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Information technology — Plenoptic image coding system (JPEG Pleno) —

Part 2: Light field coding

*Technologies de l'information — Système de codage d'images
plénoptiques (JPEG Pleno) —*

Partie 2: Codages des champs de lumière



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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and abbreviated terms	3
4.1 Symbols.....	3
4.2 Abbreviated terms.....	7
5 Conventions	8
5.1 Naming conventions for numerical values.....	8
5.2 Operators.....	8
5.2.1 Arithmetic operators.....	8
5.2.2 Logical operators.....	9
5.2.3 Relational operators.....	9
5.2.4 Precedence order of operators.....	9
5.2.5 Mathematical functions.....	10
6 General	10
6.1 Functional overview on the decoding process.....	10
6.2 Encoder requirements.....	11
6.3 Decoder requirements.....	11
7 Organization of the document	11
Annex A (normative) JPEG Pleno Light Field superbox	12
Annex B (normative) 4D transform mode	29
Annex C (normative) JPEG Pleno light field reference view decoding	73
Annex D (normative) JPEG Pleno light field normalized disparity view decoding	81
Annex E (normative) JPEG Pleno Light Field Intermediate View superbox	89
Bibliography	117

Foreword

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Introduction

This document is part of a series of standards for a system known as JPEG Pleno. This document defines the JPEG Pleno framework. It facilitates the capture, representation, exchange and visualization of plenoptic imaging modalities. A plenoptic image modality can be a light field, point cloud or hologram, which are sampled representations of the plenoptic function in the form of, respectively, a vector function that represents the radiance of a discretized set of light rays, a collection of points with position and attribute information, or a complex wavefront. The plenoptic function describes the radiance in time and in space obtained by positioning a pinhole camera at every viewpoint in 3D spatial coordinates, every viewing angle and every wavelength, resulting in a 7D function.

JPEG Pleno specifies tools for coding these modalities while providing advanced functionality at system level, such as support for data and metadata manipulation, editing, random access and interaction, protection of privacy and ownership rights.

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Information technology — Plenoptic image coding system (JPEG Pleno) —

Part 2: Light field coding

1 Scope

This document specifies a coded codestream format for storage of light field modalities as well as associated metadata descriptors that are light field modality specific. This document also provides information on the encoding tools.

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.

ITU-T Rec. T.800 | ISO/IEC 15444-1, *Information technology — JPEG 2000 image coding system — Part 1: Core coding system*

ITU-T Rec. T.801 | ISO/IEC 15444-2, *Information technology — JPEG 2000 image coding system — Part 2: Extensions*

ISO/IEC 21794-1:2020, *Information technology — Plenoptic image coding system (JPEG Pleno) — Part 1: Framework*

ISO/IEC 60559, *Information technology — Microprocessor Systems — Floating-Point arithmetic*