# INTERNATIONAL ORGANISATION FOR STANDARDISATION
# ORGANISATION INTERNATIONALE DE NORMALISATION
# ISO/IEC JTC1/SC29/WG11
# CODING OF MOVING PICTURES AND AUDIO

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| **Source** | **Telecom ParisTech,** |
| **Status** | **For consideration at the 110<sup>th</sup> MPEG Meeting** |
| **Title** | **On DASH MPD and Segment Conformance** |
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## 1   Introduction

This contribution presents a list of information that is possibly duplicated in ISOBMFF files and in MPD files. It further proposes associated draft conformance rules.

## 2   Duplicate information analysis

| DASH attribute | MP4 information | Draft conformance rule | |
|---|---|---|---|
| **MPD@mediaPresentationDuration** | moov/mvhd@duration or mvex/mehd@duration | No direct conformance rule | N/A |
| **MPD@minBufferTime** | No information at MP4 level but at the bitstream level | Should be greater than the video buffering delay | Under discussion |
| **MPD@maxSegmentDuration** | difference between composition time of the first and last sample plus sample duration | MPD info shall be max of MP4 info | Agreed and already tested |
| **MPD@maxSubSegmentDuration** | sidx information | MPD info shall be the max of the sidx info | Agreed and already tested |
| **ProgramInformation/Copyright** | udta/cprt | No direct conformance rule | N/A |
| **@lang** | moov/trak/mdhd@lang or moov/trak/udta/elng (ISOBMFF Amd4) | MPD and MP4 info shall match if specified and not 'und' | (1) Subject to corrigenda of the note |

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|---|---|---|---|
| **@contentType** | moov/trak/hdlr and stsd/type | Shall match | (1) |
| **@mimeType** | | | (1) |
| **@bitstreamSwitching** | | Complex rules | Rule is there, checking is difficult (part of it should be using ISOBMFF conformance and beyond for elementary stream) |
| **Accessibility** **Role** **Rating** **Viewpoint** | moov/trak/udta/kind (ISOBMFF Amd4) | MPD shall contain at least trak information | Not a shall but should mention something (guideline) |
| **FramePacking** | contained in the bitstream | MPD and MP4 info shall match if specified | (1) |
| **AudioChannelConfiguration** | ISOBMFF Amendment 4 | MPD and MP4 info shall match if specified | To be checked |
| **ContentProtection** | Tracks with encv/enca/enct … Scheme Type Box | MPD information shall match MP4 information | Shall match (common encryption conformance issue) |
| **@bandwidth** | BitRateBox | Should be matching | To be discussed and possibly guideline |
| **@dependencyId** | track references | MPD attribute shall be present if a track reference of type scal, dpnd, sbas … is present and order shall be the same if any | To be checked with ISOBMFF group |

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| **@associationId/@associationType** | track references | see related contribution m35084 | accepted |
| **@mediaStreamStructureId** | | Too complex | add it to the table of vectors as at risk |
| **SubRepresentation@level** | ssix, leva | Shall match | add it to the table of vectors as at risk |
| **SubRepresentation@dependencyLevel** | ssix, leva | Shall match | add it to the table of vectors as at risk |
| **@par** **@width** **@height** **@sar** | trak/width, clap, pasp, stsd/width | MPD (if specified and not 0/0) shall match with stsd information and clap/pasp | Needs to be checked with File Format Group |
| **@frameRate** | Sample duration | Shall be set in MPD to sample duration if constant | agreed (shall not exceed min (or max …)) |
| **@audioSamplingRate** | stsd information | Shall match | (1) |
| **@segmentProfiles** | styp or ftyp | Shall match | Needs to be included in conformance |
| **@codecs** | moov/trak/mdia/minf/stbl/stsd | Shall match in number and value | (1) |
| **@scanType** | No information at MP4 level (except for HEVC) but at bitstream level | Shall match | (1) |
| **@maximumSAPPeriod** | SAP information (sync or sap sample groups) | Shall match | The value in the file shall not exceed the MPD attribute value |
| **@startWithSAP** | SAP information (sync or sap sample groups) | Shall match | Value in the file shall not |

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| | | | exceed the MPD value |
| @**maxPlayoutRate** | No information at MP4 level, no immediate information in the bitstream | Hard to check. | Should use ISOBMFF or elementary stream conformance (not tested in DASH) |
| @**codingDependency** | SAP information (sync or sap sample groups) | Shall match | shall (need to be tested) |
| @**presentationTimeOffset** | Media Time (Composition Time, Edit List) | Complex rules see contribution m35088 | deferred |

## 3  Conclusion

We recommend MPEG:
- to refine the above table
- to add it to the conformance document
- to add appropriate conformance checks in the joint MPD/Segments conformance checker
- and to produce associated (positive and negative) test vectors