



# The NREN TelePresence Community



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# TelePresence ≠ Video Conferencing

**TelePresence refers to a set of technologies which allow a person to feel as if they were present, to give the appearance that they were present, or to have an effect, at a location other than their true location.**

**(from <http://en.wikipedia.org/wiki/Telepresence>)**

- **QUALITY - It's All About the Experience**

- Ultra High Definition Video – 1080p (Twice the video quality of HD today)

- Every participant has “a seat at the table” – life size images

- Eye contact, facial gestures and emotion create engagement

- Audio is spatial, sound comes from participants using normal voice levels

- Imperceptible latency

- **SIMPLICITY - As Easy as Placing a Phone Call**

- Technology is invisible to the user

- Single button to push when integrated with groupware

- Standards based (SIP)

- **RELIABILITY – Uses the Network as the Platform**

- Leverages the Network as the Platform along with Cisco Unified Communications to deliver advanced levels of reliability, resiliency, & security

# Cisco TelePresence



# Cisco TelePresence

Redefining How People Communicate



# Cisco TelePresence Endpoint Portfolio



**CTS 500**  
1–2 Seats



**CTS 1100**  
2 Seats



**CTS 1300 Series**  
Multipurpose Room



**CTS 3000**  
6 Seats



**CTS 3200**  
18 Seats

- Flexible use
- Private office
- Tele-commuter
- <5 Mbps at 1080p
- Wideband audio

- High immersion
- Flexible deployment
- <5 Mbps at 1080p
- Wideband audio

- One screen
- High immersion
- Rapid deployment
- <5 Mbps at 1080p
- Wideband audio

- High immersion
- Transforms business process
- 15 Mbps at 1080p
- Spatial wideband audio

- Transforming governance processes
- Distanced learning
- 15 Mbps at 1080p
- Spatial wideband audio

**Personal**

**Multipurpose**

**Group/Team**

**One-Button-to-Push Call Launch, Easy Scheduling, 48-Location Multipoint, Interoperability and Intercompany Capabilities Across the Entire Portfolio**



# Cisco TelePresence Recording Studio

## Cost Effective Studio-Quality Video Recording

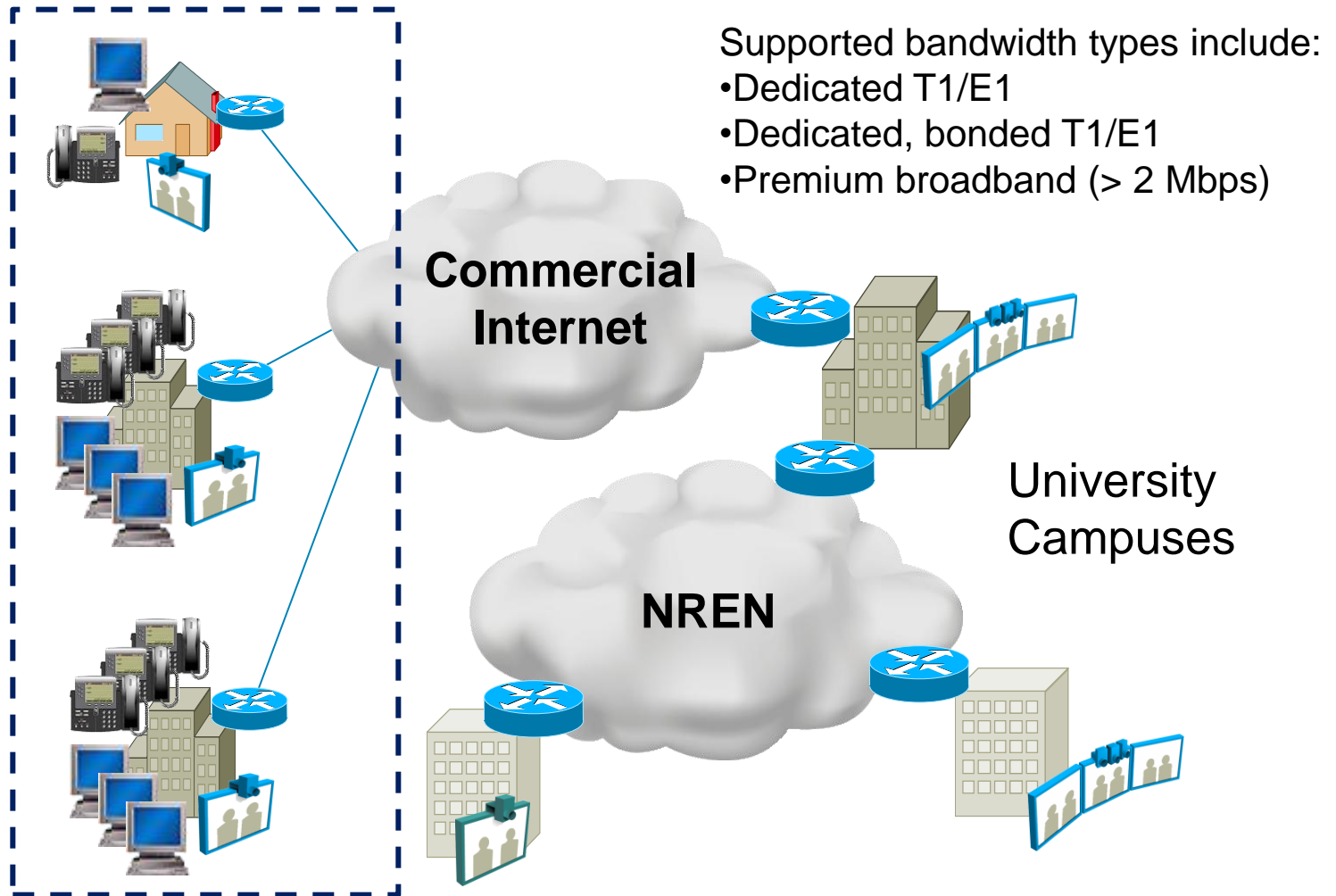


# Cisco TelePresence Extended Reach

Home Office  
Premium  
Broadband

Remote  
Campus  
Premium  
Broadband

Remote  
Campus  
T1/E1 or  
Bonded T1/E1



- **Extended Reach supports users in locations with low bandwidth**
- **720p or 1080p resolution supported with good, better, or best, motion handling as a function of available bandwidth**
- **Since Commercial Internet bandwidth is not dedicated, there may be experience issues or even call drops at certain times of the day due to a decrease in available bandwidth**

# Cisco TelePresence Interoperability



Tandberg



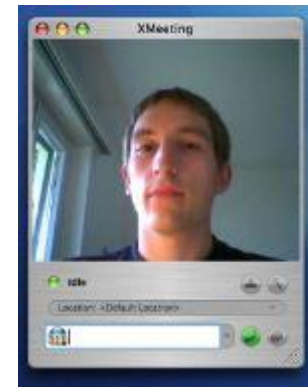
Lifesize

## Supported Protocols

- H.323
- SIP
- SCCP
- CIF
- 4CIF
- 720p
- G.711
- G.722



Microsoft NetMeeting



Mac XMeeting



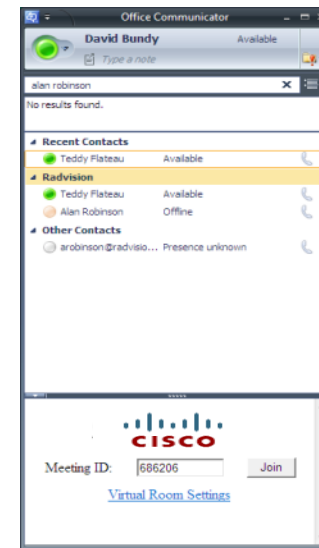
Polycom



Cisco CUCV and CUPC



Cisco 7985



Microsoft Office and Lotus Sametime

And many more...



# TelePresence Applications in R&E

- Distance Education and Training
- Collaborative meetings between researchers and staff at different universities
- Participation from a distance by guest speakers at workshops and conferences
- Curriculum Expansion/Preservation
  - TelePresence give universities the ability to offer students courses from other institutions saving curriculum development costs
  - Access to instructors at other institutions may allow universities to continue offering courses in programs they might otherwise have to cut – possibly saving “endangered disciplines”
- Dissertation Defense
  - TelePresence can be used for participation of faculty from other universities (usually required) – reducing costs and expanding the pool of potential panel members
- Interviews & Recruiting
  - TelePresence enables distance interviewing of candidates for staff and graduate student positions
- Travel time savings for university executives:

The UC San Diego Chancellor has used TelePresence to enable face to face meetings with the President of the University of California System saving valuable executive travel time and making more regular meetings possible. Beyond the obvious savings the real value add TelePresence brings here is in enabling a closer collaborative relationship

# USC Multi-Modal Learning Environment

- Cisco had partnered with the University of South Carolina's (USC's) Moore School of Business to create a Total Learning Solution that Reframes the Business and Experience of Learning
- Using Cisco Technology and the Moore School's expertise in pedagogy and integrating and applying technology to enhance distance learning Professor Raymond Smith has created a virtual learning environment that is: Affordable; Replicable; and Simple to Use
- The USC Multi-Modal Learning Environment consists of:
  - Curriculum and class materials tailored for delivery via this environment
  - Virtual Learning Environment: Infrastructure to make it work (TP, Webex, MXE 3500, Smart-board, PowerPoint, recorded video, discussion boards etc.)
  - Virtual Learning Portal (VLP) (TelePresence studio for faculty)
  - Virtual Learning Environment: Combination of virtual learning portal and remote sites
- More information is available at: <http://learnmoore.com>

***“Better learning, time effective, relevant to work, faculty efficient, with a global reach, cleaner and cheaper . With this environment , we can create learning that brings the world together, where learning is in the network and closer to its application”***

***- Raymond Smith, Associate Dean of Executive Education at the Moore School***



# Moore School of Business' Faculty TelePresence Studio (VLP)



- Environment is natural to teach in – Professors can stand, walk around, or sit while teaching and leading discussion (appearing life size to students the entire time)
- Environment is simple and intuitive to use and requires no special training for faculty



# Moore School of Business' TelePresence Classroom

Electronic  
Smartboard



Cisco  
TelePresence  
CTS-1300

Power Point  
Transmitted via  
TelePresence

- All classrooms are equal – there are no local “haves” and remote “have nots”
- Both the curriculum and the course materials are tailored to take advantage to the technology creating a much richer teaching environment for students and teaching environment for faculty



# Duke University's Fuqua School of Business Cisco TelePresence Lecture Hall



The custom-built lecture facility includes three 103-inch plasma displays, six 1080p cameras for both panoramic and lifesize immersive video experiences, an instructor's podium with two document cameras for sharing class materials, three remote student displays for the instructor to view remote classrooms from the podium, and 66 custom push-to-talk microphones for interactive discussions.

*"We are now realizing the future classroom that can support education with the global foundation that students need today and in the future. This TelePresence lecture hall will facilitate an immersion into the classroom experience from points around the country and around the world for embedded and connected learning and collaboration."*

- Blair Sheppard, Dean, Duke University

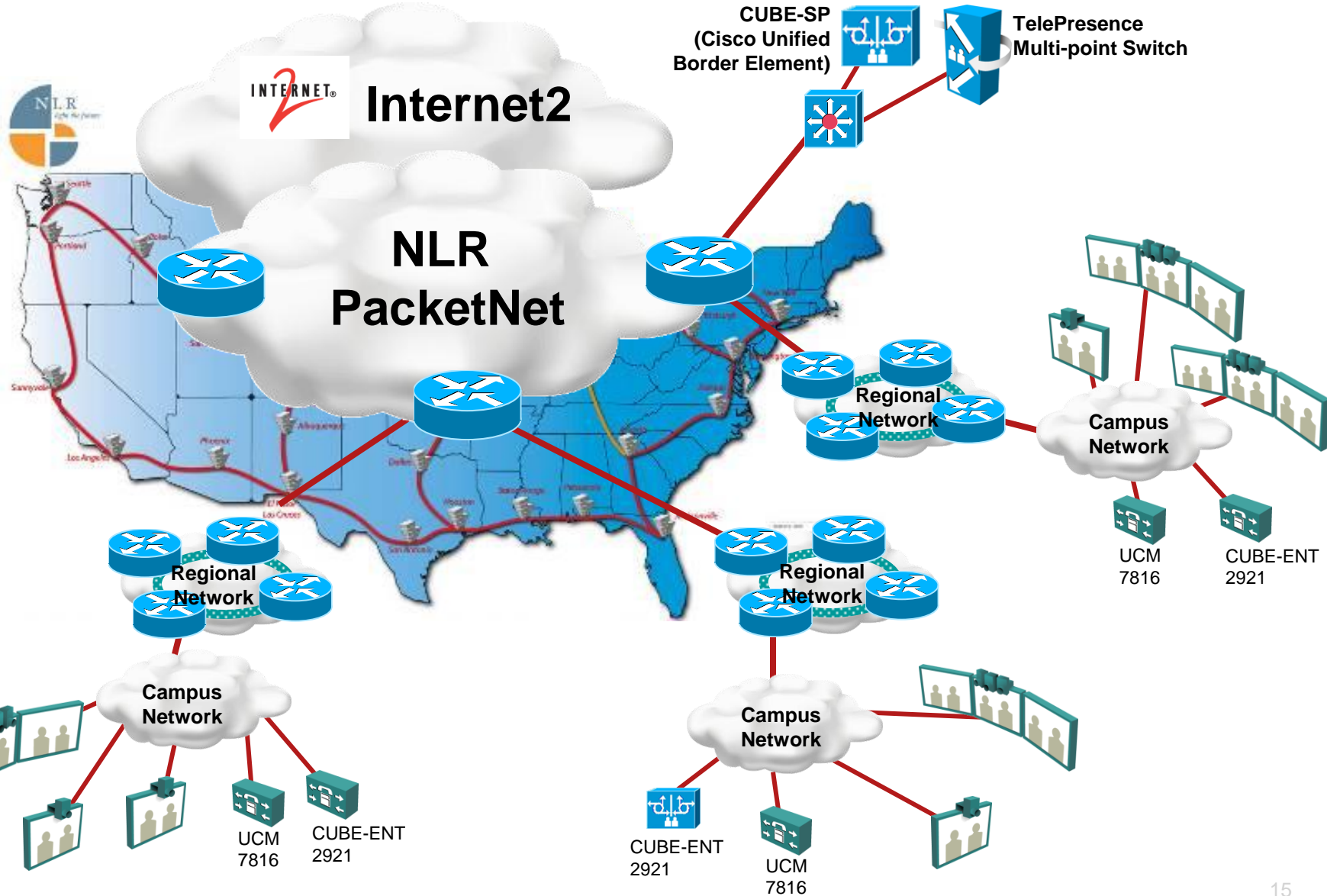


# US NREN Support for TelePresence

Internet2/NLR Cisco  
TelePresence Exchange  
Kansas City, MO

CUBE-SP  
(Cisco Unified  
Border Element)

TelePresence  
Multi-point Switch



# The NREN TelePresence Community

## Community Participants

University of California, Berkeley  
California State University System  
CENIC (California State R&E Network)  
Duke University  
Fresno, CA Unified School District  
Garden Grove, CA Unified School District  
Georgia Tech University  
Harvard University  
Indiana University  
Long Beach CA USD  
University of Missouri  
National Lambda Rail  
New York University (NYU)  
University of North Carolina Chapel Hill  
North Carolina State University  
University of Michigan  
Pennsylvania State University  
Pittsburgh Supercomputing Center  
University of South Carolina  
Towson State University  
Virginia Tech  
University of Wisconsin  
Peking University (China)  
Vienna University of Economics (Austria)  
University of the Arts (UK)  
National University of Singapore (Singapore)  
NATO C3 Agency (Netherlands)

## Community Participants

(TelePresence Units on order)

Case Western University  
University of Denver  
University of California, Irvine  
University of California, San Diego  
Florida International University  
University of Illinois at Chicago  
Massachusetts Institute of Technology (MIT)  
US National Science Foundation  
University of Southern California  
American University of Dubai

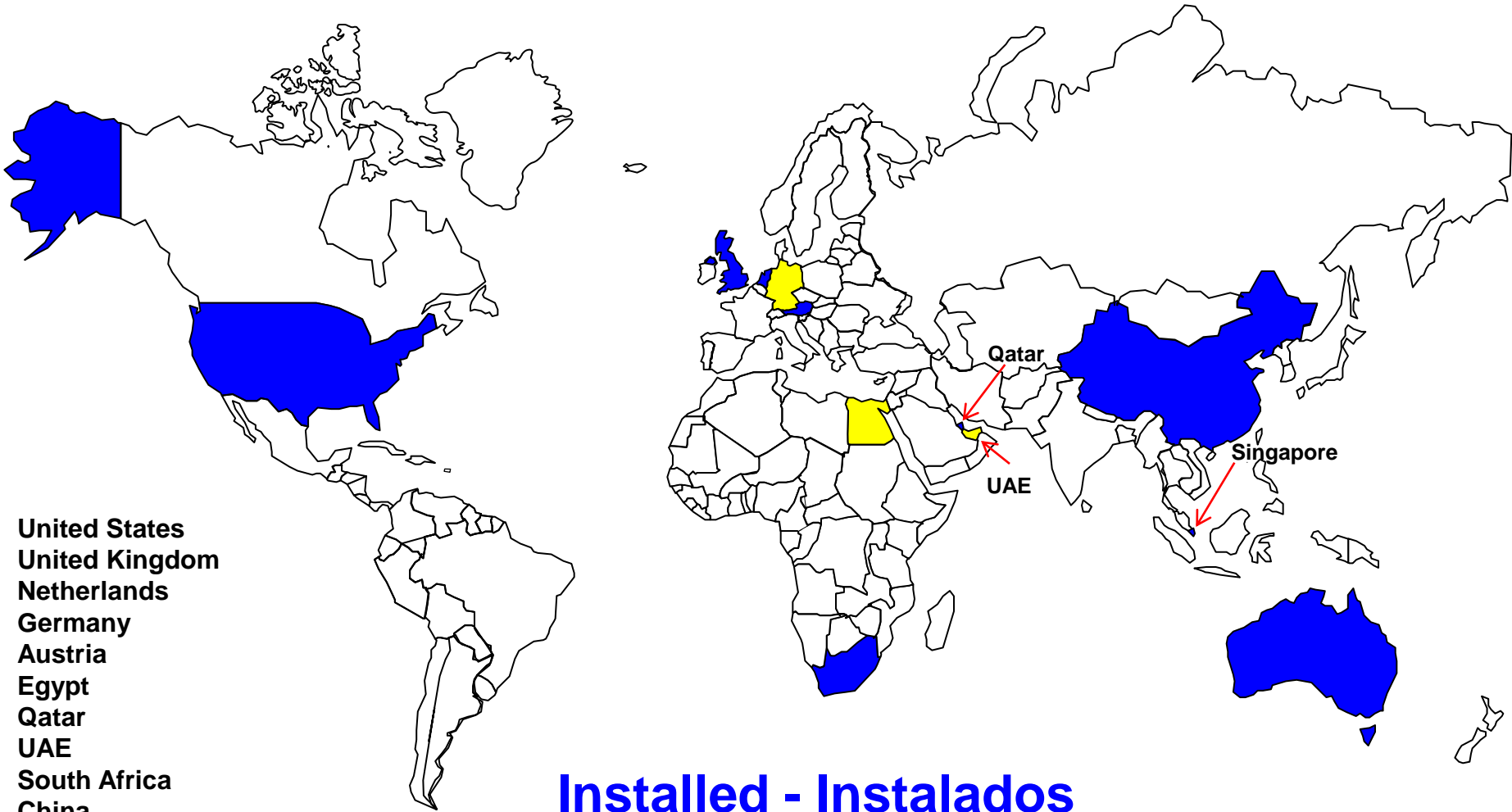
## Potential Participants

(Not yet connected to an NREN TelePresence Community Exchange)

University of California, Los Angeles  
Cornell University  
Johns Hopkins University  
Madison Area Technical College  
Oakland, CA Unified School District  
Purdue University  
Stanford University  
University of South Queensland (Australia)  
Swinburne University (Australia)  
Monash University (Australia)  
University of Southern Queensland (Australia)  
People's University (China)  
Stenden University (Netherlands, Qatar, & South Africa)  
University of Melbourne (Australia)

**Note: Many of the universities and university systems listed above have multiple TelePresence units**

# TelePresence in Education



- United States
- United Kingdom
- Netherlands
- Germany
- Austria
- Egypt
- Qatar
- UAE
- South Africa
- China
- Singapore
- Australia

**Installed - Instalados**

**On order – Son Proximos**



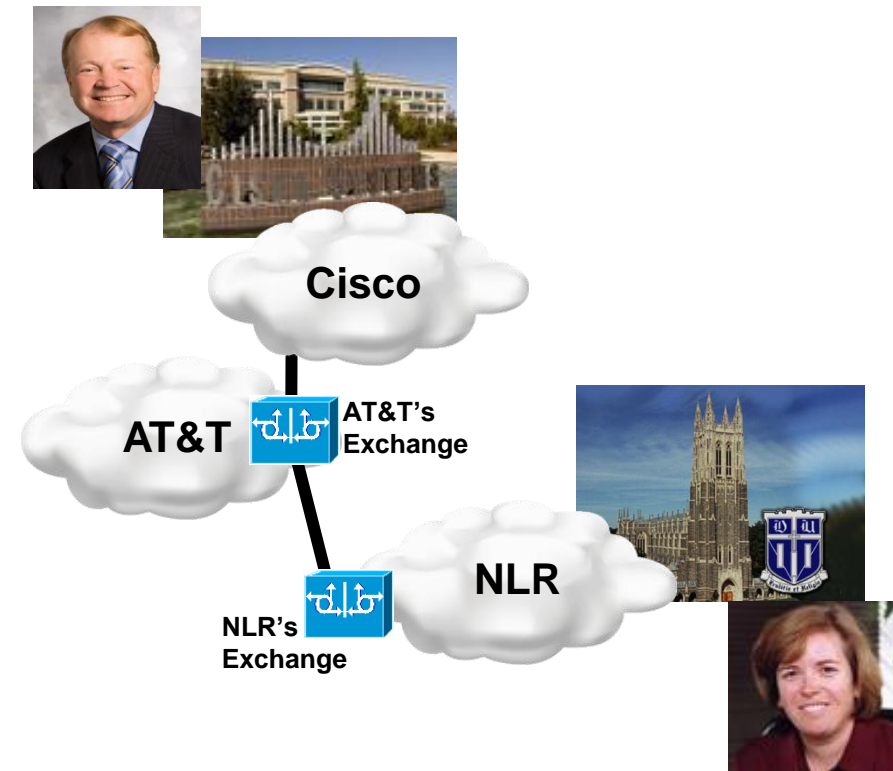
# UAE ICTRF2009

## KHALIFA UNIVERSITY - ABU DHABI



# TelePresence enables Academic/Corporate Collaboration

- NLR has entered into an agreement with AT&T to connect the Internet2/NLR Cisco TelePresence Exchange to AT&T's Cisco TelePresence Exchange for a trial period.
- TelePresence connectivity is supported over this connection between NREN TelePresence Community participants and Cisco.
- **All Cisco TelePresence rooms (more than 650 worldwide) are reachable from the NREN TelePresence Community.**

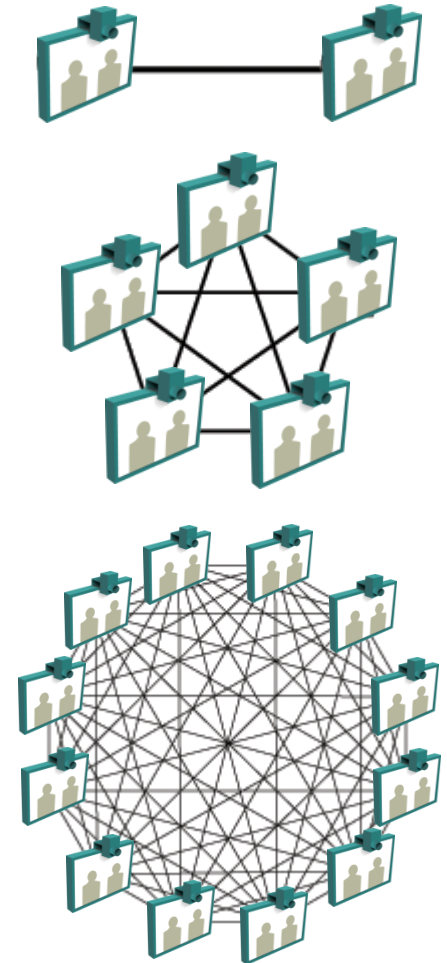


John Chambers, CEO of Cisco Systems and Tracy Futhey, CIO of Duke University recently met via TelePresence enabled by NLR/AT&T Cisco TelePresence Exchange Inter-Connectivity



# The Value of a Community

- Metcalfe's law states that the value of a telecommunications network is proportional to the square of the number of connected users of the system ( $n^2$ ) not  $n+1$ .
- Metcalfe's Law applies to the NREN TelePresence Community. Each new member represents yet another end point for a collaborative meeting and a source or destination of distance learning.
- The TelePresence systems being implemented represent break through technology but the true value of the NREN TelePresence Community are the closer relationships it enables.





**CISCO**