

# TABLE OF CONTENTS

## January - December 2001 Volume 110

### January

Message from the President . . . . .	JOHN L. MASON	3
35th SMPTE Advanced Motion Imaging Conference, Washington, DC, February 8-10, 2001 . . . . .		6
An Advanced M/E Architecture for Today's Production Environment . . . . .	Mark A. Narveson	12
A New Film Scanning Machine for Film in a Digital World . . . . .	DAVID CORBITT	18
Strategic Implications for Future Content Management Systems . . . . .	JOHN D. LITKE	23
Evaluating Video Servers . . . . .	AL KOVALICK	28
High-Definition Cabling and Return Loss . . . . .		
. . . . .STEPHEN H. LAMPEN, MARTIN J. VAN DER BURGT, AND CARL W. DOLE		34
The Technological Art of Simulation . . . . .	GRAHAM WHITEHEAD	39

### February

Letter from the Editorial Vice-President . . . . .	EDWARD P. HOBSON	69
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 . . . . .		73
35th SMPTE Advanced Motion Imaging Conference, Washington, DC, February 8-10, 2001 . . . . .		75
SMPTE Techology Committee on Digital Cinema—DC28: A Status Report . . . . .	R. M. RAST	78
A Pragmatic Approach to Data Networks in Media Production . . . . .	S. J. OWEN	85
Management and Control of Receivers in a Satellite Distribution Network . . . . .	MARTY STEIN	89
Using Reference Test Objects: From Camera Setup Through Post-Production . . . . .	DAVID F. E. CORLEY	94
TrueCircuit Technology . . . . .	CARSTEN BAUMANN AND YENDO HU	98
Tunable Optical Band-Pass Filter for Video-Routing Networks Using Dense Wavelength Division Multiplexing . . . . .	YOSUKE ENDO, TAKA AKI SAITO, AND MIKIO MAEDA	103

### March

Message from Sections Vice-President . . . . .	RENÉ VILLENEUVE	123
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 . . . . .		126
SMPTE All-Day Seminar at NAB2001 . . . . .		177
Curved Color Separation Spaces for Blue Screen Matting . . . . .	YASUSHI MISHIMA	131
High-Performance Electro-optic Camera Prototype . . . . .	STEPHEN A. STOUGH AND WILLIAM A. HILL	140
Interactive Television Content Authoring . . . . .	PAUL MITCHELL	147
Analog Video 101 and 102 for All . . . . .	WAYNE MCLACHLAN	151

### April

Report of the Engineering Vice-President . . . . .	WILLIAM C. MILLER	200
Report of the Engineering Director, Television . . . . .	PETER SYMES	205
SMPTE I23 Committee on Television Image Technology . . . . .	DAVID BANCROFT	206
SMPTE P-3 Technology Committee Activity Report . . . . .	B. W. PINKSTON	207
SMPTE D27 Data Essence Technology Committee . . . . .	JOHANN SAFAR	207
C24 Committee on Video Compression Technology . . . . .	DAVID FIBUSH	208
L6 Committee on MP Laboratory Services Technology . . . . .	ALAN J. MASSON	208
SMPTE V16 Technology Committee . . . . .	NEIL NEUBERT	209
35th SMPTE Advanced Motion Imaging Conference Special Report . . . . .		210
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 . . . . .		215
Balancing the Technologies in Digital Cinema Systems . . . . .		
. . . . .STEVEN A. MORLEY, K. S. THYAGARAJAN, AND CHRIS IRVINE		220
The Technology of Enhanced Color Saturation: Kodak Ektachrome 100D color reversal film/5285 . . . . .	DAVID L. LONG	228
Storage Area Networks in Video Applications . . . . .	MITCHELL SEIGLE	236
Genlock and Timing Regeneration for Multiple Formats of High-Definition Video and Digital Cinema . . . . .	MICHAEL POIMBOEUF	240
Methods to Improve Moving Picture Quality of PDPs Affected by Dynamic False Contour Artifacts . . . . .		
. . . . .T. YAMAMOTO, ET AL.		248

## May

Message from the Executive Director .....	FREDERICK C. MOTTS	275
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 .....		277
A Multiframe Rate Compression-Free Video Recorder for Universal DTV Mastering in High Resolution .....	DAVID J. BANCROFT	283
Removal of Spatial and Temporal Alias Artifacts in Format Conversion and Display .....	WILLIAM E. GLENN	290
On Scanning Format and MPEG-2 Coding Efficiency .....	E. B. BELLERS AND G. DE HAAN	293
Serving Up Data for Enhanced DTV Programs .....	GOMER THOMAS	299
Archival Video Status? .....	JIM WHEELER	304

## June

Message from the Financial Vice-President .....	ROBERT B. KISOR	347
SMPTE Committee on Audio Technology, A12 .....	RONALD E. UHLIG	350
SMPTE Committee on Networks and File Management, N26 .....	HANS HOFFMAN	351
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 .....		352
SMPTE 2001 Conference and Exhibition, Sydney, Australia, July 9-13, 2001 .....		356
Compression of Moving Pictures for Digital Cinema Using the MPEG-2 Toolkit .....		
.....	MICHAEL W. BRUNS AND JAMES T. WHITTLESEY	359
A Wireless Digital Television Camera .....		
.....	C. CLARKE, M. MACCORMACK, J. MITCHELL, P. MOSS AND J. ZUBRZYCKI	365
Integrating PC-based Editing, Compositing, and Graphics Systems into the Digital Studio .....		
.....	B. LAMBORELLE, A. LEGAULT, J. MATEY, AND T. MATTIOLI	372
Considerations for Moving to a Video Server-Based Facility .....	ROGER CROOKS	377
The Future of the Moving Image .....	GARY DEMOS	383

## July

Message from the Executive Vice-President .....	GAVIN SCHUTZ	419
SMPTE at IBC 2001, Amsterdam, The Netherlands, September 13, 2001 .....		421
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 .....		424
UMID Watermarking for Managing Metadata in Content Production .....		
.....	J. PELLY, D. TAPSON, J. STONE AND S. KEATING	429
A Platform for Constructing Distributed Asset Management Systems .....		
.....	S. BILOW, S. LIBERT, A. MURCHING, AND D. SLACK	436
Data Broadcasting Solutions for Broadcasters .....	BRETT JENKINS	444
How ATM Networks Meet Professional Broadcast Demands .....		
.....	JEAN CHATEL, DAVID MOUEN MAKOUA, AND LAURENT THEBAULT	449
Advanced Television Broadcasting in a Digital Broadband Distribution Environment .....		
.....	IAN OLIVER AND BRIAN HOLMES	457

## August

Message from the Executive Director .....	FREDERICK C. MOTTS	501
SMPTE at IBC 2001, Amsterdam, The Netherlands, September 13, 2001 .....		503
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 .....		504
A Multiformat HDTV Camera Head .....		
.....	P. CENTEN, T. MOELANDS, J. VAN ROOY, AND M. STEKELENBURG	510
Streaming Video with Storage Area Networks .....	GREG REITMAN	517
Audio-to-Video Delay—Watermarking Provides a Means of Automatic Correction .....	TOM TUCKER	523
A Motion Picture Machine Operator: 1900-2000 .....	D. KARL MALKAMES	527
Metering for Multichannel Audio .....	JOHN EMMETT	532

## September

Message from the Conference Vice-President . . . . .	THOMAS M. JORDAN	567
36th SMPTE Advanced Motion Imaging Conference, Dallas, TX, February 7-9, 2002 . . . . .		569
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 . . . . .		571
SMPTE Italian Section Conference, Milan, Italy, October 5-6, 2001 . . . . .		578
Images and Formats, . . . . .	DAVID J. BANCROFT	579
The Stereoscopic Cinema: From Film to Digital Projection . . . . .	LENNY LIPTON	586
Media Management for Audiovisual Digital Archiving . . . . .		
. . . . .	A. D'ALESSIO, A. BERTINI, F. CIFERRI, G. FERRARI, AND M. STRAMBINI	594
Evolving Infrastructures for a Nationwide Data Broadcasting Service . . . . .	DAVID BOROUGHS	598
Multichannel Sound in Television—Technical and Aesthetic Approach . . . . .	KIMIO HAMASAKI	608

## October

Greetings from New York . . . . .	J. L. MASON AND F. C. MOTTS	644
Message from the Engineering Vice-President . . . . .	WILLIAM C. MILLER	646
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 . . . . .		656
36th SMPTE Advanced Motion Imaging Conference, Dallas, TX, February 7-9, 2002 . . . . .		664
ISO/TAC 36—Cinematography: International Standardization . . . . .	CARLOS V. GIROD, JR.	666
IEC/TC100—Audio and Multimedia Equipment and Systems . . . . .	MARK S. HYMAN	671
Mastering and Archiving Uncompressed Digital Video Test Material . . . . .	CHARLES FENIMORE	726
The Commitment of SMPTE to Standardization . . . . .	ALEX E. ALDEN	736
A Short History of Standardization in the SMPTE . . . . .	GORDON E. CHAMBERS	739

## November

Message from the SMPTE President . . . . .	JOHN L. MASON	757
143rd SMPTE Technical Conference and Exhibition, New York City, November 4-7, 2001 . . . . .		760
Design Improvements for Motion Picture Film Projectors . . . . .		
. . . . .	C. L. DUMONT, A. F. KURTZ, B. D. SILVERSTEIN, AND D. H. KIRKPATRICK	785
A Distributed Programming Environment Using IT-based Technology . . . . .		
. . . . .	P. J. BRIGHTWELL AND P. N. TUDOR	792
The Pro-MPEG/AAF Association Material Exchange Format (MXF) . . . . .	JAMES H. WILKINSON	798
An Object Server Supporting Metadata for Video Intensive Internet-Based Access . . . . .		
. . . . .	CHRISTOPHER C. WOOLLARD	803

## December

Message from the President . . . . .	JOHN L. MASON	826
Message from the Executive Director . . . . .	FREDERICK C. MOTTS	827
SMPTE Election Results . . . . .		828
36th SMPTE Advanced Motion Imaging Conference, Dallas, TX, February 7-9, 2002 . . . . .		833
Evolution of Resolution in Film Scanners . . . . .	PETER SWINSON	839
Implementing Digital Television in Australia . . . . .	BOB GREENEY	843
Seamless Audio Splicing for ISO/IEC 13818 Transport Streams . . . . .		
. . . . .	SEYFULLAH OGUZ AND SORIN FAIBISH	846
Surround: the Current Technological Situation . . . . .	DAVID GRIESINGER	857

**BOOKS, BOOKLETS, AND BROCHURES**

- The Camera Assistant's Manual, 3rd edition, *Elkins*, Mar., 185  
 DTV Survival Guide, *Boston*, June, 407  
 DVD Demystified, *Taylor*, June, 407  
 Hollywood's Conversion of All Production to Color Using Eastman Color Professional Motion Picture Film, *Waner*, Mar., 184  
 Home Movies—A History of the American Industry 1879-1979, *Kattelle*, Sept., 629  
 Producing and Directing the Short Film and Video, 2nd edition, *Rea and Irving*, Mar., 184  
 Steadicam Techniques and Aesthetics, *Ferrara*, Mar., 185  
 Video Compression Demystified, *Symes*, Mar., 184

**ERRATA AND ADDENDA**

- Re: "Audio-Video Synchronization Across DTV Transport Interfaces: The Impossible Dream," by *Randall Hoffner*, Nov. 2000, correction, Jan., 55  
 Re: "Carlos Girod Provides Analysis for National Geographic Society," Jan. 2001, table correction, Feb., 110  
 Re: Honors and Awards recipients, Nov. 2001, p. 776, incorrect photo; correction, Dec., 872  
 Re: "Images and Formats," by *David Bancroft*, Sept. 2001, correction, Nov., 813  
 Re: *Journal Cover*, Oct. 2001, correction, Dec., 872  
 Re: President's Message January 2001, correction, Feb., 110  
 Re: Report by the SMPTE Archival Papers and Historical Committee, by *Ed Schuller*, Jan. 2001, correction, Mar., 182

**NEW PRODUCTS**

**Adapters**

- Break out adapter, BOA, Telemetrics, Mar., 183

**Audio Equipment**

- Audio post systems, Logic 3SC, AMS Neve, June, 410  
 Video and audio mixer, AV-Mix, Microvideo Ltd., Apr., 263

**Asset Management Systems**

- MetaVault, Zytech Systems, Mar., 183

**Cameras/Camera Accessories**

- Broadcast camera, SK-555; portable camera, Z-3000W, Hitachi Denshi America, Aug., 554

- Camcorders, DVCPRO HD, AJ-HDC24A, Panasonic, Apr., 263; AG-EZ50U and AG-DVC15, Nov., 814  
 Camera heads, 433 Weather-Cam, Radamec Broadcast Systems, Jan., 55  
 DVD camcorder, DZ-MV100A, Hitachi Denshi America, July, 471  
 ENG systems, Voyager Lite, Tandberg Television, Dec., 876  
 Multistandard HD cameras, SK-3100P and SK-3300P, Hitachi Denshi America, May, 337  
 Pan/tilt camera units, PT-1, Eagle, Hitachi Denshi America, May, 337; PT-1, Aug., 554  
 Three-CCD color camera, HV-D52, Hitachi Denshi America, May, 337  
 Three-CCD robotic pan/tilt camera, Digital CameraMan, ParkerVision, Dec., 875

**Converters**

- Converter/upconverters, ARC 20:20, Alchemist Platinum, upconversion module, Snell & Wilcox, Dec., 875  
 Downconverter, ViewMAX, Folsom Research, July, 471  
 Upconverter, Aquila Altair, Miranda Technologies, July, 472  
 Wide-angle converter, Optex, May, 337

**Decoders/Encoders**

*see Encoders/Decoders*

**Digital Products**

- RCA-brand digital video products, Thomson multimedia, Sept., 632

**Display**

- 3-D LCD display, 2015XLS, Dimension Technologies, Feb., 111; 2018XLQ, May, 338  
 Display processor, 4View, RGB Spectrum, Mar., 183

**Editing Equipment**

- Dual cabinet editing station, Winsted Corp., Aug., 555  
 Edit desk, E4242, Winsted Corp., Sept., 632

**Encoders/Decoders**

- Decoders, CineCast HD; HD/1; and HD/2, Vela, Nov., 814  
 Encoder, GoLine Pro, Philips Digital Networks, Dec., 876  
 Encoders, ZP-330 ad 230 series, Zapex Technologies, Feb., 111  
 Encoders, DBE 4140, 4130 Nextream, Apr. 263  
 Encoders, E5710 and E5720, Tandberg Television, Oct. 745  
 Serial digital video encoder, CLCL030, National Semiconductor, June, 410

**Film/Laboratory**

- Anti-fog, AF-2000, Eastman Kodak Co., Jan., 55  
 Film: sound recording film, Apr., 264, Eastman Kodak Co.; black-and-white negative films; color negative film 5284/7284, Vision Expression; May, 338; color intermediate film, 5242/7242, Dec., 876  
 Optical printer, Cineric, Mar., 183  
 Processing machine, Eastman Kodak Co., July, 472

**Lenses/Optics**

- Anti-vibration device, OS-Tech, Fujinon, June, 410  
 Digi zoom demand, ERD1-10A-D01, Fujinon, Aug., 555  
 EC-styled lens, Canon 33 x 11, Optex, Jan., 55  
 HD range extender, Optex, May, 338  
 Tele zoom lens, Extreme, Angenieux, Feb., 111  
 Zoom lenses, 40X and Optimo, Angenieux, July, 472

**Lighting and Lamps**

- Adapter, Light Tuner, Aspen Electronics, Apr., 264  
 Softlight range, Auraflash, Optex, Aug., 555

**Monitors**

- HD LCDI monitor, DM-3002, Astro Systems, Dec., 876  
 Plasma display monitors, CMP307 and CMP 4120, Hitachi Denshi America, June, 410  
 VideoScope field monitor, VS100, Aspen Electronics, May, 337  
 Waveform/vectorscope monitor, LIV5170D, Leader Instruments Corp., Sept., 632  
 Widescreen monitor, OTM 1690, Optex, Jan., 55  
 Wide array of new monitors announced by Thomson multimedia, Sept., 632

**Projection Equipment**

- Data/video projector, Dukane, Dec., 876  
 Digital cinema projector system, SC6000-DC, NEC Technologies, May, 338  
 DLP-based projector, PT-D85000U, Panasonic, Apr., 263; PT-L711XNTU, Nov., 815  
 XGA projector, ImpagePro 8900, Dukane Corp., Mar., 183; model 8909, Oct., 746

**Recording and Playback Equipment**

- Camera recorder, AJ-HDC27A, Panasonic, Apr., 263  
 Carrying case, SoniCase, Sonic Sense, Apr., 264

Digital disk recorder, da Vinci, July, 471  
Digital recording system, DGx, RGB Spectrum, Sept., 632  
DVD recordable drive, SW-9501-SPD, Panasonic, Aug., 555  
DVD-R/DVD-RAM video recorder, Panasonic, Dec., 876

### Routers/Routing Systems

Prophecy HD, Leitch Technology, July, 472

### Signal Processing/ Transmission Equipment

Broadcasting equipment, Evertz Microsystems, Dec., 875  
Character generator, Motto-HD, Aston Electronic Designs, June, 410  
CMOS sensor, Pro-Cam-1, Rockwell Science center, May, 337  
Digital proc amp, NPROC-3, Microvideo Ltd., Apr., 263  
Digital video generator, LT442D, Leader Instruments, Oct. 745  
Distribution amplifier, Densite, Miranda Technologies, Aug., 554  
ENG/SNG multiplexer, CopperHead, Telecast Fiber Systems, Mar., 183  
Fiberlink video/PTZ system, Communications Specialties, May, 338  
Fiber-optic multiplexed family, CopperHead, Telecast Fiber systems, July, 472; Python Plus4, Nov., 814  
Fiber optic solution, Flashlink, Network Solutions U.S., Dec., 875  
Frame synchronizer, D1 SYNC+, Prime Image, Mar., 183  
Inserter, VBI Data Bridge, Microvideo Ltd., Apr., 263  
Quad-split processor, Tango 4:2:2, Miranda Technologies, Oct., 746  
Single-chip integrated circuit, Matsushita Electric, Sept., 633  
Standards converters, Mach 2 and HD5500 Ph.C upconverter, Snell and Wilcox, June, 410  
Video scaler and line quadrupler, QuadScan Elite, Focus Enhancements, Apr., 263

### Software

MPEG file analysis, Mosalina, Snell & Wilcox, Feb., 111  
PVTV Webstation for News, Parker Vision, Mar., 184

### Storage

Image server, Gallery, da Vinci, July, 471

### Switching

Auto switching power controller, TPC 2562, Pulizzi Engineering, Feb., 111  
Switcher with DVE options, SD2524, Snell & Wilcox, Nov., 815  
Synchronous switching modules, ESW201S, Microvideo Ltd., Apr., 263

### Tests and Measurements

Chroma measurement system, CL-200, Minolta Corp., May, 337

### Video Recording and Equipment

Discs, CD-RW 10X; DVD-RAM II, Maxell Corp., July, 472  
Disc drive, DVD-R/DVD-RAM, Panasonic, Nov., 815  
Half-rack DVCPRO HD VTR, AJ-HD130DC, Panasonic, Apr., 263  
HDTV videotape, Maxell Corp., Mar., 183  
Videocassette, Betacam SX, Maxell Corp, Jan., 55; HDCAM, July, 472  
Videotape recorder, AJ-D455, Panasonic Broadcast, Sept., 633

### NEWS

#### Awards and Honors

Allen, Ioan, receives AMPAS Commendation Award, May, 336  
Baron, Stanley, wins 2001 IEEE Steinmetz Award, Sept., 630  
da Vinci Systems receives Emmy Award for Engineering, Oct., 744  
NATAS Award recipients, Dec., 873  
Schuller, Ed, receives plaque for 50 years of service to the New York Section, Aug., 549  
SMPTE Journal wins bronze Gold Ink Award, Aug., 551  
Snell, Roderick, wins John Tucker International Award for Excellence, Nov., 813  
Stone, Bud, awarded 2001 Ken Mason Inter-Society Award, May, 335  
Webb, Jim, receives Cinema Audio Society Career Achievement Award, Feb., 110  
Young, Irwin, W., awarded Gordon E. Sawyer Oscar, Mar., 181  
Young, Kenneth, A., receives Lou Wolf Scholarship Award, Feb., 109

#### Companies

ABI study sees broadband gains, Oct., 744  
Avica Technology, EVS, and GVG demonstrate server interoperability, Dec., 873  
Azcar name now applies to Immad ECVS and STI, Apr., 261  
Centralized Broadcasting Solutions created by teaming Miranda, Encoda, SignaSys, and Pinnacle, July, 469  
Cinesite technology extends art of cinematography in film, *O Brother, Where Art Thou*, Feb., 109; launches DVD division, July, 470  
CMP DV Media Group returns Digital Video Production Workshop to NAB2001, Mar., 181  
da Vinci organizes new product groups, Mar., 181, receives Emmy Engineering award, Oct., 744

Encoda Systems acquires ODAC, Inc., Apr., 261; announces Program Control, May, 336  
Fire Vault Raid qualifies, Nov., 813  
Focus Enhancements acquires Videonics, Mar., 181  
Funinon lenses "Search for Noah's Flood," June, 408  
Hollywood Software partners with WestCorp to expand TDS2000 system, Feb., 109  
Hope Reports predicts expanded sales of plasma flat screens, Jan., 53  
Illumination Dynamics, Inc., opens for business, Aug., 551  
Imax announces new projector technology, May, 336  
Kodak opens Pro-Tek Media Preservation Center Jan., 53; presents new digital cinema system, Sept., 630  
Leitch demonstrates NetOS at 142nd Conference, Jan., 54; U.S. patent on server products, Apr., 261; NATAS Award winner, Dec. 873; with DTS will provide broadcast solution, Dec., 874  
Lucent Technologies announces Inphase Technologies, Mar., 182  
Matsushita establishes Panasonic Hollywood Lab, June, 408; NATAS Award winner, Dec., 873  
Miranda and Oxtel join forces, July, 470  
NEC demonstrates new HD system, Dec., 874  
Philips Digital Networks licenses select Digimarc patents, July, 470; new tools for interactive DTV services, Oct., 873  
Quantel, NATAS Award winner, Dec., 873  
Rainbow Network Communications opens new technology center; education initiative launched, Dec., 874  
Rohde & Schwarz's digital video quality analyzer selected for Pick Hit award at NAB 2001, July, 470; NATAS Award winner, Dec., 873  
Royal Philips Electronics and Sun Microsystems collaborate on streaming media solutions, July, 469  
Sarnoff Corp. tests DTV receivers for compatibility, Dec., 874  
Sky Datamann International, Compaq Computer, and Streaming21 form alliance to develop broadband streaming services in Hong Kong, Jan., 53  
Snell and Wilcox, new offerings, Mar., 182; new offices, June, 408  
Streaming21 alliances, Mar., 182  
Tandberg Television and Telenor conduct broadband trials, Feb., 109; Tandberg provides network distribution solution to NBC, May, 336  
Technicolor reintroduces dye transfer process, Nov., 813  
Telecast Fiber Systems announces industry-standard fiber-optic connectors, Aug., 551  
Telestream and Vsoft announce partnership, May, 336  
Thomcast changes name to Thales, Nov., 813

Thomson multimedia acquires Philips Professional Broadcast, June, 408; NATAS Award winner, Dec., 873; launches new website, Dec., 874  
Triveni and Zenith join forces with PBS, Dec., 874  
Tribune Co. creates all-digital studio in Hollywood, May, 336  
USA Cable plans new network operations center in New Jersey, Apr., 261  
Vela, SCMCi, and Virage develop software interface, July, 470  
Wall Street Communications expands operations in Europe, Apr., 262

## Education

Master classes in film, TV, and video production at International Film and Television Workshops, Apr., 262  
White House Fellowships available to U.S. citizens, Jan., 54

## Other Organizations

DIG and PIMA merger creates International Imaging Industry Assoc. (I3A), Sept., 630  
GSTA assesses large format films, Sept., 630  
IBC establishes first Interactive TV Awards at Nombre d'or Festival, Aug., 551  
IES calls for entries for Richard Kelly Grant, Apr., 262  
ITU-R and SMPTE agree to mutual cooperation, Oct., 648; text of agreement, Oct, 649

## Meetings and Conferences

34th Annual U.S. Film Festival, call for papers, Jan., 54  
ShoBiz Expo 2001, May, 336

## People

Agin, Joerg D., retires as senior vice-president of Kodak/president of Entertainment Imaging division, Sept., 630  
Bellamy, Mike, joins Cinesite as senior colorist, July, 469  
Caniglia, Bob, named national manager at Snell & Wilcox, May, 336  
Craig, Margaret, appointed COO at Leitch Technology Corp., Feb., 110  
Homer, Chris, named chief engineer at KMEX-TV, Nov., 813  
Korte, Douglas, named vice-president of server system sales at Leitch, Aug., 552  
Livingston, Phil, new VP at Panasonic, Nov., 813  
McMahon, Tom, joins DemoGraFX as chief architectural officer, Aug., 551  
Miller, Kenny, joins Digital/Systems Technology, Oct., 744  
Schultz, Fred, named VP at Sundance Digital, Oct., 744  
Venn, Chris, appointed business development manager at Snell & Wilcox, July, 469

## OBITUARIES

Cannon, John, former president of NATAS, Aug., 552  
Gibson, J. James, Sept., 633  
Hilton, Richard C. Jr., Sept., 633  
Mackechnie, Gordon, Jan., 55  
Mann, Monty Sr., Jan., 55  
Mason, Kenneth M., former SMPTE President, *Frusciante*, July, 465  
Mead, Daniel Robert, Jan., 55  
Mehaffey, Earl "Mac," Aug., 550  
Morrison, Arnold, Nov., 812  
Narkunas, Gregory, June, 408  
Rescher, Arthur, Nov., 812  
Rankine, Louis P., Aug., 550  
Schuster, Melvin L., Nov., 812  
Shelton, Aaron, Jan., 55  
van Borrendam, Eric, Mar., 182  
Waner, John, Nov., 812

## REPORTS

*See also SMPTE ACTIVITIES, Engineering, Reports*

SMPTE Archival Papers and Historical Committee, *Schuller*, Jan., 48  
Archival Committee Search, Dec., 873

## SECTION ACTIVITIES

### Meetings

Chicago, Jan., 51; July, 467; Aug., 549; Sept., 627  
Detroit, Jan., 51; Feb., 107; Nov., 811; Dec., 869  
Hollywood, Jan., 51; Apr., 259; May, 330; July, 467; Aug., 549; Film conference announcement, Sept., 627; Oct., 744; Dec., 869  
Hong Kong, Sept., 627  
Napa Valley College, Jan., 52; Feb., 107; June, 405; Nov., 811  
Nashville, Dec., 869  
New York, Jan., 52; Feb., 108; Apr., 259; May, 331; July, 467; Aug., 549; Dec., 869  
Nordic, Apr., 260; June, 405;  
Ohio, Feb., 108; May, 331; June, 406; July, 468  
Pasadena City College, Jan., 52; Feb., 108; May, 332; Dec., 870  
Rochester, Jan., 52; Apr., 260; May, 332; June, 406; Aug., 550; Sept., 628; Dec., 870  
Rocky Mountain, Jan., 53; Apr., 261; June, 407; July, 468; Sept., 628; Nov., 811; Dec., 870  
Russia, June, 407  
Sacramento, Mar., 180; May, 333; July, 468; Dec., 870  
San Francisco, Jan., 57; Apr., 319; June, 501; July, 588; Sept., 628  
Toronto, Mar., 182; Apr., 261; May, 333; Nov., 812; Dec., 870  
Twin Cities, Nov., 812

## Reports

Australia Section to hold SMPTE 2001, Compressing Images—Expanding Ideas, Mar., 180; June, 356  
Hong Kong Section holds 3rd DTTB Forum, Mar., 180  
Italian Section Forum at IBTS, Oct. 5-6, 2001, Sept., 578  
Schuller, Ed, receives plaque for 50 years of service to the New York Section, Aug., 549  
Why SMPTE New England Meetings are Worthwhile, *John Gates*, May, 330

## SMPTE ACTIVITIES

### Awards and Honors

2001 Honors and Awards Recipients, Nov., 774  
New SMPTE Fellows, Nov., 770

### Constitution and Bylaws

Addition to Article III, Section 3, Nominations; correction to Article I Section 2, Qualifications, May, 335

### Engineering

#### Reports

Girod provides analysis for National Geographic Society, Jan., 47  
IEC/TC/100—Audio and Multimedia Equipment and Systems, *Hyman*, Oct., 671; *Hyman*, Mark, new IEC TC100 Chairman, announcement, Oct., 744  
ISO/TC 36—Cinematography, *Girod*, Oct., 666  
Report of the Engineering Director, Television, *Symes*, Apr., 205  
SMPTE Engineering Committee members, Oct., 672  
SMPTE Technology Committee on Digital Cinema—DC28: A Status Report, *Rast*, Feb., 78  
SMPTE Technology Committee Reports: Audio Recording and Reproduction, A12, *Uhlig*, June, 350  
Data Essence, D27, *Safar*, Apr., 207  
Digital Cinema, DC28, *Rast*, Feb., 78  
Motion Picture Laboratory Services, L6, *Masson*, Apr., 208  
File Management and Networking, N26, *Hoffmann*, June, 351  
Theatrical Projection, P3, *Pinkston*, Apr., 207  
Television Recording and Reproduction, V16, *Neubert*, Apr., 207  
Television Image, I23, *Bancroft*, Apr., 206  
Video Compression, C24, *Fibush*, Apr., 208  
Special Report from the Ad Hoc Group, Mastering and Archiving Uncompressed Digital Video Test Material, *Fenimore*, Oct., 726

## General

Former SMPTE presidents gather for annual reunion, July, 469

## History

SMPTE Almanac, *Michael Dolan*, Mar., 178; Apr., 258; May, 329; June, 403; July, 464; Aug., 537; Sept., 615; Oct., 742; Nov., 810; Dec., 867

SMPTE Archival Papers and Historical Committee, *Schuller*, Jan., 48

## Meetings and Conferences

143rd SMPTE Technical Conference and Exhibit, Feb., 76; Mar., 126; Apr., 215; May, 277; June, 352; July, 424; Aug., 504; Sept., 571; Oct., 656; program, Nov., 760; new Fellows, Nov., 770; Honors and Awards, Nov., 774

35th SMPTE Advanced Motion Imaging Conference, Jan., 6; Feb., 75; Apr., 210

36th SMPTE Advanced Motion Imaging Conference, Sept., 569; Oct., 664; Dec., 833

SMPTE at IBC2001, All-Day Seminar, program, Mar. 177; July, 421; Aug., 503

SMPTE Italian Section Forum at IBTS, Oct. 5-6, 2001, Sept., 578

## Officers and Governors

Election Results, Dec., 828

Interview with President John Mason, Jan., 43; messages, Oct., 644; Nov., 757; Dec., 826

Message from the

Conference Vice-President, *Jordan*, Sept., 567

Editorial Vice-President, *Hobson*, Feb., 67

Engineering Vice-President, *Miller*, Oct., 646

Executive Director, *Motts*, May, 275; Aug., 501; Oct., 644; Dec., 827

Executive Vice-President, *Schutz*, July, 419

Financial Vice-President, *Kisor*, June, 347

Sections Vice-President, *Villeneuve*, Mar., 123

## Publications

2001 Annual Index, December, Part II

2001 Worldwide Directory for Members, September, Part II

SMPTE Five Year Index, 1996-2001, Part II, Dec. 2001

Proceedings of the 143rd Technical Conference

## Standardization

See also SMPTE ACTIVITIES, *Engineering Committees, Reports*

SMPTE and ITU-R agree to mutual cooperation, Oct., 648; text of agreement, Oct., 649

## TECHNICAL PAPERS

### Archiving

Archival Video Status? *Wheeler*, May 304  
Media Management for Audiovisual Digital Archiving, *D'Alessio, Bertini, Ciferri, Ferrari, and Strambini*, Sept., 594

### Audio

Audio-to-Video Delay—Watermarking Provides a Means of Automatic Correction, *Tucker*, Aug., 523

Metering for Multichannel Audio, *Emmett*, reprint, Aug., 532

Seamless Audio Splicing for ISO/IEC 13818 Transport Streams, *Oguz and Faibish*, Dec., 846

Surround: The Current Technological Situation, *Griesinger*, Dec., 857

### Broadcasting

Advanced Television Broadcasting in a Digital Broadband Distribution Environment, *Oliver and Holmes*, July, 457

Curved Color Separation Spaces for Blue Screen Matting, *Mishima*, Mar., 131

Data Broadcasting Solutions for Broadcasters, *Jenkins*, July, 444

Evolving Infrastructures for a Nationwide Data Broadcasting Service, *Boroughs*, Sept., 598

How ATM Networks Meet Professional Broadcast Demands, *Chatel, Makoua, and Thebault*, July, 449

### Cables

High-Definition Cabling and Return Loss, *Lampen, van der Burgt, and Dole*, Jan., 34

### Cameras and Accessories

High-Performance Electro-optic Camera Prototype, *Stough and Hill*, Mar., 140

A Multiformat HDTV Camera Head, *Centen, Moelands, van Rooy, and Stekelenburg*, Aug., 510

A Wireless Digital Television Camera, *Clarke, MacCormack, Mitchell, Moss and Zubrzycki*, June, 365

### Combined Technologies

Balancing the Technologies in Digital Cinema Systems, *Morley, Thyagarajan, and Irvine*, Apr., 220

Images and Formats, *Bancroft*, Sept., 579

Interactive Television Content Authoring, *Mitchell*, Mar., 147

An Object Server Supporting Metadata for Video Intensive Internet-Based Access, *Woollard*, Nov., 803

The Stereoscopic Cinema: From Film to Digital Projection, *Lipton*, Sept., 586

### Compression

Compression of Moving Pictures for Digital Cinema Using the MPEG-2 Toolkit, *Bruns and Whittlesey*, June, 359

## Content Management

Strategic Implications for Future Content Management Systems, *Litke*, Jan., 23

## Conversion

On Scanning Format and MPEG-2 Coding Efficiency, *Bellers and de Haan*, May, 293

Removal of Spatial and Temporal Alias Artifacts in Format Conversion and Display, *Glenn*, May, 290

## Data Broadcasting

Data Broadcasting Solutions for Broadcasters, *Jenkins*, July, 444

Evolving Infrastructures for a Nationwide Data Broadcasting Service, *Boroughs*, Sept., 598

On Scanning Format and MPEG-2 Coding Efficiency, *Bellers and de Haan*, May, 293

Serving Up Data for Enhanced DTV Programs, *Thomas*, May, 299

## Digital Technology

Advanced Television Broadcasting in a Digital Broadband Distribution Environment, *Oliver and Holmes*, July, 457

Media Management for Audiovisual Digital Archiving, *D'Alessio, Bertini, Ciferri, Ferrari, and Strambini*, Sept., 594

A New Film Scanning Machine for Film in a Digital World, *Corbitt*, Jan., 18

The Stereoscopic Cinema: From Film to Digital Projection, *Lipton*, Sept., 586

## Digital Cinema

Balancing the Technologies in Digital Cinema Systems, *Morley, Thyagarajan, and Irvine*, Apr., 220

Compression of Moving Pictures for Digital Cinema Using the MPEG-2 Toolkit, *Bruns and Whittlesey*, June, 359

The Future of the Moving Image, *Demos*, June, 383

Genlock and Timing Regeneration for Multiple Formats of High-Definition Video and Digital Cinema, *Poimboeuf*, Apr., 240

SMPTE Technology Committee on Digital Cinema—DC28: A Status Report, *Rast*, Feb., 78

## Digital Television

Implementing Digital Television in Australia, *Greeney*, Dec., 843

A Multiframe Rate Compression-Free Video Recorder for Universal DTV Mastering in High Resolution, *Bancroft*, May, 283

Serving Up Data for Enhanced DTV Programs, *Thomas*, May, 299

A Wireless Digital Television Camera, *Clarke, MacCormack, Mitchell, Moss and Zubrzycki*, June, 365

## Facilities

- Considerations for Moving to a Video Server-Based Facility, *Crooks*, June, 377  
Implementing Digital Television in Australia, *Greeney*, Dec., 843  
Integrating PC-based Editing, Compositing, and Graphics Systems into the Digital Studio, *Lamborelle*, *Legault*, *Matey*, and *Mattioli*, June, 372

## Film/Laboratory

See *Restoration*

- Evolution of Resolution in Film Scanners, *Swinson*, Dec., 839  
Images and Formats, *Bancroft*, Sept., 579  
A New Film Scanning Machine for Film in a Digital World, *Corbitt*, Jan., 18  
The Technology of Enhanced Color Saturation: Kodak Ektachrome 100D color reversal film/5285, *Long*, Apr., 228

## Graphics and Editing

- Integrating PC-based Editing, Compositing, and Graphics Systems into the Digital Studio, *Lamborelle*, *Legault*, *Matey*, and *Mattioli*, June 372  
The Technological Art of Simulation, reprint, *Whitehead*, Jan., 39

## High and Extended-Definition TV

- High-Definition Cabling and Return Loss, *Lampen*, *van der Burgt*, and *Dole*, Jan., 34  
Genlock and Timing Regeneration for Multiple Formats of High-Definition Video and Digital Cinema, *Poimboeuf*, Apr., 240  
A Multiformat HDTV Camera Head, *Centen*, *Moelands*, *van Rooy*, and *Stekelenburg*, Aug., 510

## Historical

- The Commitment of SMPTE to Standardization, *Alden*, Oct., 736  
A Motion Picture Machine Operator: 1900-2000, *Malkames*, Aug., 527  
A Short History of Standardization in the SMPTE, *Chambers*, Oct., 739

## Image Quality

- Methods to Improve Moving Picture Quality of PDPs Affected by Dynamic False Contour Artifacts, reprint, *Yamamoto*, *et al.*, Apr., 248

## Integrated Technologies

- Integrating PC-based Editing, Compositing, and Graphics Systems into the Digital Studio, *Lamborelle*, *Legault*, *Matey*, and *Mattioli*, June 372

## Metadata Applications

- A Platform for Constructing Distributed Asset Management Systems, *Bilow*, *Libert*, *Murching*, and *Slack*, July, 436

## MPEG

- On Scanning Format and MPEG-2 Coding Efficiency, *Bellers* and *de Haan*, May, 293

## Production/Post-Production

- An Advanced M/E Architecture for Today's Production Environment, *Narveson*, Jan., 12.  
A Distributed Programming Environment Using IT-based Technology, *Brightwell* and *Tudor*, Nov., 792  
A Pragmatic Approach to Data Networks in Media Production, *Owen*, Feb., 85  
Using Reference Test Objects: From Camera Setup Through Post-Production, *Corley*, Feb., 94

## Projection

- Design Improvements for Motion Picture Film Projectors, *Dumont*, *Kurtz*, *Silverstein*, and *Kirkpatrick*, Nov., 785  
The Stereoscopic Cinema: From Film to Digital Projection, *Lipton*, Sept., 586

## Recording

- A Multiframe Rate Compression-Free Video Recorder for Universal DTV Mastering in High Resolution, *Bancroft*, May, 283

## Signal Processing/Transmission

- Analog Video 101 and 102 for All, *McLachlan*, Mar., 151  
Curved Color Separation Spaces for Blue Screen Matting, *Mishima*, Mar., 131  
Evolving Infrastructures for a Nationwide Data Broadcasting Service, *Boroughs*, Sept., 598  
Genlock and Timing Regeneration for Multiple Formats of High-Definition Video and Digital Cinema, *Poimboeuf*, Apr., 240  
Management and Control of Receivers in a Satellite Distribution Network, *Stein*, Feb., 89  
On Scanning Format and MPEG-2 Coding Efficiency, *Bellers* and *de Haan*, May, 293  
Removal of Spatial and Temporal Alias Artifacts in Format Conversion and Dispal, *Glenn*, May, 290  
Seamless Audio Splicing for ISO/IEC 13818 Transport Streams, *Oguz* and *Faibish*, Dec., 846  
TrueCircuit Technology, *Baumann* and *Hu*, Feb., 98  
Tunable Optical Band-Pass Filter for Video-Routing Networks Using Dense Wavelength Division Multiplexing, reprint, *Endo*, *Saito*, and *Maeda*, Feb., 103

## Sound

- Multichannel Sound in Television—Technical and Aesthetic Approach, reprint, *Hamasaki*, Sept., 608

- Surround: The Current Technological Situation, *Griesinger*, Dec., 857

## Storage

- The Pro-MPEG/AAF Association Material Exchange Format (MXF), *Wilkinson*, Nov., 798  
Media Management for Audiovisual Digital Archiving, *D'Alessio*, *Bertini*, *Ciferri*, *Ferrari*, and *Strambini*, Sept., 594  
Storage Area Networks in Video applications, *Seigle*, Apr., 236

## Standardization

- The Commitment of SMPTE to Standardization, *Alden*, Oct., 736  
A Distributed Programming Environment Using IT-based Technology, *Brightwell* and *Tudor*, Nov., 792  
A Short History of Standardization in the SMPTE, *Chambers*, Oct., 739

## Testing and Evaluation

- Evaluating Video Servers, *Kovalick*, Jan., 28  
TrueCircuit Technology, *Baumann* and *Hu*, Feb., 98  
Using Reference Test Objects: From Camera Setup Through Post-Production, *Corley*, Feb., 94

## Video Servers

- Considerations for Moving to a Video Server-Based Facility, *Crooks*, June, 377  
Evaluating Video Servers, *Kovalick*, Jan., 28  
An Object Server Supporting Metadata for Video Intensive Internet-Based Access, *Woollard*, Nov., 803  
Strategic Implications for Future Content Management Systems, *Litke*, Jan., 23

## Visual Effects

- An Advanced M/E Architecture for Today's Production Environment, *Narveson*, Jan., 12.  
The Technological Art of Simulation, reprint, *Whitehead*, Jan., 39

## Watermarking

- Audio-to-Video Delay—Watermarking Provides a Means of Automatic Correction, *Tucker*, Aug., 523  
UMID Watermarking for Managing Metadata in Content Production, *Pelly*, *Tapson*, *Stone*, and *Keating*, July, 429

**A**

**Alden, Alex**, The Commitment of SMPTE to Standardization, Oct., 736

**B**

**Bancroft, David J.**, Images and Formats, Sept., 579

—, A Multiframe Rate Compression-Free Video Recorder for Universal DTV Mastering in High Resolution, May, 283

**Baumann, Carsten** and **Hu, Yendo**, TrueCircuit Technology, Feb., 98

**Bellers, E. B.**, and **de Haan, G.**, On Scanning Format and MPEG-2 Coding Efficiency, May, 293

**Bertini, A., et al.**, Media Management for Audiovisual Digital Archiving, Sept., 594

**Bilow, S., et al.**, A Platform for Constructing Distributed Asset Management Systems, July, 436

**Boroughs, David**, Evolving Infrastructures for a Nationwide Data Broadcasting Service, Sept., 598

**Brightwell, P. J.**, and **Tudor, P. N.**, A Distributed Programming Environment Using IT-based Technology, Nov., 792

**Bruns, Michael A.**, and **Whittlesey, James T.**, Compression of Moving Pictures for Digital Cinema Using the MPEG-2 Toolkit, June, 359

**C**

**Centen, P., et al.**, A Multiformat HDTV Camera Head, , Aug., 510

**Chambers, Gordon E.**, A Short History of Standardization in the SMPTE, Oct., 739

**Chatel, Jean; Makoua, David Mouen;** and **Thebault, Laurent**, How ATM Networks Meet Professional Broadcast Demands, July, 449

**Ciferi, F., et al.**, Media Management for Audiovisual Digital Archiving, Sept., 594

**Clark, C., et al.**, A Wireless Digital Television Camera, June, 365

**Corbitt, David**, A New Film Scanning Machine for Film in a Digital World, Jan., 18

**Corley, David F. E.**, Using Reference Test Objects: From Camera Setup Through Post-Production, Feb., 94

**Crooks, Roger**, Considerations for Moving to a Video Server-Based Facility, June, 377

**D**

**D'Alessio, A., et al.**, Media Management for Audiovisual Digital Archiving, Sept., 594

**De Haan, G.**, and **Bellers, E. B.**, On Scanning Format and MPEG-2 Coding Efficiency, May, 293

**Demos, Gary**, The Future of the Moving Image, June, 383

**Dole, Carl W.; van der Burgt, Martin J.;** and **Lampen, Stephen H.**, High-Definition Cabling and Return Loss, Jan., 34

**Dumont, C. L., et al.**, Design Improvements for Motion Picture Film Projectors, Nov., 785

**E**

**Emmett, John**, Metering for Multichannel Audio, reprint, Aug., 532

**Endo, Yosuke; Saito, Takaaki;** and **Maeda, Mikio**, Tunable Optical Band-Pass Filter for Video-Routing Networks Using Dense Wavelength Division Multiplexing, reprint, Feb., 103

**F**

**Faibish, Sorin**, and **Oguz, Seyfullah**, Seamless Audio Splicing for ISO/IEC 13818 Transport Streams, Dec., 846

**Fenimore, Charles**, Mastering and Archiving Uncompressed Digital Video Test Materials, Oct., 726

**Ferrari, G., et al.**, Media Management for Audiovisual Digital Archiving, Sept., 594

**G**

**Glenn, William E.**, Removal of Spatial and Temporary Alias Artifacts in Format Conversion and Display, May, 290

**Greeney, Bob**, Implementing Digital Television in Australia, Dec., 843

**Griesinger, David**, Surround: The Current Technological Situation, Dec., 857

**H**

**Hamasaki, Kimio**, Multichannel Sound in Television—Technical and Aesthetic Approach, reprint, Sept., 608

**Hill, William A.**, and **Stough, Stephen A.**, High-Performance Electro-optic Camera Prototype, Mar., 140

**Holmes, Brian**, and **Oliver, Ian**, Advanced Television Broadcasting in a Digital Broadband Distribution Environment, July, 457

**Hue, Yendo**, and **Baumann, Carsten**, TrueCircuit Technology, Feb., 98

**J**

**Jenkins, Brett**, Data Broadcasting Solutions for Broadcasters, Jenkins, July, 444

**Jordan, Thomas M.**, Message from the Conference Vice-President, Sept., 567

**K**

**Keating, S., et al.**, UMID Watermarking for Managing Metadata in Content Production, July, 429

**Kirkpatrick, D. H. et al.**, Design Improvements for Motion Picture Film Projectors, Nov., 785

**Kovalick, Al**, Evaluating Video Servers, Jan., 28

**Kurtz, A. F., et al.**, Design Improvements for Motion Picture Film Projectors, Nov., 785

**L**

**Lamborelle, B., et al.**, Integrating PC-based Editing, Compositing, and Graphics Systems into the Digital Studio, June, 372

**Lampen, Stephen H; van der Burgt, Martin J.;** and **Dole, Carl W.**, High-Definition Cabling and Return Loss, Jan., 34

**Legault, A., et al.**, Integrating PC-based Editing, Compositing, and Graphics Systems into the Digital Studio, June, 372

**Libert, S., et al.**, A Platform for Constructing Distributed Asset Management Systems, July, 436

**Lipton, Lenny**, The Stereoscopic Cinema: From Film to Digital Projection, Sept., 586

**Litke, John D.**, Strategic Implications for Future Content Management Systems, Jan., 23

**Long, David L.**, The Technology of Enhanced Color Saturation: Kodak Ektachrome 100D color reversal film/5285, Apr., 228

## M

**MacCormack, M., et al.**, A Wireless Digital Television Camera, June, 365

**Maeda, Mikio; Endo, Yosuke; and Saito, Takaaki**, Tunable Optical Band-Pass Filter for Video-Routing Networks Using Dense Wavelength Division Multiplexing, reprint, Feb., 103

**Makoua, David Mouen; Chatel, Jean; and Thebault, Laurent**, How ATM Networks Meet Professional Broadcast Demands, July, 449

**Malkames, D. Karl**, A Motion Picture Machine Operator: 1900-2000, Aug., 527

**Matey, J., et al.**, Integrating PC-based Editing, Compositing, and Graphics Systems into the Digital Studio, June, 372

**Mattioli, T., et al.**, Integrating PC-based Editing, Compositing, and Graphics Systems into the Digital Studio, June, 372

**McLachlan, Wayne**, Analog Video 101 and 102 for All, Mar., 151

**Mishima, Yasushi**, Curved Color Separation Spaces for Blue Screen Matting, Mar., 131

**Mitchell, J., et al.**, A Wireless Digital Television Camera, June, 365

**Mitchell, Paul**, Interactive Television Content Authoring, Mar., 147

**Moelands, T., et al.**, A Multiformat HDTV Camera Head, , Aug., 510

**Morley, Steven A.; Thyagarajan, K. S.; and Irvine, Chris**, Balancing the Technologies in Digital Cinema Systems, Apr., 220

**Moss, P., et al.**, A Wireless Digital Television Camera, June, 365

**Murching, A., et al.**, A Platform for Constructing Distributed Asset Management Systems, July, 436

## N

**Narveson, Mark A.**, An Advanced M/E Architecture for Today's Production Environment, Jan., 12

## O

**Oguz, Seyfullah, and Faibish, Sorin**, Seamless Audio Splicing for ISO/IEC 13818 Transport Streams, Dec., 846

**Oliver, Ian, and Holmes, Brian**, Advanced Television Broadcasting in a Digital Broadband Distribution Environment, July, 457

**Owen, S. J.**, A Pragmatic Approach to Data Networks in Media Production, Feb., 85

## P

**Pelly, J., et al.**, UMID Watermarking for Managing Metadata in Content Production, July, 429

**Poimboeuf, Michael**, Genlock and Timing Regeneration for Multiple Formats of High-Definition Video and Digital Cinema, Apr., 240

## R

**Rast, R. M.**, SMPTE Technology Committee on Digital Cinema-DC28: A Status Report, Feb., 78

**Reitman, Greg**, Streaming Video with Storage Area Networks, Aug., 517

## S

**Saito, Takaaki; Endo, Yosuke; and Maeda, Mikio**, Tunable Optical Band-Pass Filter for Video-Routing Networks Using Dense Wavelength Division Multiplexing, reprint, Feb., 103

**Seigle, Mitchell**, Storage Area Networks in Video Applications, Apr., 236

**Silverstein, B. D., et al.**, Design Improvements for Motion Picture Film Projectors, Nov., 785

**Slack, D., et al.**, A Platform for Constructing Distributed Asset Management Systems, July, 436

**Stein, Marty**, Management and Control of Receivers in a Satellite Distribution Network, Feb., 89

**Strambini, M., et al.**, Media Management for Audiovisual Digital Archiving, Sept., 594

**Stekelenburg, M., et al.**, A Multiformat HDTV Camera Head, , Aug., 510

**Stone, J., et al.**, UMID Watermarking for Managing Metadata in Content Production, July, 429

**Stough, Stephen A., and Hill, William A.**, High-Performance Electro-optic Camera Prototype, Mar., 140

**Swinson, Peter**, Evolution of Resolution in Film Scanners, Dec., 839

## T

**Tapson, D., et al.**, UMID Watermarking for Managing Metadata in Content Production, July, 429

**Thebault, Laurent; Makoua, David Mouen; and Chatel, Jean**, How ATM Networks Meet Professional Broadcast Demands, July, 449

**Thomas, Gomer**, Serving Up Data for Enhanced DTV Programs, May, 299

**Tucker, Tom**, Audio-to-Video Delay—Watermarking Provides a Means of Automatic Correction, Aug., 523

**Tudor, P. N., and Brightwell, P. J.**, A Distributed Programming Environment Using IT-based Technology, Nov., 792

**Thyagarajan, K. S; Irvine, Chris; and Morley, Steven A.**, Balancing the Technologies in Digital Cinema Systems, Apr., 220

## V

**van der Burgt, Martin J.; Lampen, Stephen H.; and Dole, Carl W.**, High-Definition Cabling and Return Loss, Jan., 34

**van Rooy, J., et al.**, A Multiformat HDTV Camera Head, , Aug., 510

## W

**Wheeler, Jim**, Archival Video Status? May 304

**Whitehead, Graham**, The Technological Art of Simulation, reprint, Jan., 39

**Whittlesey, James T., and Bruns, Michael W.**, Compression of Moving Pictures for Digital Cinema Using the MPEG-2 Toolkit, June, 359

**Wilkinson, James H.**, The Pro-MPEG/AAF Association Material Exchange Format (MXF), Nov., 798

## Y

**Yamamoto, T., et al.**, Methods to Improve Moving Picture Quality of PDPs Affected by Dynamic False Contour Artifacts, reprint, Apr., 248

## Z

**Zubrzycki, J., et al.**, A Wireless Digital Television Camera, June, 365



# Index to SMPTE-Sponsored American National Standards and SMPTE Standards, Recommended Practices, and Engineering Guidelines

**Individual Copies, Complete Sets, and Standards Binders:** Complete sets of SMPTE-sponsored documents in looseleaf binders or on CD-ROMs may be purchased from Society Headquarters. Individual copies of proposed and approved standards, practices, and guidelines are also available.

**Standards Subscription Service:** This service supplies all approved standards, practices, and guidelines sponsored by SMPTE and validated during the calendar year, either hardcopy or on CD-ROMs. Proposals are published on the Society's website for comment and mentioned in the *Journal* for information. They are included in the CD-ROM subscription service but not in the hardcopy. Write, call, or fax SMPTE for detailed information regarding this service.

## AUDIO

### Photographic Record

Super 8 Spectral Response	RP 109-1994 R1999
16mm Position and Dimensions	SMPTE 41-1999
Control and Data	RP 114-1994 R1999
Signal-to-Noise Ratio	SMPTE 211M-1996
35mm Position and Dimensions	SMPTE 40-1997
2-Track Position and Dimensions	SMPTE 203-1998
Control and Data	
Camera Negatives	RP 116-2000
Release Prints	RP 115-1997
Reproduction Characteristics	SMPTE 214M-1999
Signal-to-Noise Ratio	SMPTE 211M-1996

### Magnetic Record

Super 8 Position and Dimensions	SMPTE 164-1993
Control and Data	RP 117-1994
Recorded Characteristic	SMPTE 209M-1996
Sync Pulse	EG 7-1994 R1999
16mm 100-Mil Position/Dimensions	SMPTE 112-1999
200-Mil Position and Dimensions	SMPTE 97-1999
Center Position and Dimensions	SMPTE 218M-1996
2 Records Position and Dimensions	SMPTE 210M-1999
Recorded Characteristics	SMPTE 208M-1992 R1998
35mm Position and Dimensions	
2, 3, 4 and 6 Records	SMPTE 86-1996
Recorded Characteristics	SMPTE 208M-1992 R1998
4-Track Striped Release Prints	
Position and Dimensions	SMPTE 137-2000
Recorded Characteristics	SMPTE 216-1998
70mm Position and Dimensions	SMPTE 185-1993
Recorded Characteristic	SMPTE 217-1998
Acoustic Noise Levels, Dubbing Stages	EG 14-1999
Camera Noise Measurement, Field Method	EG 16-1997
Channel Assignments	
Film, Levels on Multichannel Audio Media	SMPTE 323M-1999

Television	SMPTE 320M-1999
Magnetic Masters to Stereo Video	RP 150-2000
Cross Modulation	RP 104-1994
Dialog Recording Level	EG 15-1987
Electroacoustic Response	
B-Chain, Review Rooms and Theaters	SMPTE 202M-1998
Masters for Transfer to 16mm	EG 17-1997
Monitor System, TV Audio	SMPTE 222M-1994
Intermodulation Distortion	RP 120-1994
Loudspeaker Placement for HDEP Monitoring	RP 173 <sup>1</sup>
Noise Levels, Theaters/Review Rooms	RP 141-1995
Photoelectric Output Factor	SMPTE 183M-1996
Polarity for Analog Magnetic Recording	RP 134-1994 R1999
Post-Production Recording Level	EG 9-1995
Recordings, Care and Preservation	RP 190-1996 R2001
Record Test Position	RP 140-1995 R1999
Sound Pressure Levels for Multichannel Systems	RP 200-1999
Stereo, Transfer of 2-Channel	EG 23-1996
Stripe	
Super 8	SMPTE 161-1998
Super 8 on 16mm	
(1-3)	SMPTE 176-1999
(1-4)	SMPTE 162-1998
Super 8 on 35mm (5R)	SMPTE 163-1998
16mm 30 mil	SMPTE 101-1998
50 mil	SMPTE 127-1994
100 mil	SMPTE 87M-1996
35mm 4-Track Release	SMPTE 177-1995
70mm 6-Track Release	SMPTE 221-1998
Test Films	
Audio, Use of	EG 13-1986 R1997
Basic Parameters	EG 12-1994 R1999
Use and Care	RP 45-1972 R1987
Time and Control Code for Motion Pictures	
24, 25 and 30 Frames/s	RP 136-1999
Binary User Groups	RP 135-1999

## FILE EXCHANGE

DPX Files on TAR Tapes ..... **RP 189-1996**  
Leader Test Patterns and Images ..... **RP 193**  
File Format, Digital Moving Pictures ..... **SMPTE 268M-1994**

## FILM

### Dimensions

8mm, Perforated Super 8, 1R ..... **SMPTE 149-1999**  
16mm Perforated 1R and 2R ..... **SMPTE 109-1998**  
Perforated Regular 8, 2R-1500 ..... **SMPTE 239-1999**  
Perforated Super 8, (1-3) ..... **SMPTE 151-1998**  
(1-4) ..... **SMPTE 168-1996**  
35mm Perforated Super 8,  
2R-1664 (1-0) ..... **SMPTE 169-1997**  
5R ..... **SMPTE 165-1999**  
35mm Perforated 16mm, 3R (1-3-0) ..... **SMPTE 171-1996**  
35mm, Perforated 32mm, 2R ..... **SMPTE 73-1998**  
35mm, BH ..... **SMPTE 93-1998**  
CS-1870 ..... **SMPTE 102-1997**  
DH-1870 ..... **SMPTE 237-1998**  
KS ..... **SMPTE 139-1996**  
65mm, KS ..... **SMPTE 145-1999**  
70mm, Perforated 65mm, KS-1870 ..... **SMPTE 119-1999**

### Projector Usage

35mm ..... **SMPTE 194-1997**

### Camera Image Areas and Usage

Regular 8 ..... **SMPTE 231-1999**  
Super 8 ..... **SMPTE 157-1999**  
16mm ..... **SMPTE 7-1999**  
Super 16 ..... **SMPTE 201M-1996**  
35mm ..... **SMPTE 59-1998**  
65mm ..... **SMPTE 215-1995**

### Printer Image Areas

Super 8 on 16mm (1-3) ..... **SMPTE 181-1996**  
(1-4) ..... **SMPTE 153-1996**  
Super 8 on 35mm ..... **SMPTE 179-1996**  
16mm Contact (Positive from Negative and Reversal) ..... **SMPTE 48-1995**  
16mm to 35mm and 35mm to 70mm Enlargement Ratios ..... **RP 65-2000**  
Super 16 to 35mm Enlargement Ratio ..... **SMPTE 201M-1996**  
35mm to 16mm Reduction Ratio ..... **RP 65-2000**  
35mm Release Picture-Sound Continuous Contact ..... **SMPTE 111-1996**

### Projection Image Areas and Usage

Regular 8 ..... **SMPTE 234-1998**  
Super 8 ..... **SMPTE 154-1998**  
16mm ..... **SMPTE 233-1998**  
16 and 35mm TV Review Room ..... **SMPTE 148-1991**  
35mm ..... **SMPTE 195-2000**  
Stereo Prints ..... **SMPTE 257-1998**  
70mm ..... **SMPTE 152-1994**

## TELEVISION

AES/EBU Emphasis and Preferred Audio Sampling Rate ..... **EG 32-1996**  
Alignment Color Bar Signal ..... **EG 1-1990**  
Color  
Equations, Derivation of ..... **RP 177-1993**  
**R1997**  
Reference Pattern ..... **SMPTE 303M**  
Transformations Between Television  
Component Color Signals ..... **EG 36-2000**  
Derivation of Camera Color Reference Signals ..... **RP 176-1997**  
Dynamic Documents ..... **SMPTE 359M-2001**

ESlan-1 Remote Control System ..... **SMPTE 275M-1995**  
Implementation of Standards ..... **EG 30-1995**  
Virtual Machine Numbers, ESBUS/ESLAN ..... **RP 182-1995**  
Fault Reporting ..... **SMPTE 269M-1999**  
Fiber Optics  
Cable ..... **SMPTE 311M-1998**  
Connector ..... **SMPTE 304M-1998**  
Four-Circuit ..... **SMPTE 358M-2001**  
General Exchange Format (GXF) ..... **SMPTE 360M-2001**  
Glossary, Electronic Production ..... **EG 28-1993**  
Mapping of Pictures in 16:9 Scanning to  
Retain Original Aspect Ratio ..... **RP 199-1999**  
Negative Cutter's Conform List ..... **RP 194-1998**  
720x483 Digital Representation ..... **SMPTE 293M-1996**  
Status Monitoring/Diagnostics Protocol ..... **SMPTE 273M-1995**  
Processors ..... **RP 183-1995**  
Switching Point ..... **RP 168-1993**  
Universal Labels for Unique ID of Data ..... **SMPTE 298M-1997**  
Video Image Center, Aspect Ratio and Blanking ..... **RP 187-1995**  
Video Index Information Coding, 525- and 625-Line ..... **RP 186-1995**

## Declarative Data Essence

Unidirectional Hypertext Transport  
Protocol ..... **SMPTE 364M-2001**

## Digital Control Interface

Common Messages ..... **RP 172-1993**  
Control Message Architecture ..... **RP 138-1996**  
Electrical and Mechanical Characteristics ..... **SMPTE 207M-1997**  
Remote Control, TV Equipment ..... **EG 29-1993**  
Supervisory Protocol ..... **RP 113-1996**  
System Service Messages ..... **RP 163-1992**  
Tributary Interconnection ..... **RP 139-1997**  
Type-Specific Messages, ATR ..... **RP 171-1993**  
Routing Switcher ..... **RP 191-1996**  
VTR ..... **RP 170-1993**

## Edit Decision Lists

Storage  
8-in Diskette ..... **RP 132-1994**  
3-1/2-in Disk ..... **RP 162-1993**  
Transfer ..... **SMPTE 258M-1993**  
Film-to-Video ..... **RP 197-1998**

## Image Areas

8mm Release Prints, TV Safe Areas ..... **RP 56-1995**  
35 and 16mm Film and 2x2-in Slides ..... **SMPTE 96-1999**  
Review Rooms ..... **SMPTE 148-1991**  
Safe Areas ..... **RP 27.3-1989**

## Interfaces and Signals

AES3 Serial Digital Audio Interface  
ATSC A/52 (AC-3) Data Type ..... **SMPTE 340M-2000**  
Captioning Data Type ..... **SMPTE 341M-2000**  
Data Types ..... **SMPTE 338M-2000**  
Generic Data Types ..... **SMPTE 339M-2000**  
KLV Data Type ..... **SMPTE 355M-2001**  
Non-PCM Audio and Data ..... **SMPTE 337M-2000**  
Serial Data Transport Interface (SDTI) ..... **SMPTE 305.2M-2000**  
Content Package Format ..... **SMPTE 326M-2000**  
MPEG Decoder Templates ..... **RP 204-2000**  
Data Stream Format for Exchange of DV-Based  
Audio, Data and Video ..... **SMPTE 321M-1999**  
Generic Data Types ..... **SMPTE 339M-2000**  
High Data Rate ..... **SMPTE 348M-2000**  
Transmission of DV Compressed  
Video, Audio and Data ..... **SMPTE 322M-1999**

Analog	
Key	RP 157-1995
NTSC for Studios	SMPTE 170M-1999
Development of NTSC	EG 27-1994
	R1999
Reference, 59.94- or 50-Hz	SMPTE 318M-1999
3-Channel Parallel Component	
NTSC	SMPTE 253M-1998
High-Definition	RP 160-1997
1125/60 High-Definition Production System	SMPTE 240M-1999
1280x720	SMPTE 296M-2001
Digital	
AES/EBU Audio/Auxiliary Data into	
Ancillary Data Space	SMPTE 272M-1994
Camera Positioning Information	SMPTE 315M-1999
Data Packet and Space Formatting	SMPTE 291M-1998
DTV Closed-Caption Server	SMPTE 333M-1999
DV-Based Data Structure	SMPTE 314M-1999
Error Detection Checkwords and Status Flags	RP 165-1994
540 Mb/s 4:2:2/4:4:4 Component	SMPTE 344M-2000
Source Image Format Mapping	SMPTE 347M-2001
HD-D5 Compressed 1080i and 720p	
Encoding and Data	SMPTE 342M-2000
Transmission over 360 Mb/s SDI	RP 209-2000
HDTV 24-Bit Digital Audio	SMPTE 299M-1997
LTC and VITC Data as HANC Packets	RP 196-1997
1920x1080 Scanning	
60 Hz	SMPTE 274M-1998
50 Hz	SMPTE 295M-1997
24, 25 and 30P Segmented Frames	RP 211-2000
Payload Identification	SMPTE 352M-2001
Time and Control Code	RP 188-1999
Time Division Multiplexing Video Signals and	
Generic Data Over HD Interfaces	SMPTE 346M-2000
Transmission of Audio Signals	
Over Coaxial Cable	SMPTE 276M-1995
1280x720	SMPTE 296M-2001
Bit-Parallel Interface	
4:2:2 Component	SMPTE 125M-1995
16x9 Aspect Ratio	SMPTE 267M-1995
4:4:4:4 Component, Single Link	RP 174-1993
Dual Link	RP 175-1997
1125/60 High-Definition	SMPTE 260M-1999
M/NTSC Composite	SMPTE 244M-1995
Bit-Serial Interface	
10-Bit	SMPTE 259M-1997
AMI	SMPTE 261M-1993 <sup>2</sup>
Checkfield 4:2:2 and 4f <sub>sc</sub>	RP 178-1996
Encoding Film Transfer Information Into	
Vertical Ancillary Data	RP 215-2001
Fiber Transmission System	SMPTE 297M-2000
HDTV	SMPTE 292M-1998
Checkfield	RP 198-1998
Transport of Alternate Source Image Formats	SMPTE 349M-2001
Jitter Specification	RP 184-1996
Characteristics and Measurements	EG 33-1998
Measurement	RP 192-1996
Pathological Conditions	EG 34-1999
720x483 4:2:2p and 4:2:0p	SMPTE 294M-1997 <sup>1</sup>
12-Channel Interface for Digital	
Audio and Auxiliary Data	SMPTE 324M <sup>1</sup>
Vertical Ancillary Data Mapping	SMPTE 334M-2000
<b>Metadata</b>	
Data Encoding Protocol using KLV	SMPTE 336M-2001
Dictionary	RP 210.1-2001
Structure	SMPTE 335M-2001
Node	EG 37-2001
Element and Metadata Definitions	SMPTE 331M-2000
Encapsulation of Data Packet Streams	SMPTE 332M-2000
KLV Packets into MPEG-2 Streams	RP 217-2001
Unique Material Identifiers (UMID)	SMPTE 330M-2000
Production and Broadcast Environments	RP 205-2000
<b>Monitors</b>	
Alignment	RP 167-1995
Evaluation Conditions	RP 166-1995
Scanning, Film Transfer to TV	EG 25-1996
SMPTE C Color Colorimetry	RP 145-1999
2x2 Slide Mount	RP 9-1995
<b>MPEG-2</b>	
Audio, Linear PCM in Transport Stream	SMPTE 302M-1998
Elementary Stream Editing Information	SMPTE 328M-2000
4:2:2 Profile at High Level	SMPTE 308M-1998
Synchronous Serial Interface	SMPTE 310M-1998
Nonsynchronized Mapping of KLV Packets into	
Systems Streams	RP 217-2001
Operating Ranges	RP 213-2001
Applications	EG 38-2001
Opportunistic Data Broadcast Flow Control	SMPTE 325M-1999
Transport Emission Multiplex	RP 203-2000
Using Ethernet as a Control Channel	RP 206-1999
Recoding Data Set	SMPTE 327M-2000
Compressed Stream Format	SMPTE 329M-2000
SDTI Decoder Templates	RP 204-2000
Splice Points for Transport Streams	SMPTE 312M-2001
Transporting Recoding Information	
Ancillary Data Packets	SMPTE 353M-2000
4:2:2 Interfaces	SMPTE 319M-2000
High-Definition Digital Interfaces	SMPTE 351M-2000
Video Alignment for Coding	RP 202-2000
<b>Test Patterns</b>	
Alignment	RP 27.1-1989
Linearity	RP 38.1-1989
Mid-Frequency Response	RP 27.5-1989
Picture Steadiness	RP 27.4-1994
Registration	RP 27.2-1989
Safe Areas	RP 27.3-1989 <sup>1</sup>
<b>TELEVISION RECORDING AND REPRODUCTION</b>	
Audio Channel Assignments, AES/EBU Inputs	EG 26-1995
Cassette Bar Code Readers	EG 31-1995
	R1999
Channel Allocation, Stereo	RP 142-1997
Helical Scan	
Raw Stock, Reference Tape	SMPTE 26M-1995
Receiver/Monitor Test Tapes, Types E, G and H	RP 96-1993
Reels, 1-in	SMPTE 24M-1996
Stereo, Polarity for	RP 148-1987
	R1997
Tape, 1-in	SMPTE 25M-1995
Tape Care, Handling, and Storage	RP 103-1995
Time and Control Code	SMPTE 12M-1999
Binary Groups	
Date and Time Zone Transmission	SMPTE 309M-1999
Dialect Specification of Page Line	RP 179-1994
Directory Index Locations	RP 169-1995
Storage and Transmission	SMPTE 262M-1995
Time Address Clock Precision	EG 35-1999
Vertical Interval Location	RP 164-1996
Encoding Film Transfer Information	RP 201-1999
4:2:2 Digital	SMPTE 266M-1994
Longitudinal Relationship	RP 159-1995

## Type B 1-in

Basic Parameters	SMPTE 15M-1998
Carrier Frequencies and Preemphasis	RP 84-1996
Dropout	RP 121-1997
Frequency Response and Operating Level	SMPTE 17M-1998
Record Dimensions	SMPTE 16M-1998
Reference Recorders	
Records	SMPTE 30M-1995
Recorder Parameters	SMPTE 29M-1995
Reference Tapes, Video and Audio	RP 107-1995
Time and Control Code Recording Requirements	RP 93-1999
Tracking-Control Record	RP 83-1996

## Type C 1-in

Alignment Tapes and Procedures	EG 24-1995
Basic Parameters	SMPTE 18M-1996
Dropout	RP 121-1997
Frequency Response and Reference Level	SMPTE 20M-1996
Record Dimensions	SMPTE 19M-1996
Recorder Parameters	RP 86-1991 R1995
Tracking-Control Record	RP 85-1999

## Type D-1 19mm

Audio Control Words, Decoding	RP 161-1999
Audio Levels and Indicators	RP 155-1997
Audio Sector Time Code	RP 181-1999
Bar Code Labeling	RP 156-1999
Cue/Time and Control Code Records	SMPTE 228M-1996
Helical Data and Control Records	SMPTE 227M-1996
Magnetic Tape	SMPTE 225M-1996
Nomenclature	EG 21-1997
Tape Cassette	SMPTE 226M-1996
Tape Record	SMPTE 224M-1996
Transport Geometry Parameters	EG 10-1996

## Type D-2 19mm

Audio Levels and Indicators	RP 155-1997
Bar Code Labeling	RP 156-1999
Cassette	SMPTE 226M-1996
Cue/Time and Control Code Records	SMPTE 248M-1993
Helical Data and Control Records	SMPTE 247M-1993
Index of Documents	EG 22-1997
Nomenclature	EG 21-1997
Records	SMPTE 245M-1993
Tape	SMPTE 246M-1993
Tape Transport	EG 20-1997

## Type D-3 1/2-in

Cassette	SMPTE 263M-1996
525/60	SMPTE 264M-1998
625/50	SMPTE 265M-1998

## Type D-5 1/2-in

High-Definition Compressed 1080i and 720p Encoding and Data	SMPTE 342M-2000
Standard-Definition Component Video and High-Definition Compressed Data	SMPTE 279M-2001
Transmission over 360 Mb/s SDI	RP 209-2000

## Type D-6 19mm

Helical Data, Longitudinal Index, Cue and Control Records	SMPTE 277M-1996
Helical Data Content and Time and Control Code	SMPTE 278M-1996

## Type D-7

525/60 and 625/50	SMPTE 306M-1998
Tape Cassette	SMPTE 307M-1998

## Type D-9

Tape Cassette	SMPTE 317M-1999
Video Compression, 525/60 and 625/50	SMPTE 316M-1999

## Type D-10 12.65-mm

MPEG-2 525/60 and 625/50 Format	SMPTE 365M-2001
Stream	SMPTE 356M-2001

## Type E 3/4-in

Carrier Frequencies, Preemphasis, Audio and Control Signals	RP 87-1999
Cassette Dimensions	SMPTE 22M-1997
Record Dimensions	SMPTE 21M-1997
Small Cassette	SMPTE 31M-1995

## Type G 1/2-in

Cassette and Tape	SMPTE 35M-1997
-------------------	----------------

## Type H 1/2-in

Cassette, Tape and Records	SMPTE 32M-1998
----------------------------	----------------

## Type L 1/2-in

Basic System, Transport Geometry Parameters	RP 144-1999
Records	SMPTE 229M-1996
Tapes and Cassettes	SMPTE 238M-1998
Video, Audio, Time and Control Code and Tracking Control	SMPTE 230M-1996

## Type M-2 1/2-in

Basic System, Transport Geometry Parameters	RP 158-1999
Electrical Parameters	SMPTE 251M-1996
Pulse Code Modulation Audio	SMPTE 252M-1996
Records	SMPTE 249M-1996
Tapes and Cassettes	SMPTE 250M-1996

## Quadruplex

Dropout Detection	RP 47-1999
Headwheel and Guides	RP 36-1999
Leader	SMPTE 256M-1996
Modulation Practices	RP 6-1994 R1999
Records, Audio	SMPTE 3-1998
Record Dimensions, Video, Audio and Tracking Control	SMPTE 6-1998
Record, Tracking Control	RP 16-1993 R1997
Reels, 2-in	SMPTE 5-1995
Speed	SMPTE 4-1995
Tape Dimensions	SMPTE 1-1996
Tape Vacuum Guide	RP 11-1994 R1999
Test Tapes	
Multifrequency	
15 in/s	SMPTE 8-1995
7.5 in/s	SMPTE 11-1995

## TEST MATERIALS

Medical Diagnostic Imaging	RP 133-1991 R1999
----------------------------	----------------------

## Motion Picture

Regular 8 Registration	RP 19-1995
Super 8 Registration	RP 32-1995
16mm Projector Alignment Registration	RP 82-1995 RP 20-1995

35mm Projector Alignment . . . . . **RP 40-1995**  
 Anamorphic Attachments . . . . . **RP 110-1992**  
 70mm Projector Alignment . . . . . **RP 91-1997**

**Photographic Sound**

16mm Buzz-Track . . . . . **RP 67-1997**  
 Flutter . . . . . **RP 70-1997**  
 Scanning Beam . . . . . **RP 81-1999**  
 Sound Focusing . . . . . **RP 63-1997**  
 Sound Projector . . . . . **RP 18-1995**  
 35mm Buzz-Track . . . . . **RP 68-1997**  
 Flutter . . . . . **RP 97-1997**  
 Scanning Beam . . . . . **RP 69-1997**  
 Sound Focusing . . . . . **RP 64-1999**

**Magnetic Sound**

Super 8 Multifrequency . . . . . **RP 92-1995**  
 16mm Azimuth Alignment . . . . . **RP 78-1997**  
 Flutter . . . . . **RP 76-1997**  
 Multifrequency . . . . . **RP 90-1999**  
 35mm Azimuth Alignment . . . . . **RP 77-1994**  
 Flutter . . . . . **RP 75-1997**  
 4-Track . . . . . **RP 79-1999**  
 Multifrequency . . . . . **RP 127-1999**  
 4-Track . . . . . **RP 143-1999**  
 70mm Multifrequency . . . . . **RP 128-1997**

**MISCELLANEOUS**

**Camera Equipment**

Mounting Connections . . . . . **SMPTE 220-1996**  
 Space Environment . . . . . **EG 8-1993**  
 R1997

**Cartridge, Super 8 Camera**

Notches . . . . . **SMPTE 166-1999**  
 Silent  
 50 Ft.  
 Model 1  
 Aperture, Profile,  
 Pressure Pad, Film Position . . . . . **SMPTE 159.2-1996**  
 Camera Run Length, Perforation  
 Cut-Out, End-of-Run Notch . . . . . **SMPTE 200M-1998**  
 Cartridge-Camera Interface,  
 Take-Up Core Drive . . . . . **SMPTE 159.1-1996**  
 Model II  
 Cartridge-Camera Fit, Core . . . . . **SMPTE 190M-1994**  
 Film Length, Camera Run . . . . . **SMPTE 188M-1994**  
 Position . . . . . **SMPTE 189M-1994**  
 Speed, Color Balance, Identification . . . . . **SMPTE 191M-1994**  
 Sound  
 50 Ft.  
 Model 1  
 Aperture, Pressure Pad, Film Position . . . . . **SMPTE 198-1998**  
 Camera-Run Length, Perforation  
 Cut-Out, End-of-Run Notch . . . . . **SMPTE 200M-1998**  
 Cartridge-Camera Interface, Core Drive . . . . . **SMPTE 197-1998**  
 Pressure Pad Flatness, Aperture Profile . . . . . **SMPTE 199-1998**  
 200 Ft.  
 Model 1  
 Aperture, Profile, Film Position,  
 Pressure Pad, Flatness . . . . . **SMPTE 206-1998**  
 Camera-Run Length, Perforation  
 Cut-Out, End-of-Run Notch . . . . . **SMPTE 200M-1998**  
 Cartridge-Camera Interface, Core Drive . . . . . **SMPTE 205-1993**  
 R1998

**Conference Projection . . . . . EG 3-1994**

**Cores for Film Raw Stock . . . . . SMPTE 37M-1994**

**Density Measurements**

Calibration of Densitometers . . . . . **RP 15-1997**  
 Printing Density Spectral Conditions . . . . . **RP 180-1999**  
 Spectral Diffuse . . . . . **SMPTE 117M-1996**

**Dynamic Documents . . . . . SMPTE 359M-2001**

**Edge Identification**

Manufacturer-Printed Latent Image  
 16mm . . . . . **SMPTE 271-1994**  
 35mm . . . . . **SMPTE 254-1998**  
 Color Prints . . . . . **SMPTE 300-1997**  
 Release Prints . . . . . **RP 152-1994**  
 R1999  
 65mm  
 80 Perforation Repeat . . . . . **SMPTE 270-1994**  
 120 Perforation Repeat . . . . . **SMPTE 313-1999**  
 Reference Mark in Key Numbers . . . . . **RP 195-1998**

**Edge Numbering**

16mm Film . . . . . **SMPTE 83-1996**  
 Release Prints . . . . . **RP 54-1999**

**Emulsion Orientation**

Print Winding . . . . . **RP 39-1993**  
 R1997  
 Raw Stock Winding . . . . . **SMPTE 75M-1994**

**Film Length, 8mm Camera Spool**

(25-ft Capacity) . . . . . **SMPTE 143-1994**

**Image Quality**

70, 35, 16mm . . . . . **EG 5-1994**

**Jump and Weave**

70, 35, 16mm . . . . . **RP 105-1995**

**Leaders**

Preprint, 8mm cartridges . . . . . **RP 49-1995**  
 Television . . . . . **SMPTE 55-2000**  
 Theater Projection . . . . . **SMPTE 301-1999**

**Lenses**

Focus Scales, 16mm and 8mm Cameras . . . . . **SMPTE 74-1993**  
 R1998

**Lens Mounts**

16 and 8mm Cameras . . . . . **SMPTE 76-1996**  
 35 and 70mm Projection . . . . . **SMPTE 243M-1993**  
 R1998

**Lubrication, Print**

16 and 8mm . . . . . **RP 48-1999**  
 35mm . . . . . **RP 151-1999**

**Nomenclature**

Cartridge/Cassette . . . . . **RP 58-1995**  
 Film . . . . . **SMPTE 56-1996**



# SMPTE Standards, Recommended Practices, and Engineering Guidelines

## 2001 • Volume 110

<i>Number</i>	<i>Title</i>	<i>Issue</i>	<i>Page</i>
<b>SMPTE Standards</b>			
SMPTE 279M	Proposed, Digital Video Recording—½-in Type D-5 Standard-Definition Component Video and Type HD-D5 High-Definition Video Compressed Data .....	Dec.	879*
SMPTE 294M	Proposed, Television—720 x 483 Active Line at 59.94-Hz Progressive Scan Production—Bit-Serial Interfaces .....	Dec.	879*
SMPTE 296M-2001	Approval note, Television—1280 x 720 Progressive Image Sample Structure—Analog and Digital Representation and Analog Interface .....	May	307
SMPTE 305.2M-2000	Approval note, Television—Serial Data Transport Interface (SDTI) .....	Mar.	158
SMPTE 312M	Proposed, Television—Splice Points for MPEG-2 Transport Streams .....	Aug.	539
SMPTE 312M-2001	Approval note .....	Sept.	616
SMPTE 335M	Proposed, Television—Metadata Dictionary Structure .....	Nov.	818*
SMPTE 335M-2001	Approval note .....	Dec.	878
SMPTE 336M	Proposed, Television—Data Encoding Protocol using Key-Length-Value .....	Mar.	159
SMPTE 336M-2001	Approval note .....	June	395
SMPTE 347M	Proposed, Television—540 Mb/s Serial Digital Interface—Source Image Format Mapping .....	July	474
SMPTE 347M-2001	Approval note .....	Aug.	538
SMPTE 349M	Proposed, Television—Transport of Alternate Source Image Formats through SMPTE 292M .....	July	482
SMPTE 349M-2001	Approval note .....	Aug.	538
SMPTE 351M-2000	Approval note, Television—Transporting MPEG-2 Recoding Information through High-Definition Digital Interfaces .....	Mar.	158
SMPTE 352M	Proposed, Television—Video Payload Identification for Digital Television Interfaces.....	July	488
SMPTE 352M-2001	Approval note .....	Aug.	538
SMPTE 355M	Proposed, Television - Format for Non-PCM Audio and Data in AES3 - KLV Data Type ...	June	396
SMPTE 355M-2001	Approval note .....	July	473
SMPTE 356M	Proposed, Television—Type D-10 Stream Specifications—MPEG-2 4:2:2P @ ML for 525/60 and 625/50 .....	Oct.	677
SMPTE 356M-2001	Approval note, .....	Dec.	878
SMPTE 358M	Proposed, Television—Four-Circuit Fiber Optic Connector .....	June	399
SMPTE 358M-2001	Approval note .....	July	473
SMPTE 359M	Proposed, Television and Motion-Pictures—Dynamic Documents .....	May	308
SMPTE 359M-2001	Approval note .....	June	395
SMPTE 360M	Proposed, Television—General Exchange Format (GXF) .....	May	315
SMPTE 360M-2001	Approval note .....	June	395
SMPTE 364M	Proposed, Television—Declarative Data Essence—Unidirectional Hypertext Transport Protocol .....	Nov.	818*
SMPTE 364M-2001	Approval note .....	Dec.	878
SMPTE 365M	Proposed, Digital Television Tape Recording—12.65-mm Type D-10 Format for MPEG-2 Compressed Video—525/60 and 625/50.....	Oct.	680
SMPTE 365M-2001	Approval note .....	Dec.	878
<b>SMPTE Recommended Practices</b>			
RP 131	Proposed, Storage of Motion-Picture Films .....	Mar.	171
RP 190-1996 (R2001)	Reaffirmation note, Care and Preservation of Audio Magnetic Recordings .....	Oct.	676
RP 202	Proposed, Video Alignment for MPEG-2 Coding .....	Mar.	175
RP 202-2000	Approval note .....	May	307
RP 213	Proposed, MPEG-2 Operating Ranges .....	Sept.	617
RP 213-2001	Approval note .....	Dec.	878
RP 215	Proposed, Encoding Film Transfer Information into Vertical Ancillary Data for SMPTE 292M Bit-Serial Interface .....	Nov.	819*
RP 215-2001	Approval note .....	Dec.	878
RP 217	Proposed, Nonsynchronized Mapping of KLV Packets into MPEG-2 Systems Streams .....	Nov.	819*
RP 217-2001	Approval note .....	Dec.	878
<b>SMPTE Engineering Guidelines</b>			
EG 37	Proposed, Node Structure for the SMPTE Metadata Dictionary .....	Nov.	820*
EG 37-2001	Approval note .....	Dec.	878
EG 38	Proposed, MPEG-2 Operating Range Applications .....	Sept.	621
EG 38-2001	Approval note .....	Oct.	676

\*Only the first page of the proposal is published.