Building and Using an Access Grid Node
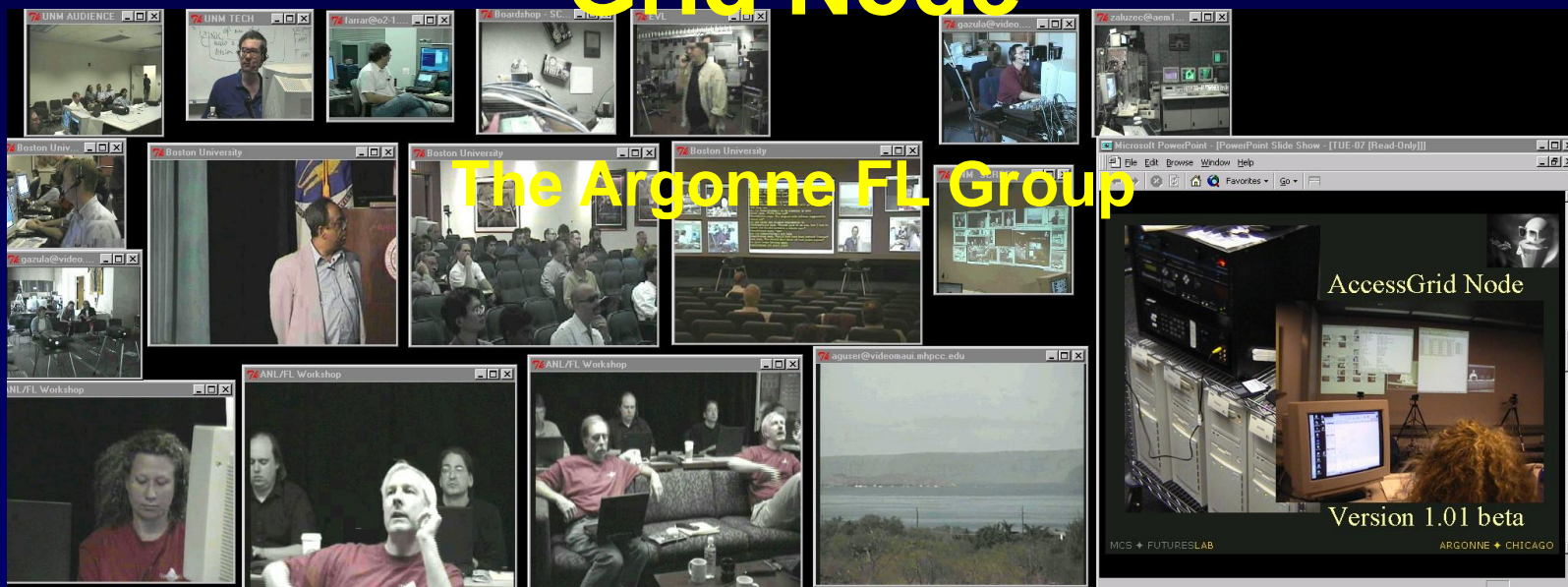
The Argonne FL Group

AccessGrid Node

Version 1.01 beta

Argonne FL Group

Schedule Today

- Introduction – Terry Disz
- Self organize into two groups
- Concurrent sessions – Lisa Childers/Bob Olson
  - Session 1
    - Group A – Node assembly, software install in the library
    - Group B – Operations in the workshop
  - Session 2
    - Group A – Operations in the workshop
    - Group B – Node assembly, software install in the library
- Audio testing and tuning – Bob Olson
- Live AG sessions Library – workshop

The Access Grid

- Access Grid does for people what the computational Grid does for machines

- The Access Grid project focus is to enable *groups* of people to interact with Grid resources and to use the Grid technology to support group to group collaboration at a distance

  - Distributed Lectures and seminars
  - Remote participation in panel discussions
  - Virtual site visits meetings
  - Complex distributed grid based demonstrations

Access Grid Goals

- Enable quality group to group interactions at a distance
- Optimize the user experience
  - provide a sense of presence and participation
  - support natural interaction modalities
- Highest quality but affordable digital audio/video
- Enable complex multisite visual experiences
  - Integrate with high-end visualization environments
  - ActiveMural, Powerwall, CAVE family, Workbenches
- Build on Grid services
- Provide a distributed testbed for ActiveSpace research

The Access Grid is Based on Digitally Linking *"Intentionally Designed"* Spaces

- Physical Groupwork spaces
  - seating, lighting, audio, video, screens, worksurfaces
- Virtual collaborative spaces
  - strong metaphors for resource organization
  - interaction scope management
- Agenda driven scenarios and work sessions
  - lectures, brainstorming, demos, meetings, planning
- Integration with GRID services
  - resource management, security, services brokering

Some AG Definitions

The Access Grid: *The infrastructure and software technologies enabling linking together distributed Active(Work)Spaces to support highly distributed collaborations in science, engineering and education, integrated with and providing seamless access to the resources of the National Technology Grid.*

Access Grid Node: *The ensemble of systems and services managed and scheduled as a coherent unit (i.e. basic component of a virtual venue).*

Access Grid Site: *A physical site (admin domain, networking POP, etc.) that supports one or more Access Grid Nodes. Access Grid Sites need to be Grid services enabled (authentication, QoS, security, resource management, etc.)*
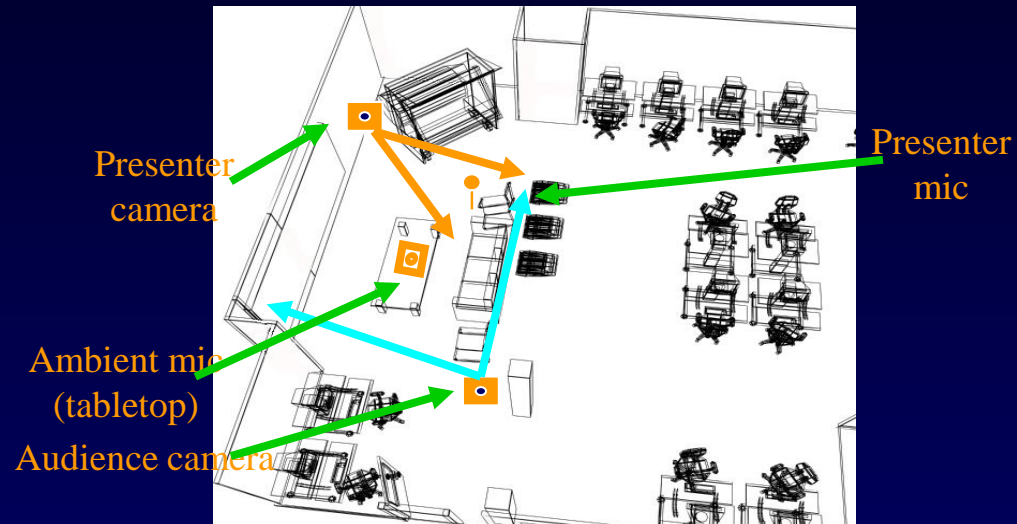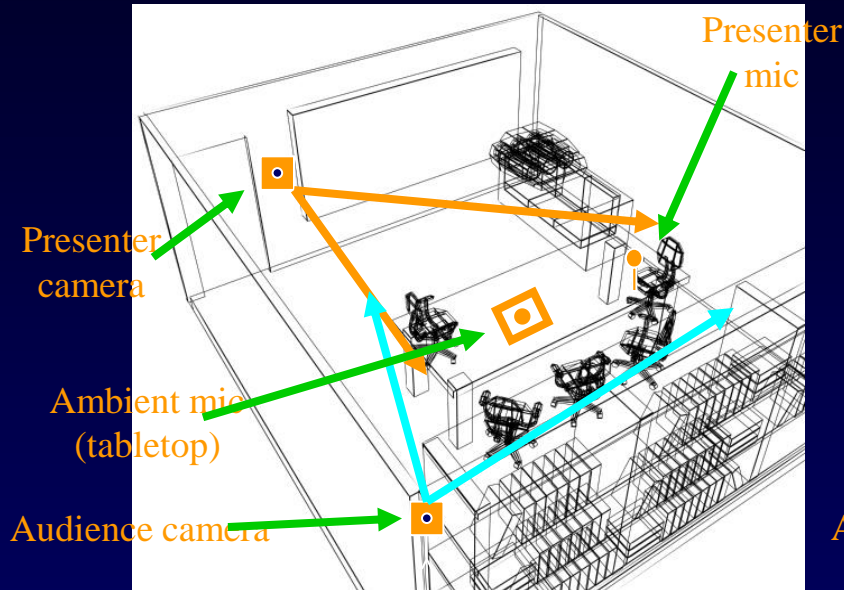
Access Grid Concepts (I)

- AG prototype Demonstration at UKY Chautauqua

- Shared PowerPoint
- Large-format displays
- Multiple audio and video streams
- Supporting distributed meetings

Access Grid Concepts (II)

- Spaces underdevelopment at ANL
  - Library
  - Workshop
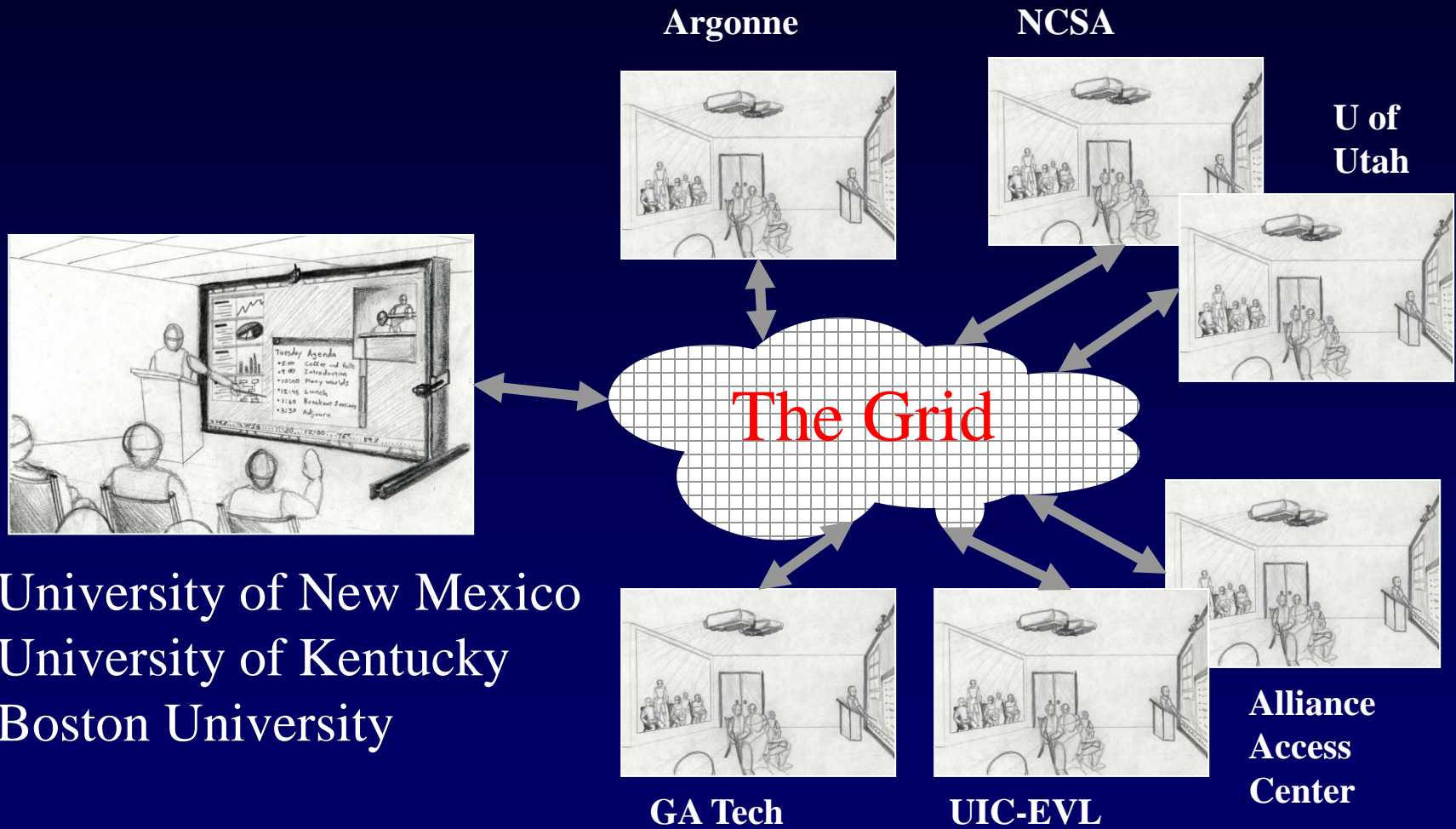 - ActiveMural Room
  - Office

Physical Spaces to Support Groupwork

- Overall room layout
  - large enough to support groups and workplace tools
  - configured so that both local and remote interactions work
- Lighting and camera geometry
  - studio type environment with specified placement, levels
  - well tested and calibrated for good image quality
- Audio geometry
  - multiple microphones and speakers
  - tested to provide good coverage
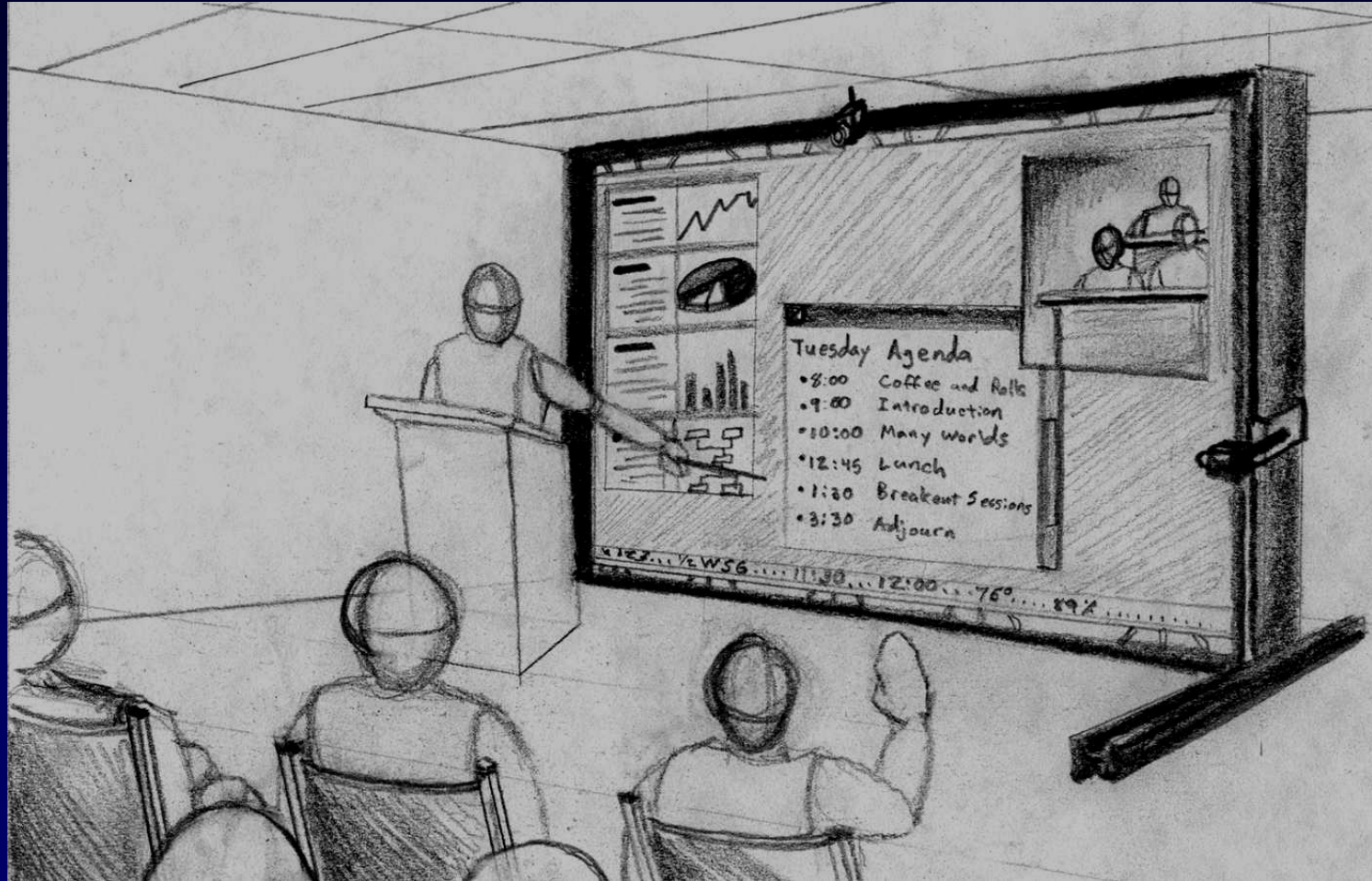 - designed to support audio clarity and some spatialization

Virtual Collaboration Spaces

- Structure and organization supports intended use
  - activity dependent
    - secure channels for "private sessions"
    - broadcast channels for public meetings
- Supports multiple interaction types (modalities)
  - text, audio, video, graphics, animation, VR
- Can exploit strong spatial metaphor
  - interaction scoping
  - resource organization
  - navigation and discovery
- Needed to escape the tyranny of the desktop

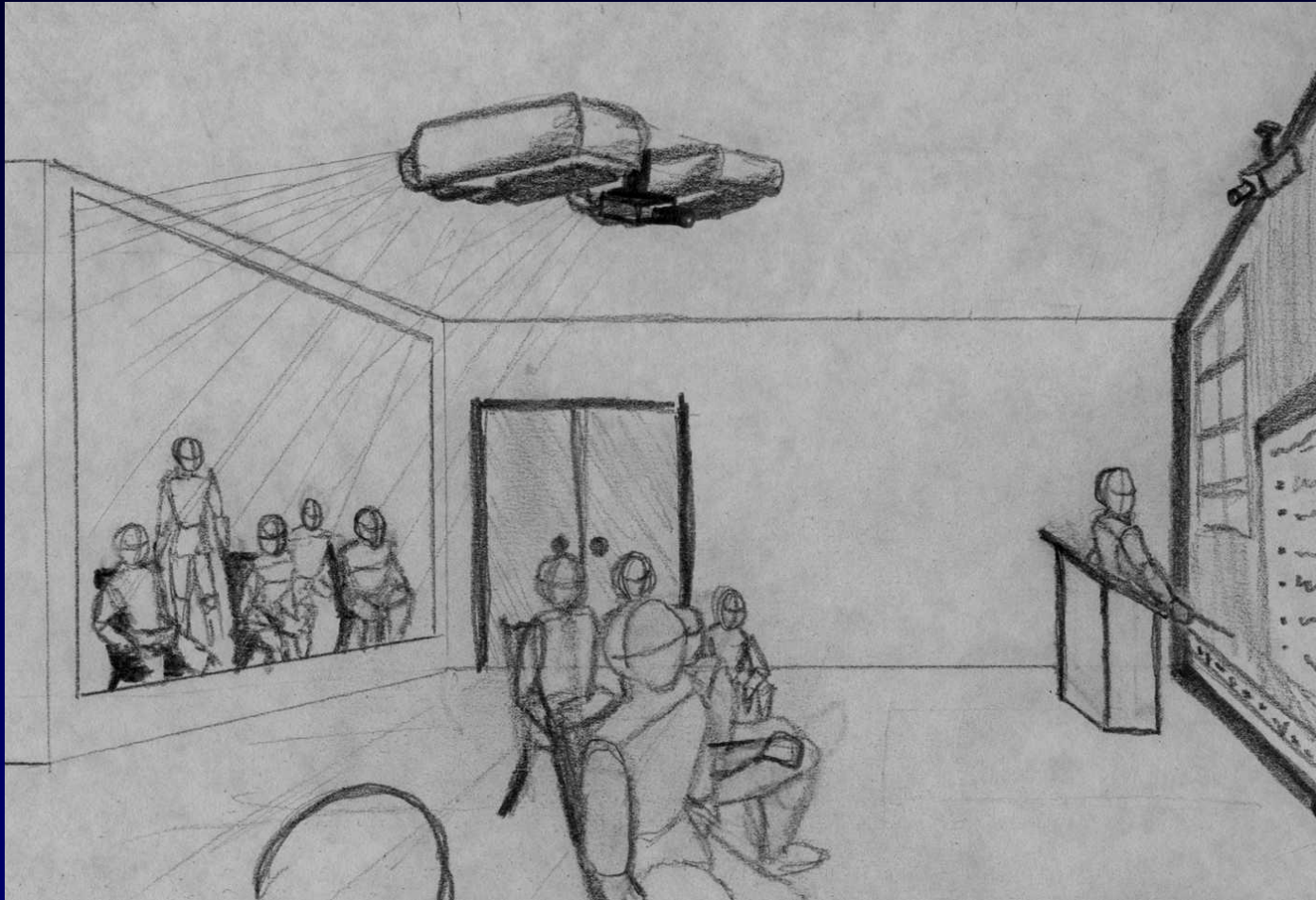# Access Grid at the Chautauquas

Argonne

NCSA

U of Utah

The Grid

University of New Mexico
University of Kentucky
Boston University

GA Tech

UIC-EVL

Alliance Access Center

A Semi-Designed Space

Enhanced Space for Distributed Presentations

Equipment – PC's

- 4 PC's, minimum Pentium 2, 350MHz
  - Display Machine
    - 1 - Matrox G100-quad multiple display card
    - Windows NT
  - Audio Capture Machine
    - Linux
    - 2 or more - Soundblaster PCI 128 card
  - Video Capture Machine
    - Dual CPU
    - Linux
    - 4 – Hauppage WinTV PCI capture cards
  - Control machine
    - Win 98

Equipment - Sound

- Gentner AP400 or AP800 Echo Cancel box
- Genelec speakers (2)
- Microphones – 4 Maximum on the Gentner
  - For table top use, Crown pcc 160
  - Wireless, Vega R22/T25
  - Room use – Crown PZM-30D

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Equipment - Cameras

Sony PC-Cam	http://www.picturephone.com/fp_sony1.htm
Videolabs FlexCam	http://www.picturephone.com/fp_vlab1.htm
Canon VC-C3 pan/tilt camera	http://www.picturephone.com/fp_cnon1.htm
Sony EVI-D30 pan/tilt camera	http://www.picturephone.com/fp_sony3.htm
Devserv	http://www-itg.lbl.gov/mbone/devserv/homepage.html

Projection Technology - Projectors

- Epson ELP-7500
  - LCD
  - small, light, bright
  - uniform
  - Low cost - $ 4,500
  - focus from 3.6' to 38'
  - screen size from 24" to 300"
  - airflow front to side: good geometry

Software

- ## NT Software
  - NT 4.0
  - AG Virtual Venue Software Installation
  - Microsoft Office 97 or 2000
- ## Windows 98
  - Gentner Control Software
- ## Linux
  - Redhat 6.1
  - AG Software install script
    - Installs Video, audio capture, resource managers, etc

Argonne Ag Web Pages

- http://www-fp.mcs.anl.gov/fl/Accessgrid/

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