From: Wang Limin-MGI1525 <limin.wang@motorola.com>
Sent: Wednesday, September 25, 2002 7:09 PM
To: 'Wu, Ping'; Gary Sullivan; Jvt-Experts
Subject: [jvt-experts] Re: Interlace feature to progressive sequences.

Dear Ping:

I am not sure if AFF is a good idea for progressive frame/seq.
Let us assume AFF is allowed for progressive frame/seq. Frame coding will be very likely (if not always) selected anyway.

Re: MPEG2. MPGE2 does have some restrictions for progressive_frame.
One of them is frame_pred_frame_dct = 1.

Best regards,

Limin

-----Original Message-----
From: Wu, Ping [mailto:pwu@tandbergtv.com]
Sent: Wednesday, September 25, 2002 7:07 AM
To: 'Wang Limin-MGI1525'; Gary Sullivan; Jvt-Experts
Subject: RE: [jvt-experts] Re: Interlace feature to progressive sequences.

Dear Limin, Gary and all,

Regarding Limin's email sent to Jvt-Expert reflector a few days ago I have a question which is not related to ABT but AVC interlace features. If we read the Limin's email it says that "For progressive seq, frame coding is always selected". I think that it indicates there is no frame/field adaptive at picture level and MB level for any progressive sequences.

I scan through FCD and found in 6.1 under a "NOTE" that "A progressive frame should always be coded as a single frame picture, However, a progressive frame is still considered to consist of two fields (at the same instant in time)". I looked else where and can not find any text to say whether frame/field adaptive coding is allowed or not allowed to progressive sequences. I propose to add one more sentence in "NOTE" (in 6.1) to clarify this. It should say "frame/field adaptive coding is not allowed to progressive sequences".

I agree that frame/field adaptive at picture level and MB level is a wonderful feature for interlaced-scan materials, however, it should also improve the coding efficiency for some progressive materials.
In MPEG-2 you can have a frame picture but coded in field features, i.e., field motion and field DCT. I think it would be nice in AVC to allow using frame/field adaptive in progressive sequences. As in FCD "6.1", progressive sequences already have field concept.

I felt that I possibly missed the discussion on this issue in previous meetings. I will accept the conclusion no matter whether it is a "political" one (i.e., people in progressive sequence world don't like frame/field adaptive feature) or technically it has already proved there is no point to introduce frame/field adaptive feature into progressive sequences. Can someone feed me more information on this please?

Best regards,
Ping Wu.

Nokia Exhibit 2247
Amazon.com, Inc., et al. v. Nokia Technologies OY
IPR2024-00572, U.S. Patent No. 7,724,818
Page 1 of 2

Tandberg Television Ltd.

-----Original Message-----
From: Wang Limin-MGI1525 [mailto:limin.wang@motorola.com]
Sent: Wednesday, September 18, 2002 6:03 PM
To: 'Mathias Wien'; Paul Bright-Thomas; Gary Sullivan; Jvt-Experts
Subject: [jvt-experts] Re: ABT questions

Dear Paul:

> o Why is the 4x4 scan different for field and frame modes in ABT, when
> it is unchanged for field mode in non-ABT? This seems to be the only
> difference for 4x4 prediction/transform.

For progressive seq., frame coding is always selected.
For interlace seq., either frame or field coding is used, depending upon the contents of seq. In general, if a seq contains a lot of fast motions, it is likely that field coding is selected.
On the other hand, if there is not much motions, frame coding may be selected.

Once in field coding (for interlace seq only), the block energy tends to be distributed more along the vertical dimension. That is why the non-zigzag

scanners are used for field coding, which scans the vertical coefficients earlier.
Our experimental results showed that the non-zigzag scanners gave much better performance than the zigzag scanners for interlace materials.

Frame coding is used for progressive seq., and may be used for interlace seq.
with slow motions as well. The block energy in frame mode (if selected correctly for interlace seq) tends to, more or less, decrease monotonically along the zigzag path. Hence, the zigzag scanner is used for frame coding.

Re. 4x4 scanner for non-ABT
There is a AHG that is working on the issue of 4x4 scanner for non-ABT right now.

Best regards,

Limin Wang
Motorola

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