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of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC
29/WG 11**

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Abstract

This document summarizes the activity of AHG15: Quantization control between the 17th meeting in Brussels, BE (7–17 Jan 2020) and the 18th Meeting (teleconference, 15-24 April 2020).

Introduction

At the 17th JVET meeting, the AHG on Quantization control was established with the following mandates:

Identify methods for quantization step size control for luma and chroma, including spatially and frequency-adaptive approaches;

Develop methods for evaluating quantization step size control operation;

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  	Joint Video Experts Team (JVET) of ITU-T SG21 WP3/21 and ISO/IEC JTC 1/SC 29 18th Meeting: Teleconference, April 2020 <i>Title:</i> Meeting Report of the 41st Meeting of the Joint Video Experts Team <i>Status:</i> Report document from the chair of JVET <i>Purpose:</i> Report	Document: JVET-R0015
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1 Summary



MEETING NOTES

[JVET-R0015](#) JVET AHG report: Quantization control (AHG15) [R. Chernyak, E. François, C. Helmrich, S. McCarthy, A. Segall]

This document summarizes the activity of AHG15: Quantization control between the 17th meeting in Brussels, BE (7–17 Jan 2020) and the 18th Meeting (teleconference, 15-24 April 2020).

The regular JVET e-mail reflector was used for discussions (jvet@lists.rwth-aachen.de) with [AHG15] in message headers. There were no emails besides AHG kickoff message sent to the JVET reflector during the AHG period.

Category 1 AHG pre-meeting of the 18th JVET meeting

The following AHG15 related contributions were identified as related to Quantization control signalling section of Category 1 AHG pre-meeting. Notes from the Category 1 pre-meeting are available in JVET-R0339.

1. [JVET-R0050](#), AHG9: HLS on dependent quantization and sign data hiding, S.-T. Hsiang, T.-D. Chuang, Y.-W. Huang, S.-M. Lei (MediaTek)
2. [JVET-R0068](#), AHG8/AHG9/AHG12: Miscellaneous HLS topics, Y.-K. Wang, L. Zhang, Z. Deng, J. Xu, K. Zhang, K. Fan (Bytedance)
3. [JVET-R0073](#), AHG9: Some cleanups on QP delta signalling, Z. Deng, L. Zhang, Y.-K. Wang, J. Xu, K. Zhang (Bytedance)
4. [JVET-R0076](#), AHG9/AHG15: Chroma QP mapping table cleanups, J. Xu, L. Zhang, Y.-K. Wang, K. Zhang, Z. Deng (Bytedance)
5. [JVET-R0272](#), AHG9: On chroma QP offsets in picture header, K. Misra, J. Samuelsson, S. Deshpande, F. Bossen, A. Segall (Sharp)
6. [JVET-R0302](#) AHG12: On signalling of chroma QP, L. Li, X. Li, B. Choi, S. Wenger, S. Liu (Tencent)

Category 2 AHG pre-meeting of the 18th JVET meeting

The following AHG15 related contributions were identified as related to Quantization control section of Category 2 AHG pre-meeting and they were discussed in session 2.5 Tue 14 April 0520-0630. Notes from the Category 2 pre-meeting are available in JVET-R0340.

1. [JVET-R0055](#), AHG15: On referencing a non-existent scaling list, C.-Y. Lai, O. Chubach, C.-Y. Chen, T.-D. Chuang, Y.-W. Huang, S.-M. Lei (MediaTek)
2. [JVET-R0127](#), AHG15: On scaling list prediction, A. K. Ramasubramonian, B. Ray, G. Van der Auwera, M. Karczewicz (Qualcomm)
3. [JVET-R0166](#), AHG15: Issue on chroma scaling matrix for 4:4:4, K. Abe, T. Toma (Panasonic)
4. [JVET-R0326](#), AHG15: On Chroma Quantization Matrix Signalling, H. Zhang, X. Li, G. Li, L. Li, S. Liu (Tencent)

The following AHG15 related contribution was identified related to Transform skip section of Category 2 AHG pre-meeting and it was discussed in session 2.4 Thu 9 April 2320 - Fri 10 April 0115.

1. [JVET-R0045](#), AHG15: cleanup for signalling of minimum QP of transform skip, J. Li, K. Abe (Panasonic)

The following AHG15 related contribution was identified related to ACT section of Category 2 AHG pre-meeting.

1. [JVET-R0380](#), Scaling list for adaptive colour transform, S. Iwamura, S. Nemoto, A. Ichigaya (NHK), K. Naser, P. de Lagrange, F. Le Leannec, P. Bordes (InterDigital)

The AHG recommended to review all related contributions and continue investigating VVC Quantization control techniques.

Using adaptive rate control for QP signalling experiments was suggested in the discussion.

CITATION

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REFERENCES

1. [J. Li, K. Abe, "AHG15: cleanup for signalling of minimum QP of transform skip", JVET-R0045, 18th Meeting: Teleconference, April 2020.](#)
2. [S.-T. Hsiang, T.-D. Chuang, C.-W. Hsu, C.-Y. Chen, Y.-W. Huang, S.-M. Lei, "AHG9: HLS on dependent quantization and sign data hiding", JVET-R0050, 18th Meeting: Teleconference, April 2020.](#)
3. [C.-Y. Lai, O. Chubach, C.-Y. Chen, T.-D. Chuang, Y.-W. Huang, S.-M. Lei, "AHG15: On referencing a non-existent scaling list", JVET-R0055, 18th Meeting: Teleconference, April 2020.](#)
4. [Y.-K. Wang, L. Zhang, Z. Deng, J. Xu, K. Zhang, K. Fan, "AHG8/AHG9/AHG12: Miscellaneous HLS topics", JVET-R0068, 18th Meeting: Teleconference, April 2020.](#)
5. [Z. Deng, L. Zhang, Y.-K. Wang, J. Xu, K. Zhang, "AHG9: Some cleanups on QP delta signalling", JVET-R0073, 18th Meeting: Teleconference, April 2020.](#)
6. [J. Xu, L. Zhang, Y.-K. Wang, K. Zhang, Z. Deng, "AHG9/AHG15: Chroma QP mapping table cleanups", JVET-R0076, 18th Meeting: Teleconference, April 2020.](#)
7. [A. K. Ramasubramanian, B. Ray, G. Van der Auwera, M. Karczewicz, "AHG15: On scaling list prediction", JVET-R0127, 18th Meeting: Teleconference, April 2020.](#)
8. [K. Abe, T. Toma, "AHG15: Issue on chroma scaling matrix for 4:4:4", JVET-R0166, 18th Meeting: Teleconference, April 2020.](#)
9. [K. Misra, J. Samuelsson, S. Deshpande, F. Bossen, A. Segall, "AHG9: On chroma QP offsets in picture header", JVET-R0272, 18th Meeting: Teleconference, April 2020.](#)
10. [L. Li, X. Li, B. Choi, S. Wenger, S. Liu, "AHG12: On signalling of chroma QP", JVET-R0302, 18th Meeting: Teleconference, April 2020.](#)
11. [H. Zhang, X. Li, G. Li, L. Li, S. Liu, "AHG15: On Chroma Quantization Matrix Signalling", JVET-R0326, 18th Meeting: Teleconference, April 2020.](#)
12. [G. J. Sullivan, Y.-K. Wang, "Agenda and report of the Category 1 AHG pre-meeting for the 18th JVET meeting", JVET-R0339, 18th Meeting: Teleconference, April 2020.](#)
13. [J.-R. Ohm, B. Bross, A. Segall, Y. Ye, "Agenda and report of the category 2 AHG pre-meeting of the 18th JVET meeting", JVET-R0340, 18th Meeting: Teleconference, April 2020.](#)
14. [J. Chen, M. Karczewicz, B. Bross, Y.-K. Wang, H. Yang, E. Alshina, S. Wenger, L. Li, "Main 10 Still Picture and Main 4:4:4 10 Still Picture profiles for VVC version 1", JVET-R0370, 18th Meeting: Teleconference, April 2020.](#)
15. [S. Iwamura, S. Nemoto, A. Ichigaya, K. Naser, P. de Lagrange, F. Le Leannec, P. Bordes, "Scaling list for adaptive colour transform", JVET-R0380, 18th Meeting: Teleconference, April 2020.](#)