

From: TK Tan <tktan@spg.yrp.nttdocomo.co.jp>
Sent: Tuesday, October 1, 2002 6:36 AM
To: Luthra Ajay-MGI1164; tktan@spg.yrp.nttdocomo.co.jp; Krishna Ratakonda; Sandy \(\Alexander\) MacInnis
Cc: Kerofsky, Louis; 'Mathias Wien'; jvt-experts@mail.imtc.org
Subject: [jvt-experts] RE: [jvt_vlc_adhoc] CAVLC for ABT

Dear Ajay,

> -----Original Message-----

> From: Luthra Ajay-MGI1164 [mailto:aluthra@motorola.com]

> If there

> is an issue on implementing CABAC on the encoder side then we should

> raise and address it directly as opposed to having two (or

> 3) tools / alternatives to do the same thing.

Well, I don't know how it got to this situation but it is surely confusing for me.

First you read. Section 9.1 (CAVLC) then you read 9.2 (CABAC). So you start to wonder when do I chose from one of these. Then you read Section 12. (Which should be absorbed into somewhere, I remember Thomas saying so). And that has a section 12.5 by itself.

The software has nice "#if defined" in them but does your syntax support such switching? Or is it done at the profile level? I hope there is someone out there who knows.

Back to these 3 tools that does the same thing.....

I believe the concensus is that 12.5 will go.

The people supporting Main profile is happy with 9.2 (CABAC) and ABT.

CAVLC as it stands does not support other block sizes but with the additional fixes it will be able to suport all block sizes. So if you have the chance why not fix it. Unless of cause the whole section 9.1 is to be removed. But you can't because then you force all profiles to use CABAC.

It's starting to look like we are defining 3 different standards!

Regards,
t.k.

> > Eventhought ABT is in the Main profile we should not look at it as a

> > main profile tool only.

>

> We should cross that bridge when we come to it. If and when we define

> any other profile that has ABT and not CABAC we can then define CAVLC

> (or some other new and improved VLC) at that time.
>
> Ajay
>
> > -----Original Message-----
> > From: TK Tan [mailto:tktan@spg.yrp.nttdocomo.co.jp]
> > Sent: Monday, September 30, 2002 5:59 PM
> > To: Krishna Ratakonda; Sandy \ (Alexander\) MacInnis
> > Cc: Kerofsky, Louis; 'Luthra Ajay-MGI1164'; 'Mathias Wien';
> > jvt_vlc_adhoc@yahoogroups.com; jvt-experts@mail.imtc.org
> > Subject: RE: [jvt-experts] RE: [jvt_vlc_adhoc] CAVLC for ABT
> >
> >
> > Dear All,
> >
> > So far I have seen a lot of evidence that CAVLC works well.
> > I have seen only one point that shows CABAC is to the left of the
> > other points (and that is with a buggy encoder for CAVLC).
> >
> > Eventhought ABT is in the Main profile we should not look at it as a
> > main profile tool only.
> >
> > I think we should first look at these tools for their technical
> > merit and then bring in issues about profiles (much later).
> >
> > I agree that we should reduce the number of lossless coding from 3
> > down to 2 or maybe 1.
> >
> > I suspect having 3 tools is out at this point in time so we need to
> > do something anyway.
> >
> > If it is 2, then we should try to make them really interwork if
> > possible. (Someone please give me a good justification why we should
> > have 2. Is it a complexity issue?)
> >
> > If it is 1, we need to also see evidence and comparisons to see
> > which is the better one and keep that.
> > Full RD curves like the ones Karl presented would be nice.
> >
> > My understanding is that until the small modification by Karl, the
> > CAVLC cannot handle blocks of 8x8, 8x4 and 4x8. Now it can and does
> > it very well. So CAVLC is a candidate for the replacement.
> >
> > Can someone firmiliar with CABAC say how or what is needed to make
> > it work with ABT?
> >
> > Regards,
> > t.k.
> >
> >
> > > -----Original Message-----
> > > From: Krishna Ratakonda [mailto:ratakond@us.ibm.com]

>>> Sent: Tuesday, October 01, 2002 3:13 AM
>>> To: Sandy (Alexander) MacInnis
>>> Cc: Kerofsky, Louis; 'Luthra Ajay-MGI1164'; 'Mathias Wien';
>>> jvt_vlc_adhoc@yahoogroups.com; jvt-experts@mail.imtc.org
>>> Subject: [jvt-experts] RE: [jvt_vlc_adhoc] CAVLC for ABT
>>>
>>>
>>>
>>>
>>> Ajay, Sandy and others,
>>>
>>> I would like to add my support to Ajay & Sandy ... I dont
>> see any point in
>>> having CAVLC/UVLC/ABT-VLC
>>> in the main profile. As Sandy points out Main profile is already
>>> incompatible with the baseline profile.
>>> Most people seem to agree that CABAC is better at coding
>> efficiency than
>>> CAVLC. If some one has
>>> valid concerns that necessitate inclusion of these VLC
>> tools in the main
>>> profile, please voice them now.
>>>
>>> Best,
>>>
>>> Krishna
>>>
>>> #Krishna Ratakonda, Research Scientist, Multimedia Dept.
>>> #IBM Research, Route 134 & Taconic Pkwy, Yorktown Heights, NY
>>> 10598
>>> #E-mail: ratakond@us.ibm.com Ph: 914-945-2178 (internal:
>> 862-2178) Fax:
>>> 914-945-1602
>>>
>>>
>>>
>>> "Sandy (Alexander) MacInnis" <macinnis@broadcom.com> on
>>> 09/30/2002 02:06:51
>>> PM
>>>
>>> Please respond to "Sandy (Alexander) MacInnis"
>> <macinnis@broadcom.com>
>>>
>>> To: "Kerofsky, Louis" <lkerofsky@sharplabs.com>, "Luthra
>>> Ajay-MGI1164"
>>> <aluthra@motorola.com>, "Mathias Wien"
>>> <wien@ient.rwth-aachen.de>,
>>> jvt_vlc_adhoc@yahoogroups.com
>>> cc: jvt-experts@mail.imtc.org
>>> Subject: [jvt-experts] RE: [jvt_vlc_adhoc] CAVLC for ABT
>>>
>>>

>>>
>>> Louie, Ajay, and everyone,
>>>
>>> Remember that main profile is already incompatible with
>> baseline. Baseline
>>> has tools that are not allowed in main, as was resolved in
>> July. So there
>>> is no compatibility advantage achieved by including CALVC in main.
>>>
>>> If a main profile decoder wants compatibility with
>> baseline, the answer is
>>> simple: Implement baseline too.
>>>
>>> --Sandy
>>>
>>> At 10:42 AM 9/30/2002, Kerofsky, Louis wrote:
>>>> Ajay,
>>>>
>>>> I understand your argument with the comment that we
>> actually have three
>>>> lossless coding tools, (CABAC, CAVLC, and ABT-VLC). You
>> make a case for
>>>> having only one lossless coding tool. I am suggesting as a step
>>> we reduce
>>>> to two (CABAC and CAVLC). I assume the main reason for
>> having CAVLC in
>>> main
>>>> is an effort to maintain compatibility with baseline.
>> Perhaps an answer
>>> is
>>>> to marry ABT to CABAC requiring use of CABAC when using ABT.
>>>>
>>>> Thoughts?
>>>>
>>>> Louie
>>>>
>>>> -----Original Message-----
>>>> From: Luthra Ajay-MGI1164 [mailto:aluthra@motorola.com]
>>>> Sent: Monday, September 30, 2002 10:30 AM
>>>> To: 'Kerofsky, Louis'; 'Mathias Wien';
>> jvt_vlc_adhoc@yahooogroups.com
>>>> Cc: jvt-experts@mail.imtc.org
>>>> Subject: RE: [jvt_vlc_adhoc] CAVLC for ABT
>>>>
>>>> Louie,
>>>> Thanks for your email and work. If I understand it
>> right CABAC is more
>>>> than 10% better than CAVLC for ABT. In that case, I do not
>> understand why
>>>> to
>>>> have it for ABT. I have heard the design consistency
>> argument but am not

>>> sure I agree with it. I do not see any benefit of trying to
 >>> unify this one
 >>> particular thing in ABT when many other things are
 >> different. Let us not
 >>> make decoder any more complex than they have to be,
 >> specially if all that
 >>> is
 >>> achieved is some (vague) theoretical design consistency.
 >>>>
 >>>> Pushing this argument further, why to have CAVLC in
 >> Main profile at
 >>> all.
 >>> CABAC provides better gain and Main Profile decoders have
 >> to implement it
 >>> anyway. Why to put two tools (CAVLC and CABAC) to do the same
 >>> thing (lossless coding) in the same profile.
 >>>>
 >>>> Regards,
 >>>> Ajay
 >>>>
 >>>> PS. As part of this discussion also happened on the JVT
 >> reflector, I have
 >>> sent the reply also to the general reflector.
 >>> [...]
 >>>
 >>>
 >>>
 >>> ---
 >>> 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).
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 >>> coding standardization work conducted by the Joint Video Team
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> > coding standardization work conducted by the Joint Video Team (JVT)
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