



todd.needham@microsoft.com

What Keeps Me Excited!

- Scalable, High Fidelity, Multi-party, Real Time Conferencing
- Capture and Archive for Multi-party
- Instructional Opportunities
- High Definition content support

Conference





http://research.microsoft.com/conferencexp



- Advanced Collaboration
- Distance Learning
- Broadcast quality audio & video

The Breadth of RTC Scenarios

• One-to-one: Live Messenger, Office Communicator...

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 Netcasting Video: Windows Media Server Services _ 🗆 🗙 One to many w/PowerPoint & audio: Live Meeting Many-to-many: ConferenceXP, Access Grid, inSORS... RULE MERN Maating Drivas Basults Microsoft* Re wireless classrooms • collaboration • distance learning Arrange by Name More Andreus Berglund Higher Productivity Competitive Reduced Increased Betsy Stadick Effective Advantage ROI Travel **Events** There are many other Seating Char Send E-mail Invite. Search list for person Feedback to o ask the presenter(s) a question, type it here and click A Ask Delete Question Manager

Connected

- Ease of:
 - -Use
 - -Installation
 - -Configuration
- Flexibility
- Managed Code & Windows MM
- Infinite Scalability*
- Broadcast-Quality Conferencing*

ConferenceXP is for <u>Government</u> Networks <u>Academic</u>

- Multicast dependency
 - Internet2 and similarly MC-enabled networks
 - Scalability limitations on unicast service*
 - No commercial deployment of multicast*
 - Fixed IP addresses in multicast deployments
- High end node requirement
 - Fastest dual-core or multi-processor
 - 3+ displays not unusual
- A Microsoft Community Source Project

ConferenceXP Components

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ConferenceXP Architecture

ConferenceXP Application						
ConferenceXP Client	Custom					

ConferenceXP Capability						
Audio / Video	Presentation	Custom				
ConferenceXP API						
DirectShow/ Windows Media	RTDocuments	CapabilityBase				
Network Transport						
RTP API						
System.Net.Sockets						

University Engagements

Purdue: Immersive Mentoring Using Mixed-Reality Tabletop; A Tablet-PC Based Teaching Platform for Portable Mixed-Reality Concept	UC Davis: Smart Classroom: Next Generation Collaborative Teaching and Learning over ConferenceXP			
Michigan State: Wireless ConferenceXP with Intelligent Congestion and Rate Control; Peer-to-peer Multi-reflector Networking for ConferenceXP	UCSD: A Tiered Approach to Evaluating and Exploiting the Effects of Multi- modal Communication on Expression and Learning in the Classroom			
UW: The Teacher Experience Project; Windows Media Transcoding using CXP Archive Service ; An Ink Enabled Curriculum for Data Structures	University of Virginia: Investigating the Effective Use of Tablet PCs in CSE Education; A Comparison of Educational Outcomes when Teaching Electronic Commerce Using Traditional vs. Tablet PC-Enhanced Methods			
MIT: Classroom Learning Partner	UIUC: Mentoring and Assessment Both Inside and Outside the Classroom; Visual Information Manager			
IIT, Kanpur, India: Health Information Delivery	Brown University: ReMarkable Texts			
NTU, Argentina: Mathematical Whiteboard Using ConferenceXP	U Missouri: Enhancing Reliability by Supporting Path-Diversity Overlay Retransmission			
Pace University: Utilizing the Tablet PC to Enhance Lectures and Team Work Project	U Nebraska: Supporting and Enhancing Cooperative Learning with ConferenceXP-powered I-MINDS			
Southwest Missouri State: Proposed Uses of Microsoft's ConferenceXP by the Missouri Virtual School	UC Davis: Smart Classroom: Next Generation Collaborative Teaching and Learning over ConferenceXP			
Saint Louis: Connecting Saint Louis University Campuses via Conference XP	U Mass, Amherst: Implementing ConferenceXP In A Multi-cultural, Collaborative, Academic Environment			
Vanderbilt: Improving Formative Assessment and Research Planning with ConferenceXP	UCSC: Advanced Classrooms Exploiting Tiled Displays and Student Computers; TeleEducation / TeleCollaboration and Streaming Multimedia			

University of Tennessee: ConferenceXP and NetSolve Usage

Academic Research Projects

2005 ConferenceXP Projects

Enhancing Reliability by Supporting Path-Diversity Overlay Retransmission Visual Information Manager Supporting and Enhancing Cooperative Learning with ConferenceXP-powered I-MINDS Windows Media Transcoding Using ConferenceXP Archive Service Data Advanced Classrooms Exploiting Tiled Displays and Student Computers The Classroom Learning Partner: Electronic Support for Student Learning Classroom Presenter Development and Deployment Peer-to-Peer Multi-Reflector Networking for ConferenceXP Implementing ConferenceXP in a Multi-cultural, Collaborative, Academic Environment...

2004/2003 ConferenceXP Projects

Health Information Delivery Immersive Mentoring Using Mixed-Reality Tabletop Mathematical Whiteboard Using ConferenceXP Mentoring and Assessment Both Inside and Outside the Classroom ReMarkable Texts A Remote Teaching Assistant Support System Responsible Conferencing: Congestion Control for Hiqh-Quality Media Smart Classroom: Next Generation Collaborative Teaching and Learning over ConferenceXP The Teacher Experience Project TeleEducation/TeleCollaboration and Streaming Multimedia

Demo - Installation

ConferenceXP Client 3.5

Welcome to the ConferenceXP Client 3.5 Setup Wizard



The installer will guide you through the steps required to install ConferenceXP Client 3.5 on your computer.

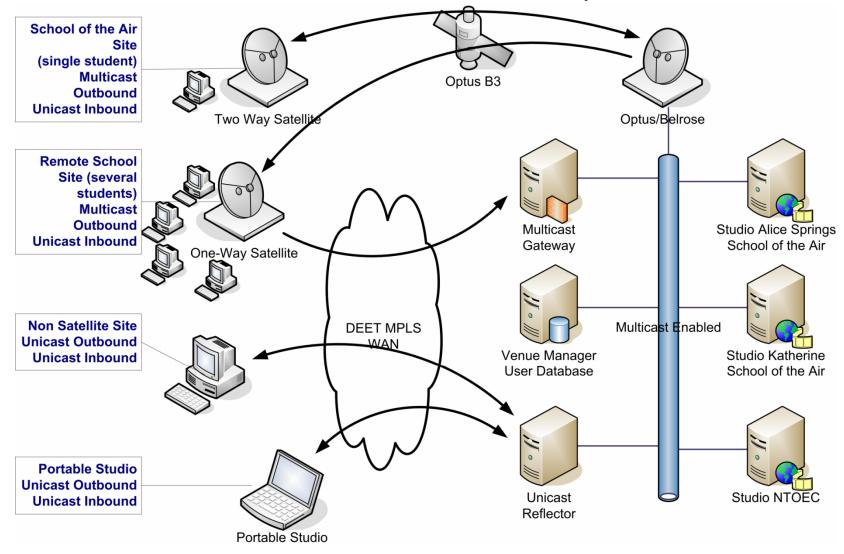
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.

Cancel	< <u>B</u> ack	<u>N</u> ext >



Australian School of the Air

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Documents

Discussions

Pictures

Surveys

Lists

Core Courses Portal

Home

- Isenberg School of Management
 DuBois Library Business Research Guide
- Business & Company Resource Center
- Mergent Online
- LexisNexis Academic Universe
- ABI/INFORM Global
- University of Massachusetts Amherst
- To Copy or Not To Copy
- Computer History Museum
- OIT Services Guide (PDF)
- Isenberg Undergraduate Office (Add/Drop Request)
- Click To Reach Your SOM 210 Lab Team

- Manufacturing data slam Wall Street
- GM, Ford post sales gains for October
- Construction spending falls again
- Al-Jazeera to launch English-language channel
- Is pink flamingo an endangered species?

Complete coverage at MSNBC.com

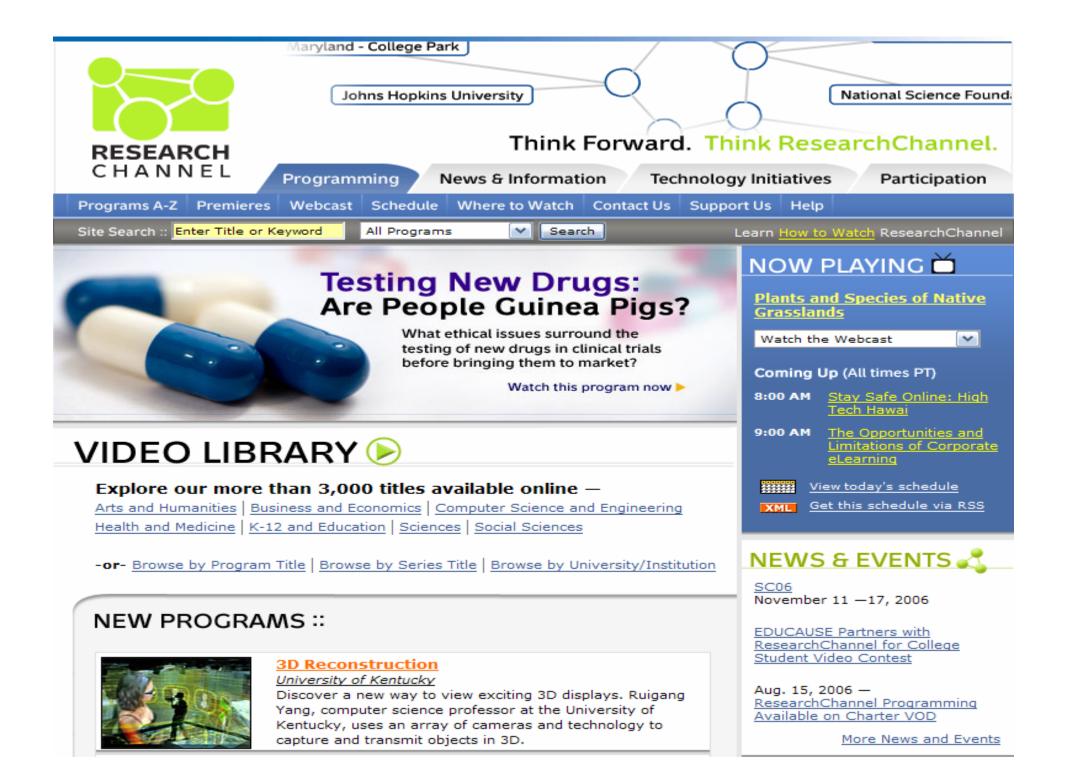






Welcome Core Courses Portal Guest

- SOM 210 (A) Introduction to Business Information Systems Home Page Course Syllabus Lab Syllabus Grades
- SOM 210 (B) Introduction to Business Information Systems Home Page
- FOMGT 250 Quantitative Tools For Management Home Page
- MGT 260 (1) Introduction to Law Home Page



Live, Distributed Musical Performance

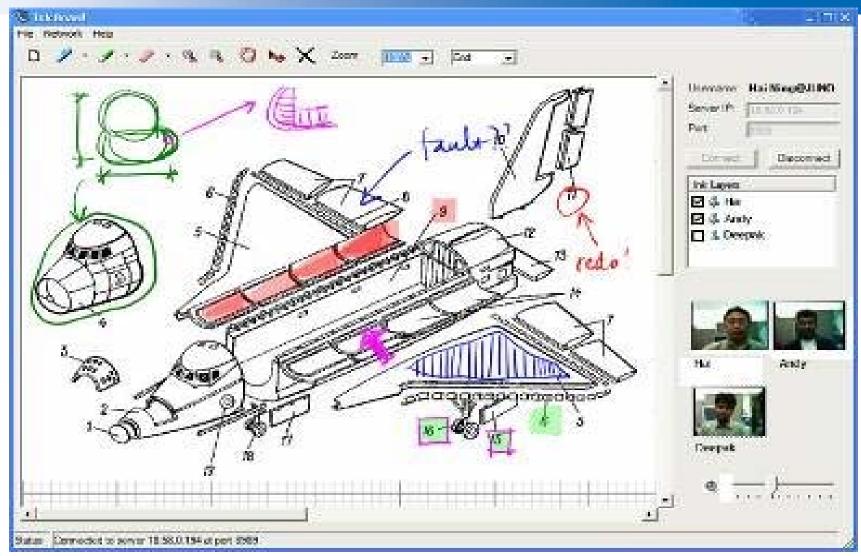
Moscow Institute of Physics and Technology; Moscow State University



omniMusic Application

Engineering Design Sketching

Massachusetts Institute of Technology



InkBoard Application

📖 CXP Web Viewer

File Help







University of Washington Computer Science & Engineering



ConferenceXP to Windows Media Gateway

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The Conferencing Experience Project is fully described here: http://www.conferencexp.net/

Introduction

The ConferenceXP to Windows Media Gateway is an adjunct to the Microsoft Research Conferencing Experience Project.

ConferenceXP implements a live interactive distributed classroom. The ConferenceXP to Windows Media Gateway encodes a ConferenceXP event such that it can be distributed live to desktop, and/or archived for asynchronous use. A typical user of this type of delivery would be a student, who is not able to attend a live or remote classroom site but yet wants to view the live class. The student has available a PC with broadband network. The goal is to permit the student to watch a class in progress using standard tools such as IE and Windows Media Player. There should be no (or minimal) special software to install on the client. In addition to the program audio and video, PowerPoint, whiteboard, and other supporting materials may be delivered to the student's desktop. Due to the lack of interactivity, this would not be recommended to students as a primary means of taking a course, but would be available for occasional emergency use, for review, or for use by casual participants, such as course auditors.

The Windows Media Gateway implements a special type of ConferenceXP listening node. The operator configures the application to gather multicast RTP audio, video and presentation streams originating from the appropriate ConferenceXP venues and nodes. Streams are transcoded using the Windows Media Format SDK, and delivered to a Windows Media Server for distribution to clients.

Current Status, Downloads and Revision History

(Most recent first)

- WMGateway 2.7.msi 4/3/2006. Supports the CXP 3.5 Screen Streaming capability. (Consider this to be Beta for now)
- WMGateway 2.6.0.msi 3/27/2006. Compatible with CXP 3.5 and Presenter 2.x.
- . WMCatoway 2 5 3 mei 1/5/2005 Compatible with CYD 3 0/3 2 and Bracenter 1 0 08 (or later) This version will work with CYD 3 5



SEARCH

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November 2, 2006 | Internet2 Commons Home

THE INTERNET2 COMMONS	commons.internet2.edu		or one-to-one, one-to-group, and abling the Internet2 research and
SERVICES		products & services	_for subscribers only
LEARN MORE	MEGACONFERENCE VIII		
ADD PORT HOURS	NOVEMBER 2, 2006	Apply for H.323 Services	Schedule a videoconference.
		Add Port Hours	get involved
>Find People >Learning Resources		RTC Services:	Apply Now for H.323 Multipoint
>Schedule a Session >Site Coordinators		>EVO	videoconferencing. Download the infosheet [pdf].
>Tools >Training >Troubleshooting		>inSORS	Find out how to register with our
RTC SERVICES	Megaconference VIII is taking place today! Watch the live netcast from 8am	>Marratech	gatekeeper and test your connection. What is GDS-enabled dialing anyhow?
>EVO >inSORS >Marratech	to 11pm EST (GMT-5). Join hundreds of participants from universities, K-12 schools, and organizations around the	>Microsoft Research	Become a Site Coordinator!
>Marratecn >Microsoft Research >RADVISION	world using advanced networks to discuss current projects and	>Radvision Click-to-Meet	become a site coordinatory
>About	developments. This year's theme, Breaking Down the Barriers: Global	Collaboration Tool Evaluations	
>Contact Us >FAQ	Connections, focuses on improving understanding between individuals and	training	sights & sounds
>Newsletter	cultures, using videoconferencing tools. Interactions will discuss and		The Commons Newsletter:
	demonstrate how groups use videoconferencing in real-world applications, and actual end-users will	Check back to register for our next training session, December 21, 2006.	Sights & Sounds
	be presenting; technical presentations will be limited. All presentations including musical performances, cultural discussions, cooking demonstrations,	Read about previous training sessions.	Spring 2000
	and morewill be fully interactive, engaging multiple sites and the		
	audience.	events	
	The Megaconferences and their spinoffs were among the recipients of the first-	Register Now for	



HOME	CURRENT STATUS	CXP+I-MINDS CAPABILITIES	TEAM
HISTORY	PUBLICATIONS	SOFTWARE DISTRIBUTION	CONTACT

Most computer-supported collaborative learning (CSCL) systems have in general three key weaknesses. First, the collaboration among students are not monitored, measured and analyzed automatically. Vital information on an individual student's collaborative performance and behavior is lost. Further, even when the students' collaborative activities are tracked, real-time analyses are not available automatically to support students or teachers. Second, the collaboration is free-formed and thus not structured. Often times, teachers design various cooperative learning activities using different models to structure how students should collaborate and to target different collaborative strategies to measure. Third, the collaboration among students is not *actively* supported: the CSCL system does not alert the instructor about a student of his or her lack of participation, does not encourage a student to increase his or her participation, and so on.

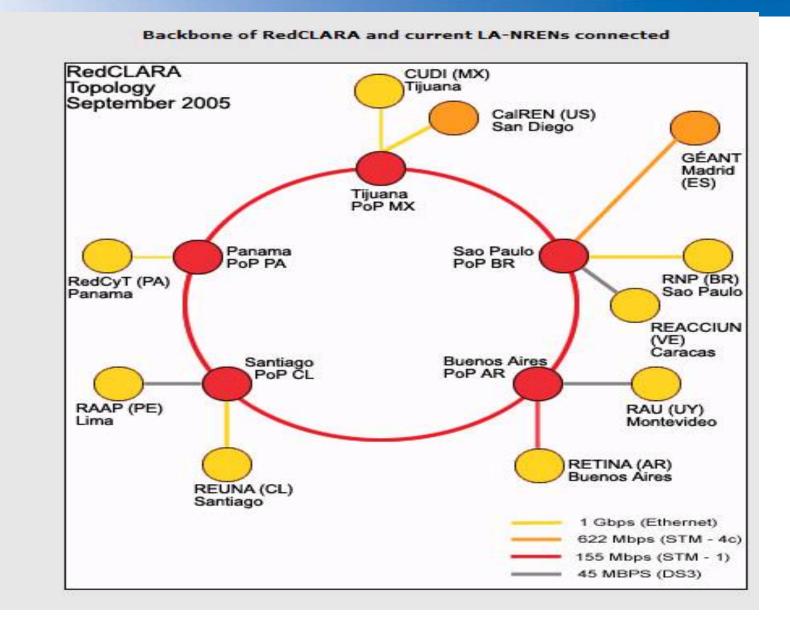
I-MINDS is a software solution to intelligent management of virtual classrooms or groups, to support real-time and offline activities by *facilitating group work, seamlessly tailoring to individual user needs and backgrounds, and assisting group moderation and management*. Its technology is built upon intelligent software agents that interact on behalf of the users autonomously. In addition to collecting data and information on the users' activities and preferences, the agents also make decisions such as evaluating and ranking questions, supporting group discussions, match-making compatible group members, and learning useful heuristics to better support the users.

Specific applications of our technology include distance education support systems, active learning support systems, and corporate training support systems. By synchronous learning, I-MINDS is to provide intelligent support for a teacher in managing a classroom at real-time (including audio/video, real-time Q&A, real-time student profiling and ranking), and for a student to participate in group activities real-time (regardless of where the student is, remote or in-class). By synchronous learning, I-MINDS is to provide automated digital archival, Q&A, and student support groups outside the classrooms. But now, after our discussions in terms of marketability, we are looking at probably "focus group support systems" as outlined above.

Use Situations for CXP-Powered I-MINDS

The CXP-Powered I-MINDS system can be used as an off-the-shelf capability in a CXP venue as well as a research tool. Its design is flexible such that users can add to the design to collect additional data or information, or create additional GUI components, or to customize features to more appropriately suit the needs of the users.

LatAm Virtual Institute



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Welcome, today is 02 Nov 2006 4:04 PM UTC Unanswered				Searc	
Forums		Last Post	Threads	Posts	
S Conference XP Project					
Post questions and find answers about ConferenceXP Client		Re: Windows Media codecs by Jason Van Eaton 31 Oct 2006 3:14 PM UTC	9	38	
Venue Service Post questions and find answers about the ConferenceXP Venue Service		Re: Please Adam. Need by Adam Eck 13 Sep 2006 5:40 PM UTC	2	22	
Post questions and find answers about the ConferenceXP Archive Service		Re: PowerPoint Present by Jason Van Eaton 26 Oct 2006 2:17 PM UTC	3	6	
Post questions and find answers about the ConferenceXP Reflector Service		Re: Get CXP to work in by Frank Verduin 27 Oct 2006 1:51 PM UTC	5	13	
Post questions and find answers about 3rd party ConferenceXP applications, utilities and projects		27.2	2		
Bardware Discuss the hardware you're using with ConferenceXP (Cameras, Computers, Microphones, TVs, F Video capture)	Re: Camera crashing Co by Todd Needham 12 Sep 2006 8:20 PM UTC	3	6		
Networking Post questions and find answers about networking, multicast, bandwidth issues and more	Re: Reliable multicast by Adam Eck 11 Oct 2006 4:03 AM UTC	2	13		
Developer Discussions Discuss ConferenceXP source code, RTP, Conference API, and capabilities	Re: AudioCapability in by Jason Van Eaton Yesterday, 5:20 PM UTC	8	28		
Conference XP Wishlist What would you like to see in the next release of ConferenceXP? (The development team is listening)		Re: Post 4.0 features by Jason Van Eaton 03 Oct 2006 5:50 PM UTC	1	6	
General Discussion Discuss topics that aren't covered by any of the other forums, share a tip you've discovered or get troubleshooting a problem	t help	Registration is now op by Todd Needham 28 Sep 2006 5:11 PM UTC	2	5	

 Forum Statistics
 Top 10 Answerers in past 30 days

 i) Jason Van Eaton (1)
 2) Adam Eck (1)

CodePlex

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New Projects



Latest Releases

DataGrid Atlas Extender Control

0.9.5 ReleaseCandidate -11/3/2006

Super Copy

0.4 ReleaseCandidate -11/3/2006

MeiRou - A Flickr Photo

Management Tool 0.2.1 SpecialBuild - 11/2/2006

Web Application Project Libraries

1.1 Production - 11/2/2006

SameDesk SameDesk 0611020333 NightlyBuild - 11/2/2006

- Open SSH for Windows CE 0.0.1 Alpha - 11/2/2006
- VSSConverter GUI 1.0 Production - 11/1/2006

About CodePlex

CodePlex is Microsoft's community development web site. You can use CodePlex to create new projects to share with your fellow developers around the world, join others who have already started their projects, or use the applications on this site and provide feedback. <u>More...</u>

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- CodePlex FAQ Get answers.

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3 - 4 Year Vision

- 1. ConferenceXP broadly used in academia for multiinstitutional education, archiving.
- 2. Academic conferences and workshops routinely enable remote participation / attendance.
- 3. University classes and guest lectures are routinely recorded and broadcast via Windows Media *but* <u>remote participation</u> is enabled via ConferenceXP.
- 4. ConferenceXP localized in a dozen languages.
- 5. High Definition collaboration is the default in distance education and research.

ConferenceXP FY07 Priorities

- Growing the Community
 - CodePlex, Microsoft Forums, Newsletter
 - ConferenceXP User and Developer Workshops
 - Internet2 Activities; Regional 'Content' Workshops
 - International Infrastructure
- RFP: "Center for Collaborative Technologies"
- Focused R&D Projects:
 - Real time High Definition encoding: U Washington
 - UW Medical School: WWAMI Classroom
 - UK eScience Grid conversion
 - Global ConferenceXP Infrastructure & Localization

Questions?

Todd Needham Sr. Program Manager, ConferenceXP todd.needham@microsoft.com

ConferenceXP community sites:

- -http://research.microsoft.com/conferencexp
- -http://commons.internet2.edu
- <u>http://forums.microsoft.com/msr</u>
- -http://www.codeplex.com/conferencexp