One Laptop Per Child to Standard Video Conferencing Gateway

Bob Dixon, OARnet and Ohio State Univ.
Gabe Moulton, Ohio State Univ.
Nicholas Thompson, Ohio State Univ.
Taewoo Kwon, Ohio State Univ.

Internet2 Conference
April 28, 2009
Arlington, VA
The One Laptop Per Child Program

• Started at MIT by Nicholas Negroponte in 2007, as a non-profit, humanitarian, educational program.

• Provides low cost PCs (about $140 each) to children in third-world countries.
  – Computer is called XO.
  – Operating system is called Sugar.
  – Child-friendly.
  – Unix based.
  – Open source.

• Applications developed by volunteers worldwide.

• About 565,000 PCs are now in the hands of children.
Current OLPC Deployments

- Uruguay 202,000
- Peru 145,000
- Mexico 50,000
- Alabama 14,000
- Haiti 13,000
- Afghanistan 11,000
- Mongolia 10,000
- +18 more countries, with fewer numbers

70% of total is Hispanic
Why is this gateway needed?

- There are vast amounts of educational materials available on the Internet, from hundreds of providers.
- Nearly all of this is in industry-standard H.323 format.
- OLPC PCs are too weak to connect to standard video conferencing or Skype.
  - 433MHz.
  - 256K memory.
- A gateway is needed to enable OLPC users to access the repository of Internet educational materials.
Current Status of OLPC/H.323 Gateway

• Version 0.1 is now in operation at Ohio State University, with streaming video to the PCs and bidirectional chat in parallel as the discussion channel.

• It is available for testing, demonstration and evaluation, and we are seeking collaborators in the OPLC community.

• It can support multiple OLPC and H.323 users at the same time.

• Slides must be sent as the primary video, rather than separately such as with H.239.

• The OLPC PCs do not support connecting to a projector, so we have added that capability as well. But very slow frame rate. A document camera works much better.
How the OLPC/H.323 Gateway Works

OLPC user on the Internet  H.323 user on the Internet

Chat Service (AIM etc)  Codian MCU

Streaming Audio/Video  The Gateway
OLPC/H.323 Gateway Demonstration

Educational Provider CILC, using H.323 and Chat, in Indianapolis

Codian MCU, in Columbus

Laptop using VLC and Chat, in Arlington

MCU is optional; Could be any streamer

Streaming Audio/Video

Chat
Future Plans for the OLPC/H.323 Gateway

• Locate an OLPC user community to work with.
• Test and evaluate with actual students and teachers.
• Make any needed changes.
Questions?

Thank you for coming!