ▶ * builds upon *SPRUCE* experiences and technologies (as well as *C2Wind Tunnel*)
- ▶ **Education** and Dissemination
 - ▶ Standards for CPS Curriculum
 - ▶ Seminars, Workshops, Tutorials & Electronic Coursework
 - ▶ Professional Development (e.g. postdoc announcements)

The CPS-VO Portal's Mission & Timeline

- ▶ Help **build the multidisciplinary community** needed to underpin this new research area
 - ▶ **Foster exchanges** between individuals across a broad range of application domains, science/engineering disciplines, and institutions (e.g. cross-disciplinary awareness)
 - ▶ **Share community results** with *[the broader]* engineering, scientific and educational communities (e.g. integrating experimental tools, platforms and simulators)
 - ▶ **Facilitate collaboration** across CPS disciplines, sectors, locations, ... (e.g. the emerging *Automotive SIG*)
 - ▶ Encourage and help with international collaborations
- ▶ **Year 1**
 - ▶ **Roll out basic functionality** for knowledge repository & collaboration framework
- ▶ **Year 2**
 - ▶ **Recruit core users** who will ultimately constitute the leaders of this new community
 - ▶ Refine/extend initial implementation to accommodate community members' expectations and suggestions
- ▶ **Years 3-5**
 - ▶ Change the world



Portal Requirements

▶ User Management

- ▶ Authentication
- ▶ User Profiles
- ▶ Directory Services

▶ Communications

- ▶ Events Calendar
- ▶ News Stories
- ▶ Instant Messaging
- ▶ Blogs & Podcasts
- ▶ RSS/Atom Feeds
- ▶ Misc. “*Social Networking*”

▶ Collaboration

- ▶ Communities of Interest
- ▶ Group Permissions Mgmt
 - ▶ Features Availability
 - ▶ Content Visibility
- ▶ Group Moderation
- ▶ Mailing Lists
- ▶ Forums
- ▶ Wikis
- ▶ File Sharing



Example *Virtual Organization Services*

CPS-VO offers a virtual environment where members can:



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& MAKE
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Welcome to the CPS-VO community!

Highlights

Upcoming Events

- ICCPS 2011
- BoF: CPS Web Portals
- CPS Community Forum
- ECBS 2011
- Georgia Tech Summer School on CPS: 2011
- CyPhy'11
- SPCC'11
- ESWeek 2011

Groups

- High Confidence Software and Systems 11th Annual Conference
- Science of Integration
- 2010 National CPS PI Meeting
- Aviation
- Science of Security
- Medical CPS

Related Research

- A Framework for Enabling Energy-Aware Smart Facilities
- Addressing Design and Human Factors Challenges in Cyber Transportation Systems
- Abstraction of Cyber-Physical Interplays and Its Application to CPS Design
- Timing-Centric Software
- Center for Autonomous Transportation Systems
- Infrastructure and Technology Innovations for Medical Device Coordination
- Self-Sustaining CPS for Structural Monitoring
- Mathematical, Computational, and Perceptual Foundations for Interactive Cyber-Physical Systems
- [Show all >](#)

Who are we?

The Cyber Physical Systems Virtual Organization (CPS-VO) is a broad community of interest for CPS researchers and developers. The CPS-VO includes institutions from academy and industry, and people who work on a wide range of related disciplines with different approaches, methods, tools and experimental platforms. These entities are all interconnected and evolve driven by a shared goal, to advance our knowledge in the science and engineering of CPS.

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Events | CPS-VO

cps-vo.org/event/2011/05/01/month/all/1

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- Calendar
- Announcements
- Groups
- Repositories

Welcome to the CPS-VO community!

CPS-VO » EVENTS »

» Week » Day » Table » List

« May 2011 »

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 High Confidence Software and Systems 11th Annual Conference Start: May 1 2011 12:35	2 High Confidence Software and Systems 11th Annual Conference all day	3 High Confidence Software and Systems 11th Annual Conference all day	4 High Confidence Software and Systems 11th Annual Conference all day	5 High Confidence Software and Systems 11th Annual Conference all day	6 High Confidence Software and Systems 11th Annual Conference End: May 6 2011 12:35	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

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Our mission is to provide reports, presentations and a science-based predictable tool suite to the Cyber Physical Systems (CPS) community related to our work in developing a new Science of Integration for CPS. This new science re-examines the fundamentals of composition in heterogeneous systems, develops foundations and tools for system integration and validates the results in experiments using automotive and avionics System-of-Systems experimental platforms. Building on the rigorous foundations, our aim is to provide the latest theories and methods for achieving constructivity and predictability in CPS integration. Our group includes an interdisciplinary group of researchers in: i) Model-Based Design and Software Engineering from Vanderbilt University (VU) and the University of Maryland (UMD); ii) Systems Science and Engineering from University of Notre Dame (ND) and UMD; iii) Control Theory and Engineering (ND, UMD, VU); iv) Computer Engineering and Networking (VU, UMD); and v) providing simulation-based and real-life electrical architecture testbeds, challenge problems, evaluation metrics, and development tools from General Motors Global R&D Center.

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Submitted by gabor on Mon, 2011-03-14 12:25

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- > Manage group forums
- > 11 members

Manager: > nkottens

The *Semantic Repository* – What is it?

- ▶ Document archival/registration service
- ▶ Design, implement & evolve standard *ontologies* and less formal *folksonomies* for the CPS community (& sub-communities)
- ▶ Domain-aware, semantically enabled *search* services
- ▶ Directory Services, Matchmaking, Bookmarking Services, Personalized Alerts
- ▶ Semantically driven, data mining services and content aggregators



Meta-Data

Cyber-Enabled Efficient Energy Management of Structures (CEEMS)

View Edit Properties Outline Revisions Workflow
Sun, 2010-08-08 15:47 — chris.vanbuskirk

Project Overviews | William Hoff (CSM) | Tyrone Vincent (CSM) | Tina Kouri (CSM) | Siddarth Suryanarayanan (CSU) | Robert Braun (CSN) | Raldo Huberg (CSM) | Peng Shao (CSM) | Marcelo Simoes (CSM) | Kevin Moore (CSM) | Dinesh Mehta (CSM) | Chang Liu (CSM) | Bryan Euser (CSM) | Brady Nunnn CSM) | Bao Nguyen (CSM) | Andrew Schmidt (CSM) | Energy Efficient Buildings | Abstract | National CPS PI Meeting 2010 | academy

This project focuses on modern buildings as a natural expression of a cyber-physical system, with many features that are typical to such systems. This project focuses on modern buildings as a natural expression of a cyber-physical system, with many features that are typical to such systems. Modern buildings exhibit a tight integration of sensing, computation, and actuation within multiple physical domains. Improving the energy efficiency of building structures and complexes represents a significant opportunity for lowering national energy consumption and emissions.

Cyber-Enabled Efficient Energy Management of Structures (CEEMS)

Groups: 2010 National CPS PI Meeting

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Title: *

Cyber-Enabled Efficient Energy Management of Structures (CEEMS)

▼ Vocabularies

NSF-CPS PI Mtg: Topics: *

Topics:

CPS Domains
-Defense
--Aerospace
-Energy
--Energy Efficient Buildings
--Smart Grid
-Critical Infrastructure
--SCADA Systems
-Health Care

Select one or more terms from the available list.

Document Type:

Select exactly one term from the presented choices.

CPS Events:

- None -
2005
-HCMDSS Workshop 2005
-RTSS Symposium 2005
Robotics and CPS
2006
-Beyond SCADA 2006
-HCSP-CPS 2006
-National Aviation Software Workshop 2006

NSF-CPS PI Mtg: Contributors(s):

Andrew Schmidt (CSM), Bao Nguyen (CSM), Brady Nunnn CSM), Bryan Euser (CSM), Chang Liu (CSM), Dinesh

A comma-separated list of terms describing this content. Example: funny, bungee jumping, "Company, Inc.".

Keywords:

Comma separated list of keywords (e.g. "aerospace, conference")

Document Source:

Taxonomies

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ListAdd term

Topics is a single hierarchy vocabulary. You may organize the terms in the Topics vocabulary by using the handles on the left side of the table. To change the name or description of a term, click the *edit* link next to the term.

[more help...]

Name	Operations
+ CPS Domains	edit
+ Defense	edit
+ Aerospace	edit
+ Energy	edit
+ Energy Efficient Buildings	edit
+ Smart Grid	edit
+ Critical Infrastructure	edit
+ SCADA Systems	edit
+ Health Care	edit
+ Medical Devices	edit
+ Manufacturing	edit
+ Robotics	edit
+ Transportation	edit
+ Automotive	edit
+ Avionics	edit
+ CPS Technologies	edit
+ Embedded Software	edit
+ Research Program Overview	edit
+ Science Policy	edit
+ Education	edit
+ Foundations	edit
+ Composition Theory	edit
+ Science of System Integration	edit

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http://cps-vo.org/file_browser

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▼ CPS Domains	89.16 MB	73
▶ Defense	6.19 MB	6
▶ Energy	20.88 MB	11
▶ Critical Infrastructure	267.51 KB	2
▶ Health Care	45.88 MB	20
▶ Manufacturing	3.2 MB	3
▶ Robotics	3.71 MB	13
▶ Transportation	9.03 MB	17
▶ Borghese, J.: Thoughts on Cyber-Physical Systems	9.09 KB	[details]
▶ CPS Technologies	351.46 KB	5
▶ Research Program Overview	23.07 MB	10
▶ Science Policy	8.62 MB	7
▼ Education	944.88 KB	4
▶ Lee, E. A.: Teaching Embedded Systems at Berkeley	560.82 KB	[details]
▶ Lee, I.: Innovations in CPS Education	93.79 KB	[details]
▶ Pappas, G.: Cyber-physical systems Educational C...	121.36 KB	[details]

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Keyword search

With all of the words

Search

Guided search

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Topics

Foundations (109)
CPS Domains (1)
Education (17)

CPS Technologies (16)

Subcategories: (13)

Health Care (22)
Transportation (19)
Robotics (14)
Energy (11)

Defense (7)
Critical Infrastructure (3)
Manufacturing (3)

Keywords

conference (10)
CPS (8)
CFP (6)
security (6)
CPS Security (5)
secure control systems (4)

Cyber Insurance (2)
more...

Document Type

Presentation (78)
Abstract (35)
Report (10)
Position Paper (6)
Congressional Testimony (4)
Memo (4)

Executive Summary (2)
Call for Proposal (1)
Draft (1)
Minutes (1)
more...

CPS Events

2010 (98)
2008 (27)
2009 (19)

2007 (9)
2011 (7)
2006 (5)

Event Types

Workshop (32)
Conference (23)
Symposium (5)
Summer School (3)

Congressional Hearing (1)
PI Meeting (1)
Roundtable (1)

Document Source

academy (86)
government (30)

industry (6)

Content type

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Event (69)

Page (36)
Story (5)

Author

Anonymous (4)
admin (93)
chris.vanbuskirk (78)
gabor (1)
Helen Gill (1)
janos.sztiapanovits (4)

Katie Dey (81)
kwebb (3)
mate (34)
sushilkbirla (1)
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Date authored

2009 (1)

2010 (327)

Taxonomic Search: Education

Results

Results 1 - 10 of 17

Georgia Tech Summer School on CPS: 2011

Thu, 2010-11-04 07:57 — admin

Start: Jun 27 2011

End: Jun 29 2011

URL:

<http://www.ece.gatech.edu/research/labs/esl/Activities/CPS-2011/index.html>

Location:

Georgia Tech Atlanta campus

The third Georgia Tech Summer School on Cyber-Physical Systems (CPS) will be held at the Georgia Tech Atlanta campus on Monday-Wednesday, June 27-29, 2011.

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Legislative News: Strengthening American Competitiveness in the 21st Century Global Economy

Wed, 2010-05-19 16:28 — admin

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Click a term to refine your current search.

Topics: all » Education

Keywords

summer school (2)
competitiveness (1)
CPS (1)
CPS Community (1)
embedded systems (1)
industry (1)

Document Type

Presentation (4)
[Textbook \(1\)](#)

CPS Events

2010 (5)
2009 (4)
2011 (3)

Event Types

Summer School (3)
Workshop (3)
Conference (2)

Document Source

academy (3)
government (1)

Content type

Event (8)
File (6)
Story (2)
Page (1)



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Fri, 2010-10-08 07:38 — chris.vanbuskirk

Education | Textbook | academy

URL:

<http://leeseshia.org/>

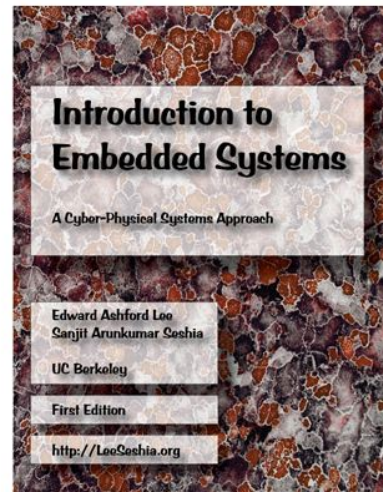
Dateline: 6th Oct 2010

Introduction to Embedded Systems - A Cyber-Physical Systems Approach by

[Edward Ashford Lee](#)

[Sanjit A. Seshia](#)

This book strives to identify and introduce the durable intellectual ideas of embedded systems as a technology and as a subject of study. The emphasis is on modeling, design, and analysis of cyber-physical systems, which integrate computing, networking, and physical processes.



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- > 11 members

Manager: > nkottens

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* This is an example of a VO *Group*

What are VO Groups?

TODO: too busy

▶ Group Defined/Scoped

- ▶ Shared, Virtual **Filesystem**
- ▶ Discussion **Forums**
- ▶ **Calendar** (incl. *Meeting Mgmt* features)
- ▶ **Search Engine**
- ▶ **Branding** (i.e. customized themes/logos)
- ▶ Others
 - ▶ e.g. subscriptions & notifications, broadcast announcements, wiki, blogging chat, ...
- ▶ Editorial & Administrative Staff
- ▶ Customizable Membership/Visibility/Content-Access Policies
- ▶ Hierarchical group/sub-group structures

Applying to found a new CPS-VO Group

Thanks for your interest in starting a new CPS-VO special interest group. Please help us to understand your needs better by providing the following information. Your application will be promptly reviewed by the VO portal's management team.

- 1) A preferred name for your group
- 2) A mission statement
- 3) A list of group managers
Description: Managers have privileges and responsibility for activities such as configuring group services, adding/banning group members, ... basic administrative activities. The management team at the portal is glad to initially handle all admin duties on your behalf, but as your group ramps up, you will be expected to be responsible for managing your own activities and your group's portions of the website. Please identify the principals that will form this administrative team (possibly merely the group's founder, at this point).
- 4) A list of group moderators
Description: group moderators do not have general administrative capabilities, but do have full control over your group's content. Therefore, while a mod will not be expected to manage the groups members/services, they will perform an editorial function. Moderators are responsible for grooming the content of your group and ensuring that publicly viewable content is appropriate, correct, and complete to your group's own standards.
- 5) A definition of your group's access and visibility policies
 - Is the group to be listed in the site's directory of all groups (or will the existence of this private group be hidden from non-members)?
 - Is the group's content generally visible to non-members?
 - What is the policy on group membership?
 - Open -- anyone may join
 - Moderated -- new members may 'apply' for membership, but these applications must be approved by the group's management team
 - Invitation Only -- group managers tightly control who is allowed to join the group
- 6) An optional description of how you envision using this group to facilitate collaboration of an online, electronic community. This may be helpful feedback for us to better predict which services and features might be most useful for the VO's operation as a whole.

▶ * mini-websites and scalable, distributed management *

- 1) A preferred name for your group
- 2) A mission statement
- 3) A list of group managers
Description: Managers have privileges and responsibility for activities such as configuring group services, adding/banning group members, basic administrative activities. The management team at the portal is glad to initially handle all administrative duties on your behalf, but as your group ramps up, you will be expected to be responsible for managing your own activities and your group's portions of the website. Please identify the principals that will form this administrative team (possibly merely the group's founder, at this point).
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What are *Groups*?

▶ Group Defined/Scoped

- ▶ Calendar
- ▶ Document repositories
- ▶ Taxonomies/terminology & search engine

▶ Other Services

- ▶ e.g. discussion forums, wiki, subscriptions & notifications, email announcements, chat, ...

■ Administrative Staff

- ▶ Customizable membership/access/visibility policies
- ▶ Distributed site management
- ▶ Hierarchical Groups

- ▶ * scalable, distributed site management

Manage a Research Project

CPS-VO offers a virtual environment where members can:



PUBLICIZE EVENTS
& MAKE
ANNOUNCEMENTS



SHARE DOCUMENTS
& COLLABORATE



FORM & MANAGE
COMMUNITIES OF
INTEREST



ORGANIZE ONLINE
MEETINGS

Summary | CPS-VO

cps-vo.org/group/soi/summary

CPS-VO NEWS **BROWSE** COLLABORATE SEARCH ADMINISTRATION MY GROUPS Hello [Chris.vanBuskirk]. > My Account > Log out

- Calendar
- Announcements
- **Groups**
- Repositories

Science of Integration

Home Summary **Members** Forums Files

CPS-VO » GROUPS » SCIENCE OF INTEGRATION »

Summary EDIT TAXONOMY BROADCAST PAGES

Science of Integration for Cyber-Physical Systems

Principal Investigator (PI) Name:
Sztipanovits, Janos

PI Username:
[Janos.Sztipanovits](#)

Co-PI Name(s):
John Baras
Panos Antsaklis
Xenofon Koutsoukos
Shige Wang

Co-PI Username(s):
[John Baras](#)
[Panos Antsaklis](#)
[Xenofon Koutsoukos](#)
[wangsg](#)

Sponsor(s):
National Science Foundation
Vanderbilt University

Group toolbar

- > Create File
- > Create Forum topic
- > Create Event
- > Group forums
- > Manage group forums
- > 11 members
- Manager: > nkottens

Organize a Conference/Workshop

CPS-VO offers a virtual environment where members can:



PUBLICIZE EVENTS
& MAKE
ANNOUNCEMENTS



SHARE DOCUMENTS
& COLLABORATE



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ORGANIZE ONLINE
MEETINGS

Event Planning

iPad 11:51 AM About | CPS-VO cps-vo.org/group/pimtg11 Google

CPS-VO NEWS BROWSE COLLABORATE SEARCH ADMINISTRATION MY GROUPS Hello [Chris.vanBuskirk] > My Account > Log out

CPS PI Meeting 2011

Home Important Dates Call for Papers Program Registration Venue Submit a Paper Organizers Contact Forums Files

CPS-VO > GROUPS > CPS PI MEETING 2011 >

EDIT TAXONOMY BROADCAST PAGES

The CPS Principal Investigator Meeting provides a forum for a wide range of stakeholders in academia, industry and federal agencies to review new developments in CPS foundations, to identify new, emerging applications, and to discuss technology gaps and barriers. The program of the meeting includes presentations about projects funded by NSF and other agencies, panels and discussion groups.

Group toolbar

- Create File
- Create Forum topic
- Create Event
- Group forums
- Manage group forums
- 5 members
- Manager: admin
- My membership

Related groups

- National CPS PI Meetings
 - 2010 National CPS PI Meeting
 - CPS PI Meeting 2011

© 2010-2011. CPS-VO

Event Archiving

iPad 11:50 AM 2010 National CPS PI Meeting | CPS-VO cps-vo.org/group/pimtg10 Google

CPS-VO NEWS BROWSE COLLABORATE SEARCH ADMINISTRATION MY GROUPS Hello [Chris.vanBuskirk] > My Account > Log out

2010 National CPS PI Meeting

Home Members Calendar Tag Cloud Search Mod-Board Forums Files

CPS-VO > GROUPS >

EDIT TAXONOMY BROADCAST PAGES

2010 National CPS PI Meeting

Start: Aug 10 2010
End: Aug 12 2010
The Westin Arlington Gateway, Arlington, VA

[Meeting Invitation] [Agenda] [Guidance for Participants] [Poster Assignment] [Register for Meeting] [Hotel Reservations]

The CPS Principal Investigator Meeting provides a forum for a wide range of stakeholders in academia, industry and federal agencies to review new developments in CPS foundations, to identify new, emerging applications, and to discuss technology gaps and barriers. The program of the meeting includes presentations about projects funded by NSF and other agencies, panels and discussion groups.

Day 2 Posters

Submitted by Chris.vanBuskirk on Fri, 2011-01-21 16:23
30.78 MB | 10 views | 22 downloads [Download](#)

Research Program Overview National CPS PI Meeting 2010 Poster academia Posters

Group toolbar

- Create File
- Create Forum topic
- Create Event
- Group forums
- Manage group forums
- 7 members
- Manager: KNEW
- My membership

Related groups

- National CPS PI Meetings
 - 2010 National CPS PI Meeting
 - CPS PI Meeting 2011

Form a Special Interest Group

CPS-VO offers a virtual environment where members can:



PUBLICIZE EVENTS
& MAKE
ANNOUNCEMENTS



SHARE DOCUMENTS
& COLLABORATE



FORM & MANAGE
COMMUNITIES OF
INTEREST



ORGANIZE ONLINE
MEETINGS

iPad 5:23 PM 82%

Terms in Medical-CPS: Topics | CPS-VO

cps-vo.org/node/724/og/vocab/terms/26

CPS-VO NEWS BROWSE COLLABORATE SEARCH ADMINISTRATION MY GROUPS Hello [Chris.vanBuskirk] > My Account > Log out

Medical CPS

List Add term

CPS-VO » GROUPS » MEDICAL CPS »

Taxonomy

Name	Operations
+ high-confidence medical devices, software and systems	edit
+ software development for medical devices	edit
+ regulatory approval	edit
+ evidence-based certification	edit
+ safety and assurance cases	edit
+ hazard analysis	edit
+ physiological closed-loop control	edit
+ medical device interoperability	edit
+ interoperability standards	edit
+ interoperability use cases	edit
+ medical device coordination framework	edit
+ robotic surgery	edit
+ human modeling	edit
+ physiology models	edit

Group toolbar

- > Create File
- > Create Forum topic
- > Create Event
- > Group forums
- > Manage group forums
- > Invite colleague
- > 11 members
- Manager: > sokolsky
- > Join

Form a Special Interest Group

CPS-VO offers a virtual environment where members can:



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& MAKE
ANNOUNCEMENTS



SHARE DOCUMENTS
& COLLABORATE



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MEETINGS

iPad 3:18 PM 93%

Science of Security | CPS-VO

cps-vo.org/node/488/browser

CPS-VO NEWS BROWSE COLLABORATE SEARCH ADMINISTRATION MY GROUPS

Hello [Chris.vanBuskirk]. > My Account > Log out

Science of Security

Home Members Calendar Tag Cloud Search Help Moderation Forums **Files**

CPS-VO » GROUPS » SCIENCE OF SECURITY »

Files

	EDIT	TAXONOMY	BROADCAST	PAGES
Cyberspace Policy Review				780.5 KB 2
Encryption				570.53 KB 1
Infrastructure				710.5 KB 1
Measuring Security				7.43 MB 5
Is Finding Security Holes a Good Idea?				109.69 KB [details]
Measuring Cyber Security and Information Assurance: A State of the Art...				4.47 MB [details]
Measuring Security				15.31 KB [details]
NSA SVP Hard Problem Overview				192.04 KB [details]
Report on Measuring Security Workshop				2.65 MB [details]
Network Monitoring				391.42 KB 1
Science of Security				53.78 MB 45
SoS: Contributor(s)				132.92 MB 107
Alessandro Acquisti				124.12 KB 1
Alfred Hero				391.42 KB 1
Ali Khanafer (University of Illinois)				111.8 KB 1
Resource Allocation Problems in Networked Cyber Physical Systems in Ad...				111.8 KB [details]

Group toolbar

- Create File
- Create Forum topic
- Create Event
- Group forums
- Manage group forums
- 14 members
- Manager: brad_martin
- My membership

File upload

Choose File

Add File

Audience:

- 2011 Automotive CPS Workshop
- Automotive
- Automotive CPS Workshops

Form a Special Interest Group

CPS-VO offers a virtual environment where members can:



PUBLICIZE EVENTS
& MAKE
ANNOUNCEMENTS



SHARE DOCUMENTS
& COLLABORATE



FORM & MANAGE
COMMUNITIES OF
INTEREST



ORGANIZE ONLINE
MEETINGS

iPad 2:52 PM 97%

Members | CPS-VO

cps-vo.org/group/auto/members

CPS-VO NEWS BROWSE COLLABORATE SEARCH ADMINISTRATION MY GROUPS Hello [Chris.vanBuskirk]. > My Account > Log out

Automotive

Home **Members** Help Forums Files

CPS-VO » GROUPS » AUTOMOTIVE »

Members

Related groups

- Transportation
 - Aviation
 - Automotive
- Automotive CPS Workshops
 - 2011 Automotive CPS Workshop

Public information: First Name	Public information: Middle Name	Public information: Last Name	Manage	Admin
Eric		Feron	Remove membership	Admin: Remove <i>admin</i>
Mary	Katherine "Katie"	Dey	Remove membership	Admin: Remove <i>admin</i>
Frankie	Denise	King		<i>Manager admin</i>
Site		Administrator	Remove membership	Admin: Create
William	Brad	Martin	Remove membership	Admin: Create
Christopher	P.	van Buskirk	Remove membership	Admin: Create
david		kuehn	Remove membership	Admin: Create
Edward	Ronald	Griffor	Remove membership	Admin: Create
Francesco		Borrelli	Remove membership	Admin: Create

Group toolbar

- Create File
- Create Forum topic
- Create Event
- Group forums
- Manage group forums
- 25 members
- Manager: > KNEW
- My membership

Related groups

- Transportation
 - Aviation
 - Automotive
- Automotive CPS Workshops
 - 2011 Automotive CPS Workshop

► Year 2

Timeline :

► Recruit core users



You are here



Moving Forward



Models of VO '*Users*'

- ▶ Documents associated with pedigree information that tracks back to people.
- ▶ Similarly for *Projects*
- ▶ Meta-data about individual users' interests, expertise, ...
- ▶ Social networks



User Interface

- ▶ General aesthetics and usability tweaks
- ▶ Improved *Search* interfaces
- ▶ Prioritize a list of group-oriented services to focus on (e.g. wikis, mailing lists, group look-and-feel customization/configurability, ...)



Meetings: Real-Time Document Sharing

The screenshot displays the BigBlueButton web interface in a browser window. The address bar shows the URL `http://129.59.129.101/client/BigBlueButton.html#`. The interface includes a top navigation bar with various menu items like "Me", "WRUW", "PB", "PB2", "Work", "Work.BizOp", "Work.ESCHER", "Work.HCDDDES", "Work.IAP", "Work.META", "Work.PAMS", "Work.S3", "Work.VO", and "TimeHole". Below this is a dashboard with tabs for "Dashboard [Jenkins]", "[#VO-238] Custom login module ...", "Members | CPS-VO", "BigBlueButton", and "2011 Automotive Workshop | CPS...".

The main content area displays a presentation slide titled "Cyber-Physical Systems (what are?)". The slide content includes:

- Are engineered systems that involving a tight conjoining between computational components and the physical world ...
- Especially when many distributed entities—connected by a communications fabric—work together to exhibit complex and intelligent behaviors.
- "Systems you can bet your life on."

On the left side of the interface, there is a "Users" panel showing a table with columns "Role", "Name", and "Status". The table lists "admin (you)" and "Chris.vanBuskirk". Below the table is a "Switch Presenter" button. At the bottom left, there is a "Listeners" panel.

On the right side, there is a "Chat" panel. It shows a message from "Chris...." at 11:34: "@Bill: I've uploaded my slides to the meeting, and I have a small demo that I can show, if we have time." The chat panel also includes a "Send" button.

At the bottom of the browser window, a footer note reads: "(c) 2011, BigBlueButton build 3818-2011-01-18 - For more information see <http://www.bigbluebutton.org/>."

Meetings: Desktop Sharing

The screenshot displays a desktop sharing session of a Windows machine running the BigBlueButton client. The browser window shows the URL `http://129.59.129.101/client/BigBlueButton.html#`. The desktop environment includes a taskbar with the Start button and several open applications: BigBlueButton - Wind..., Z:\SV\META\andbo..., Command Prompt, and CyPhyML - CB13JB - /....

The main application window is CyPhyML, titled "CyPhyML - CB15JB - RLC Lib/ElectricalComponents/10.Resistors/". It features a central workspace with a circuit diagram of a resistor component. The diagram includes an "Acoustic Power Port" (orange rectangle), an "Electrical Power Port" (green rectangle), and an "Electrical Signal Port" (blue rectangle). The resistor is represented by a yellow rectangle with a red "R" label. The diagram is connected to a "ThermalPowerPort" (red rectangle). The workspace also contains three parameter boxes:

- PARAM**
VALUE = 2
RParam
- PARAM**
VALUE = 15
Range: 0,100
PowerRating
- PARAM**
VALUE = ThickFilm
Composition

The left sidebar of the CyPhyML interface shows a "Port Browser" with various port types: EMI, Fluid, Manufacturing, Electrical, Thermal, ECG, Acoustic, Software, Fault, ConnectMapping, Environmental, Structural, BondGraph, SolidModeling, and a "Panning Window". The right sidebar shows a "CME Browser" with a tree view of components, including "CB15JB", "TLC_Lib", "ComponentAssemblies", "Active_FLC", "Digital_Filter", "RLC_Filters", "Connectors", "ElectricalComponents", "0-Resistor", "CB15JB", "M791E", "SurfaceMountResistor", "ThroughHoleResistor", "1-Inductors", "2-Inductors", "3-VariableSource", "4-ALC", "5-2AC", "6-TriangularAmplifier", "7-Processor", "Environment", "AirColumn", "Measures", "MechanicalComponents", "21-Tube", "22-30ac", and "Board1". The "Object Inspector" at the bottom right shows the properties of the selected component, "CB15JB", including its "Unique Identifier", "Volume (m^3)", "Cost (n \$)", and "Weight (n Kg)".

The bottom of the screen shows a Windows taskbar with the Start button and several open applications: BigBlueButton - Wind..., Z:\SV\META\andbo..., Command Prompt, and CyPhyML - CB13JB - /....

On the right side of the screen, a chat window titled "Electronic Meeting Test" shows a message from "admin (you)" at 11:34: "I uploaded my slides to the meeting, and I have a small demo that we have time." The message was received at 11:25.

The bottom of the screen shows a Windows taskbar with the Start button and several open applications: BigBlueButton - Wind..., Z:\SV\META\andbo..., Command Prompt, and CyPhyML - CB13JB - /....

(c) 2011, BigBlueButton build 3818-2011-01-18 - For more information see <http://www.bigbluebutton.org/>.

Open Experimental Platforms

- ▶ Move from the document-centric paradigm of *File* sharing to more generalized, ubiquitous sharing of *Artifacts*. Including, for example:

- ☐ Challenge Problems
- ☐ Models
- ☐ Algorithms
- ☐ Simulators
- ☐ Tool Suites
- ☐ Processes
- ☐ Computational Experiments



Improved Website Documentation

- ▶ Users Manual
- ▶ Group Moderators Manual
- ▶ Group Administrators Policies and Procedures

The screenshot shows a web interface for a community site. At the top is a navigation bar with links: Home, Members, Calendar, Tag Cloud, Search, Help, and Moderation. Below this is a sub-navigation bar with links: Forums, Edit, Outline, Taxonomy, Broadcast, Pages, and Browser. The main content area is titled 'User's Manual' and contains a collection of instructions for new community members. It includes a list of topics: How to apply for a VO account, How to join the 'CPS Pls' group, How to upload Files to a Group, How to create a Forum post, and How to upload Files to a Group & the Top-Level simultaneously. There are also links for 'Add child page', 'Printer-friendly version', and 'Add new comment'. A sidebar on the right contains a 'HELP' section with links: Create File, Create Image, Create Event, Group forums, Manage group forums, 10 members, Manager: brad_martin, and My membership. Below the sidebar is a search box with the text 'Search group'.

Help

Home Members Calendar Tag Cloud Search Help Moderation
Forums Edit Outline Taxonomy Broadcast Pages Browser

User's Manual
Wed, 2010-07-28 10:29 — admin
A collection of instructions, which attempt to walk the new community member through some common VO activities.

- How to apply for a VO account
- How to join the 'CPS Pls' group
- How to upload Files to a Group
- How to create a Forum post
- How to upload Files to a Group & the Top-Level simultaneously

How to apply for a VO account »

Add child page
Printer-friendly version | Add new comment | Subscribe to: This post
Subscribe to: Posts of type Book page
Subscribe to: Posts by admin

New User's Manual
Wed, 2010-11-03 16:45 — admin

The How To documentation contains URL addresses that start with "~/@ ~". To go to these places, add the path after this to the site root address in the URL, such as:

@ ~/user/login
becomes
http://cps-vo.org/user/login

- Add Content to Archive
- Add Event to Calendar
- Group Operations
- Publishing / Reviewing Content

Add Content to Archive »

Add child page
Printer-friendly version | Add new comment | Subscribe to: This post
Subscribe to: Posts of type Book page
Subscribe to: Posts by admin

HELP

- Create File
- Create Image
- Create Event
- Group forums
- Manage group forums
- 10 members
- Manager: brad_martin
- My membership

HELP

Search group

Questions/Support :

iPad 2:03 PM 100%

Contact Us | CPS-VO

cps-vo.org/contact

Google

CPS-VO NEWS BROWSE COLLABORATE SEARCH ADMINISTRATION MY GROUPS

Hello [Chris.vanBuskirk]. > My Account > Log out

- About the portal
- Contact Support
- FAQ
- Links
- Management
- Sponsors
- Vision and Goals

Welcome to the CPS-VO community!

CPS-VO »

Contact Us

You can leave a message using the contact form below.

Your name: *

Chris.vanBuskirk

Your e-mail address: *

Chris.vanBuskirk@vanderbilt.edu

Subject: *

Category: *

Suggest new features or enhancements to the VO

Message: *

Send yourself a copy