

# Increasing service efficiency

InterComms talks to Christophe Massiot, Founder, OpenHeadend, about their 20 years of project experience



**Christophe Massiot, Founder, OpenHeadend**

*Christophe Massiot is part of the original developers of the open source project VLC media player during his studies in the École Centrale Paris, used by more than 100 million users and expert in software engineering and television. His goal is to bring broadcasting solutions to a revolutionary level.*

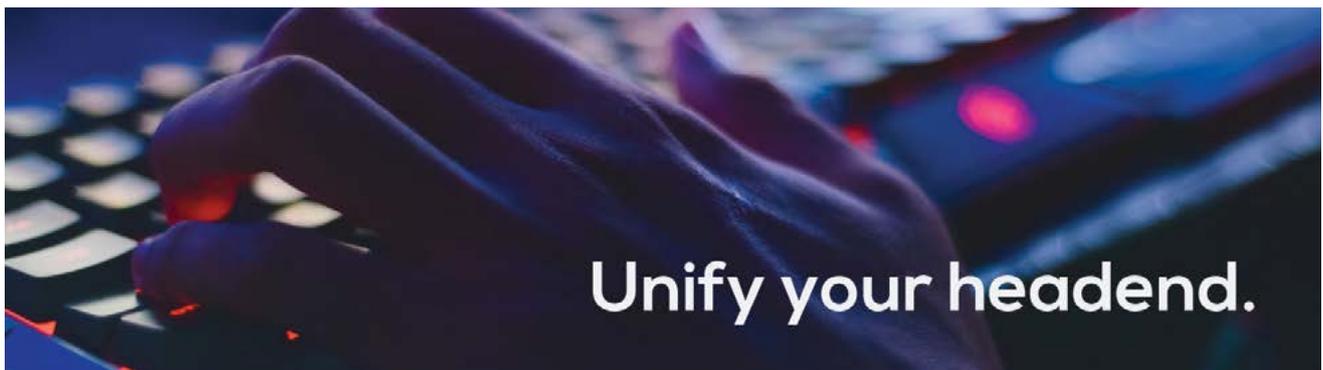
*His contribution to VLC made him one of the most renowned and recognised experts of video software, and part of the list of 100 remarkable developers presented to the French government in 2014. After working with Canal+ and creating the television head-end of a major French*

*telco entirely with open-source software, he has developed Upipe – flexible dataflow framework – an Open Source project which is the cornerstone on which OpenHeadend is leaning on, and which aims at bringing professional features to the OSS world.*

**Q: With the crossover between content providers and communication service providers blurring where do you feel the main problems exist in both provision of service and quality of service?**

**A:** For traditional broadcast and IPTV, the line of demarcation between content providers and communication service providers used to be the SDI cable. More and more, content providers internalise the encoding systems, and provide communication service providers with DTH or mezzanine signals over IP. There can even be intermediates between them. As the origin of packet losses can be hard to determine, the responsibilities of each actor can be difficult to decide. There is a need for systematic IP monitoring on boundaries between actors, that can arbitrate the responsibilities, and would include a recorder able to make extracts when an error is detected for post-mortem analysis.

However with OTT, content providers tend to undertake the encoding and distribution themselves, which is a new trade for them. Additionally, OTT encoders pose new challenges to monitoring solutions: for instance instead of



**Unify your headend.**



presenting a black frame, they may be stuck on a 30s loop. Also only one bitrate may be affected by an issue, rendering the problem invisible to most users and testers.

**Q: How are OpenHeadend providing varied solutions, how are they helping with the problems above?**

**A:** Our lightweight solutions run on any PC (even on small ARM-based boards!) or virtual machines and can be deployed easily on every edge of a network, to check for typical IP issues such as packet losses, and dispatch them to a Network Monitoring Software. We can also record extracts for later analysis.

We have also implemented a unique fingerprinting solution allowing for advanced monitoring. For instance we can compare each bitrate of an OTT stream with a reference stream (for instance SDI or mezzanine input), assess the latency between signals, or warn if the contents are not identical. We can also warn if the picture is frozen or black, or compare a clean feed with a dirty feed to check for the presence of an overlay.

**Q: Have you any new technology or services our readers should know about?**

**A:** We have put a lot of emphasis on the new technologies allowing for Internet contribution, such as SRT and RIST. We have decided to implement both of them to enable our

customers to convert streams from one protocol to the other, and use our product as a multi-purpose gateway, with lots of local processing options.

Internet contribution is not only aimed at TV channel distribution. It also enables content providers to monitor their signal from several points in the world by resending it over the Internet, with or without local transcoding.

**Q: How can service providers leverage the correct services to provide content on the go across their networks and is there any evolving technology that they should be looking at?**

**A:** Low latency HLS and DASH will allow service providers to reduce the gap between OTT streams and IPTV/cable, especially for sports content. AV1 is also a technology to look at, as it will allow service providers to reduce their bandwidth costs while improving visual quality.

IPTV providers will gradually switch to using OTT protocols, as traditional multicast is hard to maintain and has drawbacks. Least popular contents will be switched first, and the rest of the bouquet in the long run, along with the installation of more local CDN edges. Such CDN edges will be fitted with local transmuxing and/or transcoding capabilities, to minimise the number of formats to provide at the head-end.

**For more information please visit: [openheadend.tv](http://openheadend.tv)**

