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Abstract

This document summarizes the activities of AHG18 on ultra-low latency and packet loss resilience between the 42nd and 43rd JVET meetings.

AHG mandates

Study JVET-AN2039 common test conditions and propose improvements as appropriate.

Investigate creation of practical simulation software, including network transmission aspects, including consideration of network functionality that can aid timely video-coding based error correction, and conduct performance evaluation.

Identify potential requirements and feasibility of standard based technologies to support ultra-low delay requirements, including packet loss resilient decoding.

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MEETING NOTES

[JVET-AQ0018](#) JVET AHG report: Ultra-low latency and packet loss resilience (AHG18) [S. Deshpande, S. Ikonin, V. Zakharchenko (co-chairs), S. Föföel, C. Kim, X. Ma, S. Puri, J. Ström, S. Wenger (vice-chairs)]

1. Software development

Adoptions of last JVET meeting, namely JVET-AP0200 Random Access GOP4 based on standalone Network model of JVET-AO0123, and JVET-AP0222: NN-based lost picture generation, have been published in AHG18 repository (https://vcgit.hhi.fraunhofer.de/jvet-ahg-ull/VVCSoftware_VTM) as MR8, MR9 correspondingly, crosscheck is pending.

1. Related contributions

A total of 5 contributions (not including this AHG report) are identified relating to the mandates of AHG18. They are listed below. Three contributions are also related to the work of AHG9.

Proposals		
JVET-AQ0183	AHG18: Forward Error Correction for ULL simulation software	I. Gribushin , K. Malyshev , G. Gotovskii , B. Shevchenko , S. Ikonin , E. Alshina (Huawei)
JVET-AQ0199	AHG18: Feedback-Aware Reference Preservation for Ultra-Low Latency	Y. Xiao , Y. Hu, X. Ma (MLS labs)
JVET-AQ0081	AHG9: On persistence etc. and error resilience of the GSI SEI message	Y.-K. Wang , J. Xu, Y. Xu, Q. Yang, K. Zhang (Bytedance)
JVET-AQ0124	AHG9: On delayed transmission of QM SEI	T. Biatek , S. He, J. Boyce, M. M. Hannuksela (Nokia)
JVET-AQ0196	AHG9: Loss concealment purpose for NNPFCE SEI message	S. Mate , J. Boyce , M. M. Hannuksela (Nokia)

1. Recommendations

The AHG recommends:

- Review all input contributions.
- Discuss test conditions and evaluation methodology.
- Collect test cases and specific requirements.
- Continue development of simulation software.

- Continue the study of ultra-low latency and packet loss resilience technologies in JVET.

CITATION

S. Deshpande, S. Ikonin, V. Zakharchenko, S. Fössel, C. Kim, X. Ma, S. Puri, J. Ström, S. Wenger, "JVET AHG report: Ultra-low latency and packet loss resilience (AHG18)", JVET-AQ0018, 43rd Meeting: Geneva, July 2026.

REFERENCES

1. [S. Ikonin, S. Deshpande, V. Zakharchenko, "Common test conditions for technology targeting ultra low latency and packet loss resilience", JVET-AN2039, 40th Meeting: Geneva, CH, October 2025.](#)
2. [K. Malyshev, I. Gribushin, V. Khamidullin, M. Sychev, S. Ikonin, E. Alshina, "AHG18: Standalone network simulation application on top of ULL software", JVET-AO0123, 41st Meeting: by teleconference, CH, January 2026.](#)
3. [S. Ikonin, I. Gribushin, M. Sychev, K. Malyshev, V. Khamidullin, B. Shevchenko, X. Ma, E. Alshina, Z. Deng, "AHG18: Random Access GOP4 Configuration for Live-streaming Applications evaluated in ULL test conditions", JVET-AP0200, 42nd Meeting: Santa Eulària, ES, April 2026.](#)
4. [K. Malyshev, M. Sychev, S. Ikonin, E. Alshina, "AHG18: Decoder side NN-based picture generation for lost picture substitution", JVET-AP0222, 42nd Meeting: Santa Eulària, ES, April 2026.](#)
5. [Y.-K. Wang, J. Xu, Y. Xu, Q. Yang, K. Zhang, "AHG9: On persistence etc. and error resilience of the GSI SEI message", JVET-AQ0081, 43rd Meeting: Geneva, July 2026.](#)
6. [T. Biatek, S. He, J. Boyce, M. M. Hannuksela, "AHG9: On delayed transmission of QM SEI", JVET-AQ0124, 43rd Meeting: Geneva, July 2026.](#)
7. [I. Gribushin, K. Malyshev, G. Gotovskii, B. Shevchenko, S. Ikonin, E. Alshina, "AHG18: Forward Error Correction for ULL simulation software", JVET-AQ0183, 43rd Meeting: Geneva, July 2026.](#)
8. [S. Mate, J. Boyce, M. M. Hannuksela, "AHG9: Loss concealment purpose for NNPFCE SEI message", JVET-AQ0196, 43rd Meeting: Geneva, July 2026.](#)
9. [Y. Xiao, Y. Hu, X. Ma, "AHG18: Feedback-Aware Reference Preservation for Ultra-Low Latency", JVET-AQ0199, 43rd Meeting: Geneva, July 2026.](#)