



Adding High-Definition Content to an IPTV Network

Background

IPTV services started earlier this decade with the deployment of MPEG-2 based digital headend and set top boxes. As revolutionary as this new movement by the telcos to offer video service, often as part of their triple service portfolio, one key competitive ingredient is missing – High Definition (HD) content. HD is becoming a must have service offering in most markets. Due to its massive per channel bandwidth requirement, delivering HD content is simply unviable using MPEG-2 compression on DSL or FTTN infrastructure. Fortunately, MPEG-4 compression is available to solve the HD dilemma for the service providers.

Availability of MPEG-4/AVC Encoder and STB

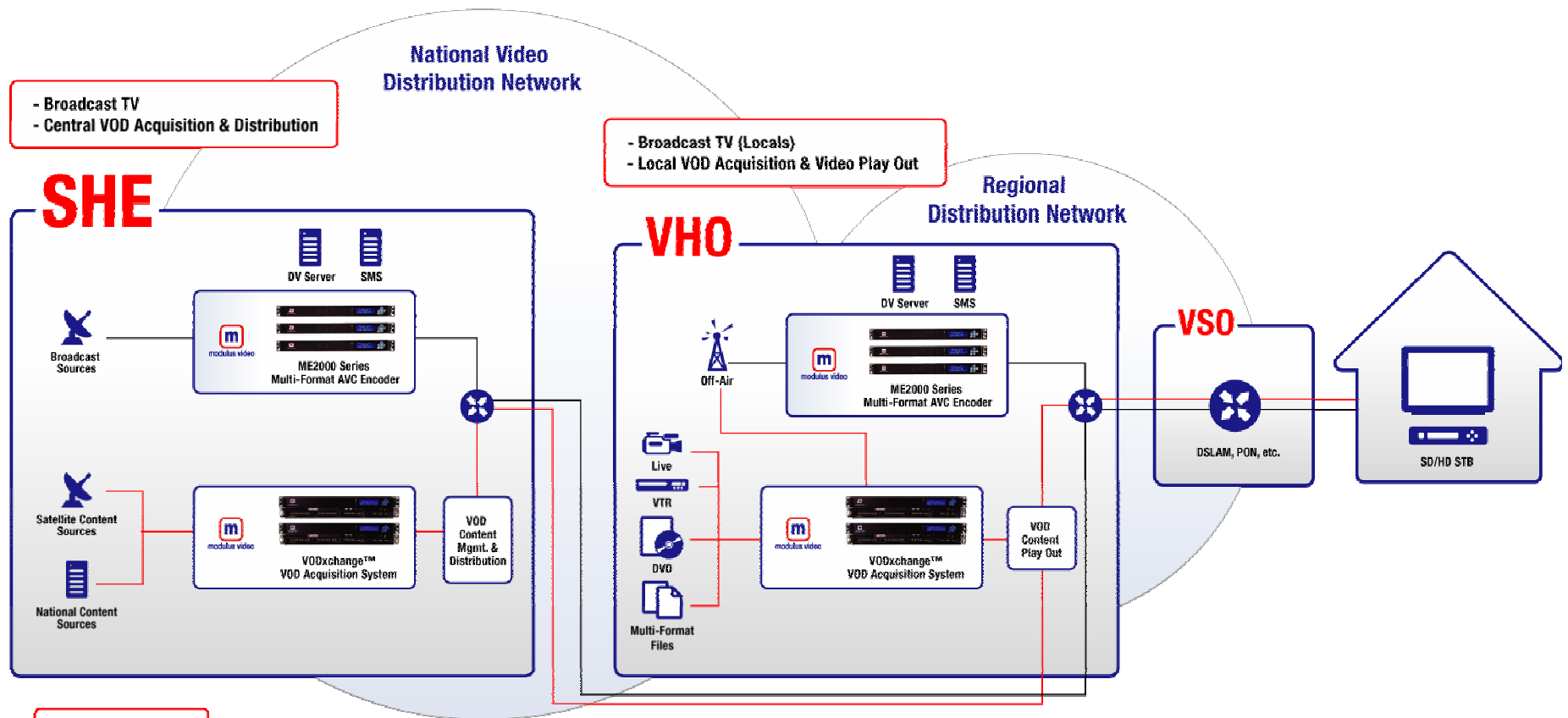
MPEG-4 Part 10, also known as H.264 and AVC, is an ITU-T and ISO standard designed to improve upon MPEG-2 for all types of video application. Modulus Video is a pioneering leader and has focused 100% on AVC development. AVC is a powerful evolution of MPEG-2 methods; the compression is improved through a combination of improved compression tools. Prominent tools include enhanced motion estimation, weighted prediction, de-blocking filter and powerful entropy coding. Now in its second-generation, the Modulus Video ME2000 Series Multi-Format AVC Encoder has achieved greater than 50% bit rate reduction against MPEG-2 while maintaining the same, high video quality. For HD content, 6 to 8 Mbps per channel is now deployable. Together with the advent of the cost-effective hybrid MPEG-2/4 set top boxes, the stage is set for HD introduction to a new or existing IPTV network.

Adding HD Content Today

For an existing IPTV network, adding HD capability is quite straightforward. MPEG-4 AVC is compatible with exiting MPEG-2 transport infrastructure, in principle to deliver HD content feeds requires the addition of MPEG-4 AVC encoders and HD set top boxes. An appropriate number of Modulus Video ME2600 HD encoders can be added to process national HD content at the primary headend and local HD content at the regional video hub offices. Operating in parallel with the MPEG-2 standard definition (SD) encoders, each ME2600 compresses a HD channel to 6-8 Mbps, and generates a MPEG-2 transport stream over UDP/IP for seamless integration into the existing IPTV infrastructure – switches, middleware, packet transport and broadband access. New hybrid MPEG-2/4 HD set top boxes are then added incrementally as the subscribers sign up for high definition programs service. These simple additions allow for HD content delivery while maintaining the existing MPEG-2 SD investment.



IPTV Video Architecture



SHE: Super Head End
 VHO: Video Hub Office
 VSO: Video Serving Office



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Local Content Ready to Air

Modulus Video also provides IPTV operators with a practical answer to the question of how to efficiently insert locally produced content such as news, sports, entertainment, advertising and government into their play out. VODxchange™ delivers a complete workflow with everything needed to go from ingest to the distribution network in real-time, even at HD resolutions for play out or video-on-demand services.

VODxchange ingests digital and analog video content and transcodes a wide range of file formats. It creates ready-to-deliver MPEG-4 AVC files for on-demand services and can also be switched to deliver live programming streams. VODxchange captures live streams to a file while playing them out, to support nPVR and Time-shift TV services. It offers real time HD, SD, and low resolution compression options to support distribution to set top boxes, mobile devices and the Internet. This real-time workflow offers significantly enhanced productivity over the off-line, software-based tools currently being used. The system also provides a real time monitoring and quality control tool to ensure that content is created with the highest visual quality and standards compliance.

As a proven AVC leader, Modulus Video has been shipping real-time HD AVC compression solutions with the best-in-class video quality and bit rate performance to service providers worldwide since 2005. Why wait another day? The timing is now to increase your video revenue with HD! Contact us for in-depth consultations on how to add HD to your IPTV network today.

About Modulus Video, Inc.

Since its founding in 2002, Modulus Video has been the only company to focus 100 percent of its efforts on perfecting the use of the MPEG-4 AVC video compression standard. As a result, Modulus Video's powerful MPEG-4 AVC encoders are now a critical component behind today's most compelling IPTV deployments, providing the most efficient use of available bandwidth and delivering outstanding standard definition and high definition television services over new and existing broadband infrastructure. Its products meet the needs of the broadcast, narrowcast and video-on-demand markets. For more information, please visit www.modulusvideo.com.

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