SMPTE Annual Technical Conference & Exhibition 2012

(SMPTE 2012)

Hollywood, California, USA
23-25 October 2012

ISBN: 978-1-62276-538-6

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2012) by the Society of Motion Picture and Television Engineers
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact the Society of Motion Picture and Television Engineers
at the address below.

Society of Motion Picture and Television Engineers
3 Barker Avenue
White Plains, New York 10601

Phone: (914) 761-1100
Fax: (914) 761-3115

smpte@smpte.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

The Pipe Dream Becomes Real: Advertising Workflows Come of Age 1
Christopher Lennon, Harold S. Geller

Lessons Learned Implementing FIMS 1.0 13
Ian Hamilton, Tony Vasile

Developments in the Realization of Practical File Based Workflow Environments 19
Ed Childers, David Pease, Andrew G. Setos

GPU-Based Real-Time 4K RAW Workflows 34
Thomas True, Andrew Page

Dynamic Rate Control Technologies enabling Priority Based Bandwidth Allocation for IP News Gathering Network 47
Shuhei Oda, Katsunori Aoki, Yosuke Endo

Real Time File System for Content Distribution 57
Heiko Sparenberg, Siegfried Foessel

Performance Parameters in File Based Workflows 64
Karl Paulsen

Optimised IP Multicast Architectures For Real-Time Digital Workflows 77
Thomas Kernen, Javed Asghar

Being The Change You Wish To See: Changing Broadcast Schedules Right Up to Air 92
Christopher Lennon

HEVC – Enabling Commercial Opportunities Through Next Generation Compression Technology 96
Lukasz Litwic

Automatic Interlace or Progressive Video Discrimination 105
Manish Pindoria, Tim Borer

Spatial Concealment for Damaged Images Using H.264 (MPEG-4 AVC) Intra Prediction and Neighborhood Cliques 115
Seyfullah Halit Oguz

High Speed Format Converter with Intelligent Quality Checker for File-based System 125
Kenichiro Ichikawa, Takuji Shimmi, Yasunori Iguchi, Kentaro Higashijima

Corralling the Chaos of Ancillary Data within Multiple File Formats 137
Sara Kudrie Sr.

And the Winner is... Workflows for Judging Content Submissions at Siggraph and VES 146
Ben Roeder, Martin Rushworth

Quantitative Evaluation of Human Visual Perception for Multiple Screens and Multiple CODECs 153
Sean McCarthy

Perceptual Signal Coding for More Efficient Usage of Bit Codes 163
Scott Miller, Mahdi Nezamabadi, Scott Daly

Human Perception & Advancements in File-Based QC 172
Eric Carson, Atul Ravindran

Compliance with FCC Rules for IP Distribution of Video Programming 178
Alison Greenwald Neplokh

Closed Captioning Challenges for IP Video Delivery 186
Jason Livingston

Leveraging Fiber Properties to Our Advantage 195
John Beatty, John Bradford, Richard Zahm, Kimberly Allen

Trends in Wireless Display Connectivity 210
Peter H. Putman

Next-generation Techniques for the Protection and Security of IP Transport 218
Chin Chye Koh

Unconstrained 2D to Stereoscopic 3D Image and Video Conversion using Semi-Automatic Energy Minimization Techniques 228
Raymond Phan, Richard Rzeszutek, Dimitrios Androutsos

Image Enhancement Using Similarity-based Color Matching for High-quality Stereoscopic 3D Image Acquisition 240
Younghoon Lim, Eunjung Chae, Eunsung Lee, Wonseok Kang, Joonki Paik

3D Sports Production at the 2012 London 251
Jim DeFilippis

High Performance Optics for a New 70mm Digital Cine Format 259
Brian Caldwell, Wilfried Bittner, Winston Ip, Dan Sasaki
Computational Photography For Dust And Scratch Detection On Transparent Photographic Material 273
Giorgio Trumpy, Rudolf Gschwind
Towards Higher Dimensionality in Cinema Color: Multispectral Video Systems 281
David Long
Issues in Color Matching 291
Joel Barsotti, Derek Smith, L. A. Heberlein
Accurate ACES Rendering in Systems Using Small 3DLUTs 298
Yasuharu Iwaki, Mitsuhiro Uchida
Leveraging the Cloud for File-based Workflows 308
Ron Quartararo, Mark Brown, Brian Campanotti
A Cloudspotter's Guide to Migration 319
Al Kovalick
The Unfolding Merger of Television and Movie Technology 327
Gary Demos
Theatrical Versioning in the Content Pipe - Integrating Digital Cinema into End to End Workflow 354
N/A
Low-Latency Transmissions for Remote Collaboration in Post-production 367
Ales Friedl, Jiri Halak, Michal Krsek, Sven Ubik, Petr Zejdl
The Cloud – What Does It Mean For Media Archives? 378
Nik Forman, Christopher H. Luther, Rajesh A. Patel
Cloud Media Collaboration, Enter Stage Right, and... Action 386
Robert Jenkins
Delivering Multi-Camera Content To Smart Devices Through Cloud Platforms 394
Wener Ramaekers, Johann Schreurs, Maher Khatib
Towards using Audio for Matching Transcoded Content 406
Dinkar Bhat
Using Name Spotting in Audio/Video Media Identification to Improve Media Discovery Service in Digital Object Architecture 414
Manish Goswami, Lan Yang
Practical Quality Assessment For Digitized Film Content 424
Francois Helt, Valerie La Torre
Effects of Viewing Conditions on Fatigue Caused by Watching 3DTV 437
Toshiya Morita, Hiroshi Ando
High Performance Polarization-Based 3D and 2D Presentation (Part I) 446
Gary D. Sharp, Miller H. Schuck, Dave Coleman, Kevin Curtis, Scott Gilman, Erik Arend
3D Production Edit Work Flow at the London 2012 Olympics 463
James DeFilippis
Production Media Data Centers: Scalable Computing, Networking, Virtualization, and Adaptive Bit Rate Encoding 472
Tom Ohanian
A Study Of The Optical Distribution Costs Of Multichannel Baseband Digital Broadcasts Over A FTTH Network 480
Takeshi Kusakabe, Takuya Kurakake, Kimiyuki Oyamada, Yoshihiro Fujita
120 Hz-frame-rate SUPER Hi-VISION Capture and Display Devices 487
Hiroshi Shimamoto, Kazuya Kitamura, Toshihisa Watabe, Hiroshi Ootake, Norifumi Egami, Yuichi Kusakabe, Yukihiro Nishida, Shoji Kawahito, Tomohiko Kosugi, Takashi Watanabe, Tadaaki Yanagi, Tetsuo Yoshida, Hideki Kikuchi
Development of a 70mm, 25 megapixel Electronic Cinematography Camera with Integrated Flash Recorder 499
John Galt, Branko Petljanski, Stacey Campbell
1080p50/60, 4K and beyond: Future Proofing the Core Infrastructure to Manage the Bandwidth Explosion 513
John Hudson
Further Investigations Into The Interactions Between Cinema Loudspeakers And Screens 528
Brian Long, Roger Schwenke, Peter Soper, Glenn Leembruggen
Frequency Response Versus Time-of-Arrival for Typical Cinemas 555
Louis D. Fielder
4K TV Capture, An Early Experience Sharing 579
Jerome Vieron, Matthieu Parmentier

Tutorial on Critical Listening of Multi-channel Audio Codec Performance 596
Sunil Bharitkar, Grant Davidson, Louis Fielder, Poppy Crum
Scalable Format And Tools To Extend The Possibilities Of Cinema Audio 621
Charles Q. Robinson, Sripal Mehta, Nicolas Tsingos
Lee de Forest and the Invention of Sound Movies, 1918-1926 633
Mike Adams
Broadcasting Video Over The Cellular Network And The Internet 648
Nuraj Lal Pradhan, John Wood
Multiformat Operation - System Implications and Solutions for Routing Switchers 654
Alan Smith, Kim Francis
Here Comes Ethernet® 664
Stephen H. Lampen
Author Index