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29/WG 11**

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18th Meeting: Teleconference, April 2020

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Purpose: Proposal

**Author(s) or
Contact(s):** [Jonatan Samuelsson](#) | jsamuelsson@fb.com | submitter (Sharp)
[Sachin Deshpande](#) | sdeshpande@sharp.com (Sharp)
[F. Bossen](#) | frank.bossen@me.com (Sharp)
[Andrew Segall](#) | asegall@amazon.com (Sharp)
[Tomonori Hashimoto](#) | tomonori.hashimoto@sharp.co.jp (Sharp)
[E. Sasaki](#) | eiichi.sasaki@sharp.co.jp (Sharp)
[Tomoko Aono](#) | aono.tomoko@sharp.co.jp (Sharp)
[Tomohiro Ikai](#) | ikai.tomohiro@mail.sharp (Sharp)
[Alican Nalci](#) | analci@qti.qualcomm.com (Qualcomm)
[Hilmi Egilmez](#) | hegilmez@qti.qualcomm.com (Qualcomm)
[Marta Karczewicz](#) | martak@qti.qualcomm.com (Qualcomm)
[S. T. Hsiang](#) (MediaTek)
[C. W. Hsu](#) (MediaTek)
[Z. Y. Lin](#) (MediaTek)
[T. D. Chuang](#) (MediaTek)
[Olena Chubach](#) | olena.chubach@mediatek.com (MediaTek)
[C. Y. Chen](#) (MediaTek)
[Y. W. Huang](#) (MediaTek)
[S. M. Lei](#) (MediaTek)
[Mohammed Golam Sarwer](#) | msarwer@google.com (Alibaba)

Source: Sharp, Qualcomm, MediaTek, Alibaba

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Abstract

This contribution presents a proposal for high level signalling of Transform Skip Residual Coding (TSRC), Dependent Quantization (DQ) and Sign Data Hiding (SDH). It is asserted that the proposed changes minimize the impact on the existing design and avoids increasing the number of syntax elements signalled in Slice Header for common cases, in comparison to other proposals being discussed at the 18th JVET meeting (such as the combination of JVET-R0049 and JVET-R0271). The key aspect of the proposal is to derive variables to determine if DQ and SDH is used in a slice while keeping the flags for enabling/disabling DQ and SDH in the picture header. Version 2 of the document fixes a typo in the conclusions. Version 3 of the document fixes an incorrect sentence in the introduction section and adds additional authors to the document. Version 4 of the document updates the patents rights declaration. Version 5 of the document adds additional authors.

Introduction

As pointed out in several contributions to the 18th JVET meeting and in discussions at the meeting it is desirable to ensure that when TSRC is disabled in a slice (slice_ts_residual_coding_disabled_flag=1) then DQ and SDH are disabled in that slice.

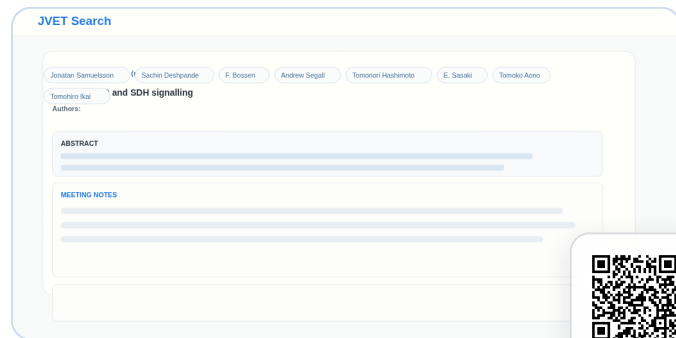
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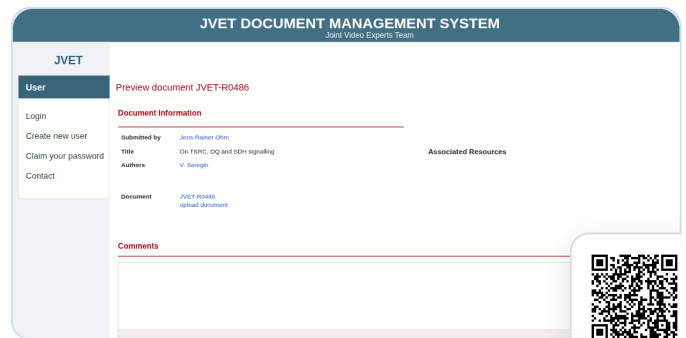
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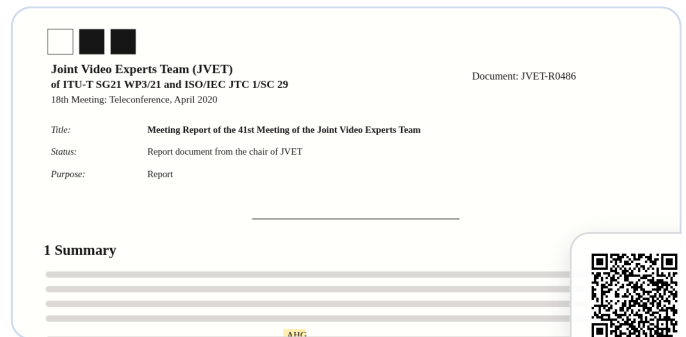
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MEETING NOTES

external meeting notes

https://www.itu.int/wftp3/av-arch/jvet-site/2020_04_R_Alpbach/JVET-R_Notes_dH.docx



MEETING NOTES

[JVET-R0486](#) On TSRC, DQ and SDH signalling [J. Samuelsson, S. Deshpande, F. Bossen, A. Segall, T. Hashimoto, E. Sasaki, T. Aono, T. Ikai (Sharp), A. Nalci, H.E. Egilmez, M. Karczewicz (Qualcomm), S. T. Hsiang, C. W. Hsu, Z. Y. Lin, T. D. Chuang, O. Chubach, C. Y. Chen, Y. W. Huang, S. M. Lei (MediaTek), M. G. Sarwer (Alibaba)] [late]

This contribution presents a proposal for high level signalling of Transform Skip Residual Coding (TSRC), Dependent Quantization (DQ) and Sign Data Hiding (SDH). It is asserted that the proposed changes minimize the impact on the existing design and avoids increasing the number of syntax elements signalled in Slice Header for common cases, in comparison to other proposals being discussed at the 18th JVET meeting (such as the combination of JVET-R0049 and JVET-R0271). The key aspect of the proposal is to derive variables to determine if DQ and SDH is used in a slice while keeping the flags for enabling/disabling DQ and SDH in the picture header. Version 2 of the document fixes a typo in the conclusions. Version 3 of the document fixes an incorrect sentence in the introduction section and adds additional authors to the document. Version 4 of the document updates the patents rights declaration. Version 5 of the document adds additional authors. Version 6 shows change marks compared to -v5-clean and adds additional authors. The -v5 version is also included in the zip file showing all changes compared to the first version of the document.

Presented Friday 24 April at 0500 UTC (chaired by JRO).

It is proposed to keep the enabling flags for DQ/SDH in PH, and introduce variables which are either set to the value of the enabling flags, or turn those tools off in slices where TSRC is disabled.

Furthermore, it is proposed to use method 1 from JVET-R0049.

It is pointed out that this would require a slight re-design of low level (storing the variable rather than using the flags directly). This might however not be a big problem.

It is commented that the main advantage might be a slight saving of bits in SH.

Another expert comments that switching DQ/SDH on and off at slice level is not needed by other use cases rather than mixed lossy/lossless coding.

One expert points out that the approach may be more difficult to understand in the spec.

Some concern was raised whether the approach would still be consistent when the SPS flag was removed.

There was no good reason to override the decision made about JVET-R0483 which completely solves the problem.

No action was taken on this.

CITATION

J. Samuelsson, S. Deshpande, F. Bossen, A. Segall, T. Hashimoto, E. Sasaki, T. Aono, T. Ikai, A. Nalci, H.E. Egilmez, M. Karczewicz, S. T. Hsiang, C. W. Hsu, Z. Y. Lin, T. D. Chuang, O. Chubach, C. Y. Chen, Y. W. Huang, S. M. Lei, M. G. Sarwer, "On TSRC, DQ and SDH signalling", JVET-R0486, 18th Meeting: Teleconference, April 2020.

REFERENCES

1. [S.-T. Hsiang, C.-W. Hsu, Z.-Y. Lin, T.-D. Chuang, C.-Y. Chen, Y.-W. Huang, S.-M. Lei, "AHG9: HLS on disabling TSRC", JVET-R0049, 18th Meeting: Teleconference, April 2020.](#)
2. [A. Nalci, M. Coban, M. Karczewicz, "AHG9/AHG14: High-level constraints of dependent quantization and sign data hiding", JVET-R0271, 18th Meeting: Teleconference, April 2020.](#)
3. [M. G. Sarwer, Y. Ye, J. Luo, J. Chen, A. Nalci, M. Coban, H. E. Egilmez, M. Karczewicz, S. T. Hsiang, C. W. Hsu, Z. Y. Lin, T. D. Chuang, O. Chubach, C. Y. Chen, Y. W. Huang, S. M. Lei, T. C. Ma, X. Xiu, Y. W. Chen, H. J. Jhu, X. Wang, S. Yoo, J. Choi, J. Lim, S. Kim, Z. Deng, Y. K. Wang, L. Zhang, K. Zhang, K. Naser, F. L. Léannec, T. Poirier, M. Kerdranvat, T. Hashimoto, E. Sasaki, T. Aono, T. Ikai, J. Gan, "AHG9: Combination of JVET-R0049 and JVET-R0271", JVET-R0483, 18th Meeting: Teleconference, April 2020.](#)