STAYING ALERT

Jenny Priestley talks to technology specialists Broadpeak about their M² EAS alert system

How do you alert a viewer to an emergency when they're not watching a linear channel? Other than sending an alert to another screen, there's no way to do it. But French technology company Broadpeak has devised a solution that can break into both linear and VoD content, no matter what screen the viewer is watching.

The M² EAS solution enables pay-TV operators to interrupt any programme distributed in HLS or MPEG-DASH formats. The content is replaced by a live feed showing the alert message. At the end of the alert, the streaming session is played back from the point of interruption.

It relies on the manipulation of the manifests that are used to announce to a player what chunk of video it should request. In case of an alert, the manifest sent by the origin server is modified by Broadpeak's Manifest and URL Controller (MUC) module in order to reference the EAS replacement content instead of the VoD or live chunks. In the case of VoD, a library in the application allows the position of the playout to be tracked.

"Our idea was to create a solution that works in the adaptive bitrate format," explains Nivedita Nouvel, VP marketing at Broadpeak. "An emergency alert system is something that is quite codified, it's based on the different countries, and based on the traditional streaming format that is used in broadcast for MPEG-2 transport system. For this you have a standard solution that exists to interrupt a programme to broadcast an Emergency Alert System. For everything that relates to the new formats, an adaptive bitrate like HLS or MPEG-DASH, there's not something that is fully standardised."

Currently, US broadcasters are subject to regulation regarding these kinds of alerts. "There were some discussions in the US about whether Netflix or YouTube should display these messages in the same way cable companies and IPTV companies have to and those discussions are ongoing," continues Nouvel. "At Broadpeak, we decided to work in advance on a solution that would allow the interruption of content that is streamed in an ABR format to display another video related to the alert message."

"We think that it can be of interest to operators even if there is not such a legal requirement to have this type of solution that allows them to very rapidly interrupt any programme, live or VoD, that their subscribers may be watching and display an important alert message."

Nouvel admits creating a solution that works across both linear and VoD hasn't been easy, but Broadpeak has managed to overcome the technical challenges. "When we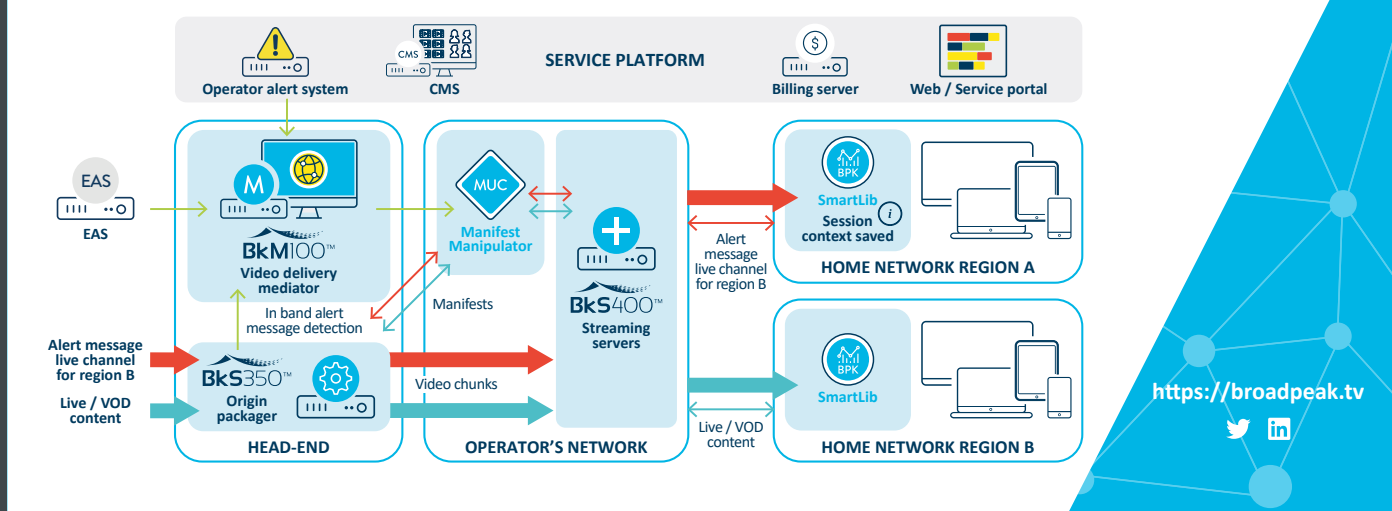 talk about ABR content, you have the manifest that is going to tell the player what chunk of video it should display next," she explains. "When you are using live content you cannot know in advance everything that is going to be available. So the manifest that you use is called an open manifest. The player needs to request this manifest again and again to know what it needs to play. If we want at some point to interrupt the programme to switch to something else in a way that is seamless for the viewer, in linear we can imagine how to use this mechanism to replace one piece of content for another.

"VoD is more difficult because the content is fully available. When you send the manifest, usually you send it only once and it describes all the chunks of the video. So the technical idea that we had for the solution was to have this manifest that is updated in order to know if there is a switch that needs to be triggered at some point and to be able to switch to this new channel, even when the viewer is watching VoD content," continues Nouvel.

broadpeak

M² EAS: Multiscreen and Multiservice EAS

SERVICE PLATFORM

Operator alert system | CMS | Billing server | Web / Service portal

EAS

M

BkM100™
Video delivery mediator

MUC
Manifest Manipulator

BkS400™
Streaming servers

SmartLib
Session context saved
HOME NETWORK REGION A

Alert message live channel for region B

In band alert message detection

Manifests

Alert message live channel for region B

Live / VOD content

BkS350™
Origin packager

Video chunks

SmartLib
HOME NETWORK REGION B

HEAD-END

OPERATOR'S NETWORK

Live / VOD content

https://broadpeak.tv

"With our solution, it's not just an overlay, it stops the video and switches to other content where the viewer is given advice on what to do."

NIVEDITA NOUVEL

"Our idea is a solution that is more generic to operators who usually control the streaming of their content themselves. The idea is that if the viewer is watching live or VoD through IPTV, cable TV or a DVR system, and on any screen, they can benefit from this feature."

Any operator using an alerts system could leave themselves open to a malicious attack, both from inside the building and out. Nouvel says Broadpeak has taken this into account and implemented a number of security steps within the solution. "First of all, everything is controlled through HTTPS, so you have something that is secure in terms of how you're going to access the solution. There are also some other types of protection, like DDoS protection, so that you can fight against attacks that try to overload the system.

"In terms of implementation, you need to have firewalls that are going to protect you against an attack. It can be quite straightforward when we talk about an operator because all their streaming system is already deployed on the managed network. We are not talking about public Cloud, or the open internet, we're working in the managed network of the operator. So the type of protections that an operator needs to have

for this solution are exactly the same that they need to have in any case for protecting their streaming service. We're talking about the head end, and we're talking about the backbone network, the managed network of the operator."

There are already alert systems on the market that display text over video, used particularly in the US for missing children. Nouvel explains that Broadpeak's solution could be used for other serious events: "With our solution, it's not just an overlay, it stops the video and switches to other content where the viewer is given advice on what to do - so for example if there's a hurricane, or a terrorist attack."

"When all of these alert systems were originally designed everybody was watching live TV. Now there are so many different ways of watching content. It's a matter of saving lives to be able to send this information to as many viewers as possible."

"The content of the alerts has to be very controlled so that it doesn't panic viewers," she concludes. "But if it can save lives, if there is a hurricane for example, it's incredibly important that all viewers are aware of this as fast as possible." ∎