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Partie 9: Technologie de la synthèse du grain de film pour les applications vidéo

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Foreword

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Introduction

Film grain synthesis technology can provide subjective quality benefits for certain video applications and can be used to effectively achieve improved video compression. The use of such technology can involve pre-processing to reduce film grain and sensor noise that is present in a video or image signal prior to compression. Metadata information can then be conveyed to a decoder and used to synthesize noise with similar characteristics as in the original content as a post-processing stage that follows the compression decoding process. This metadata can be signalled using appropriate mechanisms, such as the supplemental enhancement information messages that are supported by several video coding standards.

This document provides a referenceable overview of the end-to-end processing steps for film grain and sensor noise removal, estimation, parameterization, synthesis, and blending for consumer distribution applications. This document includes examples of encoder-side and post-decoding processing steps for grain blending for some of the currently defined technologies.

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Information technology — MPEG video technologies —

Part 9:
Film grain synthesis technology for video applications

1 Scope

This document provides a description of the film grain synthesis technology in video applications, including for use with Rec. ITU-T H.264 | ISO/IEC 14496-10, Rec. ITU-T H.265 | ISO/IEC 23008-2 and Rec. ITU-T H.266 | ISO/IEC 23090-3.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Rec. ITU-T H.264 | ISO/IEC 14496-10, *Information technology — Coding of audio-visual objects — Part 10: Advanced video coding*

Rec. ITU-T H.265 | ISO/IEC 23008-2, *Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 2: High efficiency video coding*

Rec. ITU-T H.266 | ISO/IEC 23090-3, *Information technology — Coded representation of immersive media — Part 3: Versatile video coding*

Rec. ITU-T H.274 | ISO/IEC 23002-7, *Information technology — MPEG video technologies — Part 7: Versatile supplemental enhancement information messages for coded video bitstreams*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in Rec. ITU-T H.264 | ISO/IEC 14496-10, Rec. ITU-T H.265 | ISO/IEC 23008-2, Rec. ITU-T H.266 | ISO/IEC 23090-3 and Rec. ITU-T H.274 | ISO/IEC 23002-7 apply.

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— ISO Online browsing platform: available at https://www.iso.org/obp

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