MPEG-4 Industry Forum

AVC

The MPEG-4 standard now includes an advanced video codec jointly developed between the Video Coding Experts Group (VCEG) of the International Telecommunications Union (ITU) and the MPEG committee of ISO/IEC. With its complex pedigree, the new codec acquired a number of transient names; MPEG refers to the codec as “Advanced Video Coding” or AVC.

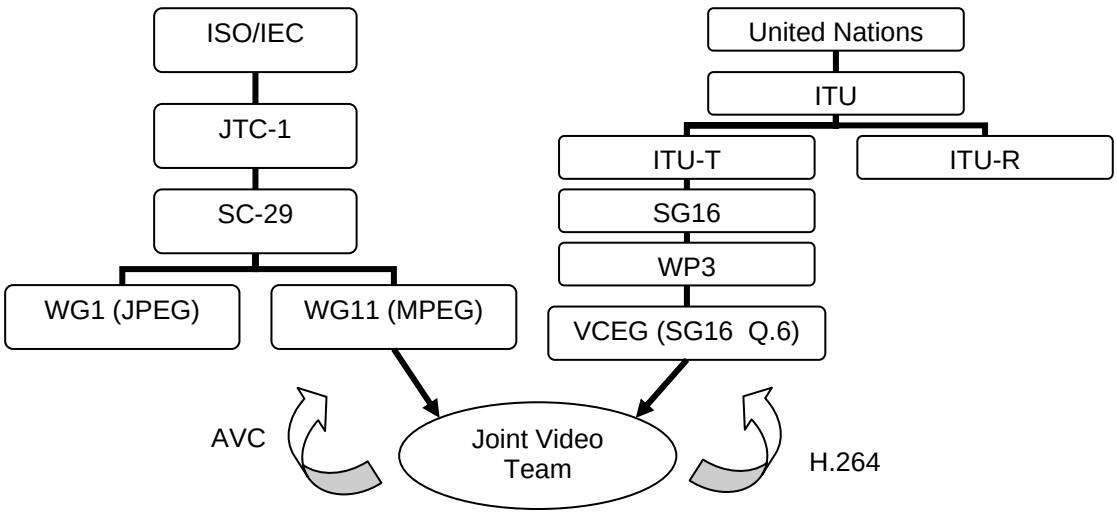
A NEW CODEC ON THE BLOCKS

1) Without Filter

2) with H264/AVC Deblocking filter

AVC can give broadcasters 40-50% compression efficiency gains over today’s optimized MPEG-2 bit rates, and is an integrated part of the future proof MPEG-4 system. This allows users to:

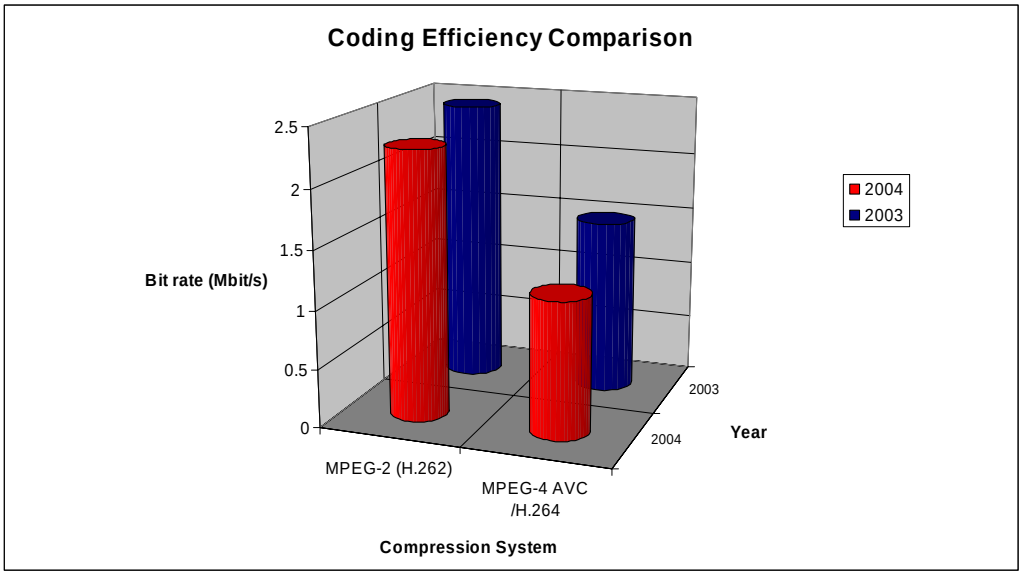
- Increase the quality AND quantity of video services.
- Make more use of their bandwidth to get more revenue-spinning services on the air.
- Benefit from a smooth, evolutionary upgrade path - AVC meshes effortlessly into existing MPEG-4 and MPEG-2 architectures
- Prepare for an exciting future, making use of object based interactivity, synthetic content, multiplatform deployment of services, and ALL other features of MPEG-4.



The origins of AVC, H.264 and MPEG-4 Part 10

ENCODING EFFICIENCY WITH OPEN STANDARDS

It is not enough to look at the coding efficiency of the various MPEG video compression systems at any given instant in time, since this ignores the fact that competition around an open standard results in year by year improvements in coding efficiency. The chart below shows the expected gain in efficiency of AVC over MPEG-2 for 2003 and 2004.



Finally, MPEG-4 is twice as good as MPEG-2, and counting...

COMPLEXITY VERSUS EFFICIENCY

Greater complexity means more processing power is needed for encode/decode, hence a higher silicon cost. However, recent advances in semiconductors have enabled Standard Definition MPEG-4 AVC decoders to be available now, with High Definition to follow soon.

MPEG-4 AVC / H.264 Profiles	Target applications	Rough decoder complexity increase over MPEG-2	Preliminary estimates of efficiency improvements over MPEG-2
Baseline Profile	low delay applications, video phone, mobile ...	2.5 X more complex	1.5 x better
Extended Profile	mobile, streaming, ...	3.5 X more complex	1.75 x better
Main Profile	interlaced video applications, broadcast, packaged media, ...	4.0 X more complex	2.0 x better

WILL BE WIDELY ADOPTED

Some of the key digital media organizations currently evaluating AVC for adoption include:

- **Advanced Television Systems Committee** (www.atsc.org)
- **Digital Video Broadcasting Project** (www.dvb.org)
- **DVD Forum** (www.dvdforum.org)
- **Internet streaming Media Alliance** (www.isma.tv)
- **3rd Generation Partnership Project** (www.3gpp.org)
- **International Multimedia Telecommunications Consortium** (www.imtc.org)