



# 2015 ANNUAL TECHNICAL CONFERENCE & EXHIBITION HOLLYWOOD, CA. 26-29 October 2015



## PROGRAM

### Tuesday, October 27

**7:30 - 08:30 am Morning Coffee**

Rooms: Salon 1, Salon 2

**8:30 - 8:45 am Welcome and Introduction**

Rooms: Salon 1, Salon 2

**8:45 - 10:15 am**

#### Color Management

Room: Salon 1

Chair: Arjun Ramamurthy (20th Century Fox, USA)

This session highlights the different aspects that need to be considered to ensure that such transformations are carried in a fashion that faithfully represents the creative intent on displays that are different dynamic range and color volume from the mastering display. Papers in this session delve into the importance of analyzing scene content and generation of dynamic metadata; examining the effect of applying transformations in different color spaces, and illustrating how color volume mapping can be carried to determine the correct look for intermediate targets, when two versions of the content are available.

**8:45 Content-Dependent Metadata for Color Volume Transformation of High Luminance and Wide Color Gamut Images** Lars Borg (Adobe, USA); Raymond Yeung (Dolby, USA)

**9:15 Color Fidelity for High Dynamic Range Signals** Jim Houston (Starwatcher Digital, USA)

**9:45 Reference-based Color Volume Remapping** William Redmann (Technicolor, USA)

#### Broadcast Infrastructure—Back to the Future?

Room: Salon 2

Chair: John E. Ferder (CBS, USA)

Most of today's broadcast plants have been moving ahead with implementing the latest technologies and workflows, but are still using as their base, established older methods

and infrastructures. This session will examine newer methodologies that have been in place for some time and standardized by SMPTE, but have not experienced widespread adoption. It will also describe the paths of incorporation into established broadcast plants.

**8:45 The Death of Black Burst** J. Patrick Waddell (Harmonic Inc., USA)

**9:15 Considerations in Interoperability Testing of the New Sync System** Paul Briscoe (Consultant, IEEE, Canada)

**9:45 UHD in a Hybrid SDI/IP World** John Hudson (Semtech Corp., Canada); Randy Conrod (Imagine Communications, USA); Nigel Seth-Smith (Semtech Corp., United Kingdom)

**10:15 - 10:45 am Coffee Break**

Rooms: Salon 1, Salon 2

**10:45 am - 12:15 pm**

#### Aspects of UHD TV Capture

Room: Salon 1

Chair: Patrick D. Griffis (Dolby Laboratories, USA)

Advances in camera and lighting technologies have significantly broadened the range of tools and choices to be made for content production. This session will provide practical insights on how to take advantage of high frame rate and high dynamic range capture, optimizing perceived resolution, and the interaction of LED lighting with the capture of a wide color gamut. The end result is the ability to offer "better pixels" that are visually apparent to the audience.

**10:45 HFR Capture and Production Methods** Jim DeFilippis (TMS Consulting, USA); Michael Korpi and Corey P. Carbonara (Baylor University, USA)

**11:15 4K, HDR and Further Image Enhancements for Live Image Acquisition** Klaus Weber (Grass Valley & A Belden Brand, Germany); Peter G. Centen (Grass Valley, The Netherlands)

**11:45 Color Rendering Index Value Requirement for Wide-Gamut UHD TV Production** Hiroaki Iwasaki (Panasonic Corp. & Eco Solutions Co., Japan); Tetsuya Hayashida (NHK, Japan); Kenichiro Masaoka (NHK Science & Technology Research Laboratories, Japan); Masanori Shimizu (Panasonic Corp. & Eco Solutions Co., Japan); Takayuki Yamashita (NHK Science & Technology Research Laboratories, Japan); Wataru Iwai (Panasonic Corp., Japan)

## CURRENT SPONSORS



## Is Coax Ready for the Undertaker?

Room: Salon 2

Chair: John P. Maizels (Entropy Enterprises, Australia)

75 ohm coaxial cable has been the mainstay of television interconnection since day one, and it has continued to serve us well from composite analog through to HD-SDI. But after years of stuffing racks, closets, and floors with coax until the spaces get to bursting point, 6G and 12G come along and strike terror into the hearts of engineers and accountants. What now? Can we continue to breathe life into the old pieces of string, or do we need to start afresh? This session looks at some ways to make coax run the distance, and an alternative view into a brave new world.

### 10:45 4K Video Over SMPTE 2022-5/6 Workflows

Laura Reshetar (Macnica Americas, Inc., USA); Marc Levy (Macnica, USA); Gaël Rouvroy (IntoPIX, Belgium)

### 11:15 Scaling UHD Live Production Workflow with

Mezzanine Compression Charles Meyer (Grass Valley, USA); Jean-Baptiste Lorent (IntoPIX, USA); Sara Kudrle (Grass Valley, a Belden Brand and & SMPTE Western Region Governor, USA)

11:45 A Single Strand of Glass: The Incredible Power of Optical Fiber in the Production Environments of Today and Tomorrow John Brendle (Barnfind Americas, USA)

## 12:15 - 12:30 Exhibits Open at 12 Noon— Walking Time to Industry Luncheon

### 12:30 - 2:00 pm Industry Luncheon Keynote

Room: The Annex

### 2:00 - 2:15 pm Walking Time from Industry Luncheon

### 2:15 - 3:45 pm

## Human-Centered Image Quality in HDR/HFR/WCG

Room: Salon 1

Chair: David Long (Rochester Institute of Technology, USA)

The digital revolutions in television and cinema have placed a spotlight on the pixel. As engineers consider what makes a pixel “better,” answers have usually come in objective physical quantities—there should be more of them on each frame and more of them available each second. They should reconstruct larger color volume and deliver wider brightness distribution. But beyond the physics, we must more fully consider holistic quality of experience for the human observer. This session will emphasize studies of HDR/HFR/WCG on integrated image quality and provide guidance for keeping future television and cinema inventions focused on delivering truly excellent perceptual experiences.

### 2:15 How Independent are HDR, WCG, and HFR in Human Visual Perception and the Creative Process?

Sean McCarthy (ARRIS Group Inc., USA)

### 2:45 Best in Show: How to Measure Perceived Image Quality Suzanne Farrell (Dolby Laboratories, USA)

### 3:15 Perceptual Uniformity for High Dynamic Range Television Systems

Manish Pindoria, Katy C. Noland, Tim Borer, Andrew Cotton, Simon Thompson, and John Zubrzycki (BBC, United Kingdom); Peter Wilson (High Definition & Digital Cinema Ltd., United Kingdom)

## Design Elements for Core IP Media Infrastructures—Part 1

Room: Salon 2

Chair: Al Kovalick (Media Systems Consulting, USA)

This session will have presentations covering software-defined transport, understanding the methods of lossless IP stream design, design elements for a core IP media infrastructure, the composition of elementary media flows and other relevant themes. IP will be the lingua franca for moving all non/realtime facility data. Come learn how this will happen.

### 2:15 Prospects for Software-Defined Networking and Network Function Virtualization in Media and Broadcast Environments John Ellerton (BT Media and Broadcast, United Kingdom)

2:45 Journey of 9's: High Availability for IP-Based  
Production Systems Pradeep Kathail (Cisco, USA); Charles Meyer (Grass Valley, USA)

3:15 Design Elements for Core IP Media Infrastructures  
Al Kovalick (Media Systems Consulting, USA)

## 3:45 - 4:15 pm Coffee Break

Rooms: Salon 1, Salon 2

### 4:15 - 5:45 pm

## Tracking Digital Content from Production through Distribution

Room: Salon 1

Chair: Marc Zorn (Independent Security Consultant, USA)

As we complete the transition from film to digital media, the complexity and security exposure of all content has increased dramatically. The simple fact that data can be accessed or copied without altering the original has created the need for better tracking, accountability, and forensic capabilities through the entire arc from production to post to all the paths of distribution. This security session is focused on the examination of tools, mechanisms, and strategies to improve these capabilities.

### 4:15 Sample Variants: A Standardized Framework for Forensic Marking of ISO/BMFF Files Julia Kenyon (Duct Tape Engineering & Solekai Systems, USA)

4:45 Enabling Watermarking in a Diverse Content  
Distribution Infrastructure Niels Thorwirth (Verimatrix, Inc., USA)

5:15 Cybersecurity for Media Technology Products  
William Hooper (National TeleConsultants, USA)

## Design Elements for Core IP Media Infrastructure—Part 2

Room: Salon 2

Chair: Al Kovalick (Media Systems Consulting, USA)

IP as a data transport mechanism has changed the world as witnessed by the Internet. It will likewise change the character of the media facility. This session will have presentations covering software-defined transport, understanding the methods of lossless IP stream design, design elements for a core IP media infrastructure, the composition of elementary media flows, and other relevant themes. IP will be the lingua franca for moving all non/realtime facility data. Come learn how this will happen.

**4:15** Elementary Flows for Live IP Production **Thomas Edwards** (FOX Networks Engineering and Operations, USA); **Michael Bany** (DVBLINK, USA)

**4:45** Optimizing Large Media Networks for Accuracy Time Transfer via PTP **Nikolaus Kerö** (Oregano Systems, Austria); **Thomas Kernen** (Cisco, Switzerland); **Tobias S. Müller** (University of Applied Sciences Technikum Wien & Oregano Systems, Austria)

**5:15** Distributed Object-based Production of 3D Audio Using IP Networks **Richard Day** and **Robert Wadge** (The British Broadcasting Corporation, United Kingdom)

## **6:00 - 8:00 pm** Welcome Reception

*Room: Exhibit Hall*

## **8:00 - 10:00 pm** Student Film Festival

*Room: Salon 1*

# Wednesday, October 28

## **7:30 - 8:30 am** Morning Coffee

*Rooms: Salon 1, Salon 2*

## **8:30 - 10:00 am**

### **Compression Part 1—The Impact of New Viewing Experience Features on Video Compression Technologies**

*Room: Salon 1*

**Chair: Matthew S. Goldman** (Ericsson, USA)

The session will explore the effect of High Frame Rates (HFR) and High Dynamic Range (HDR) on High Efficiency Video Coding (HEVC) compression efficiency, for both HD and 4K UHD. These new features also require that other coding technologies be updated as well. Extensions to the SMPTE VC-3 coding technology will be discussed, including how the mezzanine compression format preserves the high quality of the original content. Also included will be details about how the new UHD Blu-ray format supports HDR, wide color gamut (WCG), 10-bit sample precision and HFR. While all the new features promise a greatly enhanced viewing experience, HDR arguably has the highest level of interest. The outcome of the Moving Picture Experts Group (MPEG) “call for evidence” on HDR and WCG technologies for low bitrate applications will be discussed as well as details of the most recent investigations into these technologies.

**8:30** High Dynamic Range: Compression Challenges **Pierre Larbier** (ATEME, France)

**9:00** The Interaction Between Transfer Function and Compression in High Dynamic Range Video **Olie Baumann** (Ericsson Television, United Kingdom)

**9:30** Better, Faster and More Pixel Handling with SMPTE VC-3 Codec Updates **Shailendra Mathur** (Avid, Canada); **Markus Weber** (Avid, Germany); **Al Kovalick** (Media Systems Consulting, USA)

### **Asset Management**

*Room: Salon 2*

**Chair: S. Merrill Weiss** (Merrill Weiss Group LLC, USA)

**8:30** Talk About BIG Data! **Brian Campanotti** (Oracle | Front Porch Digital, USA)

**9:00** A New Digital Asset Management System for the Rochester Institute of Technology's School of Film and Animation **Alex Etienne** (Rochester Institute of Technology, USA)

**9:30** Preservation and Archive: The Next 100 Years **Barbara Murphy** (HGST, a Western Digital Company, USA); **Walter Hinton** (HGST, A Western Digital Company, USA)

### **OTT—The New Frontier or the Wild West?**

*Room: TCL Theatre*

**Chair: Steve Wong** (Siemens Convergence Creators, USA)

Over the Top TV: Lack of specifications, overwhelming metadata, keeping track of content rights, quality, and security around the world. How can engineers keep up with the growing demand and exceed viewer and business expectations with OTT?

**8:30** CBS All Access **Robert Seidel** (CBS, USA)

**9:00** Virtualized Segmented Streams in OTT Services: Decoupling Content Generation from Delivery Technologies **Yasser F. Syed** (Comcast, USA); **Wendell Sun** (Arris, USA); **Alex Galadi** (InterDigital, USA); **Neill A. Kipp** (Comcast, USA)

**9:30** Big Data Analysis for Effective Monetization of Over the Top TV Content **Arnav Mendiratta** (University of Southern California, USA); **Steve Wong** (Siemens Convergence Creators, USA); **Jay Yogeshwar** and **Shane Archiquette** (Hitachi Data Systems, USA); **Reinhard Grim** (Siemens Convergence Creators, USA)

## **10:00 - 10:30 am** Coffee Break—Exhibit Hall Opens

*Rooms: Salon 1, Salon 2*

## **10:30 am - 12:00 pm**

### **Compression Part 2—The Impact of New Viewing Experience Features on Video Compression Technologies**

*Room: Salon 1*

**Chair: Matthew S. Goldman** (Ericsson, USA)

The session will explore the effect of High Frame Rates (HFR) and High Dynamic Range (HDR) on High Efficiency Video Coding (HEVC) compression efficiency, for both HD and 4K UHD. These new features also require that other coding technologies be updated as well.

**10:30** The Ultra HD Blu-ray Format Extension and its Next-Generation Video Characteristics **Michael D. Smith** (Wavelet Consulting LLC, USA)

**11:00** High Frame Rate (HFR) Compression Efficiency and Backwards Compatibility using HEVC **Juan Jose Anaya** and **Antonio Sanchez** (SAPEC, Spain); **Jordi Joan Giménez** and **Damian Ruiz** (Universitat Politècnica de València, Spain)

**11:30** MPEG HDR Update **Walt Husak** (Dolby Laboratories, Inc., USA)

### **Resurrecting the Restored**

*Room: Salon 2*

**Chair: Theodore Gluck** (The Walt Disney Studios, USA)

Restoring a treasured classic is only part of the battle. Once you have reconstructed and digitally mastered treasured cinematic moments, how do you preserve them and ensure

that their digital futures are as robust as their analog beginnings? This session will examine not only the variables such as the disparate frame rates of early silent films, but will also explore how to best preserve your digital archives once you've scanned fragile and decaying 80+ year-old sprocketed media.

**10:30** The Digital Projection of Silent Era Films **Jonathan Erland**  
(The Pickfair Institute for Cinematic Studies, USA)

**11:00** The Challenges of Media Archiving Past & Future  
**James Snyder** (Library of Congress, USA)

**11:30** UHD and HDR: More than Just More Pixels **Ken Goeller**  
(Deluxe, USA)

## **12:00 - 12:30 pm** Exclusive Exhibit Hours

*Room: Exhibit Hall*

## **12:30 - 2:00 pm** Fellows Luncheon

*Room: Vantage Room*

## **2:00 - 2:15 pm** Walking Time from Fellows Luncheon

## **2:15 - 3:45 pm**

### **Audio Part 1—Lots and Lots of Audio**

*Room: Salon 1*

**Chair: William Redmann** (Technicolor, USA)

Innovative and revisited sound capture and production techniques are crucial for the effective authoring of immersive audio in all forms. Support of the premium experience requires new mixing skills, tools, tests, monitors, and a pervasive respect for the artist's intent and trust at all levels of presentation, including legacy formats: Nobody is predicting that stereo will disappear.

**2:15** Object-Based Audio for Live TV Production **Steven Silva**  
(21st Century Fox, USA)

**2:45** Scene-Based Audio Implemented with Higher Order Ambisonics (HOA) **S. Merrill Weiss** (Merrill Weiss Group LLC, USA)

**3:15** The Future of Audio Post-Production using Virtual 3D Scenes **Nuno Fonseca** (IT/ESTG, Polytechnic Institute of Leiria, Portugal)

### **Display Part 1—Advances in Display Technology**

*Room: Salon 2*

**Chair: Peter H. Putman** (ROAM Consulting LLC, USA)

For all the work we do to ensure the highest quality and consistency in image capture, editing, processing, and delivery, we still have to deal with the "wild card" world of displays, which is largely driven by what the consumers and TV manufacturers want—and nowadays, that means big, cheap TV screens! Still, there have been some significant improvements behind the glass as ultra-high-definition (UHD) looms large.

**2:15** Display Technology: The Next Chapter **Peter H. Putman** (ROAM Consulting LLC, USA)

**2:45** Black + White = Chroma!? **Andy Rosen** (Bitlogic, USA); **Dan Brunner** (Microsoft, USA)

**3:15** Observer Metamerism Models and Multiprimary Display Systems **David Long** and **Mark Fairchild** (Rochester Institute of Technology, USA)

## **3:45 - 4:15 pm**

### **Coffee Break**

*Rooms: Salon 1, Salon 2*

## **4:15 - 5:45 pm**

### **Audio Part 2—Lots and Lots of Audio**

*Room: Salon 1*

**Chair: William Redmann** (Technicolor, USA)

In the near future, immersive audio is everywhere: Enhancing our dramas, seating us in sports venues, or putting us on the field. In that future, Immersive Audio turns an autonomous commute from work into an escapist unwind. Now to the simple matter of just making it happen! Innovative and revisited sound capture and production techniques are crucial for the effective authoring of immersive audio in all forms. Support of the premium experience requires new mixing skills, tools, tests, monitors, and a pervasive respect for the artist's intent and trust at all levels of presentation, including legacy formats: Nobody is predicting that stereo will disappear.

**4:15** Listening Test Methodology for Object-Based Audio Rendering Interoperability Using Artificial Reference Signals and Artistic Content **Brian Claypool** (Barco, Belgium); **Markus Mehnert** (Barco Audio Technologies, Germany); **Bert Van Daele** (Auro Technologies NV, Belgium)

**4:45** Monitoring and Authoring of 3D Immersive Next-Generation Audio Formats **Peter Poers** (Junger Audio GmbH, Germany)

**5:15** Recipes for Creating and Delivering Next-Generation Broadcast Audio **Sripal Mehta** and **Jeffrey Riedmiller** (Dolby Laboratories, USA); **Timothy Onders** (Dolby Laboratories Inc., USA)

### **Display Part 2—Advances in Display Technology**

*Room: Salon 2*

**Chair: Peter H. Putman** (ROAM Consulting LLC, USA)

For all the work we do to ensure the highest quality and consistency in image capture, editing, processing, and delivery, we still have to deal with the "wild card" world of displays, which is largely driven by what the consumers and TV manufacturers want—and nowadays, that means big, cheap TV screens! Still, there have been some significant improvements behind the glass as UHD looms large.

**4:15** Towards Standardizing a Reference White Chromaticity for High-Definition Television **Matthew Donato** (Imatest, LLC, USA); **David Long** (Rochester Institute of Technology, USA)

**4:45** Achieving BT. 2020 Color with LCDs: A Tale of Two Applications **James Hillis**, **Jimmy Thielen**, **Josh Tibbits**, **John Van Derlofske** and **Dave Lamb** (3M Company, USA)

**5:15** What Does "Broadcast Quality" Mean Now? **Josef Marc** (Archimedia Technology Inc., USA)

## **12:00 - 12:30 pm** Exclusive Exhibit Hours

*Room: Exhibit Hall*

## **6:00 - 6:30 pm** Annual Membership Meeting

*Room: Salon 1*

## Thursday, October 29

### 7:30 - 8:30 am Morning Coffee

Rooms: Salon 1, Salon 2

### 8:30 - 10:00 am

#### Coming Soon to a Theater Near You!—Part 1

Room: Salon 1

Chair: Peter Ludé (RealD, USA)

The transition from film to digital cinema is virtually complete, and now filmmakers and theater owners are presented with a bevy of new options never before possible. Enabled by digital, the cinema experience can now be enhanced with increased resolution, frame rate, dynamic range, brightness and color gamut. But which of these will capture the imagination of theater-goers? This session will explore the latest in managing and measuring color, leveraging new frame rates, optimizing high-contrast projection systems, and evaluating 3D projection.

**8:30** Creative Frame Rates: The Past, Present and Future of Cinema Jonathan Erland and Noah Orozco (Pickfair Institute for Cinematic Studies, USA)

**9:00** The Academy Color Encoding System (ACES): Industry Standards for Digital Image Interchange, Color Management, and Long-term Archiving Andy Maltz (AMPAS, USA)

**9:30** Is There a Standard Observer in the House? François Helt (Highlands Technologies Solutions, France)

#### Cloud Part 1—Working in the Cloud-Practical Applications

Room: Salon 2

Chair: Thomas Edwards (FOX Networks Engineering and Operations, USA)

Meaningful discussions of cloud for media have moved well beyond the generalized theory and entrenched basics. The Industry is now looking for the applications, processes and architecture they need to make the leap from traditional machine room to virtualized services. This session will explore real-world implementations of cloud for media processing and delivery, discussing the tools and techniques used to provide practical viable solutions for existing challenges, and looking at how these differentiate themselves from traditional infrastructure.

**8:30** Shoot the Bird: Linear Broadcast Distribution on AWS Usman Shakeel and Konstantin Wilms (Amazon Web Services, USA)

**9:00** Distributed, Multiresolution Media Processing in the Cloud Walter Arrighetti (Frame by Frame Italia, Italy)

**9:30** Utilizing Massive Compute Resource in Public Cloud for Complex Image Processing Applications Richard J. Welsh (Sundog Media Toolkit, United Kingdom)

#### ATSC 3.0: The Next-Generation Broadcast Platform

Room: TCL Theatre

Chair: Harvey Arnold (Sinclair Broadcast Group, USA)

ATSC 1.0 marked a huge chapter in television broadcasting in North America. More than 20 years later, the next-generation broadcast standard is set to take broadcast to the next level. ATSC 3.0 offers more than HDTV. Mobility, portability, flexibility, and interoperability is the promise.

Learn what ATSC 3.0 is and how its features will allow broadcasters to deliver a programming and potential new business service to all types of devices. Presentations describe the building blocks and business opportunities, as well as service-following, and single frequency networks. At the conclusion of the papers, the presenters will have a panel discussion focusing on implementation, business, and regulatory considerations of this new broadcast standard.

**8:30** Next-Generation Television Platform ...Coming to Multiple Screens Near You! Dave Siegler (Cox Media Group, USA)

**9:00** ATSC 3.0: Overview, Advantages and Status

Skip Pizzi (NAB, USA)

**9:30** Advanced Emergency Alerting via ATSC 3.0

Joseph Seccia (GatesAir, USA)

### 10:00 - 10:30 am Coffee Break

Rooms: Salon 1, Salon 2

### 10:30 am - 12:00 pm Coming Soon to a Theater Near You!—Part 2

Room: Salon 1

Chair: Peter Ludé (RealD, USA)

The transition from film to digital cinema is virtually complete, and now filmmakers and theater owners are presented with a bevy of new options never before possible. Enabled by digital, the cinema experience can now be enhanced with increased resolution, frame rate, dynamic range, brightness, and color gamut. But which of these will capture the imagination of theater-goers? This session will explore the latest in managing and measuring color, leveraging new frame rates, optimizing high-contrast projection systems and evaluating 3D projection.

**10:30** Technical Analysis, Standard Interpretation, Inspection and Assessment Study for Digital Cinema Stereoscopic Projection Bo Gong (Test Institute of Film Technical Quality, P.R. China); Hu Qin (China Film Co, P.R. China); Dengke Chen and Feng Wang (Test Institute of Film Technical Quality, P.R. China)

**11:00** An Analysis of System Contrast in Digital Cinema Auditoriums Peter Ludé and Miller Schuck (RealD, USA)

**11:30** Modelling of Achievable Contrast and its Impact on HDR Projection in Commercial Cinema Environments Claude Tydtgat and Dirk Maes (Barco nv., Belgium); Goran Stojmenovik (Barco n. v., Belgium); Augustin Grillet (Barco nv., Belgium)

#### Cloud Part 2—Working in the Cloud: Practical Applications

Room: Salon 2

Chair: Richard J. Welsh (Sundog Media Toolkit, United Kingdom)

Meaningful discussions of cloud for media have moved well beyond the generalized theory and entrenched basics. Industry is now looking for the applications, processes and architecture they need to make the leap from traditional machine room to virtualized services. This session will explore real-world implementations of cloud for media processing and delivery, discussing the tools and techniques used to provide practical viable solutions for existing challenges, and looking at how these differentiate themselves from traditional infrastructure.

**10:30** My Boss Wants to Transcode in the Cloud **Jim Duval**  
(Telestream, USA)

**11:00** Zero Infrastructure Broadcasting **Tom Ohanian** (Cisco, USA)

## **12:00 - 2:00 pm** Boxed Lunch—Exclusive Exhibit Hours

*Rooms: Exhibit Hall, Salon 1, Salon 2*

## **2:00 - 3:30 pm**

### **Thought-Provoking Ideas for Increasing Diversity in Motion Picture and Television Engineering**

*Room: Salon 1*

**Chairs:** Kellie McKeown (McKeown Consulting, USA)

With the average age of SMPTE members increasing, we need to attract younger engineers to strengthen our ranks and our future. By widening our search to fully include women and minorities, we can maximize the opportunity to attract top engineers. In this session, five women engineers in the industry provide brief presentations on their ideas for increasing and sustaining diversity, followed by ample time for Q&A and discussion with the audience. Please join us for insight and interchange on effective approaches to sustaining the vitality and future of our industry through casting a wider net to draw new engineers.

**2:00** Thought-Provoking Ideas for Increasing Diversity in Motion Picture and Television Engineering **Kellie McKeown** (McKeown Consulting, USA); **Andrea Berry** (Fox Networks Group, USA); **Marilyn Pierce** (FOX News Channel, USA); **Renu Thomas** (Disney ABC Television Group, USA); **Jennifer Zeidan** (Industrial Light and Magic, USA); **Cindy Hutter Cavell** (Cavell, Mertz & Associates, USA); **Wendy Aylsworth** (SMPTE Past President, USA)

### **File-Based Workflows: Scalable, Efficient and Here to Stay**

*Room: Salon 2*

**Chair:** Arjun Ramamurthy (20th Century Fox, USA)

File-Based workflows in the media production chain hold the promise of being scalable, providing greater efficiencies, enabling greater collaboration and throughput. But how does a media object wrapped in a file enable that? Does simply wrapping video and audio essences within the IMF, DPP, AS-11 or other wrapper materialize these gains? This session explores the different ways file-based workflows that enable steps within the processing chain resulting in greater productivity, traceability, quality control, and scalability.

**2:00** Introduction of a File System with Integrated Scaling Capability **Heiko Sparenberg** and **Siegfried Foessel** (Fraunhofer IIS, Germany)

**2:30** Using BPMN to Simplify IMF Caption & Subtitle Creation **Bruce Devlin** (Dalet, United Kingdom); **Simon Adler** (Dalet, USA)

**3:00** IMF in Mastering and Distribution Automation **Henry Gu** (Green International Consulting, USA)

## **3:30 - 4:00 pm** Coffee Break

*Rooms: Salon 1, Salon 2*

## **4:00 - 5:30 pm**

### **Image Processing: Can you Push your Movie to the Right Look?**

*Room: Salon 1*

**Chair:** Siegfried Foessel (Fraunhofer IIS, Germany)

In many cases, movies do not fit to your presentation wishes and devices. The available time slot is too short to show the complete movie, the resolution is not high enough for today's screens, or your color timing does not match to your presentation device. This session will give you answers on how you can identify and match your movie parameters by means of image processing technologies.

**4:00** Exploring New Technologies for Non-Destructive Adjustment of Running Times of File-based Content **Scott Matics** (Telestream, USA)

**4:30** Native Resolution Detection of Video Sequences **Ioannis Katsavounidis, Anne Aaron, and David Ronca** (Netflix, USA)

**5:00** Seamless 3D Interaction of Virtual and Real Objects in Professional Virtual Studios **Thomas Hach** (ARRI, Germany); **Carles Bosch** (Fundació Barcelona Media, Spain); **Javier Montesa** (Brainstorm Multimedia, Spain); **Pablo Arias** (Universitat Pompeu Fabra, Spain); **Pablo Gascó** (Brainstorm Multimedia, Spain)

### **Media Workflows: Automated Techniques for Quality, Captions and Ad Insertions—Can They Work?**

*Room: Salon 2*

**Chair:** Sara Kudrle (Grass Valley, a Belden Brand and & SMPTE Western Region Governor, USA)

Today's media workflows can be complicated and require much interaction to ensure smooth delivery. Automated techniques presented in this session are designed to increase quality and correctness of the video and audio, ensure timely captioning, and simplify ad insertion. This session explores these techniques and presents case studies demonstrating viability.

**4:30** File-based Closed Captioning System without Captioning Delay **YunHyung Kim, Sunghee Han, Sungwoo Choi and Byunghye Jung** (KBS (Korean Broadcasting System), Korea)

**5:00** Case Study—Scaling Dynamic Ad Insertion (DAI) Provisioned VOD for Cable **Jim Duval** (Telestream, USA); **Brent Stranathan** (CBS, USA)

## **7:00 - 10:00 pm** Honors & Awards Ceremony and Dinner

*Room: Hollywood Ballroom*

*Program Subject to Change*