

ISO/IEC TR 23009-3:2015-05 (E)

Information technology - Dynamic adaptive streaming over HTTP (DASH) - Part 3: Implementation Guidelines

Contents		Page
1	Scope	1
2	References	1
3	Terms, Definitions and Abbreviated Terms	2
4	Introduction	2
4.1	System overview	2
4.2	Normative parts	3
4.3	Main design principles	4
4.3.1	Common timeline	4
4.3.2	Data model	4
4.3.3	Segments	5
4.3.4	Segment types	6
4.3.5	Segment addressing schemes	6
4.3.6	Stream access points	6
4.4	Background on DASH profile concept	7
5	Guidelines for content generation	7
5.1	General guidelines	7
5.1.1	Video content generation	7
5.1.2	Audio content generation	9
5.1.3	Content preparation for live streaming	11
5.1.4	Guidelines for generation of segment file names	11
5.2	Guidelines for ISO-BMFF content generation	14
5.2.1	On-demand streaming	14
5.2.2	Live streaming	18
5.2.3	Enabling trick modes	19
5.2.4	Support for SubRepresentations	21
5.2.5	Enabling delivery format to storage file format conversion	22
5.3	Guidelines for MPEG-2 TS content generation	26
5.3.1	General recommendations	26
5.3.2	Live streaming	27
5.3.3	On demand streaming	28
5.4	Support for Advertisement Insertion	29
5.4.1	Use cases	29
5.4.2	MPD authoring	30
5.4.3	Example	30
5.4.4	The use of inband events	31
6	Client implementation guidelines	32
6.1	General	32
6.2	Client architecture overview	32
6.3	Example of client operation	33
6.4	Timing model for live streaming	33
6.4.1	General	33
6.4.2	MPD information	33
6.4.3	MPD times	34
6.4.4	Context derivation	34
6.4.5	Derivation of MPD times	35
6.4.6	Addressing methods	35

6.4.7	Scheduling playout	36
6.4.8	Validity of MPD	36
6.5	MPD retrieval	36
6.6	Segment list generation	37
6.6.1	General	37
6.6.2	Template-based generation of segment list	38
6.6.3	Playlist-based generation of segment list	39
6.6.4	Media segment list restrictions	39
6.7	Rate adaptation	40
6.8	Seeking	41
6.9	Support for trick modes	42
6.10	Stream switching	42
6.11	Client support for dependent representations	42
6.11.1	General	42
6.11.2	Client trick-mode support using SubRepresentations	43