

# CONTRIBUTION NETWORKS

Increasingly broadcasters are using data network services for professional media transport. But the transition to these new methods requires adaptation, communication and learning. The EBU is helping its Members by specifying and testing standards and providing guidelines for interoperability and negotiation of Service Level Agreements.

## BACKGROUND

There are many benefits to using data network services such as fibre, Ethernet, IP (internet protocol) and MPLS (Multiprotocol Label Switching). They offer a large market of providers, reduced provisioning costs and turnaround time, and the potential to reach more sites.

For professional video and audio the applications are primarily real-time services for live contribution covering inter-studio, inter-campus and broadcaster-to-broadcasters links, O/B Van or SNG contributions. Primary distribution such as from playout centres to distribution partners can use the same techniques. (We don't speak here about delivery to the end user at home.)

Data rates can range from high quality uncompressed HD video (1.5 Gbit/s to 3.0 Gbit/s per stream), through mezzanine compressed video (e.g. HD JPEG 2000 at 150 Mbit/s) to low bit rates for presence monitoring (e.g. 64 kbit/s audio).



## THE CHALLENGE FOR PUBLIC SERVICE MEDIA

Adopting these new contribution techniques can be a challenge for broadcasters on many fronts. Using data networks for media content gives rise to very specific requirements: high performance and high availability is needed for live and real-time processes; guaranteed and predictable Quality of Service is expected; and interoperability is paramount.

Contribution would traditionally have been the domain of broadcast engineers, but the use of data network services brings with it a need for expertise from the IT domain. Knowledge that previously belonged to two separate departments needs to be unified, preferably using a common vocabulary.

In the area of audio contribution, in many countries we are seeing the replacement of ISDN by IP. A key requirement here for broadcasters is interoperability across vendors. For video, new standardized methods of carrying uncompressed video and JPEG 2000 compressed video over IP have become available. These technologies are seeing significant uptake in contribution applications.

Whether for audio or video, all broadcasters will inevitably need to negotiate Service Level Agreements (SLAs) that translate their business needs into the conventional SLA framework used by network service providers. The specific technical requirements mentioned above need to be taken into account, along with extra testing and monitoring, particularly during prime time broadcast periods.

### WHAT IS THE EBU DOING?

Through the strategic programme on Future Networks and Storage Systems (FNS) and its project groups, the EBU supports its Members in their transition to IT/network based infrastructures for their production and contribution workflows and ensures interoperability and best practices.

- Building on the de facto standard *EBU Tech 3326: Audio Contribution over IP - Requirements for Interoperability*, the ACIP2 group addresses the new world of audio over IP for broadcasters. It provides a platform for Members and manufacturers to exchange experiences and requirements and reacts to new issues that arise, like protection or the integration of new codecs.
- The VCIP group – Video Contribution over IP – helps Members to understand the potential that exists with these new technologies and also to establish the market maturity of certain standard implementations by means of interoperability tests. The group is investigating the SMPTE 2022-5/6 standard for uncompressed video and JPEG 2000 transports over IP. Reports on interoperability tests – already completed for the former and planned for Q1/2014 for the latter – will be available to EBU Members.
- The Service Level Agreement (SLA) group addresses the need to find a common ground so that the service level can be defined to suit the needs of broadcasters within the framework of the service providers. It has published *Tech 3361: Service Level Agreement for Media Transport Services - High Level Guidelines*. It is now preparing the companion Technical Parameters document, to be published by the end of 2013.

FNS also prepares the programme of the Network Technology Seminar, the annual event at the crossroads of IT and media production infrastructures covering production and contribution applications (See [tech.ebu.ch/nts2013](http://tech.ebu.ch/nts2013)).

### FIND OUT MORE

Future Networks & Storage Systems Strategic Programme  
ACIP2 Project Group  
VCIP Project Group  
SLA Project Group

[tech.ebu.ch/fns](http://tech.ebu.ch/fns)  
[tech.ebu.ch/nacip](http://tech.ebu.ch/nacip)  
[tech.ebu.ch/nvcip](http://tech.ebu.ch/nvcip)  
[tech.ebu.ch/sla](http://tech.ebu.ch/sla)