

# Survey of European Broadcasters on MPEG-DASH

DASH Industry Forum- May 2013

## Introduction

At the EBU’s BroadThinking 2013 event (<http://tech.ebu.ch/broadthinking2013>) in March 2013, the DASH Industry Forum (DASH-IF) conducted a survey of European broadcasters on MPEG-DASH (DASH). Thirteen major broadcasters responded to the survey. This report summarizes the results and examines if the DASH IF’s activities and focus is aligned with the needs expressed in the survey.

## Survey Results

Figure 1 demonstrates the DASH deployment plans by the broadcasters. These results show that DASH will be adopted by nearly all European broadcasters taking the survey. Much of this adoption is expected to take place under the HbbTV 1.5 standard. It is worth noticing that over 75% of the deployments are projected to occur between the second half of 2013 and the first half of 2014.

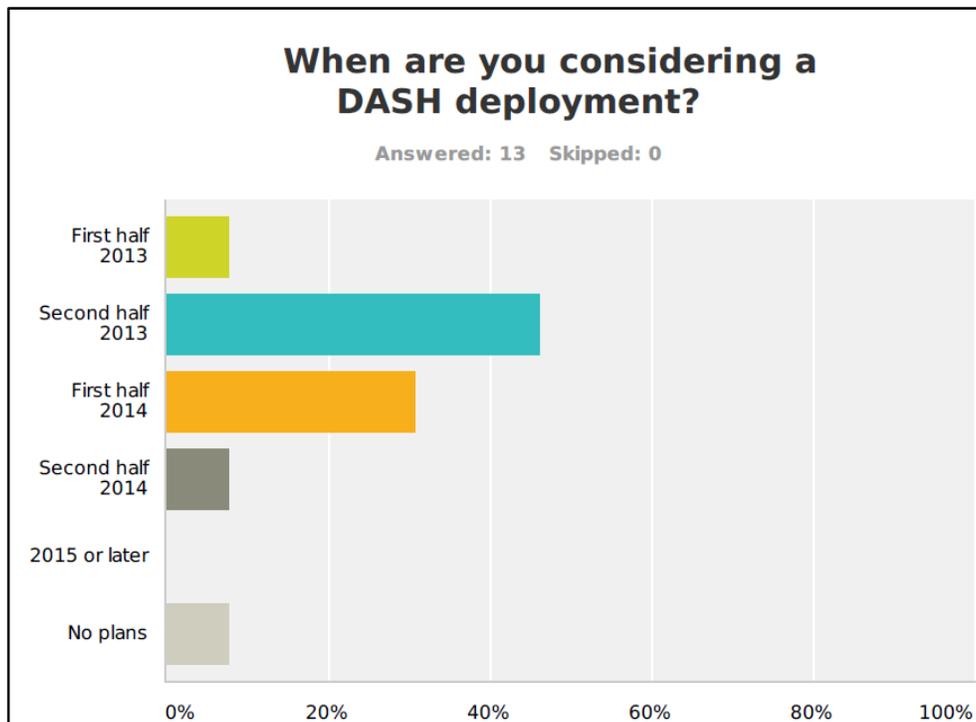


Figure 1 DASH Deployment Plans

According to Figure 2, European broadcasters believe that client availability is the biggest concern by far for deployment of DASH. Figure 3 shows that the availability of DASH clients for all major platforms (including support in browsers) is desired by the broadcasters. Availability of content packaging tools is the second biggest concern. Since several DASH-IF members are currently developing DASH-IF clients for various platforms, we believe that the first concern will be addressed in a timely manner. DASH-IF is also

implementing a DASH open source reference client in JavaScript to be used out-of-the box with browsers and/or to assist the DASH client implementers to implement clients for other platforms. DASH-IF encoder members are also offering DASH encoding and packaging tools that address the European broadcasters' second concern.

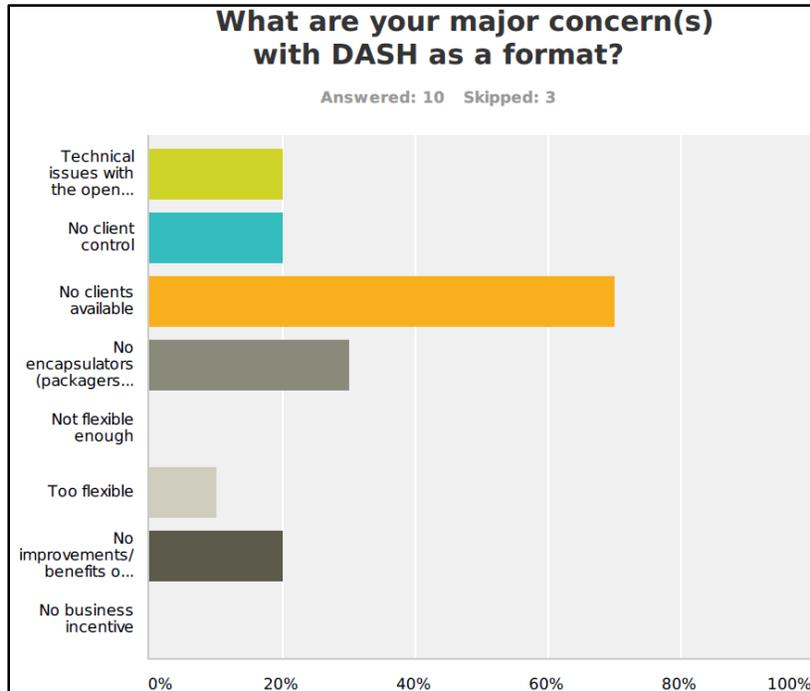


Figure 2 DASH deployment hurdles

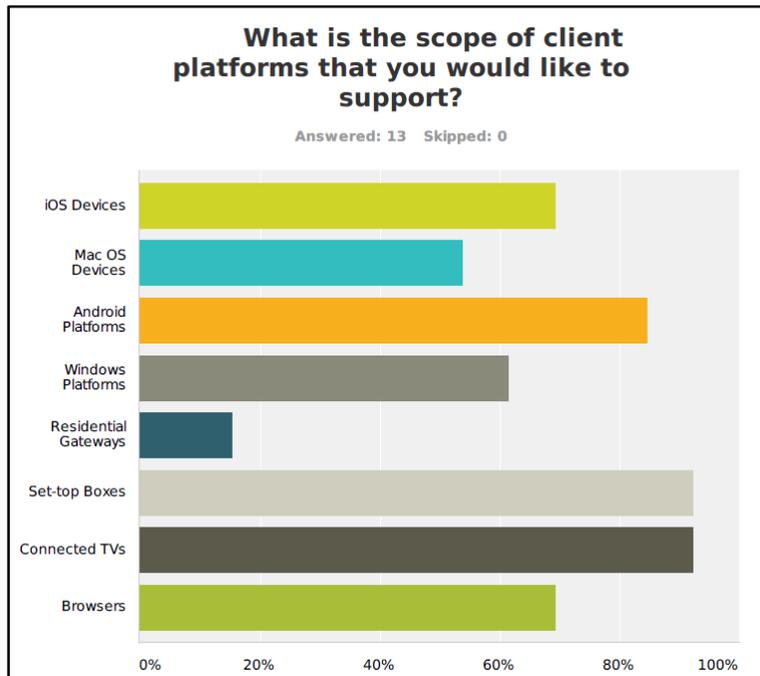


Figure 3 Desired platform support

Figure 4 shows that both live and on-demand services will be offered by almost all European broadcasters, while time-shifted content delivery will be deployed by half of them. The DASH-AVC/264 Implementation Guidelines (DASH-AVC/264) support the combination of DASH profiles that are most suitable for deploying live, on-demand and time-shifted services and therefore seem well matched to the broadcaster's requirements. Figure 5 shows the broadcasters desired end-to-end delay for the live services. Note that a significant majority of the broadcasters desire an end-to-end delay of 10 seconds or less. DASH and more specifically DASH-AVC/264 are designed to be able to achieve these end-to-end delay goals.

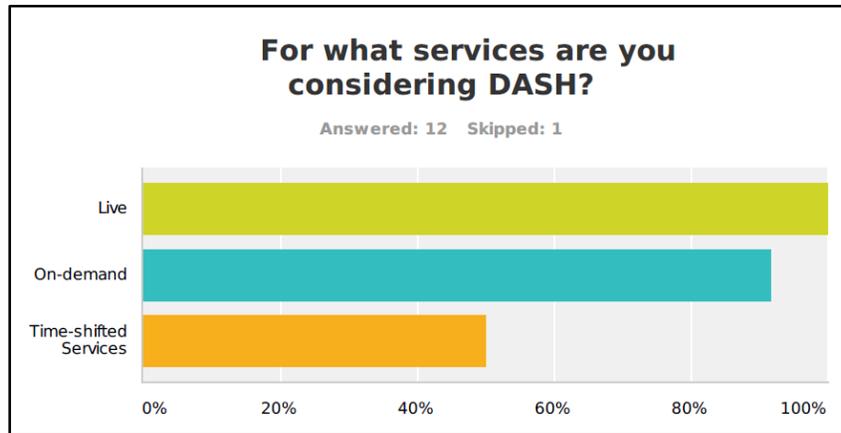


Figure 4 Target services

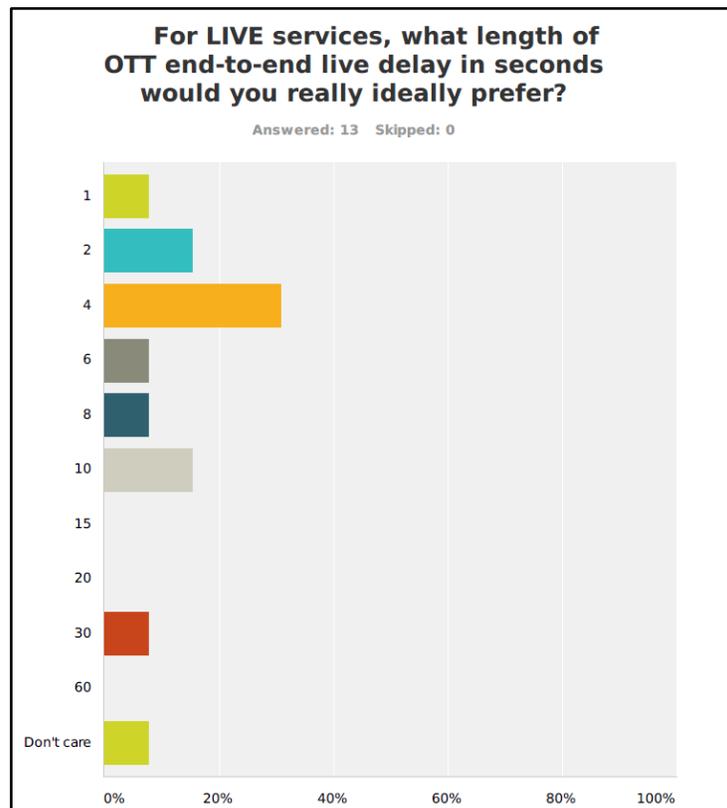


Figure 5 Desired live services latency

Figure 6 demonstrates the popularity of content protection schemes among various broadcasters. Note that while some content will be delivered without content protection, a variety of different DRM schemes are desired by the broadcasters. DASH-AVC/264, which recommends the use of DASH and Common Encryption together, allows delivery of both non-protected content and common encrypted content that can be used with multiple concurrent DRM schemes. Also note that according to Figure 7, both entire segment encryption as well as the HTTPS protocol will be used for service level protection. Delivery of content without any service level protection will be used in 60% of the deployments.

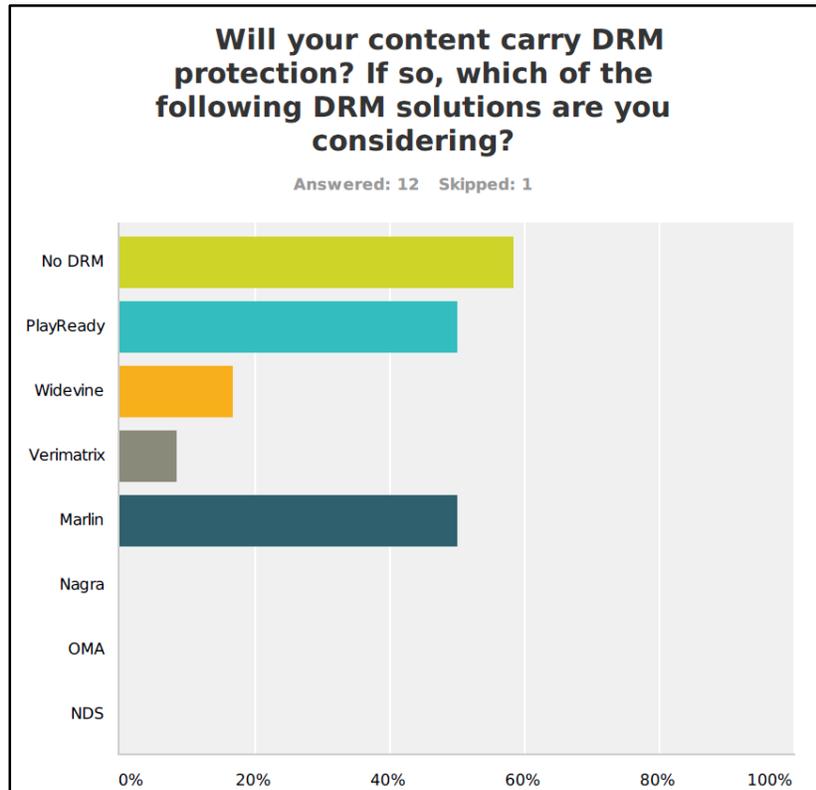


Figure 6 Content protection needs

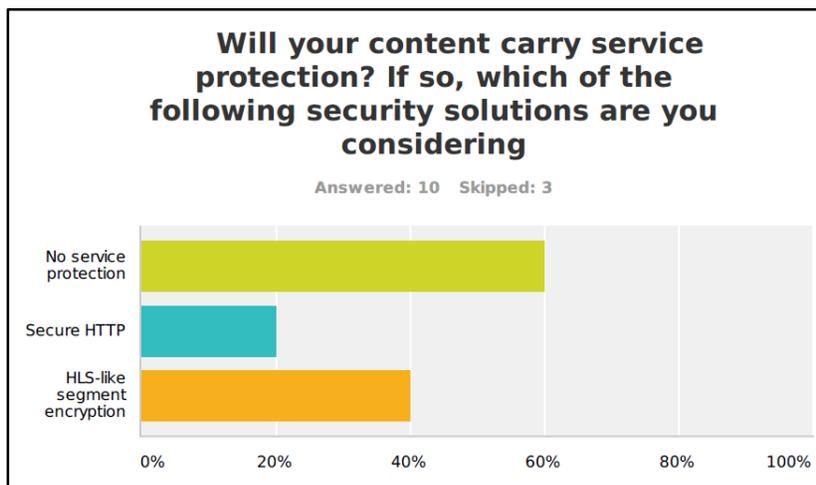


Figure 7 Content service protection

Figure 8 shows that broadcasters intend to deploy services that use both single and multiple audio and video tracks. As anticipated, single track video with single/multi-track audio will be the most popular service in Europe. Figure 9 indicates that stereo and 5.1 multichannel audio are projected to be the dominant audio channel configurations in the services offered by these broadcasters.

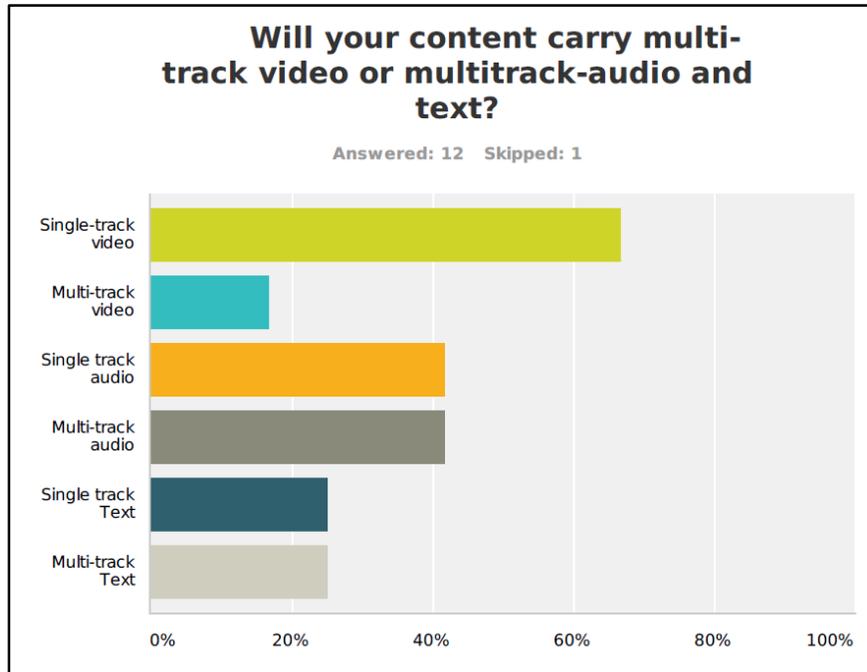


Figure 8 Single or multiple track media

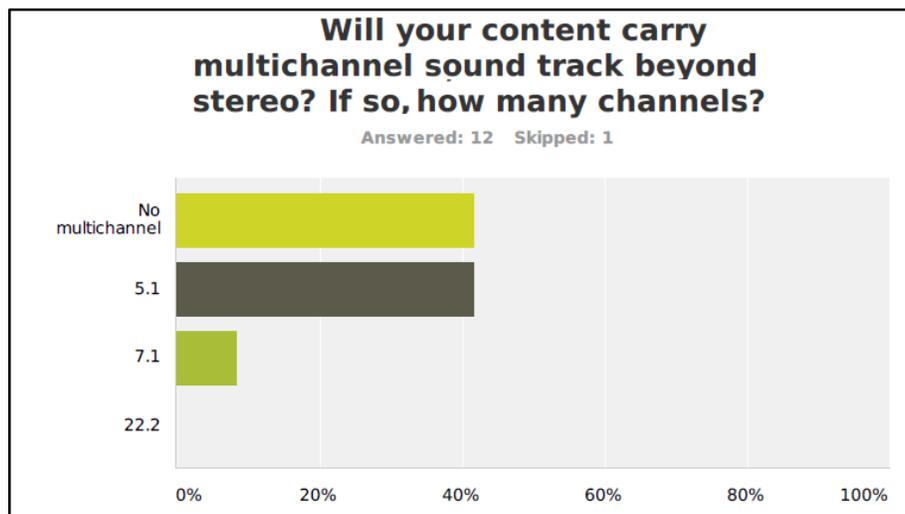


Figure 9 Multi-Channel Audio

According to Figure 10, various models of advertising are of interest to the broadcasters. They plan to deploy services with no advertisements, with server side linear non-targeted advertisements, with server side targeted advertisements and with client-side targeted advertisements. Note that DASH enables the above use cases both for live and on-demand applications.

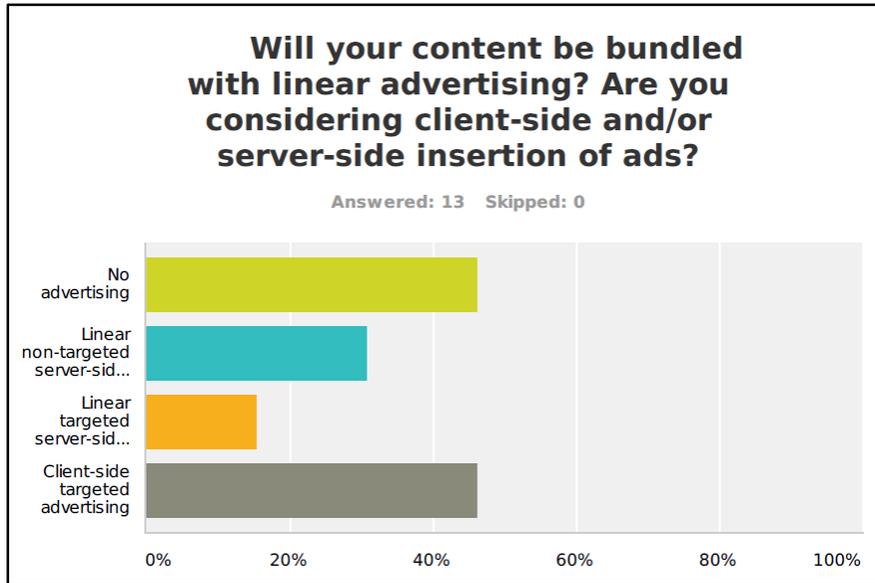


Figure 10 Desired ad-insertion scenarios

Internet streaming quality aspects of delivery are important to the broadcasters for over the top services as indicated in Figure 11. The most important factor is the content visual quality and the user’s quality of experience. Other important factors include the overall performance and consistency of clients, support for content protection and ad-insertion. DASH is designed to support all of these aspects, which the survey shows is important for a successful OTT service.

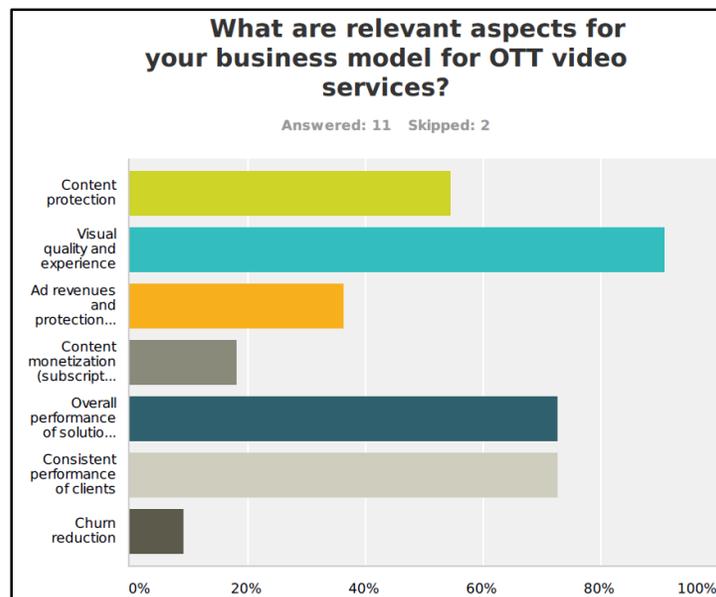


Figure 11 Relevant business aspects of DASH

Figure 12 indicates the intentions of broadcasters to augment and replace their existing services with DASH. The survey does not indicate whether the augmentation is to provide a smooth transition to DASH or whether the existing proprietary formats will also be offered in the long-term.

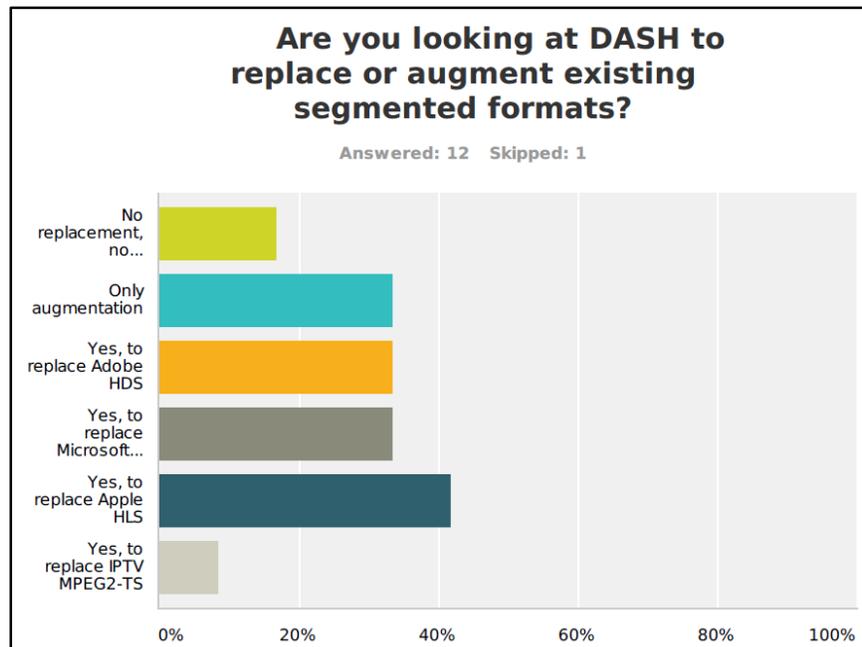


Figure 12 DASH as the replacement of existing solution?

Figure 13 shows that, in terms of new video formats and services, broadcasters are mainly interested in deploying the HEVC video codec and in delivering content to companion screens with their OTT services. DASH-IF is currently working on interoperability points, test cases and test vectors for combining HEVC with DASH, and based on this will develop DASH-HEVC similar in spirit to the already published DASH-AVC/264.

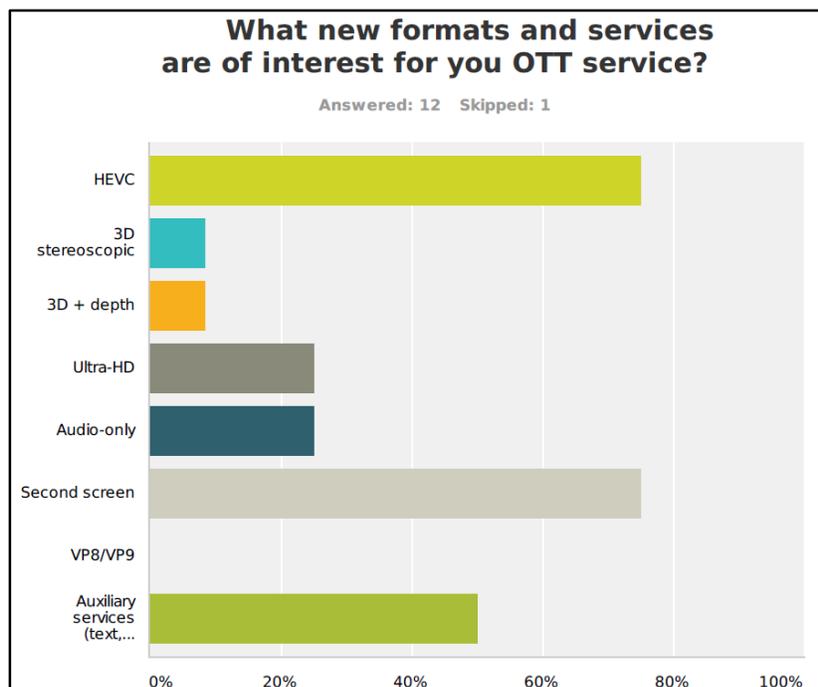


Figure 13 New formats and services

Figure 14 indicates that functional verification of the clients is the most important certification aspect to the broadcasters, i.e., over 60% of broadcasters would expect functional certification. Figure 14 also shows that although some broadcasters would accept uncertified clients, others would expect at least minimum performance certification from clients.

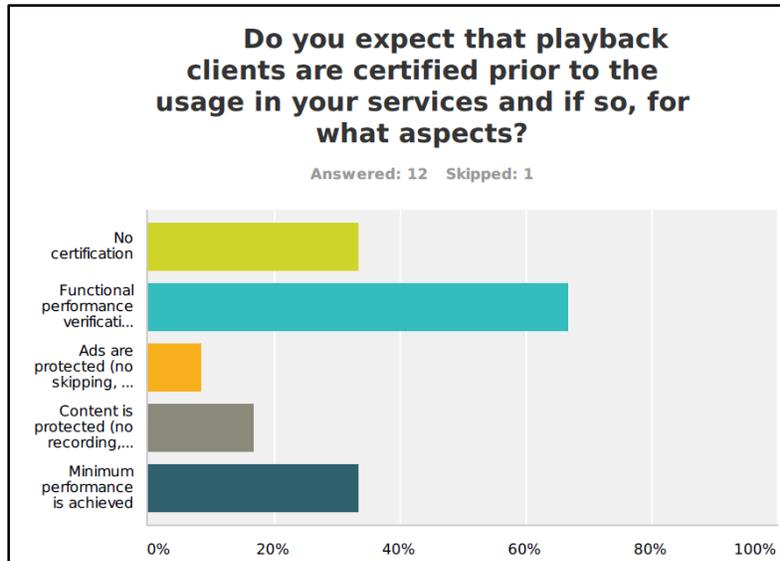


Figure 14 Client certification

Figure 15 evaluates the benefits of DASH to broadcasters. Stability and openness of the DASH international standard, anticipated broad client support, broad availability of encoding tools and reduced content publishing costs are the most important benefits to the broadcasters. Ability of supporting different ad-insertion paradigms as was multiple-DRM support are other benefits. This survey shows that broadcasters would benefit from all the main features of DASH compared to proprietary solutions.

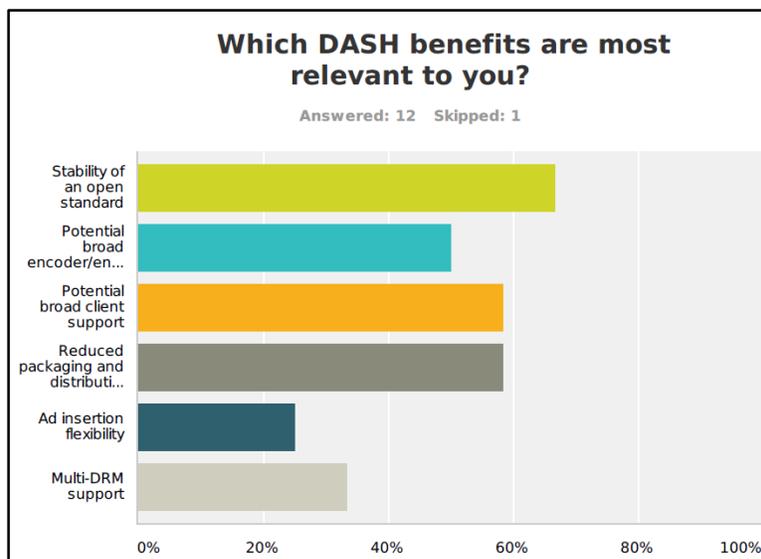


Figure 15 Benefits of DASH to broadcasters

Finally, Figure 16 shows that the broadcasters need white papers, specifications, test vectors, conformance and reference software as well as licensing information to design and deploy DASH services. DASH-IF is focusing on these issues. For example, DASH-AVC/264 provides a first basic set of detailed implementation guidelines. DASH-IF is also providing the test cases, test procedures and test vectors upon which DASH-AVC/264 is based. Additional white papers on application scenarios such as ad-insertion will be provided by DASH-IF in the future. DASH-IF is also in the process of developing additional implementation guidelines, for example for support of enhanced audio and for support of HEVC.

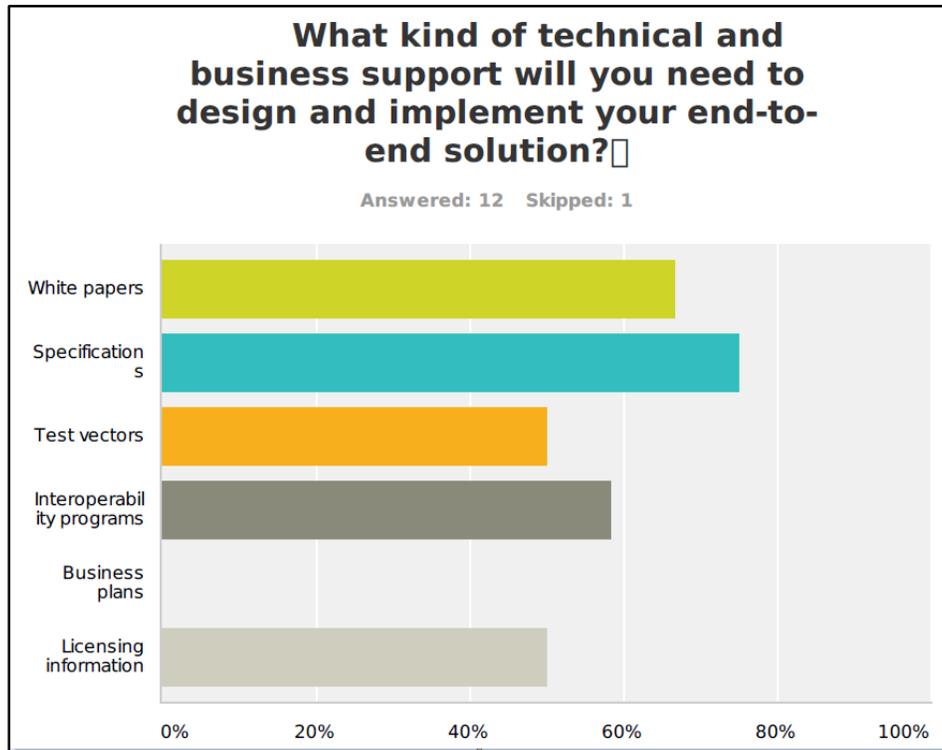


Figure 16 Needed support for DASH deployment

## Conclusion

In summary, the survey indicates that most European broadcasters who answered the survey plan to deploy DASH between the second half of 2013 and the first half of 2014. Their biggest challenge is the availability of DASH clients, expected to be largely available in the second half of 2013. The survey indicates that live, on-demand and time-shifted services will be widely supported. Furthermore, the efforts of the DASH-IF to provide DASH-AVC/264, as well as the associated test cases, test vectors, conformance software and reference client software will assist the European Broadcasters in deploying such services.