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Title **Clarifications on DASH SubAssetIdentifier**
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1 Introduction

During the 109th MPEG meeting, the DASH TuC document N14618 was produced including the technology of SubAssetIdentifier to signal editorial continuity of Adaptation Sets, Representations or SubRepresentations across Periods. This contribution proposes to adopt this technology into the DASH standard and provides specification text changes.

2 Current Text on Assets

"3.1.4 asset

content including media and metadata together with the rights to use the content by the content provider"

In Section 4.3:

"Content in different media content periods may be completely independent or certain periods of a Media Presentation may belong to the same Asset, for example a Media Presentation is a collection of main program composed of multiple periods, each assigned to the same Asset, and interleaved with inserted advertisement periods."

In 5.3.2.2, Period Semantics

"

AssetIdentifier	0...1	specifies that this Period belongs to a certain asset.
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"

"5.8.4.10 Asset Identifier

The **AssetIdentifier** is used to identify the asset on Period level. If two different Periods contain equivalent Asset Identifiers then the content in the two Periods belong to the same asset.

NOTE if the scheme or the value for this descriptor is not recognized the **AssetIdentifier** element may still be used to understand the equivalence of Asset Identifiers across Periods. Processing of the descriptor scheme and value by the DASH client is not essential for normal operation."

3 Proposed text

Add the following definition in section 3.1

"3.1.X

sub-asset

media component (or part of) identified as corresponding to a part of an asset

"

Add in Section 4.3:

"Furthermore, sub-assets composing a same Asset may be identified by a DASH descriptor enabling DASH clients to maintain content continuity across periods. For instance, if an asset is composed of multiple video components, sub-assets enable selecting the previously selected video component after an ad insertion."

Add to "Table 9 — Common Adaptation Set, Representation and Sub-Representation attributes and elements" the following row:

SubAssetIdentifier	0..N	specifies that the associated SubRepresentation or Representations (if specified at the AdaptationSet level) form a sub-asset of the asset identified at the Period level. For details see 5.8.4.11.
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Add the following subclause

"5.8.4.11 Sub-asset Identifier

The **SubAssetIdentifier** is used to identify sub-assets within an asset. It may be placed at the AdaptationSet or SubRepresentation level. It shall not be placed at the Representation level.

If two different AdaptationSets or SubRepresentations from different Periods contain SubAssetIdentifier elements with the same @schemeIdUri and @value attributes then the content in the associated Representation(s) or SubRepresentations represent, at least, the same sub-asset.

NOTE – The association between sub-assets and representations or sub-representations may change between periods. For instance, an AdaptationSet may be associated with a sub-asset of an asset in one Period but with another sub-asset of the same asset in another period.

NOTE 2 – **SubAssetIdentifier** elements may be used by DASH clients to select representations to be processed after a period change.

A given AdaptationSet or SubRepresentation may contain more than one SubAssetIdentifier indicating that the associated Representation(s) or SubRepresentations represent more than one identified part of the asset. However, different AdaptationSets or SubRepresentations in a Period shall not contain the same SubAssetIdentifier, i.e. shall not have the same @schemeIdUri and @value.

NOTE 3 – If the scheme or the value for this descriptor is not recognized the **SubAssetIdentifier** element may still be used to understand the equivalence of sub-asset identifiers across Periods. Processing of the descriptor scheme and value by the DASH client is not essential for normal operation."

Modify the MPD schema as follows:

```
<!-- Representation base (common attributes and elements) -->
  <xs:complexType name="RepresentationBaseType">
    ...
    <xs:element name="InbandEventStream" type="DescriptorType" minOccurs="0"
maxOccurs="unbounded"/>
    <xs:element name="SubAssetIdentifier" type="DescriptorType" minOccurs="0"
maxOccurs="unbounded"/>
    ...
  </xs:complexType>
```

4 Conclusion

We propose to adopt the proposed text in a DASH Amendment.