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AMENDMENT 1
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Information technology — Plenoptic image coding system (JPEG Pleno) —

Part 2:
Light field coding

AMENDMENT 1: Profiles and levels for JPEG Pleno light field coding system

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

Partie 2: Codages des champs de lumière

AMENDEMENT 1: Profils et niveaux pour le système de codage des champs de lumière JPEG Pleno

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

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

Part 2: Light field coding

AMENDMENT 1: Profiles and levels for JPEG Pleno light field coding system

A.3.2

Replace the content of A.3.2 with the following:

Profile and levels shall be as defined in Annex F. The type of the JPEG Pleno Profile and Level box shall be 'jppl' (0x6A70 686F) and contents of the box shall have the organization as in Figure A.2 and format as in Table A.2.

Key

Ppih profile of the codestream (as defined in Annex F)

Plev level of the codestream (as defined in Annex F)

Figure A.2 — Organization of the contents of a JPEG Pleno Profile and Level box

Table A.2 — Format of the contents of the JPEG Pleno Profile and Level box

Field name	Size (bits)	Value
Ppih	16	Variable, defined in Annex F
Plev	16	Variable, defined in Annex F

Annex E

At the end of Annex E, add a new Annex F as follows:

Annex F
(normative)

Profiles and levels for JPEG Pleno light field coding system

F.1 General

This annex defines two profiles named baseline block-based profile and baseline view-based profile. The baseline block-based profile comprises all coding tools belonging to the 4D transform mode coding path. The baseline view-based profile comprises all coding tools belonging to the 4D prediction mode coding path. The 4D transform mode and the 4D prediction mode are specified in 7.2.

Figure F.1 shows the relationship between the coding tools in this document and the profiles defined in this Annex.

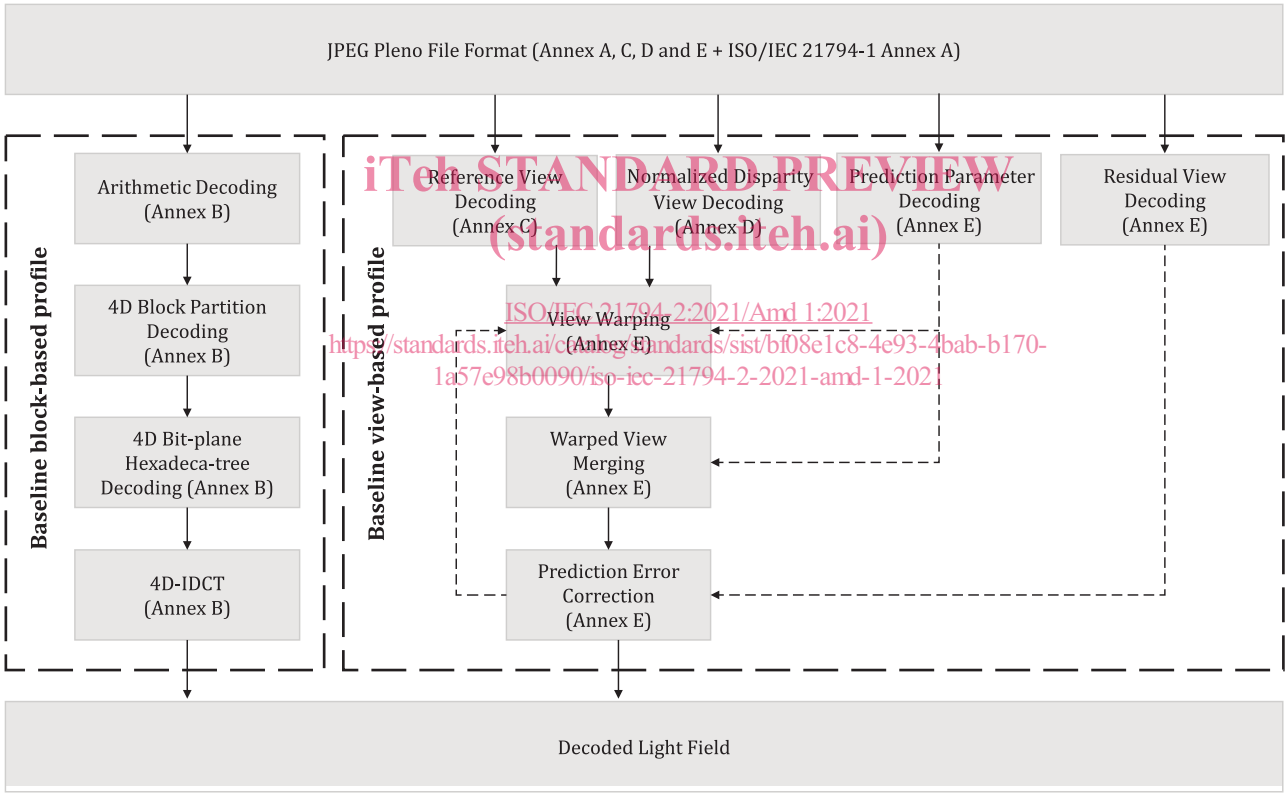

Figure F.1 — Relationship between coding tools and profiles

F.2 Profiles

The JPEG Pleno profile and level box (A.3.2) shall be used for signalling one of the two profiles setting the Ppih value according to the values defined in Table F.1. JPEG Pleno decoders that conform to the Baseline view-based profile shall use ITU-T Rec. T.800 | ISO/IEC 15444-1 for decoding reference views (C.3.1), normalized disparity views (D.3.1), and residual images (E.3.1).

Table F.1 — JPEG Pleno profiles

Profile	Ppih
Baseline block-based profile	1
Baseline view-based profile	2

F.3 Levels

Levels are defined in terms of maximum number of samples and, for the 4D transform mode, maximum block dimensions. A sample represents a single component value for a channel.

EXAMPLE 1 If a light field has $T \cdot S$ subaperture views, each view has resolution $V \cdot U$, with three (3) channels (e.g. RGB), five (5) disparity views with same resolution and a single channel (1), the total number of samples is computed as $S_{tot} = T \cdot S \cdot V \cdot U \cdot 3 + 5 \cdot V \cdot U \cdot 1$.

Table F.2 shows the baseline block-based profile levels.

Table F.2 — Baseline block-based profile levels

Level	Plev	Maximum number of samples $T \cdot S \cdot V \cdot U$	Maximum block dimension $t_k \cdot s_k \cdot v_k \cdot u_k$
1	1	$256 \cdot 10^6$	64
2	2	$1024 \cdot 10^6$	96
3	3	$4096 \cdot 10^6$	128
4	4	$16384 \cdot 10^6$	192

The maximum bit precision for source light field samples is 16 bits.

Table F.3 shows the baseline view-based profile levels.

Table F.3 — Baseline view-based profile levels

Level	Plev	Maximum number of samples $T \cdot S \cdot V \cdot U$
1	1	$256 \cdot 10^6$
2	2	$1024 \cdot 10^6$
3	3	$4096 \cdot 10^6$
4	4	$16384 \cdot 10^6$

The maximum bit precision for source light field samples is 16 bits.