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Sent: Wednesday, November 27, 2002 5:21 PM
To: jvt-experts@mail.imtc.org
Subject: [jvt-experts] Minor problem in the parameter set logic

Folks:

While implementing (finally!) the parameter sets into the software, I identified a small problem with the parameter set logic. It has to do with the `pic_order_present_flag` in the Picture Parameter set RBSP. This field is present in the syntax if the `pic_order_cnt_type` (in the sequence parameter set) is smaller than two, see section 7.3.2.2 of the latest draft.

While there is an implicit hierarchy between the sequence and the picture parameter sets, this dependency is not good. Suppose you are transmitting the parameter sets out of band, over a protocol that does not preserve the sequence of transmission. Suppose your Picture Parameter set arrives before the Sequence Parameter Set. Suppose the `pic_order_cnt_type` is changing with the update of the Sequence Parameter Set. Then you may erroneously decode the picture parameter set, because you assume the presence of a `pic_order_present_flag` when there is none.

The solution is simple: don't have syntactical dependencies between the two parameter sets.

Fortunately, the mentioned problem is the only one of this kind in the draft. I propose to make the `pic_order_present_flag` unconditional -- it adds only one bit in case of the picture parameter set transmission, and solves a whole class of rather tricky error resilience problems.

I'm going to implement the software accordingly.

And I would like to ask to try not avoid similar dependencies in the future.

Regards,
Stephan

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