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1 Introduction

During its 107th meeting, MPEG issued a Working Draft for the Amendment 2 of MPEG-DASH (N14183). This contribution reviews this WD and proposed modifications, mostly editorial.

2 Comments on Generalized URL Parameters

2.1 Use of EssentialProperty and Supplemental Property

The WD contains the following note:

> NOTE The usage of query and fragment identifiers for URL templates is activated only when signalized through the presence of an appropriate EssentialProperty or SupplementalProperty descriptor.

We think such note is erroneous. If a DASH player supports the Generalized URL Parameter identifiers (such as $querypart$, …), independently of the presence of an EssentialProperty or SupplementalProperty descriptor, it will replace the identifiers. EssentialProperty are meant for DASH players that do not support these new identifiers. Authors may want to (and probably should) signal to these old players that some URL use new identifiers with such an EssentialProperty. In this case, the scheme should be used in the descriptor. The use of SupplementalProperty is not clear as the parameters will not be replaced by old players and will most likely fail.

We suggest replacing the NOTE with:

> NOTE For backward compatibility reasons, authors are encouraged to signal the use of query and fragment identifiers in URL templates with an EssentialProperty whose schemeIdUri is identicated in table 2 and to propose alternative URLs not using these identifiers.

2.2 Use of UrlQueryInfo

Reading the WD, the following points are not clear:

- what happens if the @QueryString is not present in the UrlQueryInfo element if the @useMPDUrlQuery is false.
- How is "xlink:href" used? Does the attribute point to an external UrlQueryInfo element (as usual in DASH) or to an "external query string" (this term is not defined)?
- In 5.8.5.8.2: It is not clear how URL concatenation using the 3 attributes `@useMPDUrlQuery`, `@mpdQueryString`, and `@xlink:href` is performed, is it following HTTP RFC? A reference to or a description of the algorithm is needed.

- How is the concatenation of multiple URLs from "URL query descriptors" (what is that? is it URLQueryInfo elements) done? Is the concatenation made with outer URL or inner on the left?
- It is not clearly explained that the URL obtained by concatenation is only used to extract the $$ parameters and does not replace the $querypart$ (and others) in the URL of the @media (and other) attributes.

2.3 Typos

Replace: "signalized" by "signaled"

3 Comments on SRD

3.1 Placement of SRD descriptors

The current text specifies that Spatial Relationship Descriptions (SRD) are in Adaptation Sets but the XML schema allows descriptors to be placed also in Representations and SubRepresentations. We suggest rephrasing the introduction as follows to indicate such possibilities.

"This scheme allows ~~the~~ Media Presentation authors to express spatial relationships ~~among Adaptations Sets~~between Adaptation Sets, Representations or Sub-Representations."

"The **`SupplementalProperty`** and/or **`EssentialProperty`** descriptors with `@schemeIdURI` equal to "`urn:mpeg:dash:srd:2014`" ~~signal~~ provide ~~the~~ spatial ~~relationship description~~ information associated to the containing **`AdaptationSet`**, **`Representation`** or **`SubRepresentation`**."

"To preserve the compatibility with legacy clients,~~.~~ it is mandatory that MPD authors use at least one `SupplementalProperty` when all Adaptation Sets, Representations and Sub-Representations in a MPD have SRD annotations so that at least one ~~`AdaptationSet`~~ Representation is interpreted by legacy clients~~remains in the MPD~~."

3.2 Miscellaneous Editorial changes

Add an acronym: SRD Spatial Relationship Description

Replace:
"As an example, spatial relationships can be positioning information of a spatial part of a video with respect to a full-frame video."
with:
"As an example, a spatial relationship may express that a video represents a spatial part of another full-frame video."

Replace:
"The semantic of `@id` is left unchanged with respect to the one for generic descriptor in section 5.8.2."
with:
"The semantic of `@id` is left unchanged compared to the semantic defined for generic descriptor in section 5.8.2."

3.3 Optional parameters

Replace
"In order to keep parsing simple, it is assumed that when at least one optional parameter is present, all the optional parameters should be present."
with
"In order to keep parsing simple, there shall be no gap in between parameters, i.e. if an optional parameter is present, all preceding parameters shall be present."

3.4 Parameter clarification

Insert the following text after the 4th paragraph in 5.8.5.7:
"The x and y parameters (respectively w and h) express 2D positions (respectively 2D sizes) of the associated Adaptation Set, Representation or Sub-Representation in the coordinate system associated to the source, identified by the source_id parameter. This coordinate system uses an arbitrary origin; the x-axis is oriented from left to right and the y axis from top to bottom. All SRD sharing the same source_id value have the same origin and axes orientations.

The W and H values define a reference space in this coordinate system. The values of the x, y, w, and h parameters are relative to the values of the W and H parameters. Positions (x,y) and sizes (w,h) of SRD sharing the same source_id value may be compared after taking into account the size of the reference space, i.e. after the x and w values are divided by the W value and the y and h values divided by the H value of their respective descriptors.

NOTE – Different reference spaces may be used to provide positions and sizes information with different units, while indicating that the associated Adaptation Sets, Representations or Sub-Representations originate from the same source and spatially relate to each other.

Upon selection of an Adaptation Set, Representation or Sub-Representation, DASH clients may use reference spaces to quickly identify other representations, whose SRD parameters are expressed in the same units, possibly because they form a grid of representations.

When @value is not present, the SRD does not express any spatial information at all and can be ignored."

Replace the table 23 with:

EssentialProperty@value or SupplementalProperty@value parameter	**Use**	**Description**
source_id	M	positive or null integer providing the identifier for the source of the content. ~~specifies a content identifier expressed as a positive or null integer.~~ Parameter values (x, y, w, h) used in different SRD sharing the same source_id value within a Period may be compared to determine that two representations spatially relate to each other. Spatial relationships are undefined for representations using SRD with different source_id values.~~Note : SRD annotations with identical source ids describe the same content.~~
x	M	~~Is a~~ positive or null integer expressing the horizontal position, in the reference space defined by this descriptor, of the top-left ~~position of the spatial part.~~corner of the Representations or Sub-Representations using this descriptor.
y	M	~~Is a~~ positive or null integer expressing the vertical position, in the reference space defined by this descriptor, of the top-left corner of the Representations or Sub-Representations using this descriptor.~~position of the spatial part.~~
w	M	~~Is a~~ positive or null integer expressing the width, in the reference space defined by this descriptor, of the ~~spatial part~~Representations or Sub-Representations using this

		descriptor.
h	M	~~Is a~~ positive or null integer expressing the height, in the reference space defined by this descriptor, of the ~~spatial part~~Representations or Sub-Representations using this descriptor.
W	O	~~Is an~~ optional positive or null integer expressing the ~~width~~ maximum extent in the x-axis of ~~the reference space for~~ all Representations or Sub-Representations having SRD with ~~spatial parts having~~ the same ~~group_id and/or~~ source_id value. The value of W shall be such that the sum of x and w is smaller than W, for all Representations or Sub-Representations using the same source_id value. When ~~non~~ not present, this value is set to the W value of the SRD ~~annotation~~ having the same ~~group_id and/or~~ source_id value. For a given source_id value, at least one W value ~~should~~ shall be specified.
H	O	~~Is an~~ optional positive or null integer expressing the ~~height~~ maximum extent in the y-axis of ~~the reference space for~~ all ~~spatial parts~~ Representations or Sub-Representations having SRD with ~~having~~ the same ~~group_id and/or~~ source_id value. The H value shall be such that the sum of y and h is smaller than H, for all Representations or Sub-Representations using the same source_id value. When ~~non~~ not present, this value is set to the H value of the SRD ~~annotation~~ having the same ~~group_id and/or~~ source_id value. For a given source_id value, at least one H value ~~should~~ shall be specified.
group_id	O	~~Is an~~ optional positive or ~~-~~null integer providing an identifier ~~of a reference space~~ for a group of ~~-~~Representations or Sub-Representations that have the same source_id value. MPD authors may group Representations or Sub-Representations to indicate that they are non-overlapping videos, or contiguous videos with no gaps. The exact semantic of the group may be found by inspecting the x,y,w,h parameters of all videos in the group ~~spatial parts. Spatial parts having the same group_id value share the same reference space~~. When no~~t~~n present, this value is treated as 0 ~~value~~.

Legend:
M=Mandatory, O=Optional

~~**Notes:**~~

~~When @value is not present, the SRD annotation does not express any spatial relationships at all and can be ignored.~~

~~The coordinate system used to express the positions of a spatial part is a 2D coordinate system, where the origin is arbitrary but shall be the same for all SRD annotations associated within a same source id. Additionally, the x-axis is assumed to be oriented from left to right and the y-axis from top to bottom.~~

~~The positions and sizes values can be expressed in arbitrary pixel units or in actual video pixel units (refer to guidelines for examples).~~

4 Conclusion

We recommend MPEG to take into account the following comments and to use the suggested text to produce the PDAM2 of MPEG-DASH at this meeting.