

From: Yoichi Yagasaki <yagasaki@av.crl.sony.co.jp>
Sent: Tuesday, October 1, 2002 12:41 AM
To: sony-jvt@av.crl.sony.co.jp; List, Peter
Cc: jvt-experts@mail.imtc.org
Subject: [jvt-experts] Re: [sony-jvt] RE: Maximum bits per macroblock

Hello all,

I would like to support Dzung Hoang-san's comment and the concept of Peter List-san's proposal.

I am thinking that we may need more strict limitation for MB bit production, since we need very fast CABAC decoding in Main Profile.

Best Regards,

Yoichi Yagasaki

>Hi,
>
>I also would like to voice my concerns over the requirement for an
>encoder to strictly enforce a MB bit production limit. Here are just
>two of the challenges that a hardware encoder designer must face.
>
>1) When will a hardware encoder know that the limit has been exceeded?
>2) What can be done to recover? This will be difficult for a pipelined design.
>
>Both of these issues would be exacerbated with CABAC.
>
>I agree with Peter that if a limit were to be imposed, a
>encoder-complexity-reduction mechanism should also be included.
>
>Regards,
>- Dzung Hoang
>
>
>
>
>"List, Peter" <Peter.List@t-systems.com>
>
>09/23/2002 01:30 AM
>Please respond to "List, Peter"
>
> To: jvt-experts@mail.imtc.org
> cc:
> Subject: [jvt-experts] RE: Maximum bits per macroblock
>
>

>First of all,
>I TOTALLY agry with Minua.
>
>Minua:
>> Without this limit, one would need to check the decoder bitstream
>> buffer fullness whenever VLD accesses the buffer.
>> The overhead spent on checking the buffer fullness is not small.
>> Moreover, the bitstream buffer re-fill could happen at anytime
>> during the VLD of a macroblock, which is not good for pipeline.
>
>The overhead is indeed not small, not even in a PC-implementation.
>
>
>Louis:
>> I recall this effort. My understanding is that there is support for
>> imposing such a limit; however the proposal added a PCM coding mode
>> to avoid this data expansion rather than simply stating that an
>> encoder must limit its output. I believe there was resistance to
>> introducing another encoding mode.
>
>Introducing the new mode itself is NOTHING with the UVLC system we have
>in the JVT-codec. Changes in the Encodes are very similar no matter at
>what number the limit is.
>Also, I am convinced, from the encoder point of view a limit of ~384 it
>is the MOST SIMPLE method to deal with. If ANY (higher) bound is in
>place, you would need the possibility of recoding anyway.
>But how to recode: increase QP by 2, by 4???
>With a new mode "recoding" would simply be "dumping the macro block
>content into the bitstresam" when the limit is exceeded.
>Also, the encoder could be sure, that no data expansion could ever
>happen.
>
>So, I propose to introduce such a limit, that contains all bits needed
>to store uncompressed content into the bitstreeam.
>
>Size = (16*16 + 2*8*8*(2*(4_2_2 == TRUE)))*bit_per_pixel + new_MB_mode
>
>Regards
> Peter
>
>
>---
>The use of the jvt-experts list is intended only for the video coding
>standardization work conducted by the Joint Video Team (JVT) of ISO/IEC
>JTC1/SC29/WG11 (MPEG) and ITU-T SG16 Q.6 (VCEG).
>
>You are currently subscribed to jvt-experts as:
>Dzung.Hoang@conexant.com To unsubscribe send a blank email to
>%%email.unsub%%
>
>
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