

# New Video Conferencing Developments

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October 10, 2007

Internet2 Fall Meeting - San Diego

# Videoconferencing is Alive and Well

- Many new products are appearing
- Existing products from all vendors continue to be upgraded
- Compatibility with the H.323 standard is widely touted among other systems

# New Developments

- Scalable Video Coding - the future?
- Adding more resolution to existing video
- Video receptionist
- Desktop collaboration tool with H.323 compatibility
- Stepping in front of your video illustrations
- Get ready for a 5-ring circus, as all the above are demonstrated LIVE.

# Scalable Video Coding

(simplified explanation)

- Based on the H.264 Annex G standard.
- As implemented by Layered Media, Inc.
- Completely new approach to video encoding and distribution
- Better quality video; less bandwidth
- Resilient to packet loss
- Less computing, hence less cost.
- Low Latency

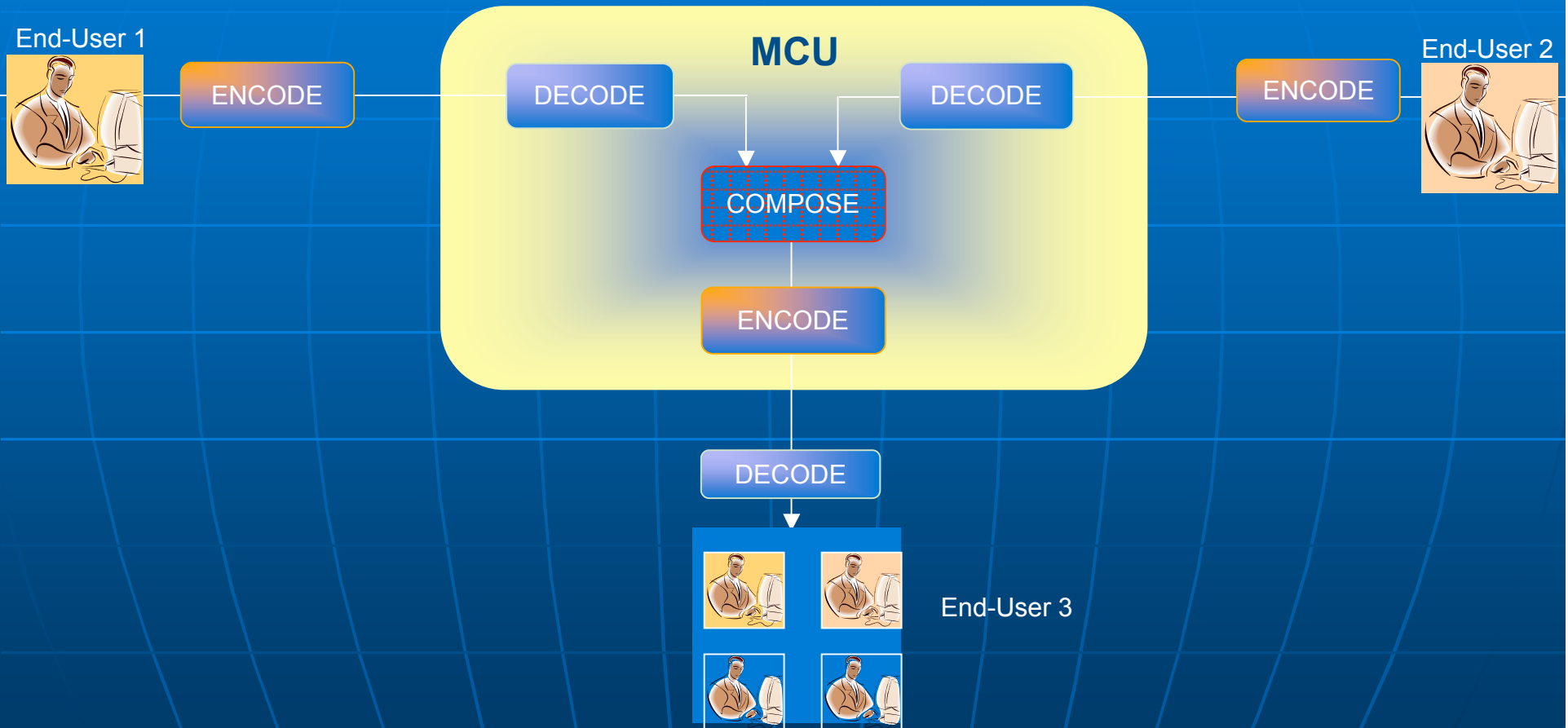
# Traditional Video Coding

- The entire image is sent occasionally, called an "I-frame."
- Then only updates to that image are sent for a while, called "P-frames."
- This is referred to as linear coding.
- Each update succeeds only if all previous updates have succeeded.

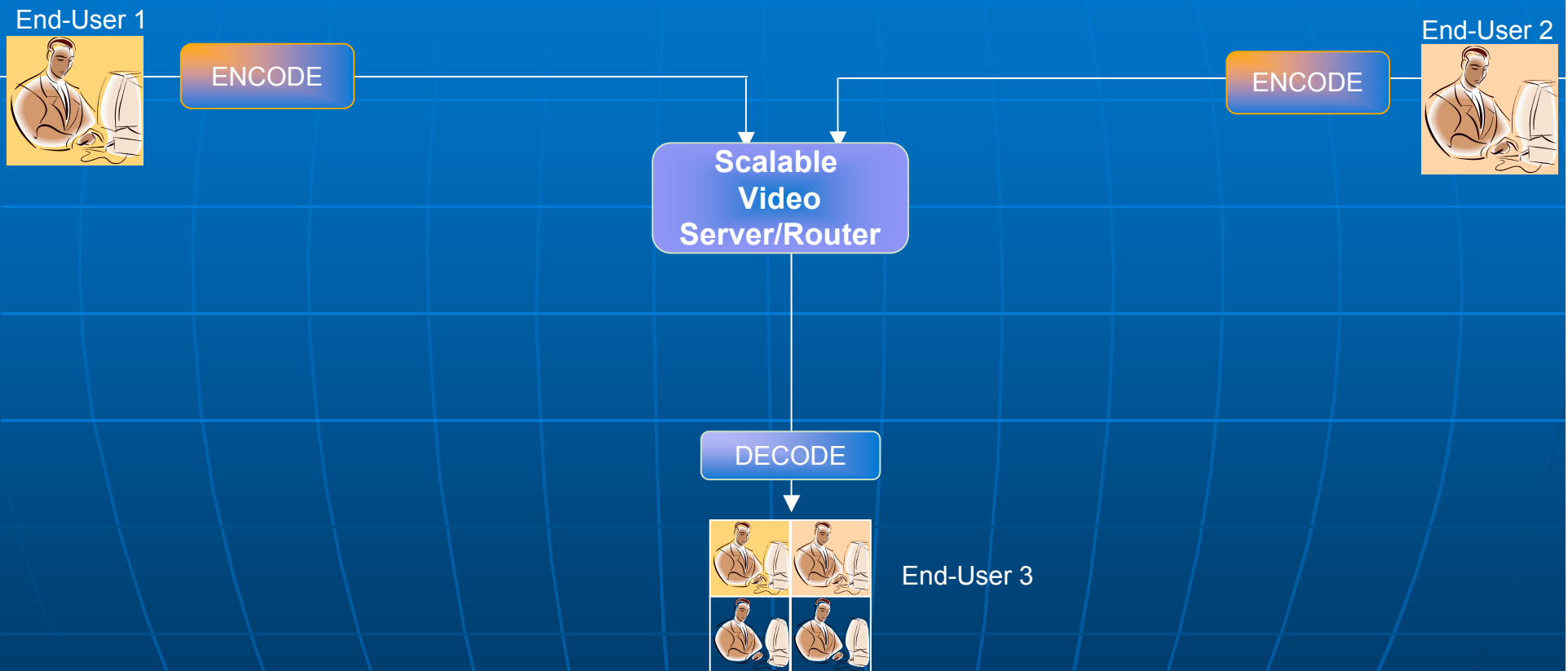
# Scalable Video Coding

- The entire image is sent only once, at the beginning.
- The updates are coded so as to spread multiple image changes out over multiple updates. Distributed coding.
- This allows the image to be reconstructed even if some of the updates are lost.

# Traditional Video Distribution



# Scalable Video Distribution



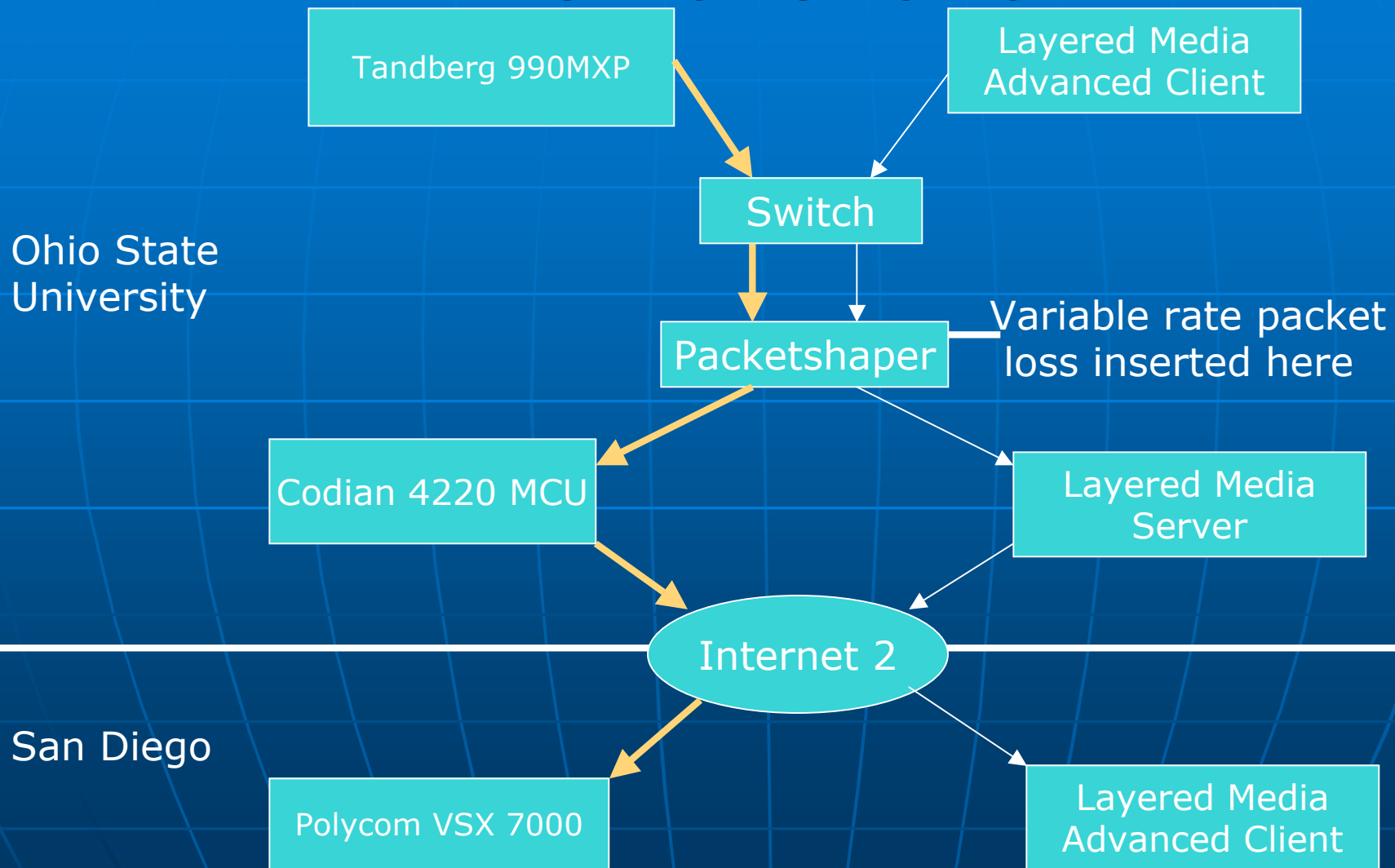
# Variable Resolution

- Each endpoint encodes at the highest resolution and frame rate it can.
- Base video stream plus HD enhancement video stream.
- Each endpoint continuously negotiates with server to determine what resolution and frame rate Decoding it can do. Server sends appropriately.
- Multiple video streams provide additional method of packet loss recovery.

# Miscellanea

- Audio and media are sent as additional scalable streams using the same technology
- An H.323 gateway will be available
- Runs on Windows, Mac and Unix
- Both a central server and a gateway will be installed at the Internet2 Commons, and be freely available to everyone.

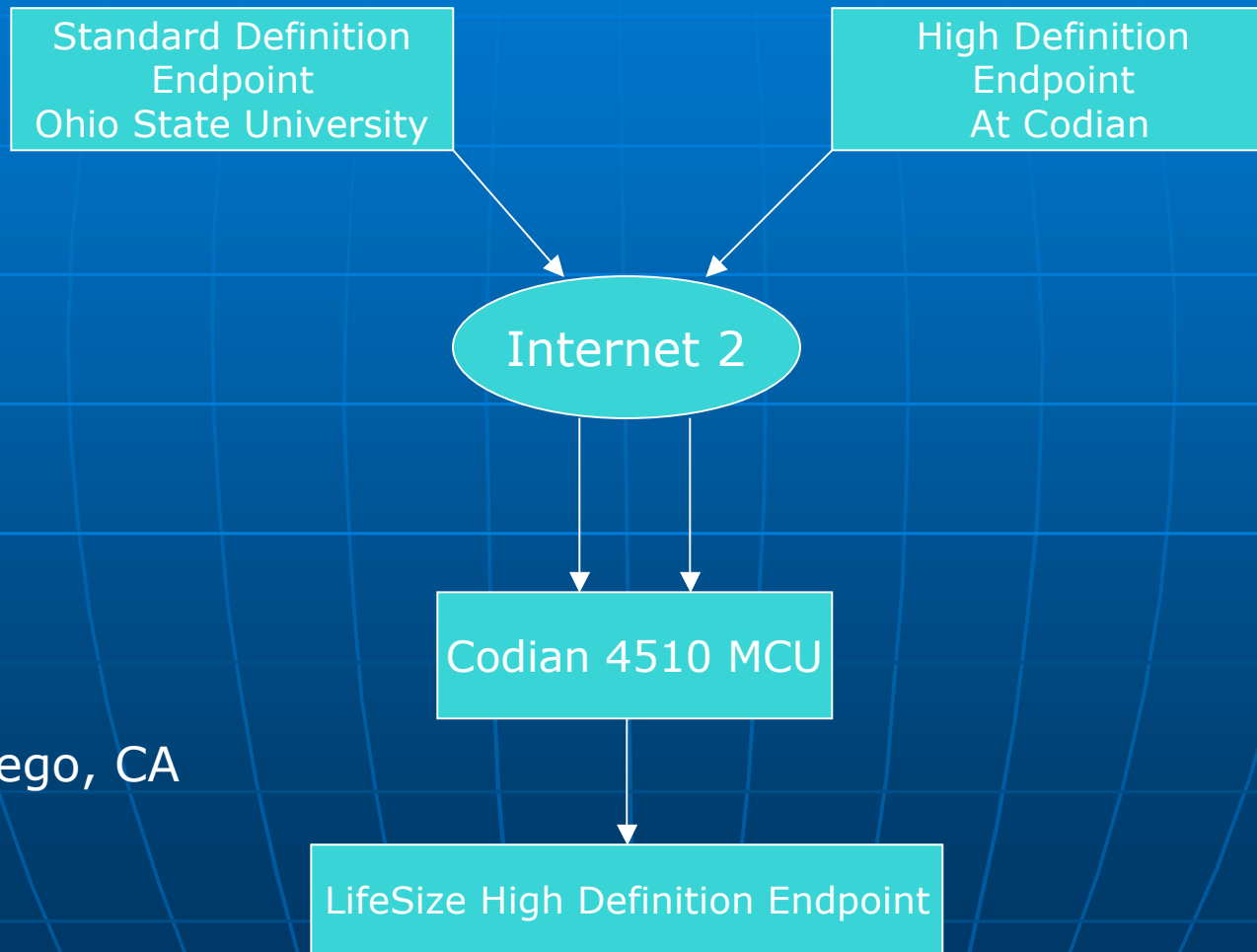
# Scalable Video Coding Demonstration



# Increasing Video Resolution

- ClearVision™, by Codian
- Provided by Codian HD MCU
- Increases the resolution of a CIF video conference to appear 4CIF.
- Receiving endpoint must be capable of decoding and displaying 4 CIF.
- Uses complex extrapolation among multiple frames.

# Increasing Resolution Demonstration



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# Video Receptionist

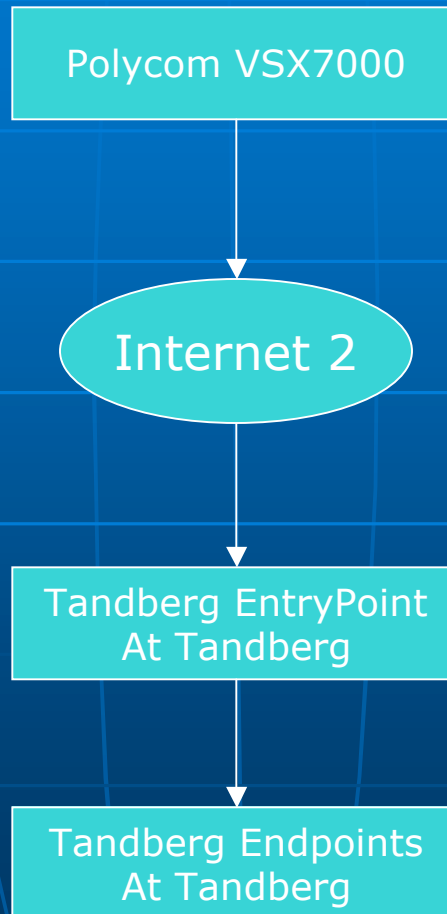
- Receptionist, Help Desk, Concierge, Directory Service, etc
- Tandberg Entrypoint™
- A new class of H.323 device
- You call it from your endpoint, and it provides video, audio and text to help connect you to other locations.
- Analogous to telephone interactive voice response (Push 1 for ...)

# Entrypoint™ additional features

- Supports a directory and a search by name capability
- Also supports audio-only and 3G telephone connections
- Can connect to ISDN gateway and to MCUs.

# Video receptionist Demonstration

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# H.323 Desktop Collaboration Tool

- There are about 200 desktop collaboration tools today.
- Almost all are incompatible with one another.
- Almost all follow no national or international standards.
- Many are not cross-platform
- Many provide video conferencing, but are incompatible with the H.323 standard

# RADVISION Scopia Desktop™

- Included FREE with Scopia MCU.
- Requires separate additional PC Server
- Desktop users can intercommunicate interchangeably with each other, or with H.323 users.
- Runs on Windows and Macs, but Mac is view-only.
- Outgrowth of Click-to-Meet

# Scopia Desktop Demonstration

all connections over Internet2

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Scopia Desktop Client

Polycom VSX700

RADVision  
In NJ

Scopia Desktop Client

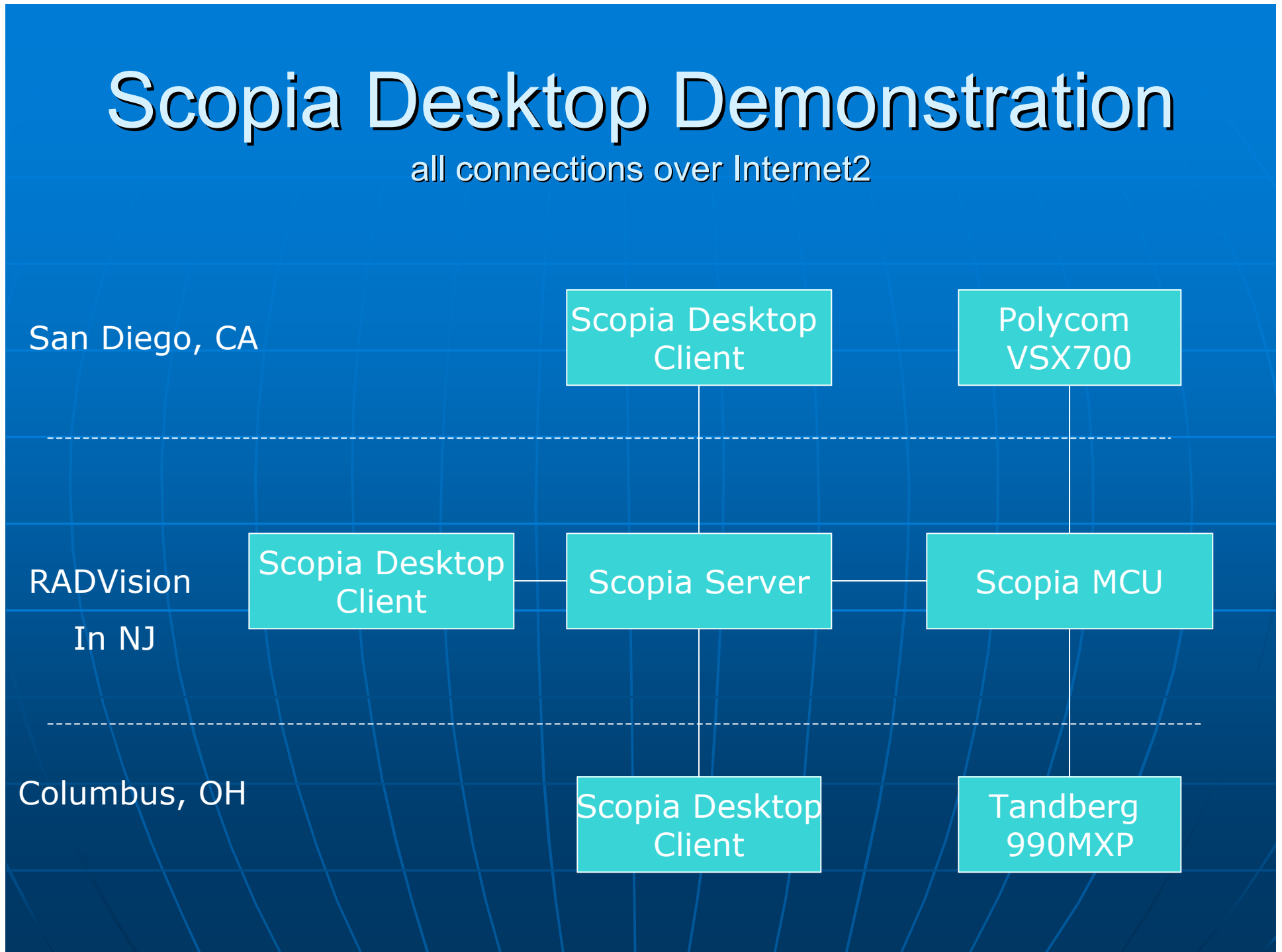
Scopia Server

Scopia MCU

Columbus, OH

Scopia Desktop Client

Tandberg 990MXP



# Virtually Standing in front of Your Slides

- Polycom “People ON Content”
- Not to be confused with Polycom “People PLUS Content” or H.239
- Uses chroma key technology to superimpose live video on top of media such as slides.
- Requires Polycom HDX endpoint to originate video.

# People ON Content Demonstration

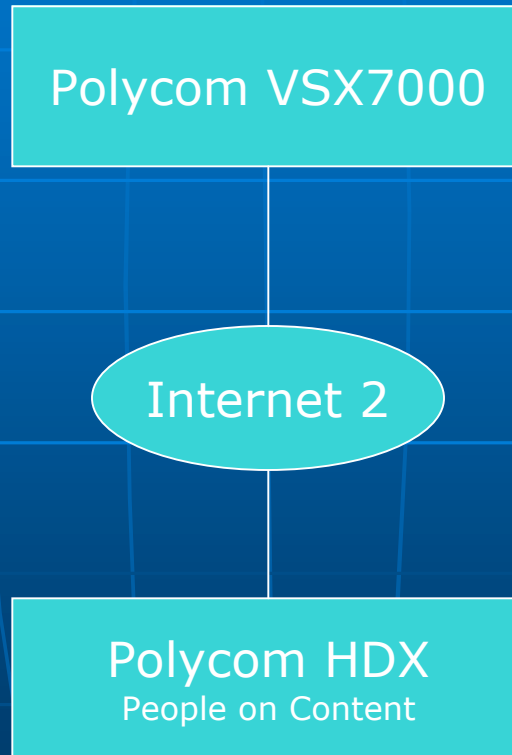
San Diego, CA

Polycom VSX7000

Internet 2

Polycom HDX  
People on Content

Polycom



# How to get More Information

- Many of these vendors are in the audience.
- See them right after this session.
- See them at lunch.
- See them in the demo area this afternoon between 1-5.
  
- These slides are on the conference web site.