

SMPTE Annual Technical Conference & Exhibition 2013

(SMPTE 2013)

**Hollywood, California, USA
22 – 24 October 2013**

ISBN: 978-1-62993-837-0

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© (2013) by the Society of Motion Picture and Television Engineers
All rights reserved.

Printed by Curran Associates, Inc. (2014)

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

Analysis of PTP Locking Time on Non-PTP Networks for Genlock over IP	1
<i>N. Kero, T. Muller, T. Kernnen, M. Deniaud</i>	
Gamut Mapping for Digital Cinema	16
<i>J. Frohlich, A. Schilling, B. Eberhardt</i>	
The Principles of Low-Latency Media Centric Network Architectures	27
<i>T. Kernnen, S. Posick</i>	
Media Facility Infrastructure of the Future	41
<i>E. Pohl</i>	
Depth/Disparity Creation for Trifocal Hybrid 3D System	60
<i>R. Tanger, M. Muller, P. Kauff, R. Schafer</i>	
Software-Defined Network for Media Workflows	68
<i>A. Latif, T. Ohanian</i>	
Depth/Disparity Interchange Representation for Post-Production	77
<i>P. Pahalawatta, K. Stec</i>	
The Fundamentals of the All-IT Media Facility	89
<i>A. Kovalick</i>	
Video Processing in an FPGA-enabled Ethernet Switch	103
<i>T. Edwards, W. Belkin, A. Bechtolsheim</i>	
All-IP Video Processing of SMPTE 2022-6 Streams on an All Programmable SoC	113
<i>M. Klein, T. Edwards</i>	
Put IP and Media Perfectly in Tune? Running an IT Media Facility in a Predictable Way	134
<i>L. Andries</i>	
Playout Automation in a Virtual Environment	141
<i>E. Openshaw, G. Sakata</i>	
Towards A Hierarchy of SDI DATA Rates	160
<i>J. Hudson, E. Frlan</i>	
Advanced Storage Techniques using Scalable Media	191
<i>H. Sparenberg, S. Foessel</i>	
French Cinema Goes IMF	197
<i>F. Helt, B. Fevrier, F. Delbecque, X. Brachet, H. Locher, M. Bourhis</i>	
It's A Retrieval Problem, Not A Storage Problem	212
<i>J. Marc, C. Tsang, V. Steinberg, M. Levkov</i>	
Beyond BT.709	222
<i>M. Pedzisz</i>	
Filtering in a High Dynamic Range (HDR) Context	235
<i>G. Demos</i>	
An IIF based Post Production Infrastructure Developed for Feature Film Production and Higher Education in Iraq	269
<i>C. Woollard</i>	
Camera Radiometric Calibration from Motion Images	281
<i>R. Figueroa, J. Gu</i>	
Your Eyes Don't Do the Math: Effect of Temporal Display Protocols on Perceived Brightness	291
<i>Z. Derzsi, S. Henriksen, J. Read</i>	
Study On The Acceptance Of Higher Frame Rate Stereoscopic 3D In Digital Cinema	307
<i>W. Ruppel, Y. Alf, T. Gollner</i>	
Controlling Miniaturization in Stereoscopic 3D Imagery	319
<i>M. Smith, J. Malia</i>	
Faxes, Emails, Pagers, And The Macarena – Adios To Relics Of The ‘90s	333
<i>C. Lennon</i>	
Deploying Video Platforms In The Cloud	339
<i>A. Sinclair</i>	
New Generation Of Contribution Services Using HEVC 422 Profile	348
<i>J. Anaya, D. Ruiz</i>	
Private Patching in the Cloud: Offering the Media Industry a Mind of Its Own	364
<i>R. Jenkins</i>	
A Technical Overview of VP9 – The Latest Open-source Video Codec	376
<i>D. Mukherjee, J. Han, J. Bankoski, R. Bultje, A. Grange, J. Koleszar, P. Wilkins, Y. Xu</i>	

Developing Requirements for a Visually Lossless Display Stream Coding System Open Standard	393
<i>D. Stolzka</i>	
Building Real World Media in the Cloud	405
<i>B. Campanotti, A. Hurt</i>	
Development of the Super Hi-Vision HEVC/H.265 Real-time Encoder	412
<i>Y. Sugito, K. Iguchi, A. Ichigaya, K. Chida, S. Sakaida, Y. Shishikui, H. Sakate, T. Itsui, N. Motoyama</i>	
Look To The Cloud: Enabling Seamless Video In A Multi-Device World	429
<i>J. Malkin</i>	
VC-5 Video Compression for Mezzanine Compression Workflows	438
<i>E. Reuss</i>	
Virtualization of Television Playout	452
<i>M. Holmes, N. Maycock, J. Shike</i>	
Analyzing and Optimizing Video Quality in the New H.265 (HEVC) Standard	462
<i>A. Mogre, B. Kumar, S. Madhani, M. Sharma, S. Kumar</i>	
HEVC, The Key To Delivering An Enhanced Television Viewing Experience “Beyond HD”	474
<i>S. Percheron, J. Vieron</i>	
Creating an Innovative Broadcasting with Technology and Standardization	485
<i>T. Yokoo</i>	
Enhanced Image Processing Beyond Baseband: CPU/GPU Process Model Unlocks Performance Possibilities	492
<i>E. Sanchez, K. Marple, H. Frecon</i>	
A Design Approach To Creating Scalable Beyond-4K Video Processing Systems On FPGAs	501
<i>B. Cope, D. Shih</i>	
Taking the Pixel out of the Picture	521
<i>P. Willis, J. Patterson, P. Balch, J. Paxton</i>	
Development Of A Multi-Link 10-Gbit/S Mapping Method And Interface Device For 120-fps UHDTV Signals	531
<i>T. Soeno, Y. Nishida, T. Yamashita, Y. Kusakabe, R. Funatsu, T. Nakamura</i>	
Light-field Acquisition and Processing System for Film Productions	545
<i>S. Foessel, F. Zilly, M. Schoberl, P. Schafer, M. Ziegler, J. Keinert</i>	
Compact 120-fps Super Hi-Vision (8K) Camera with 35-mm PL Mount Lens	553
<i>H. Shimamoto, T. Yasue, K. Kitamura, T. Watabe, N. Egami, S. Kawahito, T. Kosugi, T. Watanabe</i>	
Dreams Do Come True!	564
<i>R. Rothschild</i>	
High-Accuracy Digital Camera Color Transforms for Wide Gamut Workflows	571
<i>J. McElvain, W. Gish</i>	
A Perspective On The Evolution Of Sound-System Equalization And Its Possible Impact On New Recommended Practices For B-Chain Calibration	583
<i>J. Murray</i>	
Author Index	