Announcement

Workshop on Advanced Digital Video in the National Information Infrastructure

May 10–11, 1994
Georgetown University Conference Center
Washington, DC

NIST

U.S. Department of Commerce
Technology Administration
National Institute of Standards and Technology

Workshop Co-sponsors

National Institute of Standards and Technology

Technology Policy Working Group
Information Infrastructure Task Force
Committee on Applications and Technology

Electronics Industries Association

Institute of Electrical and Electronic Engineers - USA

Society of Motion Picture and Television Engineers

Advanced Television Systems Committee

Cross-Industry Working Team

Program Committee

The Program Committee membership is:

Charles Fenimore, National Institute of Standards and Technology

Bruce Field, National Institute of Standards and Technology

Howard Frank, Advanced Research Projects Agency

Elden Georg, Space Applications Corporation

Michael Papillo, Houston Associates, Inc.

Glenn Reitmeier, David Sarnoff Research Center

Will Stackhouse, Consultant

Craig Van Degrift, National Institute of Standards and Technology

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Research Center

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Workshop Objectives

In the National Information Infrastructure (NII), digital video is expected to provide vital information to manufacturers communicating with their suppliers, to medical practitioners consulting with patients and specialists, to students and scholars performing research, and to the producers and distributors of entertainment. This wide range of applications imposes a variety of technical demands on the Information Infrastructure, including a degree of flexibility not found in existing computer or television systems. The objectives of this workshop are to:

- Define a vision of the role of digital video within the NII.
- Identify the architectural, scaling, and performance issues in realizing this vision.
- Recommend the research, experiments, and steps to be taken to resolve these issues.

Agenda (cont'd)

Tuesday, May 10 (cont'd)

6:00-8:00 p.m.–Reception at the Georgetown University Conference Center
Hors d'oeuvres and cash bar

Wednesday, May 11

8:00 a.m.–Continental Breakfast

8:30 a.m.–Panel Discussion: The Evolution of Standards: Is a New Approach Necessary?
Moderator: Will Stackhouse, consultant
Panelists: Rex Buddenberg, Naval Postgraduate School; Karen Higginbottom, Apple Computer; Thomas Stanley, FCC; and Julius Szakolczay, Mitsubishi of America

9:30 a.m.–Coffee Break

9:45 a.m.–Continued breakout sessions; prepare report to plenary.

12:00 p.m.–Lunch
What Will the Home Information Appliance Look Like?
Joseph Donahue, Thomson Consumer Electronics, Inc.

1:30 p.m.–Presentation of Breakout Group reports

2:30 p.m.–Discussion, summary and action to be taken.

4:00 p.m.–Adjourn

Thursday, May 12

9:00 a.m.-12:00 p.m.–Optional tours of NIST labs:

- Video Processing Laboratory/Princeton Engine
- Integrated Services Digital Network (ISDN) Testbed Laboratory
- PDES Testbed or other demos of Mosaic/Internet services

If you are interested in attending the tours, please check the box on the registration form.

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Breakout Descriptions

The participants in the workshop are asked to join a breakout session. The goal of these sessions is to identify the key architectural, scaling, and performance issues associated with incorporating advanced digital video in the NII (ADV/NII) and to recommend the steps needed to resolve these issues. To each breakout group, the Program Committee offers the following list of questions to stimulate and guide discussion.

Architectural Considerations, Modular Decomposition, and Interoperability:

What is the range of requirements for decoding of text, graphics, and video that is envisioned for various ADV/NII applications? How should ADV/NII handle a widely varying set of decoder requirements? What are the advantages and disadvantages of multi-resolution encoding in the various NII applications?

Should there be minimum performance requirements for NII information appliances and delivery services? What would be the effect of multiple performance levels for services?

What constraints are imposed by the differing packet structure of ATM, MPEG-2, and other protocols? How can the differing transmission protocol structures interoperate with minimal cost and performance degradation?

Display Performance:

What are the display requirements (size, viewing distance, resolution, brightness, refresh and update rate, cost, etc.) of various ADV applications (text, graphics, and video)? What is the impact of various application-driven display requirements on different information appliances? Will the many display rates used in TV's, PC's, and workstations converge in the digital-video-rich world of NII?

How will new display technologies affect refresh rate and other display requirements? What, if any, display standards should be created? Should minimum display performance levels be required for certain ADV/NII applications?

What constraints are imposed on various ADV/NII applications by the use of interlaced scanning in soon-to-be-deployed cable and satellite systems for digital standard definition television (SDTV) and in the Grand Alliance HDTV systems?

Breakout Descriptions (cont'd)

Image Capture and Display Requirements:

What are the requirements for image capture (resolution, sensitivity, frame rate, signal-to-noise ratio, color gamut, etc.) in various ADV/NII applications (text, graphics, and video)? What range of requirements for spatial resolution and picture size are envisioned in various ADV/NII applications?

What requirements for temporal resolution (frame rate) are envisioned in these applications? What are the requirements for acceptable motion rendition in various applications? What range of pixel formats and frame rate flexibility should be provided in ADV/NII appliances? What is the impact of decoupling display formats from source formats in ADV/NII?

Digital Delivery Services:

What are the data rate capabilities of the various digital delivery services? How do the different modulation techniques required in various delivery media impact receivers? What role will pre-recorded media play?

What are the two-way communications capabilities of various digital delivery services? What are the advantages/disadvantages of hybrid systems that combine high datarate delivery with telephone return channel? What NII services will be delivered best by broadcast, cable, satellite, and other digital delivery systems?

Descriptions (cont'd)

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Location

The Georgetown University Conference Center, 3800 Reservoir Rd., N.W., Washington, D.C.

Registration

The registration fee is **$155** per person. Registration includes coffee breaks, lunches, a reception, and workshop materials. Please complete and return the attached registration form by **May 2, 1994,** in order for your name to appear on the preliminary participants list. Cancellations must also be submitted by this date. Refunds for cancellations will not be made after **May 2, 1994.**

Accommodations

A block of rooms has been reserved at the Georgetown University Conference Center. The special workshop rate is $110 single or $120 double, plus 11% sales tax and a $1.50 occupancy tax. To register for rooms, please call the University Reservations Department directly, **(202)687-3232 or 1-800-446-9476**, no later than **May 2, 1994**, and mention that you are attending the "ADV Workshop". Check-in time is 3:30 p.m., check-out time is 12:00 p.m.

Technical Information

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