

High Definition Industry- Standard Video Conferencing

Bob Dixon and Megan Troyer

OARnet

Ohio State University

Internet2 Commons

March 27, 2007

ViDe Conference

Atlanta, Georgia

What is it?

- ◆ High Definition video conferencing is to Standard Definition video conferencing, as High Definition television is to Standard Definition television.
- ◆ HD VC uses the same H.323 industry standard technology as does SD VC.
- ◆ But the resolution is 4 times as great.

Additional Features of HD VC

- ◆ 16x9 screen aspect ratio
- ◆ Higher quality audio
- ◆ Compatible with Standard Definition VC
- ◆ Always uses best compression algorithm (H.264) to minimize required bandwidth
- ◆ 1 Mb/sec gives good results

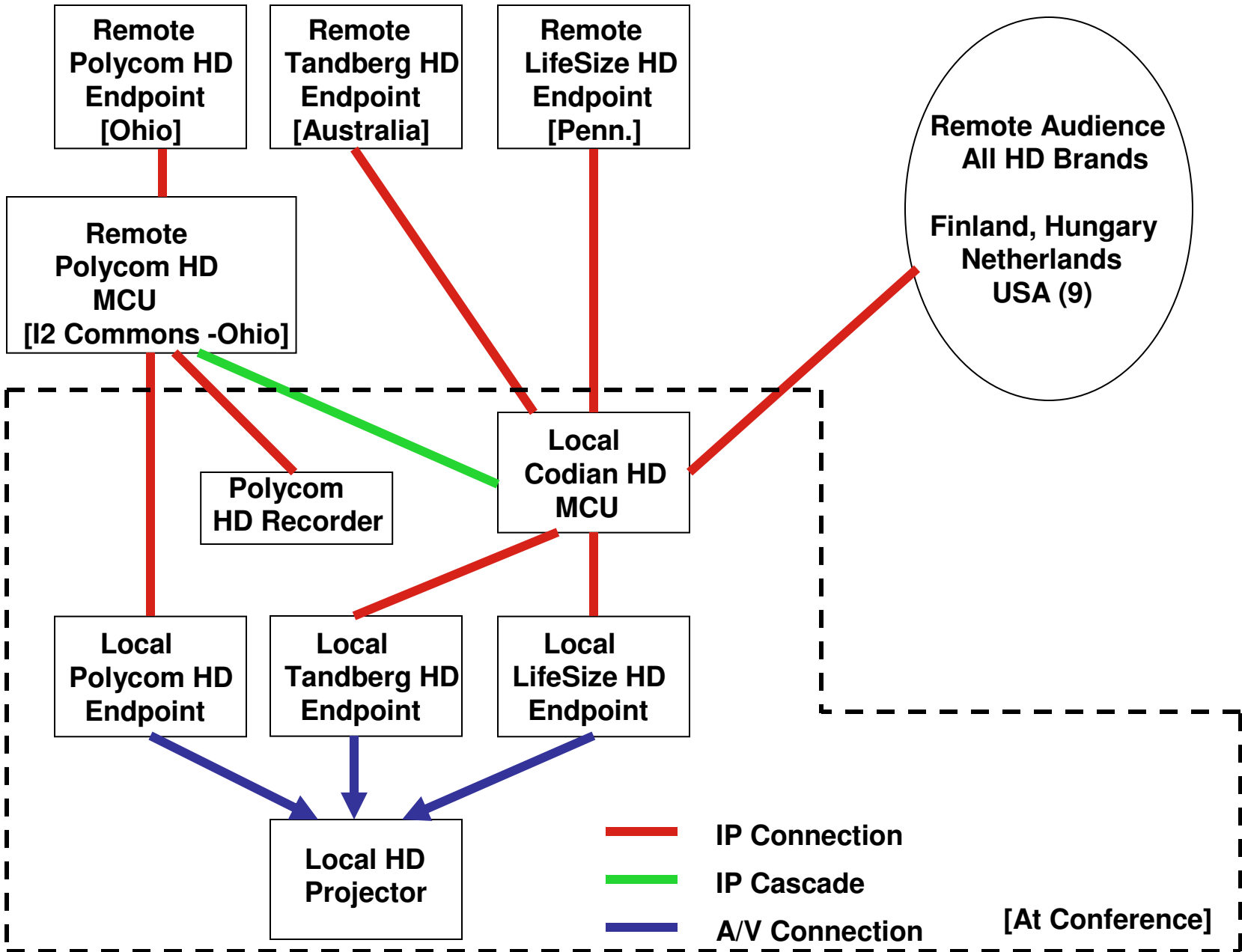
Available Equipment

- ◆ Endpoints from Codian, LifeSize, Polycom, Sony, Tandberg
- ◆ MCUs from Codian and Polycom, possibly RADvision
- ◆ Recorder from Polycom
- ◆ VGA displays and screens widely available
- ◆ Projectors are rare and expensive
- ◆ Internet2 Commons supports HD

The Gigaconference

- ◆ Special event for HD VC
- ◆ Dec 5, 2006, Chicago Internet2 meeting
- ◆ Demonstrated the state of the art
- ◆ Codian, LifeSize, Polycom, Tandberg
- ◆ Endpoints, MCUs, Recorder
- ◆ Worldwide participation
- ◆ <http://commons.internet2.edu/gigaconference>

Gigaconference II - December 5, 2006. Chicago, Illinois.



Gigaconference Firsts

- ◆ Largest-Ever HD VC. 24 locations.
- ◆ First large-scale use of new Codian MCU
- ◆ First cascade between Polycom and Codian HD MCUs.
- ◆ First large-scale use of Polycom HD recorder

Special Events

- ◆ **Special VIP Show of Computer Art and Animation, from the Advanced Computing Center for the Arts and Design, Ohio Supercomputer Center**

Roll Call of Remote Audience Locations

Gigaconference Results

- ◆ All the endpoints of all vendors are interoperable.
- ◆ Both the MCUs used are interoperable.
- ◆ High data rates are not necessary for HD VC.
- ◆ All the vendors cooperated and worked together.
- ◆ Recordings and (SD) streaming video available.

Special Thanks

- ◆ Polycom for \$5000
- ◆ LifeSize for \$2500
- ◆ Codian for \$2500
- ◆ Allowed us to rent the high-quality HD projector at the Internet2 Fall Member Meeting

- ◆ Codian: flew in the new special HD MCU from England for this event.
- ◆ Polycom: upgraded the Internet2 Commons MCU to HD, provided the HD recorder, and offloaded the recording for this event.

Puppet Master's View Pre-Conference

- ◆ Most participants and presenters only had a few days to test, some had a few hours
- ◆ The time difference between Chicago, IL and Armidale, Australia is 17 hours
- ◆ Needed to locate and order a projector capable of at least 720p resolution

Pre-testing

- ◆ The Polycom MCU was ready for testing HD connections only two weeks before the event
- ◆ The Codian MCU was held up in Customs and was only available for testing the Thursday before the Tuesday event

More testing

- ◆ The Codian MCU crew found (and fixed) a bug that caused the audio to go bad after 5 sites were connected
- ◆ The Polycom HD Presenter's location was under construction and was not able to test until the day before

On-Site

- ◆ The projector delivered was not the HD capable projector ordered (and paid for)
- ◆ All of the endpoints were in the demo room until 30 minutes before the start of Gigaconference
- ◆ The network in the presentation room was not configured properly so all the endpoints had to reconfigure at the last minute

Chaos

- ◆ There was echo of many endpoints in one room—each with their own microphones—all connected to one conference
- ◆ Short time for testing meant some sites did not mute themselves properly
- ◆ There were times when I had to force layout control—an active speaker was not capturing the conference

Demonstrations

- ◆ We will watch a clip from the Gigaconference (26:42, 46:40, 54:30)
- ◆ If you are interested in seeing some HD H.323 endpoints in action, please visit the vendors in the ballroom