

Title: **AHG3:** Intra period for random access set in configuration files

Status: Input document to JVET

Purpose: Proposal

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Abstract

The document proposes an update to the CTC and the cfg directory on the ECM git repository, which properly sets the IntraPeriod parameter for RA in the configuration files.

1 Introduction

Currently, the cfg directory on the ECM git repository contains the per-sequence configuration files, which include most of the per-sequence parameters, but not all of them. It can be misleading and the missing IntraPeriod parameter can be omitted leading to a wrong experiment setup.

Below, the section 6 of the CTC is pasted. The per-sequence parameters set in the per-sequence configuration files are highlighted in green, the one which is not is highlighted in red.

Fragments of the section 6 of the CTC:

The following sections define encoder configuration files to be used for each test case. Parameters to be changed for each test point are:

- **InputFile** to reflect the location of the source video sequence on the test system
- **FrameRate** to reflect the frame rate of a given sequence as per **Error! Reference source not found.**
- **SourceWidth** to reflect the width of the source video sequence
- **SourceHeight** to reflect the height of the source video sequence
- **FramesToBeEncoded** to reflect the frame count of a given sequence as per **Error! Reference source not found.**
- **IntraPeriod** to reflect the intra refresh period in the random access test cases. The intra refresh period is dependent on the frame rate of the source and rounded to multiples of the GOP size in use as shown in Table 1.
- QP to reflect the quantization parameter values defined in section **Error! Reference source not found..**
- **InputBitDepth** to reflect the bit depth of a given sequence as per **Error! Reference source not found.**

Table 1. Intra period for random access test case

Frame rate (fps)	IntraPeriod
20	32
24	32
30	32
50	64
60	64
100	96

The following configuration files are provided in the `cfg/` folder of the ECM software package (available at <https://vcgit.hhi.fraunhofer.de/ecm/ECM>).

[...]

Sequence-specific parameters are to be found in the `cfg/per-sequence/` and `cfg/per-sequence-HDR` folders for SDR and HDR content, respectively.

2 Proposed update

2.1 *cfg directory modifications*

Name	Ext	Size	Date	Attr
[...]	<DIR>		2025/03/19 11:35	----
[444]	<DIR>		2024/02/15 12:37	----
[base]	<DIR>		2024/02/15 12:37	----
[CacheCfg]	<DIR>		2024/02/15 12:37	----
[field]	<DIR>		2024/02/15 12:37	----
[groupoff]	<DIR>		2025/03/18 12:35	----
[lossless]	<DIR>		2024/02/15 12:37	----
[multi-layer]	<DIR>		2024/02/15 12:37	----
[partitioning]	<DIR>		2024/02/15 12:37	----
[per-class]	<DIR>		2024/12/11 11:37	----
[per-sequence]	<DIR>		2024/02/19 12:38	----
[per-sequence-gaming]	<DIR>		2024/09/25 11:00	----
[per-sequence-HDR]	<DIR>		2024/02/15 12:37	----
[per-sequence-non-420]	<DIR>		2024/02/15 12:37	----
[rpr]	<DIR>		2024/02/15 12:37	----
[scaling_list]	<DIR>		2024/02/15 12:37	----
[sei_vui]	<DIR>		2024/02/15 12:37	----
[tool-on]	<DIR>		2024/02/15 12:37	----
encoder_randomaccess_ecm	cfg	12,356	2025/03/18 12:35	-a--
encoder_intra_ecm	cfg	6,131	2024/12/11 11:37	-a--
encoder_lowdelay_ecm	cfg	10,707	2024/12/11 11:37	-a--
encoder_lowdelay_P_ecm	cfg	10,441	2024/07/12 07:50	-a--
encoder_randomaccess_gop16_ecm	cfg	13,517	2024/07/12 07:50	-a--

Name	Ext	Size	Date	Attr
[...]	<DIR>		2025/03/19 11:35	----
[444]	<DIR>		2025/03/19 11:35	----
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[field]	<DIR>		2025/03/19 11:35	----
[groupoff]	<DIR>		2025/03/19 11:35	----
[lossless]	<DIR>		2025/03/19 11:35	----
[multi-layer]	<DIR>		2025/03/19 11:35	----
[partitioning]	<DIR>		2025/03/19 11:35	----
[per-class]	<DIR>		2025/03/19 11:35	----
[per-sequence]	<DIR>		2025/03/19 11:35	----
[per-sequence-gaming]	<DIR>		2025/03/19 11:35	----
[per-sequence-HDR]	<DIR>		2025/03/19 11:35	----
[per-sequence-HDR-randomaccess]	<DIR>		2025/03/19 11:35	----
[per-sequence-non-420]	<DIR>		2025/03/19 11:35	----
[per-sequence-randomaccess]	<DIR>		2025/03/19 11:36	----
[rpr]	<DIR>		2025/03/19 11:35	----
[scaling_list]	<DIR>		2025/03/19 11:35	----
[sei_vui]	<DIR>		2025/03/19 11:35	----
[tool-on]	<DIR>		2025/03/19 11:35	----
encoder_intra_ecm	cfg	6,131	2024/12/11 11:37	-a--
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encoder_randomaccess_ecm	cfg	12,356	2025/03/18 12:35	-a--
encoder_randomaccess_gop16_ecm	cfg	13,517	2024/07/12 07:50	-a--

Fig. 1. cfg directory before update (left) and after update (right).

Cactus.cfg			
1	#===== File I/O =====		
2	InputFile	:	Cactus_1920x1080_5
3	InputBitDepth	:	8 # Input bit
4	InputChromaFormat	:	420 # Ratio of
5	FrameRate	:	50 # Frame Ra
6	FrameSkip	:	0 # Number of
7	SourceWidth	:	1920 # Input fr
8	SourceHeight	:	1080 # Input fr
9	FramesToBeEncoded	:	500 # Number of
10	IntraPeriod	:	64 # Period of
11	Level	:	4.1
12			

Cactus.cfg			
1	#===== File I/O =====		
2	InputFile	:	Cactus_1920x1080_50.yuv
3	InputBitDepth	:	8 # Input bit
4	InputChromaFormat	:	420 # Ratio of
5	FrameRate	:	50 # Frame Ra
6	FrameSkip	:	0 # Number of
7	SourceWidth	:	1920 # Input fr
8	SourceHeight	:	1080 # Input fr
9	FramesToBeEncoded	:	500 # Number of
10	IntraPeriod	:	64 # Period of
11	Level	:	4.1
12			
13			

Fig. 2. A single-sequence cfg file in the per-sequence directory (left) and the per-sequence-randomaccess directory (right).

2.2 CTC document modification

Before update:

Sequence-specific parameters are to be found in the cfg/per-sequence/ and cfg/per-sequence-HDR folders for SDR and HDR content, respectively.

After update:

Sequence-specific parameters **for RA configuration** are to be found in the cfg/per-sequence-randomaccess and cfg/per-sequence-HDR-randomaccess folders for SDR and HDR content, respectively. Sequence-specific parameters **for other configurations** are to be found in the cfg/per-sequence and cfg/per-sequence-HDR folders for SDR and HDR content, respectively.

3 Recommendations

It is recommended to update the CTC and the cfg directory on the ECM git repository.

4 Patent rights declaration(s)

Poznan University of Technology does not have any current or pending patent rights relating to the technology described in this contribution.