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CODING OF MOVING PICTURES AND AUDIO**

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**Source**    **Telecom ParisTech, Canon Research Centre France**  
**Status**    **For consideration at the 111th MPEG Meeting**  
**Title**     **DASH SubAssetIdentifiers and Sub-Representations**  
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## **1 Introduction**

During the 110<sup>th</sup> MPEG meeting, contribution m35082 [1] proposed to adopt the SubAssetIdentifier technology into the DASH amendment. The discussion led to modifications to the technology. This contribution proposes to adopt those modifications pending some clarifications of the DASH amendment regarding SubRepresentations.

## **2 ContentComponent and Sub-Representations**

The current TuC [2] indicates that the SubAssetIdentifier is expressed as a SupplementalProperty element that is allowed at the AdaptationSet level. It is proposed to allow it at ContentComponent level if the purpose was to link the multiplex content, but it is not allowed at the SubRepresentation level. This might be a problem as explained below.

### **2.1 Main problem**

For layered representation or tiled representation or multiplexed representations with 2 or more medias of the same type (e.g. 2 audio streams, or 2 video streams), one might want to assign a SubAssetIdentifier per layer or per tile or per media.

From the current spec, it is unclear if a scalable layer, or a tile or each media stream can correspond to different content components or if only one of a given type shall be declared.

The definitions don't help much as they are recursive, cyclic and unclear:

#### **3.1.18**

##### **media content**

one media content period or a contiguous sequence of media content periods

#### **3.1.19**

##### **media content component**

one continuous component of the media content with an assigned media component type that can be encoded individually into a media stream

#### **3.1.20**

##### **media content component type**

a single type of media content such as audio, video, or text

#### **3.1.21**

##### **media content period**

set of media content components that have a common timeline as well as relationships on how they can be presented

#### **3.1.26**

## media stream

encoded version of a media content component

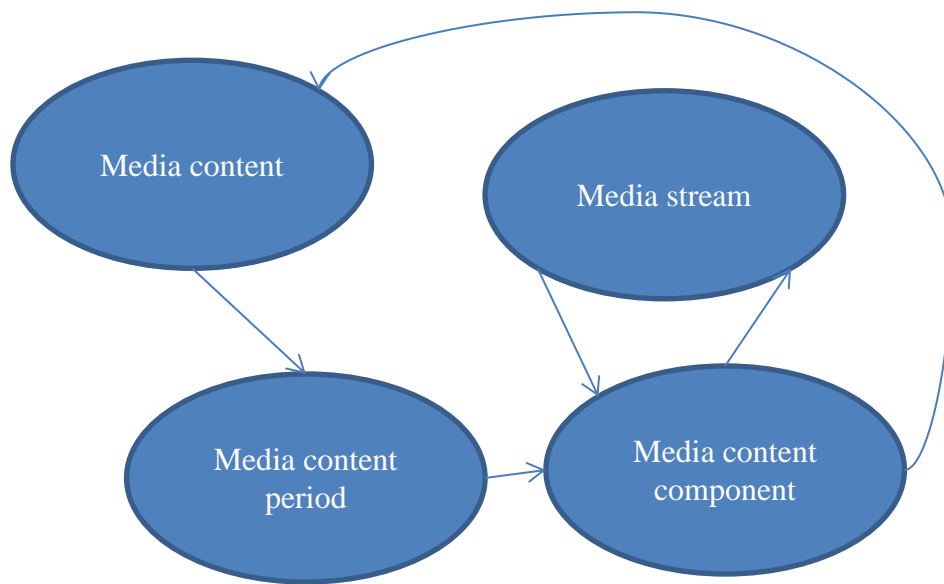


Figure 1 - Cycles in DASH definitions

### 3 Recommendation

We recommend MPEG to:

- Fix the definitions: avoiding recursive and cyclic definitions,
- Clarify what a content component is, in particular for layered media and tiled HEVC,
- Depending on the clarification, allow SubAssetIdentifier at SubRepresentation level or allow several ContentComponent elements with the same media type
- Move the technology regarding the SubAssetIdentifier from the TuC into a DASH Amd.

### 4 References

- [1] m35082 “Clarifications on DASH SubAssetIdentifier” by C. Concolato, J. Le Feuvre, F. Denoual, F. Mazé, E.Nassor, MPEG#110, Strasbourg, October 2014
- [2] w14857 “Technologies under Consideration for Dynamic Adaptive Streaming over HTTP 23009, parts 1 and 4” by A. Giladi and T. Stockhammer, MPEG#110, Strasbourg, October 2014