Fourth International Colloquium on Advanced Television Systems

Ottawa Congress Centre
OTTAWA, CANADA
June 25-29, 1990

COLLOQUIUM PROCEEDINGS

A Post-Colloquium Proceedings will be published in order to include the summaries of the panel discussions.

Additional copies of the Colloquium Proceedings are available at $80 per volume set. Please make cheque or money order payable in Canadian funds to CBC/HDTV '90 and send to:

Janet A. West-Cyr
HDTV '90
CBC Engineering
7925 Cote St. Luc Road
Montreal, Quebec H4W 1R5
CANADA

Quatrième colloque international sur les systèmes de télévision de pointe

Centre des congrès d'Ottawa
OTTAWA, CANADA
25 au 29 juin 1990

LES ACTES DU COLLOQUE

Les Actes du colloque seront publiés après le colloque, afin d'inclure les résumés des délibérations qui auront eu lieu dans le cadre des discussions entre experts.

On peut se procurer des exemplaires supplémentaires des actes du colloque moyennant 80 $ canadiens pour la série des deux volumes. Veuillez établir votre chèque ou mandat à l'ordre de CBC/HDTV '90. Les commandes doivent être adressées à:

Janet A. West-Cyr
TVHD '90
Société Radio-Canada, Ingénierie
7925, chemin de la Côte-St-Luc
Montréal (Québec) H4W 1R5
CANADA
OTTAWA CONGRESS CENTRE

All abstracts are in English and French.
Papers in italics will be published in the proceedings only.

PROGRAM

Monday, 25 June 1990

16:30 - 21:00    REGISTRATION

19:00 - 21:00    Welcoming Reception and Opening of Demonstrations and Exhibits.

Tuesday, 26 June 1990

07:00 - 17:00    REGISTRATION

OPENING SESSION

08:30 - 17:00    Introduction
Janet West-Cyr, Organizing Chairman, HDTV '90
Canadian Broadcasting Corporation

Opening Address
Eldon Thompson, Chairman, HDTV '90
President & CEO, Telesat Canada

Keynote Address
Marcel Masse, Minister of Communications
Government of Canada

Keynote Speaker
Michael McEwen, Executive Vice-President
Canadian Broadcasting Corporation

SESSION 1.     ADVANCED TELEVISION TODAY

Session Chairs: Bob Findlay, CFCF-12
Elizabeth McDonald, CAB

Market Shares and Profit Levels Sustainable Among Prospective Competing EDTV and HDTV Delivery Media
W. Vivian, University of Michigan, U.S.

The Changing Perspectives in European Broadcasting
J. Forrest, International Broadcast Authority, U.K.

HDTV Service Now
M. Ohkawa, NHK, Japan
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<th>SESSION 2A.</th>
<th>SPECIAL APPLICATION DEVELOPMENTS</th>
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| **Session Chairs:** Peter Bowers, TV Ontario  
Jaqueline Cook, Telesat Canada |
| **Space Station HDTV Applications for Science, Operations and Media Dissemination**  
R.S. Prodan, Stellacom Inc., U.S. |
| **Present Status of HDTV Application for Movies in Japan**  
T. Ishida et al., NHK, Japan |
| **High Definition Graphics - Bridging the Media**  
P. Owen, Quantel Ltd., England |
| **An Introduction of HDTV Still Picture in Art Museum**  
R. Mochizuki et al., NHK, Japan |
| **Commercial Applications for High Definition Television Systems**  
D.C. Boyd, Scientific Atlanta, Canada |
| **HDTV and the Computer Industry**  
C. A. Poynton, Sun Microsystems Inc., U.S. |

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<th>SESSION 2B.</th>
<th>DISPLAY TECHNOLOGIES</th>
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| **Session Chairs:** Hideo Kusaka, NHK  
Metin Akgun, DOC/CRC |
| **Considerations on Required Property for HDTV Displays**  
M. Ogino et al., Hitachi Ltd., Japan |
| **The Development of Criteria for Cinematic Presentations of Live Performances Transmitted by Satellite**  
B.P. De Jong et al., Telesat Canada, Canada |
| **Psychological Effects of the Experimental 3D HDTV System**  
S. Yano et al., NHK, Japan |
| **Fabrication of a 33-Inch Color DC Plasma Display Panel**  
H. Murakami et al., NHK, Japan |
| **Light Valve Technology for HDTV - State of the Art**  
R. Gerhard-Multhaupt, Heinrich-Hertz-Institut, FRG |
EVENING SESSION

18:00 - 19:30  **Face-off discussion - "The business of HDTV"**
A distinguished panel will debate the business issues of ATV and forecast future trends.

**Moderator:** Robert O'Reilly, CBC
**Invited:**
- Patrick Watson, Chairman - CBC
- Weston Vivian - University of Michigan
- Brian Ross - Dome Productions
- John Oppenheimer - Jack Morton Productions
- Stuart Samuels - Z-Big Vision

20:00 - 21:00  **A program of electronic cinema live via satellite from NHK in Tokyo.**

Wednesday, 27 June 1990

SESSION 3A.  **PRODUCTION TECHNIQUES**

**Session Chairs:** Lee Stringer, HDC Communications
Janet West-Cyr, CBC

09:00 - 17:00  **Pioneering the Applications of Wide-Screen Electronic Imaging for the 1990's**
B. Rebo, REBO Research, U.S.

- **A Little Night Music**
P. Kafno, Thames Television, U.K.

- **HDTV Toward A New Visual Vocabulary**
S. Samuels, Z-Big Vision Ltd., U.S.

- **The Post Production Applications of HDVS**
J. Galt, Sony America, U.S.

- **Trends in the Production and Integration of Film-Like Electronic Motion Pictures Sequences**
E. Zwaneveld et al., NFB, Canada

- **High Definition Thinking**
D. Niles, Captain of America/1125 Productions, U.S.

- **A Sound Reproduction and Transmission System for HDTV**
H. Suganami et al., NHK, Japan
SESSION 3B. SIGNAL PROCESSING

Session Chairs: Shaker Sabri, Bell-Northern Research  
Eric Dubois, INRS-Télécommunications

A Comparison of Different HDTV Standards Using Subjective and Objective Criteria  
R. Schäfer et al., Heinrich-Hertz Institut, FRG

Multiresolution Techniques with Application to HDTV  
M. Vetterli et al., Columbia University, U.S.

Review of Techniques for Motion Estimation and Motion Compensation  
E. Dubois et al., INRS-Télécommunications, Canada

Phase Segregation, Motion Compensation and DATV for Enhanced PAL and High Definition Television  
M. Weston et al., BBC, U.K.

Bit-Rate Reduction Codec for HDTV: Architecture and Hardware Implementation  
S. Cucci et al., Telettra, Italy

Display Processing for HD-MAC  
G.M.X. Fernando et al., Philips Research Labs, U.K.

SESSION 4A. PRODUCTION STANDARDS AND TECHNOLOGY

Session Chairs: Terry Snazel, Sports Network  
Keith Field, CBC

13:30 - 17:00  Production Standards - The International Perspective  
K.P. Davies, CBC, Canada

The Current EBU Analysis of the CIF and CDR HDTV Production Formats  
D. Wood et al., EBU, Belgium

Standards Conversion  
K. Field, CBC, Canada

The Role of Film in the Era of Advanced Television: An Economic and Technological Analysis  
B. Hunt, Eastman Kodak, U.S.

Design Considerations for a Mobile HDTV Production Facility  
A. Bigras et al., Telesat Canada, Canada
SESSION 4B. CABLE AND NETWORK DISTRIBUTION

Session Chairs: Roger Poirier, CCTA
Mohamed Elkharadly, CUC

MAC Transmissions on Cable
H. Kolk, Philips Consumer Electronics, Netherlands

International HDTV Service Via Intelsat
E.A. Faine, Comsat, U.S.

Projections of ATV Progress in Cable
W.S. Ciciora, American Television and Communications Corporation, U.S.

A Practical Approach for Implementation of Advanced Television
H.N. Miller, PBS, U.S.

HDTV Impact on Cable System Architecture
N. Hamilton-Piercy, Rogers Communications Inc., Canada

The Cable Labs ATV Test Program
C.K. Tanner, Cable Television Laboratories Inc., U.S.

18:15 - 19:00  RECEPTION
19:00 - 20:45  BANQUET
21:00 - 23:00  CONCERT

Thursday, 28 June 1990

SESSION 5A. BROADCAST DISTRIBUTION

Session Chairs: Jean Lajoie, Radio-Quebec
Michel Durocher, CBC

08:30 - 17:00  Analysis of Design Principles for ATV Systems
A. Mainguy et al., DOC/CRC, Canada

Development of Compatible MUSE Systems-ADTV
Y. Tanaka et al., NHK, Japan

ACTV Status
J.S. Fuhrer et al., David Sarnoff Research Center, U.S.
High Definition Television
W.C. Luplow, Zenith Electronic Systems R&D, U.S.

Digital Advanced Television - Feasibility and Introduction Considerations
A. Toth, N. A. Philips Corporation, U.S.

An NTSC-Compatible Wide Aspect Advanced Television System
Y. Sugimori et al., NTV, Japan

Session Chairs: Brian Baldry, CBC
Michel Durocher, CBC

ATV UHF Spectrum Investigation
R. Zeitoun et al., DOC, Canada

Objective and Subjective Tests of ATV Emission Systems
P. Fannon et al., ATTC/CRC, U.S.

Investigations of an Improved PAL System that Uses HDTV as Source Material
S. Nyström et al., Swedish Telecom Radio, Sweden

Progress in Commercial DBS in the U.K.
G. Drury, Independent Broadcasting Authority, U.K.

Satellite Broadcasting of HDTV
G. Chouinard, DOC/CRC, Canada

The HD B-MAC System for Satellite Transmission: Results of the ATV Trial
F. Smart et al., Telesat Canada, Canada

SESSION 5B. INTRODUCTION STRATEGIES

Session Chairs: Vic Reed, Skyline Cablevision Ltd.
Keith Chang, DOC/CRC

Recent Trends in HDTV Development
J. Ishida, NHK, Japan

New Television Media in Japan - Current Status and Policy on Development and Application
M. Kawauchi, Ministry of Posts and Telecommunications, Japan

Making a Business with Advanced Television Technologies: A Canadian Perspective
L. Rankin et al., Telesat Canada, Canada
Rolling Out Advanced Television in the United States:  
A Broadcaster's Perspective  
S.M. Weiss, N.B.C., U.S.  

5B.4

A Pragmatic Scenario of HDTV Development  
I. Switzer, Cablecasting, Canada  

5B.5

European Strategy for the Introduction of HDTV  
E. Lalor, European Commission, Belgium  

5B.6

The Flexible Introduction of New Services Including HDTV  
G. Tonge et al., Independent Broadcasting Authority - U.K.  

5B.7

Compatible HDTV: Eureka 95 Progress and Prospects  
R.N. Jackson, Philips Research Laboratories, U.K.  

5B.8

The Realities of Advanced Television in America  
J. Donahue, Thomson Consumer Electronics, U.S.  

5B.9

The Advance of HDTV - Challenges, Dilemmas and Opportunities  
L. Thorpe, Sony Advanced Systems, U.S.  

5B.10

Quality Judgements and Purchase Decisions: An Evaluation of  
Consumer Reactions to HDTV  
S. Lupker et al., DOC/CRC, Canada  

5B.11

Friday, 29 June 1990  

09:00 - 13:00   PANEL DISCUSSIONS

A Technical Panel chaired by Bill Sawchuk (DOC/CRC) entitled:  
"Have the ATV Systems Ignored Satellite Transmission?"

The Plenary Panel chaired by Peter Lyman (Nordicity) with panelists such as Linda Rankin (Telesat Canada), R. Hubbard (Hubbard Broadcasting), Sidney Topol (Scientific Atlanta), Eamon Lalor (European Commission), Harold Greenberg (Astral Bellevue Pathe) and J. Matsusaki (NHK Enterprises) will debate:  
"HDTV - What's Driving It? Technology Push or Market Pull"

COLLOQUIUM CLOSING