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## The Importance of SMPTE Standards in the IT/Cloud Days Ahead

**I**n an excellent article in the *SMPTE Journal*, Al Kovalick<sup>1</sup> made the statement that “*The media enterprise is in the biggest transition of its life. Equipment, processes, and applications are moving towards Information Technology (IT) methods and infrastructure. The cloud is not just a buzz word; it is the future of the media facility. The IT/cloud momentum is unstoppable and every systems designer and technician will need to become well versed in IT and cloud technologies.*” The article goes on to give a snapshot of the state of this migration one year ago and enumerates many of the important technologies that are enabling this transition of our industry. Reading this article, just one year after it was written, reinforces the speed at which this transition is happening.

Fundamental to the enabling of virtualized processing in the cloud is the deployment of IT-based infrastructure in the modern media facility. The Joint Task Force on Networked Media (JT-NM), a joint initiative of SMPTE, European Broadcasting Union (EBU), Video Services Forum (VSF), and most recently the Advanced Media Workflow Association launched phase 3 of its work at NAB 2016. The first public demonstration of the JT-NM work to align the

different ongoing activities around the development of open standards and specifications for IP interoperability was shown recently in the IP Zone at IBC 2016. The IP Zone featured demonstrations of interoperable implementations of timing and essence flow over IP infrastructure, based on implementations AES 67, SMPTE ST 2022-6, SMPTE ST 2059, and VSF TR-03. The roadmap for this transition points to a new multipart SMPTE Standard ST 2110, currently in development in the SMPTE 32NF Facilities and Infrastructure Technology Committee, which will provide the standards for IP Media Inter-Networking with Separate Essence Flows.

Although moving video and audio essence over IP infrastructure is key to integrating cloud-based processing alongside on-premises hardware and software resources in a seamless system, two other essential components are distributed IP-based timing and synchronization and media device control over IP. In 2015, SMPTE published the ST 2059-1 and ST 2059-2, the core standards to enable IP-based time and synchronization using Precision Time Protocol. The recently published Engineering Guideline, EG 2059-10, provides an introduction and overview of the time and synchronization system. At the 2016 SMPTE Annual Technical Conference in Hollywood, there will be a further demonstration of time and synchronization over IP networks, based on interoperability

testing that has been happening within SMPTE.

The SMPTE ST 2071 Media Device Control suite of standards addresses the low-level, atomic operations needed to control media devices over the Internet Protocol, in a deterministic, low-latency manner. The 2016 revisions to these standards have been published.

As the move to more distributed local and cloud-based processing continues, there is still much work to complete. These and other enabling standards set a broad platform on which to build modern media facilities.

Most of this standardization work is being done in the SMPTE 32NF Technology Committee on Network/Facilities Architecture, which is one of our largest and most active committees. Each of our ten Technology committees meets face-to-face during our quarterly Standards meetings; however, much of the work is done by the committee subgroups that meet regularly by Web-based teleconferences. After each set of quarterly meetings, we publish a Meeting Outcome report. The Executive Summary captures some of the more notable project developments. More detailed information on the current status of the more than 120 active projects can be found in the detailed account. Download the most recent outcome report from our September meetings in Geneva at EBU at <https://www.smpte.org/standards/meeting-reports>.

<sup>1</sup>A Review of the Technology and Migration Patterns for IP/IT Media Infrastructures, *SMPTE Motion Imaging Journal*, 2015, Volume: 124, Issue: 6