



Computer Science 360-520 Seminar

Todd Sands, Ph.D
November 12, 2004



Change is Inevitable!

“It is not the strongest of the species that survive, nor the most intelligent, but the ones most responsive to change.”

-- Charles Darwin



A story of e-Enabling. . ."the use of technology"

A success story of adapting to change. . .in the digital economy.

What is a “Smart Community of. . .?”

“A community with a vision of the future that involves the use of information and communication technologies in new and innovative ways to empower its work!”

Adapted from Industry Canada

Putting Together Our “Smart Community” Puzzle

Four Key Components:

1. Smart Organizations (you)
2. Smart Infrastructure (All)
3. Smart Applications (?)
4. Smart Access (ORION)



- ❖ Difficult to separate any of the four key pieces
- ❖ Difficult to sustain in isolation

Identity and Mission



... a consortium of health, education,
and municipal stakeholders . . .

...working together...

...to create a SMART community-based and regional
platform for the development and use of advanced &
secure electronic technologies, products and services. . .



Historical Overview

- ❖ Circa 1994, with the idea of requiring a physical network with capability. . . Why?

To research, develop, promote and recognize the benefits of a high-speed communications network in Southwestern Ontario for the education, health, municipal and industrial sectors.

- ❖ Needed \$\$\$. . . looked to government programs – e.g. Ontario Network Infrastructure Program (1996), etc.,

- ❖ Needed partners – local users and vendor suppliers – success!

- ❖ Canadian Network for the Advancement of Research, Industry and Education
- ❖ Optical Regional Advanced Network for Ontario (PoP Upgrade & Connectivity Projects)
- ❖ Energy, Science and Technology Telecommunications Access Partnership Program (TAP)
- ❖ Municipal and Educational Services Interface – City and School Boards – 200 sites
- ❖ Connect Ontario/GeoSmart – working on Connecting Windsor-Essex
for citizen engaged applications with researchers

- ❖ Investment in IT through partnerships @ more than \$20 million

What has WEDnet Helped e-Enable?

- ❏ *Electronic reserves library project - WERLnet*
- ❏ *Healthcare network - patient care maps – WRCC*
- ❏ *Network solution + document imaging- Hotel-Dieu Grace Hospital*
- ❏ *Windsor Regional Hospital - network solution + ADT system*
- ❏ *GECBSB - (WPB/ECBE) Project labs for student integrated learning*
- ❏ *WECDSB - (WSSB/ECSSB) Project labs for student integrated learning*
- ❏ *St. Clair College Manufacturing Design Facility*
- ❏ *St. Clair College intercampus project to connect remote campuses*
- ❏ *University backbone network upgrades & high tech labs – VoD delivery*
- ❏ *University Multimedia Learning and Language Laboratory*
- ❏ *Real-time H.320 and H.323 videoconferencing among partners*
- ❏ *Information kiosks - City of Windsor + on-line services*
- ❏ *CWE Proposal for Connect Ontario/GeoSmart*
- ❏ *Support for Windsor Essex Geomatics Consortium (WEGC)*
- ❏ *Virtual Tourism Project with virtual tours on-line*

ORION's Infrastructure brings Wave Division Multiplexing for Windsor and Essex County with direct connection to Larg*net in London, ON



Infrastructure & Applications (Key)

- ❖ **Expansion of Regional Advanced Network**
 - ❖ Fibre Optic PoP in each municipality
 - ❖ Ease rural/urban dichotomy of level of service
 - ❖ Improved infrastructure to library systems & schools

- ❖ **Connect Ontario Applications:**
 - ❖ Community Connector – portal (3 - I's)
 - ❖ e-Government/e-Commerce
 - ❖ Virtual Tourism

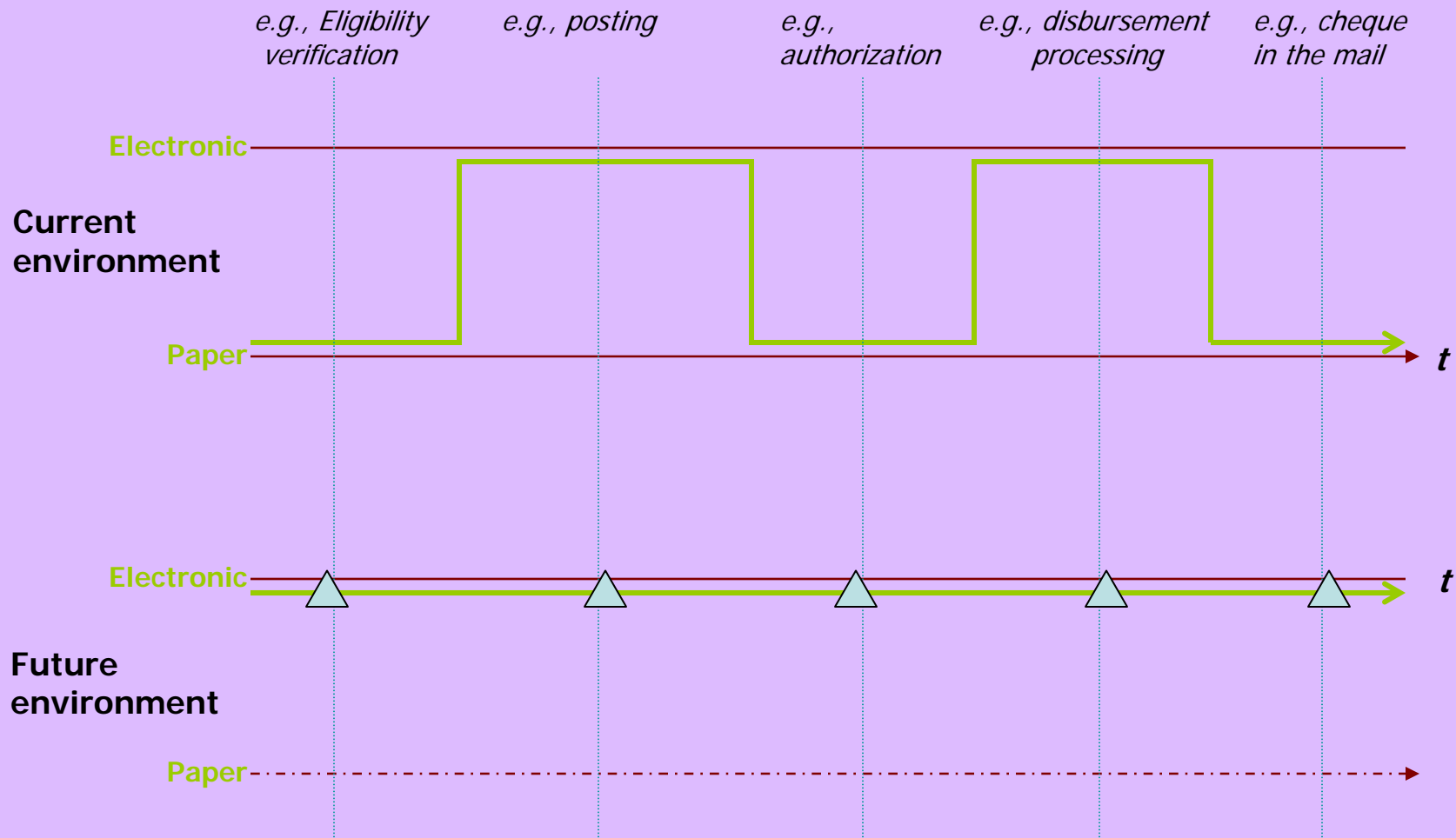
- ❖ **GeoSmart Applications:**
 - ❖ Directory & Services Locator
 - ❖ Emergency Services Routing
 - ❖ Tourist Routing

Security Strategy

- Security Policy Framework
- Security Awareness
- Threat & Risk Assessment
- Security Classification of Information
- Information Technology Security
- Personnel Security
- Business Continuity Planning
- Incident Analysis
- Physical Security
- Security Organization

The Electronic Service Delivery objective:

The "virtual" organization



The “Last Mile” of Virtual Identity

The people



The services

PKI, SSL, VPN, etc..

The organization

PMI, access control, common signon, etc..

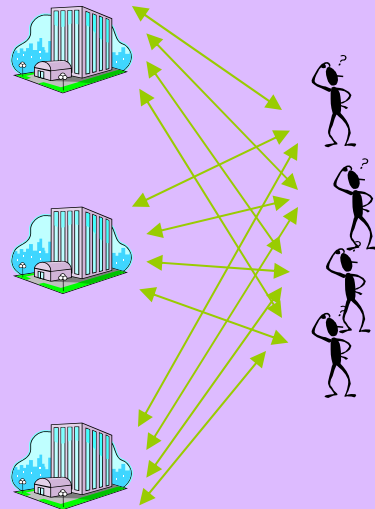
Viviale Concept Based on Societal Relationships

- Identity: from cradle to grave..
 - Relationship between a name and an individual
 - Void of any societal context
- Societal roles: a profession (e.g., Professor) that transcends time and organizational boundaries
 - Roles can be played across multiple settings
- Functions: a function that is limited in time and space to the organization that has defined it (e.g., a seminar speaker in room 2136 ER)
 - Functions are defined by an organizational context

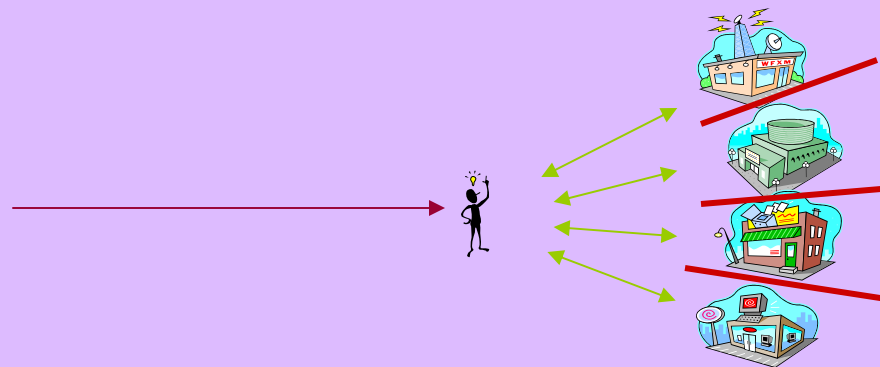
Privacy impediments arise from personal information crossing boundaries and being attached to identity

The Virtual Identity Challenge

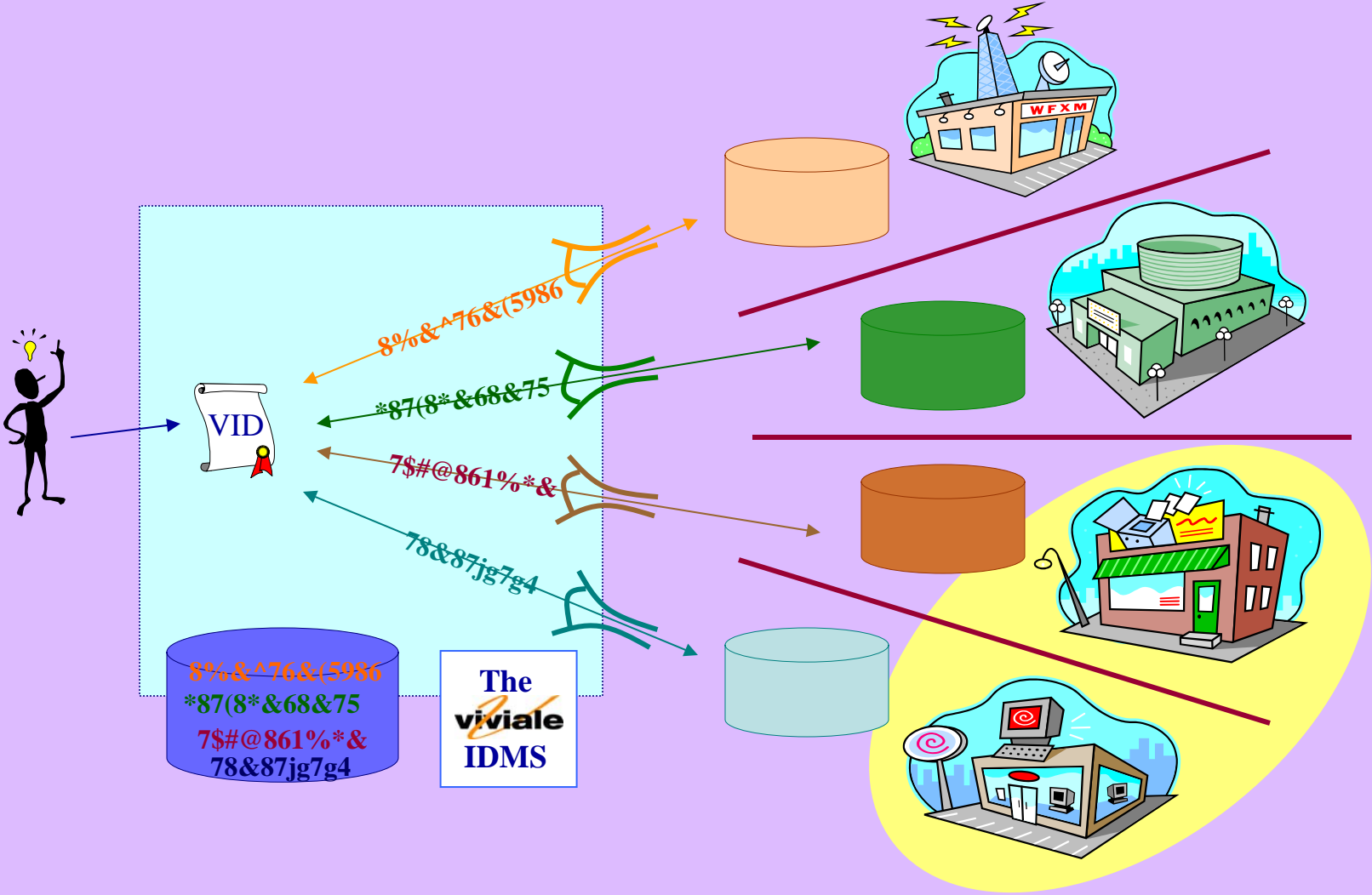
From...



To...



Shared Services Model



Activities Underway

- Identity Management – individuals
- Privacy & Security policy action items
- Organizational user interface specificity
- Advanced toolsets – videoconferencing +
- More connections with user needs including researchers specific needs
- Priority setting to determine what has the most value (not cost savings, but cost avoidance)

Portal Infrastructure

The screenshot shows a web browser window displaying the 'Connecting Windsor-Essex' portal. At the top, there is a navigation menu with links for Home, Business & Industry, Culture, Education, Government, Health & Wellness, Leisure & Sports, Tourism, Volunteer & Service Associations, and Search. A 'Main' button is also visible. The main content area features a large 'WE' logo on the left, with a vertical stack of colored buttons representing the same categories as the top menu. To the right of the logo, the text reads 'Connecting Windsor-Essex™ @ the speed of life®'. Below this, a welcome message states: 'Welcome to Connecting Windsor-Essex™... your official source for key information, services and contacts.' A secondary navigation bar includes the date 'Friday, January 16, 2004', a link for 'FIRST VISIT? ... click here', and links for 'Login' and 'HELP'. The main content is organized into four columns: 'Weather' (showing 'Windsor, ON', 'A few clouds', and '-10°'), 'Search Windsor-Essex' (with sub-links for 'Search Community Information' and 'Windsor-Essex News'), 'Community Calendar' (with a 'more Events...>>' link), and 'Community Connector' (with a 'The Demo Room' section and a login prompt). A footer contains a list of categories, a copyright notice for 2003, and links for 'About Us', 'Disclaimer', and 'Acceptable Use Policy', along with the Ontario logo.

I forgot my password | Help | Log in

Home | Business & Industry | Culture | Education | Government | Health & Wellness | Leisure & Sports | Tourism | Volunteer & Service Associations | Search

Main



- Business & Industry
- Culture
- Education
- Government
- Health & Wellness
- Leisure & Sports
- Tourism
- Volunteer & Service Associations

Connecting Windsor-Essex™
@ the speed of life®

Welcome to *Connecting Windsor-Essex™*... your official source for key information, services and contacts.

Friday, January 16, 2004 » FIRST VISIT? ... click here » Login HELP

Weather Windsor, ON A few clouds The Weather Network -10° Click for Forecast	Search Windsor-Essex Search Community Information Windsor-Essex News Kevin's Test... Have a great summer !... more News...>>	Community Calendar more Events...>>	Community Connector The Demo Room. Access to discussion, event calendars and resources for Windsor-Essex groups. Please login before entering this area
---	--	---	---

Business & Industry | Culture | Education | Government | Health | Leisure & Sports | Tourism | Volunteer & Service Associations
test HTML version

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Connecting Windsor-Essex™ @ The Speed of Life!®

Identity Management: Please login

Welcome to the Connecting Windsor-Essex™ Identity Management System.
To access the System you must login.

Membership Code:

P1P2

Enter the four digit code from your e-mail

Shared Secret:

Enter the Shared Secret you created during your original Application Process.

Please Note: Shared Secrets are case sensitive.

login



Industry
Canada

Industrie
Canada



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Connecting Windsor-Essex™ @ The Speed of Life!®

Identity Management:

[IDMS Main](#) [Registered Users](#) [Operations](#) [Services](#) [Support](#) [Exit](#)

Welcome: **Chris PAM Bertenshaw**

Last online: 04/08/2004 12:00

Message:

Notes:

ViviMail Messages:

From	Sent

Waiting Authentications:

Referrals:



Industry
Canada

Industrie
Canada



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Connecting Windsor-Essex™ @ The Speed of Life!®

Identity Management: Registered User: Authorization

Main	Supporting Info	Referral	Face To Face	Escalate
Document 1:	Passport			
Document 2:	Photo driving licence			
Status:	Authorize			
Notes:	I checked this information.			
<input type="button" value="Cancel"/> <input type="button" value="Submit"/>				



Connecting Windsor-Essex™ @ The Speed of Life!®

Creating Your Virtual Identity

This Web site is requesting a new certificate on your behalf. You should click only trusted Web sites to request a certificate for you. Do you want to request a certificate now?

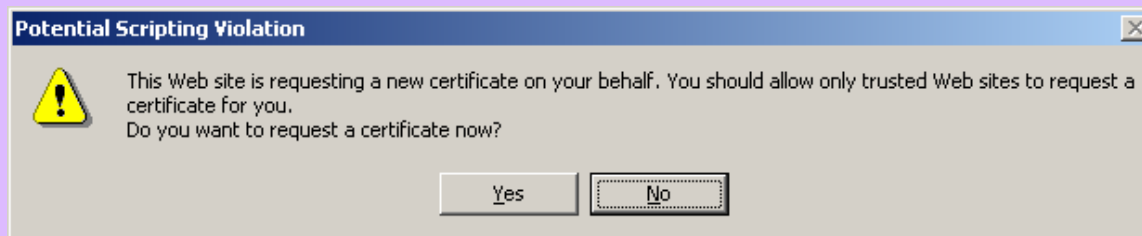
You must click "Yes" to create your Identity.

You will then see a second dialog creating your virtual identity keys.

Creating a new RSA exchange key

An application is creating a Protected ID™.







Connecting Windsor-Essex™ @ The Speed of Life!®

Congratulations you have successfully registered with Connecting Windsor-Essex.

Your virtual identity was successfully created and installed in your browser.

The Connecting Windsor-Essex Community Portal. [Windsor-Essex Portal Login](#)

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[Privacy Policy](#)

[Disclaimer](#)

[Acceptable use and Agreement Policy](#)





The Advanced Applications Database: Query/Search

[Contact us](#) with your comments or use our [data submission form](#) for corrections, and submission of new information.

Please take some time to complete our [websurvey](#)

[Search](#) [Reports](#) [Charts](#)

Search

Search for:	<input type="text"/>	<input type="button" value="Search"/>
	<input checked="" type="radio"/> Containing <input type="radio"/> Exact match <input type="radio"/> Beginning with	
Choose from:	<input checked="" type="radio"/> Project - title, term abstract <input type="radio"/> Resource - resource/tool name, term abstract <input type="radio"/> Affiliation - abbreviation, extended name <input type="radio"/> Project leader - project leader's last name <input type="radio"/> People - person's last name <input type="radio"/> Institution - name, part of name <input type="radio"/> State - name, abbreviation <input type="radio"/> Country - name, abbreviation	


Need some [examples](#) on using the search ...



The Clearinghouse Database: Results - Microsoft Internet Explorer

Address <http://cgi.ncsa.uiuc.edu/cgi-bin/General/CC/irg/clearing/query.pl>

Google Search Web 1 blocked AutoFill Options



Search Result found 743 matches for "science"

science 10 results Search

Back to: [Database Query/Search](#) (Term Searches, Reports, and Charts)

Project title (p) / Resource name (r) / Institution name (i) Please click on the following link to obtain more information about it	Primary URL
Central Arizona-Phoenix Long-Term Ecological Research (CAP LTER) (p)	http://caplter.asu.edu/
Intelligent Stage (p)	http://www.intelligentstage.com/
Interactive Nano-Visualization in Science and Engineering Education (IN-VSEE) (p)	http://invsee.asu.edu/
National Center for Macromolecular Imaging (p)	http://ncmi.bcm.tmc.edu/ncmi/
Earthquake Physics (p)	http://physics.bu.edu/
Analysis of data from planetary probes and interactions with associated groups or researchers (p)	http://www.brown.edu/Facilities/CIS/Network_Services/vBNS/meritapp.html
Telecollaboration and remote visualization of digital cardiography data (p)	http://www.brown.edu/Facilities/CIS/Network_Services/vBNS/meritapp.html
Graphics and Visualization Center (p)	http://www.cs.brown.edu/stc/
Metacomputing Research (p)	http://www.aldea.com/cenic/acit.html

Done Internet

http://www.wednet.on.ca/units/WEDnet/ProjForm.nsf/ProjForm?OpenForm - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Refresh Print Mail News RSS

Address http://www.wednet.on.ca/units/WEDnet/ProjForm.nsf/ProjForm?OpenForm Go Links

Google Search Web 1 blocked AutoFill Options

WEDnet Project Worksheet

The WEDnet Office and Technical Group will use the information below as part of the project request process.

Questions concerning this form should be directed to Kevin Macnaughton at kevinm@uwindsor.ca or by phoning 519-253-3000 x4558.

Please Complete the Following:

This request involves work that is initially best represented as:

- Concept Only
- Exploratory Design/Research
- Live Development/Production

Lead Contact for Organization Requesting the Project:

<i>Name</i>	<input type="text"/>
<i>Title</i>	<input type="text"/>
<i>Organization</i>	<input type="text"/>
<i>Work Phone</i>	<input type="text"/>
<i>FAX</i>	<input type="text"/>
<i>E-mail</i>	<input type="text"/>

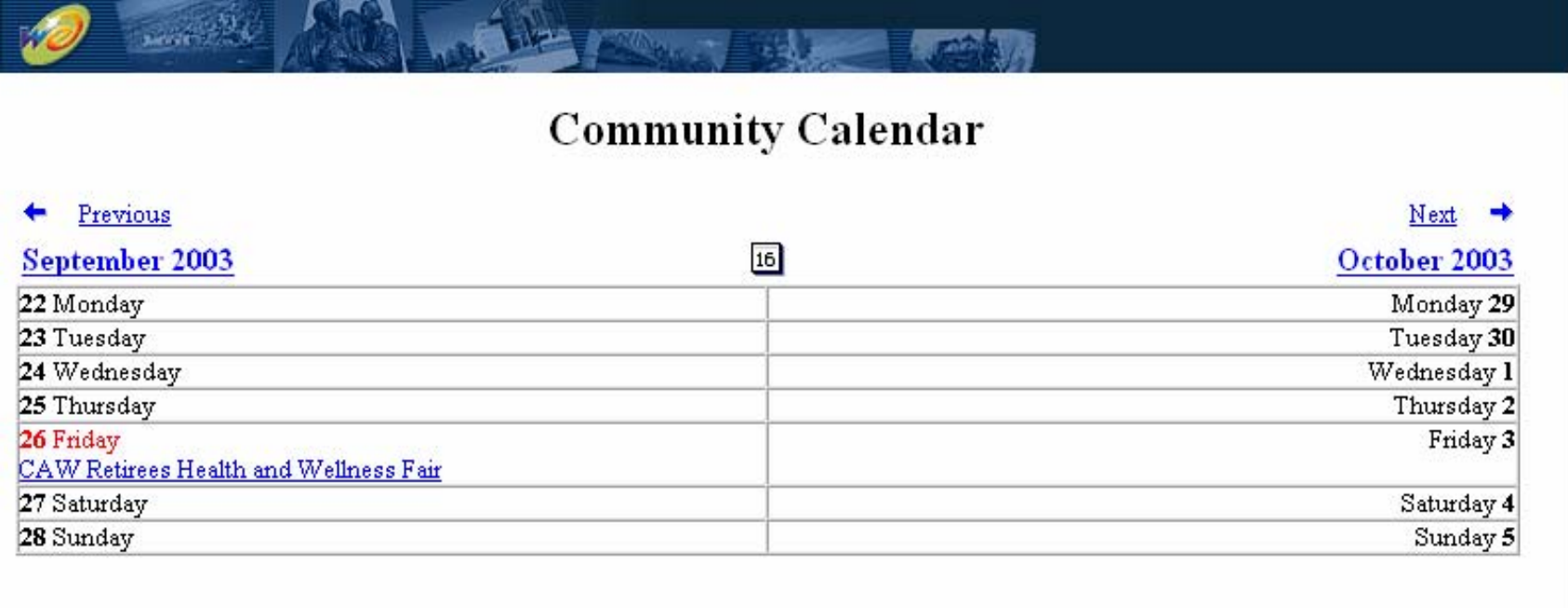
Local Contact for Technical Assistance Related to the Project:

<i>Name</i>	<input type="text"/>
<i>Title</i>	<input type="text"/>
<i>Organization</i>	<input type="text"/>

Done Internet

Community Calendar

1. Public Calendar – Share your event information
2. Planning Calendar – Maximize Opportunities

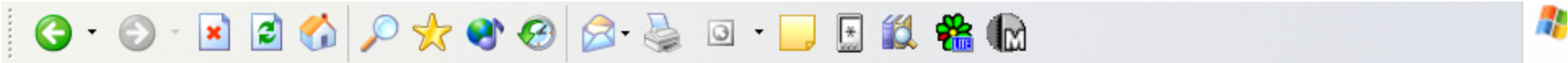


Community Calendar

[← Previous](#) [Next →](#)

[September 2003](#) 16 [October 2003](#)

22 Monday		Monday 29
23 Tuesday		Tuesday 30
24 Wednesday		Wednesday 1
25 Thursday		Thursday 2
26 Friday		Friday 3
CAW Retirees Health and Wellness Fair		
27 Saturday		Saturday 4
28 Sunday		Sunday 5



Windsor-Roseland Rotary Club

■ kverner |

New... Edit Check Out... Copy Move Delete

- Chat:
- Welcome to our Quickplace!
- Discussion
- Calendar
- Library
- Tasks
- Club Service
- Community Service
- International Service
- Vocational Service
- Index
- Black Tie Bingo
- Lobsterfest
- Wines of the World
- Members
- Customize
- Chat
- Search
- What's New
- Room Map
- Work Offline
- My Places
- Help

✉ Notify

Welcome

This is the QuickPlace for the Windsor-Roseland Rotary Club. This space will allow our members to be kept apprised of aspects of events that Windsor-Roseland Rotary is working on. In addition the various avenues of service are represented in this area.

Next steps

- > Click any link in the table of contents to start working
- > Click Help for more information

Questions?

If you have any issues working within this space, please contact Kristina Verner at kverner@uwindsor.ca or (519) 253-3000 x 4560.

New... Edit Check Out... Copy Move Delete



Windsor-Roseland Rotary Club

■ kverner |

[New Calendar Page](#) [New...](#) [Folder Options](#)

- Chat:
- Welcome to our Quickplace!
- Discussion
- Calendar**
- Library
- Tasks
- Club Service
- Community Service
- International Service
- Vocational Service
- Index
- Black Tie Bingo
- Lobsterfest
- Wines of the World
- Members
- Customize
- Chat
- Search
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- Room Map
- Work Offline
- My Places
- Help

[Notify](#) [Print](#)

Calendar

October 2003 October 2003

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
29	30 Weekly Meeting @ 12:00 AM Foglar kverner Furlan	1	2	3	4	5
6	7 Weekly Meeting @ 12:00 AM Foglar kverner Furlan	8	9	10	11	12
13	14 Weekly Meeting @ 12:00 AM Foglar kverner Furlan	15	16	17	18	19
20	21 Weekly Meeting @ 12:00 AM Foglar kverner Furlan	22	23	24 Wines of the World @ 05:00 PM kverner	25	26
27	28 Weekly Meeting @ 12:00 AM Foglar kverner Furlan	29	30	31	1	2

Times shown are: Eastern Daylight Savings Time (GMT -5:00)

[New Calendar Page](#) [New...](#) [Folder Options](#)



Windsor-Roseland Rotary Club

■ kverner |

New Task Page New... Cleanup Folder Options



- Chat:
- Welcome to our Quickplace!
- Discussion
- Calendar
- Library
- Tasks
- Club Service
- Community Service
- International Service
- Vocational Service
- Index
- Black Tie Bingo
- Lobsterfest
- Wines of the World
- Members
- Customize
- Chat
- Search
- What's New
- Room Map
- Work Offline
- My Places
- Help

Notify Print

Tasks

Days Weeks		Jul											
Task	Assigned To	16	17	18	19	20	21	22	23	24	25	All Tasks Milestones To Do	
! Book facility													
! Learn about portal													
Lobsterfest													

- no start or due date -

New Task Page New... Cleanup Folder Options





■ kverner |

New... Change Basics

- Welcome
- Discussion
- Library
- Calendar
- Index
- Administration:
- Technical:
- Training:
- Technical Issue Reports
- Customize
- Members
- Search
- News: Daily | Weekly
- Room Map
- My Places
- Help

Notify Print

Basics
 You can reorder the items in the table of contents and...
 To change any of the following aspects of this place, click **Change Basics**...

- > **Choose a title and logo** for this place.
- > **Reorder the links** in the table of contents
- > **Hide or show** the Calendar, the Tasks page
- > **Set notification options.** Choose whether to receive regular email news update, and other options
- > **Set mail-in options.** Choose whether mail-in is enabled.
- > **Set real-time collaboration options.** Choose whether to allow real-time meetings.
- > **Choose Security Options.** Enable or disable security options.

Note: some features may not be available in this version.

To permanently delete this place, click the button below.

Delete this place...

New... Change Basics

Room Map - cweproject - Microsoft Internet Explorer

Rooms in this place
 Click any room name to go there

- Connecting Windsor-Essex Project Quickplace
- Training
- Administration
- Portal Content Advisory Group
- Working Group
- e-Government
- e-Commerce
- Community Portals
- GIS
- City of Windsor
- County of Essex
- Development & Partnerships
- ICT Awareness
- Marketing
- Education & Evaluation
- Technical
- Portlet Managers
- System Administrators

WebCat - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Guide Print Security Stop

Instant Message Internet Lookup New&Cool

Bookmarks Netsite: http://wpl.welnet.net/uhtbin/webcat

CATALOG HELP YOURSELF FIND IT FAST!

GO BACK HELP PREFS EXIT

Search the Library Catalog

Keyword
 Browse
 Exact

[SEARCH EVERYTHING](#)
[AUTHOR](#)
[TITLE](#)
[SUBJECT](#)
[SERIES](#)
[PERIODICAL TITLE](#)

1. Enter the word(s) you want to find.
Keyword returns records *containing* the word(s) entered.
Browse returns catalog headings *beginning* with the first word entered.
Exact returns records that *exactly* match the word(s) entered.

2. Choose a target search field.
Search Everything targets all indexed fields within a record.
All other choices target specified fields within a record.

QUICK SEARCH COMPLEX SEARCH CALL NO. BROWSE

library: ALL

- ALL
- HERE
- 1_AMBASSAD
- 1_ARCHIVES
- 1_BUDIMIR
- 1_CENTRAL
- 1_DEVONSHR
- 1_ERIVER
- 1_FGL-OPT
- 1_FOUNTAIN
- 1_MUSEUM
- 1_REMPARK
- 1_RIVERSID
- 1_SANDWICH
- 1_SCABANA
- 1_SEMINOLE
- 1_SWALKERV

TOP

WebCat®
 a product by SIRSI
 Copyright © 1995 - 1998
 Sirsi Corporation

Document: Done

Start Workspace at Dr. Sands - ... WebCat - Netscape untitled - Paint

7:06 AM



WebCat Gateway

[CATALOG](#) [GATEWAYS](#) [INFO. DESK](#) [HELP YOURSELF](#) [FIND IT FAST!](#) [JUST FOR KIDS](#)

[GO BACK](#) [REQUEST](#) [PREFS](#) [EXIT](#)

JUST FOR KIDS



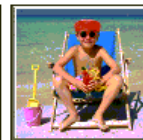
["A" TO "Z" --
JUST FOR
KIDS](#)



[ANIMALS --
JUST FOR
KIDS](#)



[COOKING --
JUST FOR
KIDS](#)



[FUN STUFF
-- JUST FOR
KIDS](#)



[HANDICRAFTS
-- JUST FOR
KIDS](#)



[HOLIDAYS
-- JUST FOR
KIDS](#)



[JOKES --
JUST FOR
KIDS](#)



[KIDS'
CONCERNS
-- JUST FOR
KIDS](#)



[PLAYS --
JUST FOR
KIDS](#)



[POEMS -- JUST
FOR KIDS](#)



[SCIENCE --
JUST FOR
KIDS](#)



[SPOOKY
THINGS --
JUST FOR
KIDS](#)



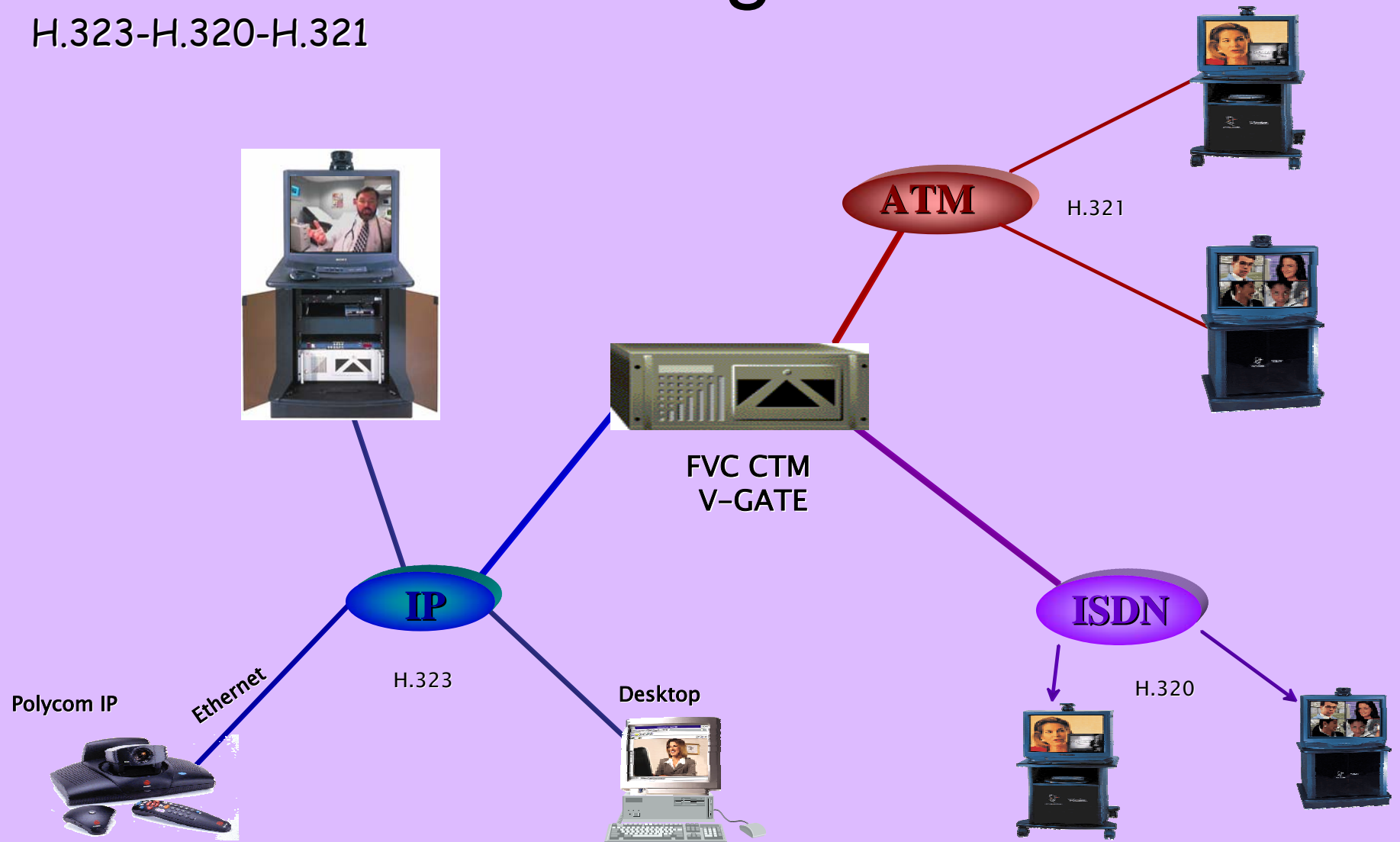
[SPORTS --
JUST FOR
KIDS](#)



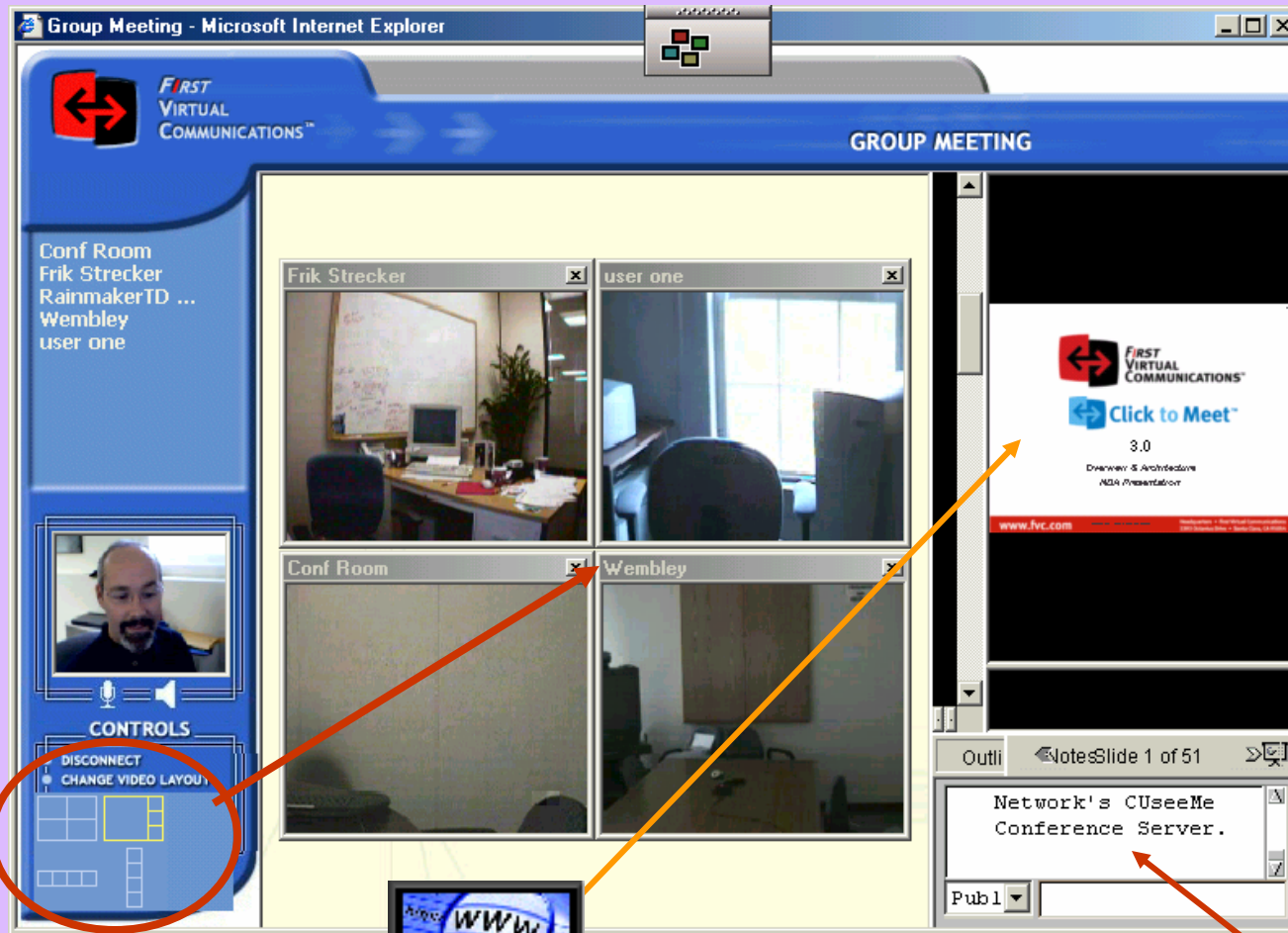
[STORIES --
JUST FOR
KIDS](#)

Videoconferencing

H.323-H.320-H.321



Web Conferencing – Multipoint video, audio, text chat, data collaboration from inside Internet Explorer – No standalone application required!



User Defined Screen Layout

Users can also push a URL in the data window to others inside the conference.

Public/Private Chat

Advanced Networking of People and Equipment



Ontario Research and Innovation Optical Network

Ontario's gateway to research and discovery

ORION NEWS

NEW!
NEWS RELEASES

[ORANO ANNOUNCES CONTRACT WITH BELL CANADA TO BUILD ONE OF THE WORLD'S LARGEST RESEARCH AND EDUCATION OPTICAL NETWORKS](#)

December 16, 2002 [\(en français\)](#)

The Ontario Research and Innovation Optical Network - ORION - is a new high-speed, optical network that brings affordable world-class broadband access and connectivity to Ontario's research and advanced education (R&E) institutions.

ORION was created to bring leading-edge network capability to Ontario's publicly funded research and education community and to become a catalyst for creative and innovative next generation Internet applications.

Connecting more than 50 Ontario institutions and organizations with other local and global networks, ORION enables transmittal of data at 10-gigabit speed, leading to the development of new applications and collaborative projects otherwise be impossible or impractical to undertake.

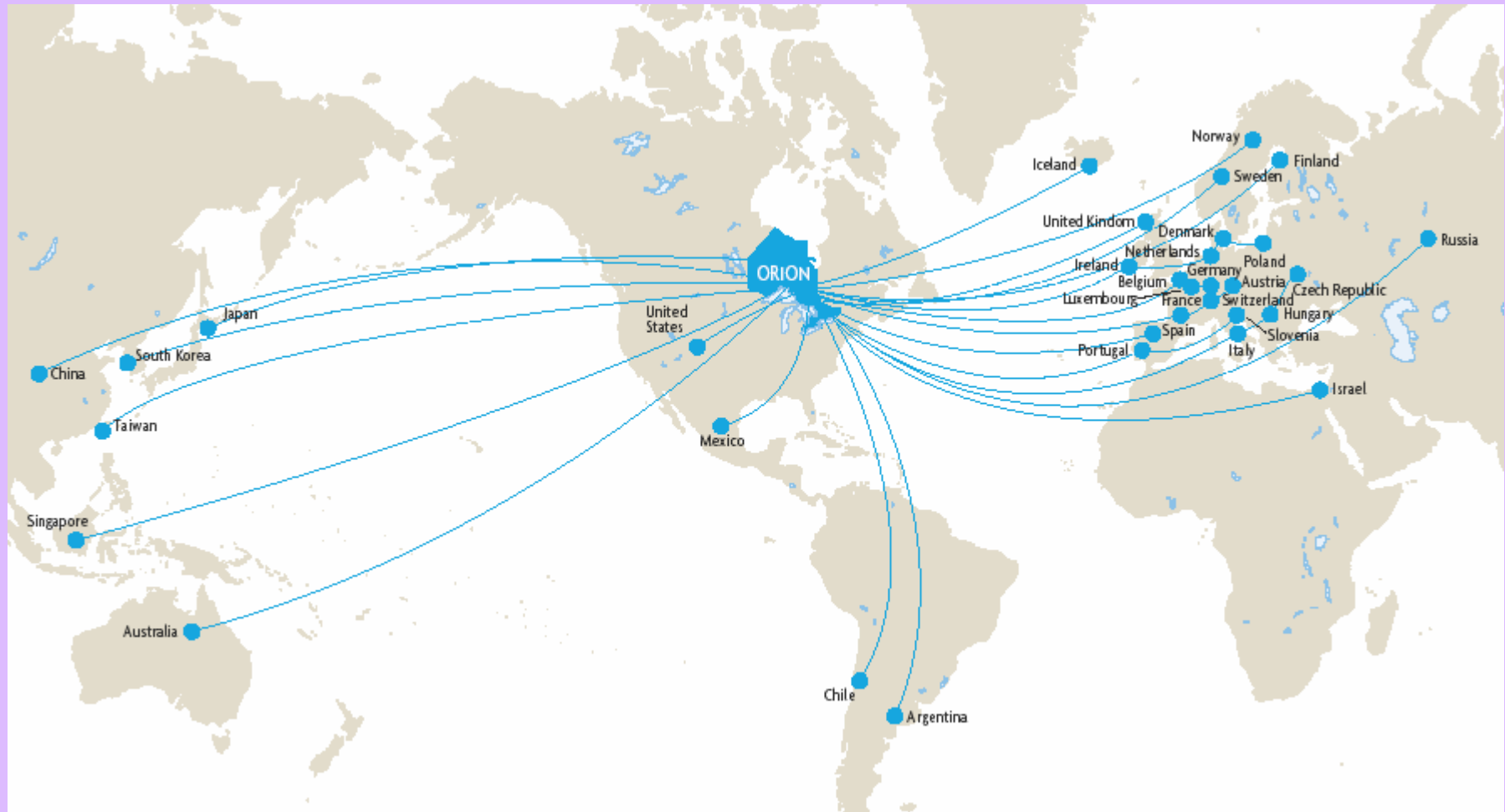
ORION will be fully operational by Spring 2003.



How ORION connects to national backbone

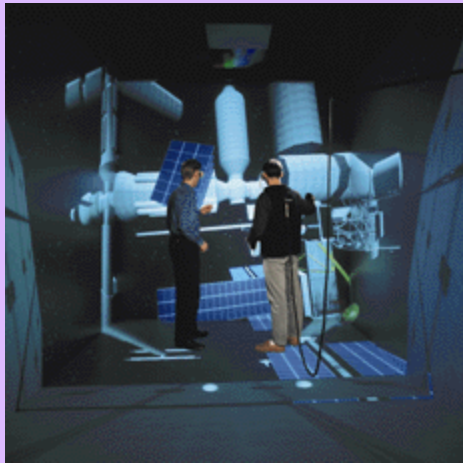


How ORION connects to R&E networks

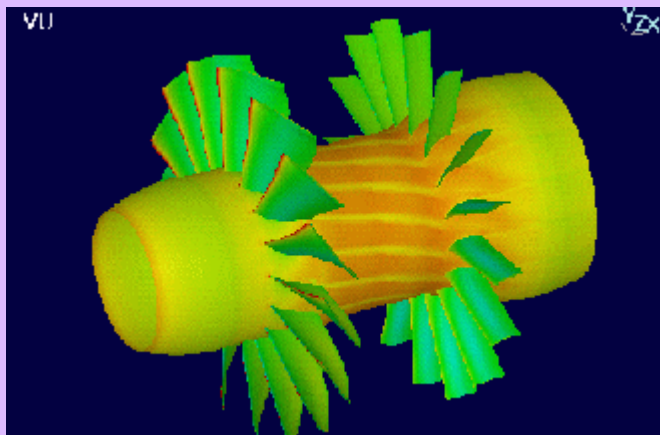




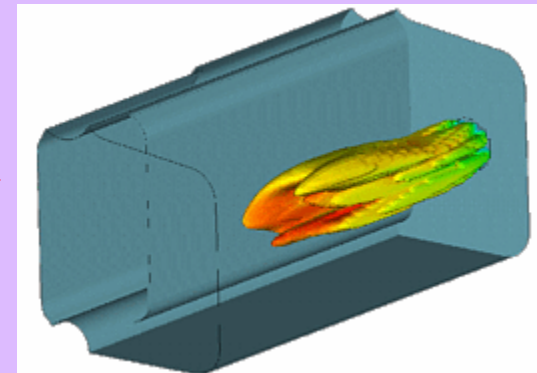
VU is a configurable visualization software tool for the display and analysis of numerical solutions.



Immersive



Modelling



Where is e-Enablement Going for Us?

- Link WEDnet to Ontario on ORION's OC192 backbone
- Interface DWDM backbone to the existing RAN
- Higher-end router interfaces (Cisco GSR & 7606 layer 3)
- Minimum switch interface GbE or OC12 to each member
- 20 year fibre IRU for access by members
 - 1. equity fibre
 - 2. condo access
- Install government INP interface with WEDnet as a pilot CBN to demonstrate to others the success of the investments
- Enable BGP6 Network peering, IPv6, multicast

- ORION allows:
 - broad range of e-learning opportunities;
 - virtual classrooms and laboratories;
 - complex multimedia-based interactivity;
 - real-time collaborative research;
 - shared and ready access to large genomic and biotech data bases; and
 - grid computing and large scale computing resources.

Help network Ontario's networking through programs such as Connect Ontario and GeoSmart (Ministry of Enterprise, Opportunity and Innovation, and MNR) and in cooperation with organizations such as . . .



. . . and through its strategic alliances with MISA and others

For more information:

<http://www.wednet.on.ca>

<http://www.windsor-essex.info>

Email: wednet@uwindsor.ca

Todd Sands, Ph.D, Exec. Director

twsands@uwindsor.ca

Other sites of interest:

<http://www.orion.on.ca>

<http://dast.nlanr.net>

<http://www.RNO.on.ca>

<http://www.canarie.ca>

<http://www.c3.ca>