# 10 things you need to know about...


# VP8 and H.264 Codec performance

## 1 Broadcasters are increasingly using streaming video for content distribution. The video encoding format to use is a fundamental decision that a broadcaster has to make

*Broadcasters need to ensure that consumers can successfully decode the streamed content – with as many of the various Web browsers as possible. To facilitate this HTML5 language, in development, includes a new <video> tag that will help make the process of decoding simpler.*

## 2 Fundamental requirements for video encoders

*Public Service Broadcasters have a substantial interest in utilizing 'open' technologies. Open in this context mean that the technology is freely available and standardized and that the IPRs (Intellectual Property Rights) are clarified and preferably licence cost free for content providers. In addition, among other technical requirements video encoders should provide a high image quality, be bandwidth efficient and should minimize encoding time/delay.*

## 3 Two candidate encoders to choose from

*Amongst many different codecs available today, two prominent candidates seem likely to have the biggest market impact and may be a subject of decision for broadcasters. One is the WebM/VP8 codec and the other is the H.264/MPEG-4 AVC codec.*

## 4 What does WebM/VP8 mean?

*VP8 the video compression codec of the WebM open video format that is available freely. It is sponsored by Google. The format is not 'standardized' in the normal sense of the word by an official international standards body.*

## 5 What does H.264 and x264 mean?

*Today, most videos on the web are delivered using ITU-T H.264 (or MPEG-4 AVC) standard. There is a free software library (x264) for encoding video into the H.264 format.*

720p – 1536 kbps – VP8

720p – 1536 kbps – x264

## 6 Particular technical requirements for Internet streaming applications

*Internet streaming is quickly evolving towards HDTV resolution, 3D and beyond HDTV. The refresh rate of the computer and mobile device's flat panel display is often 60Hz, and devices always use progressive scanning. This may require standards conversion to this frame rate with 50Hz originated material.*

## 7 A good practice: Standards conversion before encoding

*In order to avoid motion artefacts caused the (relatively simple) conversion of 50Hz content to the 60Hz viewing device by its video card, the broadcaster may want to use a professional-grade standards converter before encoding the video files.*

## 8 What is the EBU demonstrating at IBC 2011?

*The EBU is providing images comparing VP8 and x264 codecs in current and future production formats – 720p and 1080p – and using different net bit rates. The visitor will be able to judge for himself or herself the visual quality provided by those two codecs.*

## 9 What work has been done by other organizations?

*A number of organizations such as STM Microelectronics, TNO and the IRT (an EBU Member) have published the results of evaluations of these codecs.*

## 10 What work is still needed

*It would be valuable to investigate more fully the resulting image quality at various bit-rates and to perform objective and subjective picture quality evaluations including using different genres of content.*



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