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Title: On Intra Period of Random Access Test Case for HD and below Content

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Purpose: Proposal

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Abstract

In today's streaming applications, intra period is reportedly much larger than 1 second used in our CTC, especially when the adaptive intra picture inserting by rate control is excluded. It is proposed to use larger intra period of 2 seconds for content with resolution at or below HD, in random access test cases of CfP and future CTC to better align with practical applications while keeping a reasonable testing runtime.

Introduction

Streaming's share of total TV viewing (in US) reached a record high in April, according to Nielsen's monthly report of The Gauge™ [1][2].

For most streaming services, the intra period is much larger than 1 second when the auto intra picture insertion by rate control is not considered. However, in VTM and ECM CTC, 1-second intra period is still kept for random access test case, which is far from today's practical streaming applications.

To study the impact of intra period (IP) in RA, CfE sequences defined in [3] were tested with VTM/ECM CTC QPs (22, 27, 32, 37), where VTM-23.9 with 1-second intra period (VTM-23.9-ip1s) was used as the anchor. Note that the intra period in the following tests is not exact 1/2/3/5 seconds, but an approximation to the target, rounding to a multiple of 32.

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MEETING NOTES

[JVET-AM0187](#) On Intra Period of Random Access Test Case for HD and below Content [X. Li (Google), L. Zhang (ByteDance), X. Wang (Kwai), S. Liu (Tencent), A. Duenas (Warner Bros. Discovery), A. Norkin (Netflix), W. Zhang (Disney), Y. Ye (Alibaba), A. Segall (Amazon)]

In today's streaming applications, intra period is reportedly much larger than 1 second used in our CTC, especially when the adaptive intra picture inserting by rate control is excluded. It is proposed to use larger intra period of 2 seconds for content with resolution at or below HD, in random access test cases of CfP and future CTC to better align with practical applications while keeping a reasonable testing runtime.

It was commented that it is probably good to define test conditions as close as possible to potential applications. However, it is questionable whether it would make a relevant difference in terms of testing coding tools. It might further encourage submission of more complex intra tools.

It was also commented that it would be undesirable to use different intra period for different resolutions.

It was further commented that IDR would rather be used than CRA in practice for intra refresh.

It was commented that some applications also would use shorter periods, and 1 s may be a good compromise to select tools that accommodate a variety of applications.

As the work in JVET is mainly about the assessing the benefit of tools, it would be interesting to see if it makes a difference in comparing VTM vs. ECM when 2 s is used instead of 1s.

Proponents are asked to make such a comparison over all classes such that it can be better understood if variation of the intra period has impact on the assessment of coding tools.

There were diverging opinions – no conclusion was reached at this moment.

A larger variety of conditions better suitable for real-world applications could also be tested in a verification tests, or by additional interim testing of tools during standard development with non-CTC conditions, or also testing with different set of sequences.

CITATION

X. Li, L. Zhang, X. Wang, S. Liu, A. Duenas, A. Norkin, W. Zhang, Y. Ye, A. Segall, "On Intra Period of Random Access Test Case for HD and below Content", JVET-AM0187, 39th Meeting: Daejeon, KR, June 2025.