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Part 30: Low latency, low complexity light detection and ranging (LiDAR) coding

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Contents

Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

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Introduction

Advancements in 3D capturing and rendering technologies are enabling new applications and services in the fields of assisted and autonomous driving, cartography, and other industrial processes. Point clouds captured with LiDAR (Light Detection And Ranging) sensors, sometimes coupled with traditional camera sensors, have arisen as one of the main representations for such applications. A point cloud frame consists of a set of 3D points. Every point, in addition to having a 3D position, may also be associated with numerous other attributes such as intensity, colour, timestamp, and classification. Such representations require a large amount of data, which can be costly in terms of storage and transmission and are often used in real-time application which requires fast processing of the point cloud data. This document provides the method for efficiently compressing point cloud representations while ensuring low complexity and low latency constraints can be met.

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1 Scope

This document specifies low latency, low complexity light detection and ranging (LiDAR) coding.

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.

ISO/IEC 8825-1 | Rec. ITU-T X.690, *Information technology — ASN.1 encoding rules — Part 1: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)*

ISO/IEC 9834-1 | Rec. ITU-T X.660, *Information technology — Procedures for the operation of object identifier registration authorities — Part 1: General procedures and top arcs of the international object identifier tree*

ISO/IEC 9834-8 | Rec. ITU-T X.667, *Information technology — Procedures for the operation of object identifier registration authorities — Part 8: Generation of universally unique identifiers (UUIDs) and their use in object identifiers*

ISO/IEC 23091-2, *Information technology — Coding-independent code points — Part 2: Video*

Recommendation ITU-T T.35, *Procedure for the allocation of ITU-T defined codes for non-standard facilities*