



The Future of Storytelling and How to Save It

SMPTE 2016 Symposium: Monday, 24 October

As we approach SMPTE's 100th anniversary, it's amazing to see how much technology has changed the way we tell stories as well as how we preserve them. As we look to the next 100 years the way we preserve the creativity of our industry will need to be as complex as the way we tell stories. The day long exploration will delve into those kinds of technologies and how great talents are bringing new heights of creativity and creative approaches help to preserve them.



7:30 AM

Morning Coffee

9:00 — 9:15 AM

Opening Welcome

9:15 — 9:45 AM

Keynote

9:45 — 10:30 AM

Want to know how to preserve digitally? Play a Game

Games are breaking technical ground everyday but they also teach us a lot about the history of digital technology—an essential part of archiving.

10:30 — 11:00 AM

Networking Coffee Break

11:00 — 11:45 AM

Enhanced formats need enhanced archival brains

Object-based audio; enhanced theatrical, virtual reality require very smart people to dissect and describe their atomic archival parts.

11:45 AM — 1:15 PM

Networking Lunch

1:15 — 2:30 PM

Why restore films anymore?

They all say we don't go to theaters, we don't buy disks we don't even watch movies on TV — so why should anybody bother restoring films anymore? Visionary filmmakers, technologists and cultural curators all weigh in.

2:30 — 3:30 PM

Networking Coffee Break

3:00 — 3:45 PM

Wrappers Delight

IMF, AXF, MXF, DCI...there are many wrappers with many acronyms and many more uses. How do these standards help preserve and protect moving images? What is assumed about the futures.

3:45 — 4:25 PM

Archives are not an Island

Digital asset management is a complex set of business and operational systems, taking on digital archiving means understanding a larger strategy.

4:25 — 4:30 PM

Thank you and Adjourn

5:30 — 9:00 PM

Honors & Awards Ceremonies

(Ticket Required)

Program Subject to Change



2016 ANNUAL TECHNICAL CONFERENCE & EXHIBITION HOLLYWOOD, CA. 24-28 October 2016



Tuesday, 25 October

7:30 — 8:45 AM Morning Coffee

8:45 — 9:00 AM Welcome

9:00 — 10:00 AM Opening Keynote

10:00 — 10:30 AM Coffee Break

10:30 AM — 12:00 PM

Networked Media Infrastructure 1 — Topics on IT-based Media Infrastructure

Room: Salon 1

Chair: Al Kovalick (Media Systems Consulting, USA)

This session will sharpen your skill set related to IT-based media infrastructures. Some of the themes covered include; media transport protocols, non-blocking net-

work architectures, deterministic flow routing with zero packet loss, virtualized infrastructure, understanding PTP timing/sync in massive IP networks, software-defined methods, hyper-converged systems and consideration of an all-cloud media facility. Expect to be enlightened with case studies, analysis, tutorials, and more in this fast-changing area of media technology.

Color Management 1 — Tone and Color Management — The Art and Science of Preserving and Enhancing Creative Intent

Room: Salon 2

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

Do all displays match the reference master display? Possibly, but in a lot of cases probably not. What happens when we look at high dynamic range? Do we expect large variations there? If there are large variations, what considerations should we keep in mind so that we can preserve creative intent, and provide the correct guidance to our colorists and creative talent to explore the greater pallet

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offered in high dynamic range?

The papers in this session present both the technical side and the artistic side of the challenges facing the color management community. We will examine the color adaptations considerations as well as the tonal considerations one needs to keep in mind to account for differences in the displays, and highlights, and examine the artistic implications of high dynamic Range grading and how they differ from standard dynamic range color correction. Additionally, as greater color volumes are available with high dynamic range displays, we will look at how schemes that provide mechanisms to take advantage of the greater color gamut.

12:00 — 1:30 PM Fellows Luncheon

1:45 — 3:15 PM

Networked Media Infrastructure 2 — Topics on IT-based Media Infrastructure

Room: Salon 1

Chair: Al Kovalick (Media Systems Consulting, USA)

This session will sharpen your skill set related to IT-based media infrastructures. Some of the themes covered will be; media transport protocols, non-blocking network architectures, deterministic flow routing with zero packet loss, virtualized infrastructure, understanding PTP timing/sync in massive IP networks, software-defined methods, hyper-converged systems and consideration of an all-cloud media facility. Expect to be enlightened with case studies, analysis, tutorials and more in this fast changing area of media technology.

Color Management 2 — Tone and Color Management — The Art and Science of Preserving and Enhancing Creative Intent

Room: Salon 2

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

Do all displays match the reference master display? Possibly, but in a lot of cases probably not. What happens when we look at high dynamic range? Do we expect large variations there? If there are large variations, what considerations should we keep in mind so that we can preserve creative intent, and provide the correct guidance to our colorists and creative talent to explore the greater pallet offered in high dynamic range?

The papers in this session present both the technical side and the artistic side of the challenges facing the color management community. We will examine the color adaptations considerations as well as the tonal considerations one needs to keep in mind to account for differences in the displays, and highlights, and examine the artistic implications of high dynamic range grading and how they differ from standard dynamic range color correction. Additionally, as greater color volumes are available with high dynamic range displays, we will look at how schemes that provide mechanisms to take advantage of the greater color gamut.

3:15 — 3:45 PM Coffee Break

3:45 — 5:15 PM

Security — Can IMF, Cloud and Distribution be Secure?

(Description TBD)

Room: Salon 1

Image Processing — Good Images and Too Good Images!

Room: Salon 2

Chair: Siegfried Foessel (Fraunhofer IIS, Germany)

Immersive viewing experiences like UHD and HDR require careful selection and optimization of video content. This session gives answers on the influence of motion blur and previewing conditions to get the best results for such experiences. The second part of the session gives an overview on challenges and detection mechanisms for forgeries of videos.

5:30 — 8:00 PM Annual Membership Meeting

6:00 — 8:00 PM Welcome Reception

Wednesday, 26 October

7:30 — 8:30 AM Morning Coffee

8:30 — 10:00 AM

Broadcast Infrastructure: Cable: Even Less Dead than Last Year

Room: Salon 1

*Chairs: Harvey Arnold (Sinclair Broadcast Group, USA),
John Maizels (Entropy Enterprises, Australia)*

Ask the IT people and they tell you that broadcast signal distribution has to be on UTP and soon. Ask the chief engineer and the accountants, and you might get a different foreseeable future. What's becoming clear is that for the answer, and maybe for longer, coaxial cable will be needed. Masses of it. And as IP islands emerge, they will be surrounded by and glued together with the old faithful: coaxial cable and BNC connectors. This session covers three aspects of cable performance and behaviour that you might just need to know.





Cloud 1 — Virtualizing Broadcasting: Data Center and Cloud

Room: Salon 2

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

How can broadcast media processing capability be moved onto an IP architecture and virtualized across data center and cloud infrastructure, for encoding, master control, disaster recovery, and archive?

A practical look at using the cloud for media, including the use of micro services, scale-out workload designs, and best practices for very large content library migrations.

VR/AR: Assuring VR Quality

Room: TCL

Chair: William Redmann (Technicolor, USA)

In VR, as elsewhere, standards, quality checks, and best practices can be counted on to protect, even improve, the audience's experience. These speakers present challenges, solutions, and metrics for VR workflows, interchange, and review techniques usable to more reliably assure the quality of VR productions.

10:00 — 10:30 AM Coffee Break

10:30 AM — 12:00 PM

Broadcast Infrastructure: But Wait — There's More: SDI Evolves!

Room: Salon 1

Chairs: Harvey Arnold (Sinclair Broadcast Group, USA), John Maizels (Entropy Enterprises, Australia)

SDI was a bit of a miracle when it was born: faster than the IT crowd could conceive, capable of carrying everything from soup to nuts, and so, so solid. Our world has a lot of SDI, it's serving us well, and it's set to be a mainstay for a while yet if we let it. So can we let it? How will SDI deliver 100 Gbit services and how do we seamlessly transition to IP when the time is right? You have questions, and this session has answers.

Cloud 2 — Practical Use of the Cloud for Media

Room: Salon 2

Chair: Steve Wong (Hewlett Packard Enterprise, USA)

How can broadcast media processing capability be moved onto an IP architecture and virtualized across data center and cloud infrastructure, for encoding, master control, disaster recovery, and archive?

This session takes a practical look at using the cloud for media, including the use of micro services, scale-out workload designs, and best practices for very large content library migrations.

12:00 — 1:30 PM Lunch on your Own

1:30 — 3:00 PM

Re-Energize Entertainment Engineering: How to Blend the Experience of Yesterday with Millennials' Vision of Tomorrow

Room: Salon 1

Chair: Kellie McKeown (McKeown Consulting, USA)

With the average age of SMPTE members increasing, the entertainment industry needs to attract and retain younger engineers to strengthen our ranks and our future. Millennials are key consumers of our products, but how do we attract them to the industry as technical professionals? The differences between Baby Boomers, Gen X'ers and Millennials are vast in everything from work philosophy, to pace, to professional goals. Is the entertainment industry properly equipped to recruit, manage, mentor and retain the new generation? In this session, six millennials in entertainment engineering each give a brief presentation on their experiences, outlooks and hopes for the future on what it means to be a millennial in entertainment engineering, followed by ample time for Q&A with the audience. Please join us for insight and interchange on attracting and retaining young engineers to sustain the vitality and future of the entertainment industry.

Future of Cinema: Perception of HDR and Contrast

Room: Salon 2

Chair: Peter Ludé (RealD, USA)

Understanding how an audience perceives the higher contrast images possible with modern components is crucial for engineers designing new presentation systems and for the cinematographers who will compose images to be presented with those systems. Understanding the audience perception should help clarify tradeoffs available to provide the best quality experience, for the greatest portion of the audience.

How many is enough? Can they come "too fast"? What about "not fast enough"? Pixels can be fast in the camera, they can be fast at the display. This session examines "more pixels per second" from three different vantages: The aesthetics of high frame rate capture, the psychovisual effects of high frame rate presentation, and the impact achieved by overfilling one's field of view.

3:00 — 3:30 PM Coffee Break

3:30 — 5:00 PM

Asset Management & Storage: Content Management and Storage — Surviving the Data Tsunami

(Description TBD)

Room: Salon 1

Chair: John E. Ferder (CBS, USA)

Future of Cinema: Pixels per Second

Room: Salon 2

Chair: Peter Ludé (RealD, USA)

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5:00 — 7:00 PM **Oktoberfest Reception**

7:30 — 9:30 PM **Student Film Festival**

Thursday, 27 October

7:30 — 8:30 AM **Morning Coffee**

8:30 — 10:00 AM

UHDTV/HFR/HDR/Wide Color: Bigger, Better, Faster Comes to Broadcast

Room: Salon 1

Chair: Kevin J. Stec (Consultant, USA)

Moving to higher spatial and temporal resolution, wider color gamut and higher dynamic range presents a number of challenges to broadcasters. How to deal with the increase in data rates, how to create dual content streams for both HDTV and UHDTV and how to capture HDR/WCG content are all factors to be considered. The presenters in this session will provide insight into how their respective organizations plan to deal with these difficult challenges.

As we move to UHDTV, we need better perceptual models in order to assess the quality of high resolution, high dynamic range and wide color gamut video. This session will present the challenges involved and a number of novel approaches to deal with them.

File Work Flows and Formats 1 — Media Infrastructure Workflows: Tools of the Trade

Room: Salon 2

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

Media infrastructure workflows are becoming more com-

plex with the addition of live streaming, hybrid UHD workflows, ad insertion and OTT ABR services. Come learn some of the newest tools of the trade and how they will affect your workflows.

IMF and DPP both have a common goal; deliver an interoperable file format. Whether you are a studio or a broadcaster, the increase in B2B file exchange drives a need for common file formats. Come learn why MAM and OPL are becoming important parts of IMF, along with QC and UHD for DPP.

Audio — Advances in Audio Reproduction

Room: TCL

Chair: Chris Witham (Walt Disney Studios, USA)

Whether in the theater, wearing a virtual reality headset or viewing a live sports event in the home, immersive audio is altering the entertainment experience. This session will explore how we produce, deliver and reproduce sound while taking advantage of the latest advances in technology.

10:00 — 10:30 AM **Coffee Break**

10:30 AM — 12:00 PM

UHDTV/HFR/HDR/Wide Color: Make Those Pixels Work!

Room: Salon 1

Chair: Kevin J. Stec (Consultant, USA)

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As we move to UHDTV, we need better perceptual models in order to assess the quality of high resolution, high dynamic range and wide color gamut video. This session will present the challenges involved and a number of novel approaches to deal with them.

File Work Flows and Formats 2 — IMF and DPP-Interoperability from Creation to Delivery

Room: Salon 2

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

Media infrastructure workflows are becoming more complex with the addition of live streaming, hybrid UHD workflows, ad insertion and OTT ABR services. Come learn some of the newest tools of the trade and how they will affect your workflows.

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broadcaster, the increase in B2B file exchange drives a need for common file formats. Come learn why MAM and OPL are becoming important parts of IMF, along with QC and UHD for DPP.

12:00 — 2:00 PM Boxed Lunch

2:00 — 3:30 PM

Advances in Display Technology

Room: Salon 1

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

The world of displays continues to evolve at an accelerating pace. Larger screens, more pixels, wider color gamuts, high dynamic range, and interfacing challenges — they're all coming to a screen near you, or have already arrived. This session will take a deeper dive into some of these latest advances in display technology.

New Distribution Modalities: Influence of Digital Technology on Distribution Channels

Room: Salon 2

Chair: Siegfried Foessel (Fraunhofer IIS, Germany)

Distribution today is no longer broadcast only. IT technologies and streaming methods influence the complete media distribution eco-chain. The session highlights the evolutions in broadcast, audience measurement for impression-tracking and consumer behavior.

3:30 — 4:00 PM Coffee Break

4:00 — 5:30 PM

Video Compression Technologies

Room: Salon 1

Chair: Matthew S. Goldman (Ericsson, USA)

The application of video has become even more pervasive in our lives, moving out from the traditional motion picture and live TV usages, to delivery to low bandwidth mobile platforms and for ultra HD immersive viewing experiences. This session will explore video compression technologies at both ends of the spectrum: low bandwidth usage for over-the-top internet and mobile devices and mezzanine encoding for high-end intra and inter studio/facility applications.

New Distribution Modalities: Challenges to Transmit Immersive Quality for OTT

Room: Salon 2

Chair: Siegfried Foessel (Fraunhofer IIS, Germany)

With the advent of new IT technologies and higher bandwidths for media content streaming, more immersive media consumptions like UHD and HDR are possible. But fluctuations in available bandwidth cut down the viewer experience. The session identifies the challenges for immersive media deliveries, the risks on viewer experience and potential solutions.

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Centennial Gala
FRIDAY, 28 OCTOBER 2016

Ray Dolby Ballroom • Hollywood and Highland Center
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or separately at www.smpte gala.org