

ISO/IEC 23090-18:2024-01 (E)

Information technology - Coded representation of immersive media - Part 18: Carriage of geometry-based point cloud compression data

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Abbreviated terms	3
5	Overview	3
5.1	Overall architecture for carriage of geometry-based point cloud compression data	3
5.2	Referenceable code points	5
5.2.1	Brands	5
5.2.2	Sample entry type	5
5.2.3	Box types	5
5.2.4	Track reference types	6
5.2.5	Entity grouping types	6
5.2.6	Sample grouping types	7
5.2.7	Uniform resource names	7
6	Volumetric media	7
6.1	Volumetric visual media	7
6.1.1	General	7
6.1.2	Volumetric visual media header	7
6.1.3	Volumetric visual sample entry	8
6.1.4	Volumetric visual sample group entry	8
6.1.5	Volumetric visual samples	8
7	Timed G-PCC data storage in ISO/BMFF	8
7.1	General	8
7.2	Common boxes and data structures	9
7.2.1	G-PCC decoder configuration record	9
7.2.2	G-PCC decoder configuration box	10
7.2.3	G-PCC component information box	10
7.2.4	Tile inventory information sample group	12
7.3	Single track encapsulation	12
7.3.1	General	12
7.3.2	Sample entry	13
7.3.3	Sample format	13
7.4	Multiple track encapsulation	15
7.4.1	General	15
7.4.2	Sample entry	15
7.4.3	Sample format	16
7.4.4	Track references	17
7.5	Encapsulation of tiled G-PCC bitstream	17
7.5.1	General	17
7.5.2	G-PCC tile base track	18
7.5.3	G-PCC tile tracks	19
7.5.4	Relationship between samples in G-PCC tile base track and tile track	20
7.5.5	Track references	21
7.6	Indication of alternatives	21

8	Non-timed G-PCC data storage in ISOBMFF	21
8.1	General	21
8.2	Image item	22
8.2.1	G-PCC item	22
8.2.2	G-PCC tile item	23
8.3	Image properties	23
8.3.1	G-PCC configuration item property	23
8.3.2	G-PCC component information item property	24
8.3.3	G-PCC spatial region item property	24
8.3.4	sub-sample item property	25
8.3.5	G-PCC tile information item property	25
8.4	Entity grouping	26
8.4.1	Viewport association	26
9	Signalling of metadata in ISOBMFF	26
9.1	G-PCC Spatial region information	26
9.1.1	Information structure	26
9.1.2	Signalling of static spatial region information	29
9.1.3	Signalling of dynamic spatial region information	29
9.2	G-PCC viewport information	32
9.2.1	General	32
9.2.2	Information structure	32
9.2.3	Signalling of static viewport information	35
9.2.4	Signalling of dynamic viewport information	36
10	Encapsulation and signalling in DASH	37
10.1	Single-track mode	37
10.1.1	General	37
10.2	Multi-track mode	37
10.2.1	General	37
10.2.2	DASH MPD descriptors	38
10.2.3	GPCC Preselection	41
10.2.4	Supporting multiple versions of GPCC data	41
10.3	Partial delivery and access	41
10.3.1	Signalling of static spatial regions	41
10.3.2	Signalling of dynamic spatial regions	43
10.3.3	Tiled G-PCC data encapsulation and signalling	43
10.4	Signalling recommended viewports	45
10.4.1	Signalling of static recommended viewports	45
10.4.2	Signalling of dynamic recommended viewports	47
11	Encapsulation and signalling in MMT	47
11.1	Encapsulation of G-PCC bitstream for MMT streaming	47
11.2	MMT signalling descriptors	47
11.2.1	Asset reference descriptor	47
11.2.2	G-PCC Asset descriptor	48
11.3	MMT application-specific signalling messages	49
11.3.1	General	49
11.3.2	GPCC Asset Group Metadata Message	50
11.3.3	GPCC Asset Selection Message	52
11.3.4	GPCC View Change Feedback Message	53
	Annex A (normative) File format toolsets and brands	56
	Annex B (normative) GPCC DASH Schema	57
	Annex C (normative) MIME types and sub-parameters	59
	Annex D (informative) Sample entry type and sample format	60
	Annex E (informative) Alternative Indication Examples	61
	Annex F (informative) Partial access support with G-PCC tile tracks	63
	Annex G (informative) Partial access support with non-timed G-PCC data	65
	Annex H (informative) DASH MPD examples	67
	Bibliography	75