

## CHANGE REQUEST

**DASH-IF IOP** CR **0006** rev **-** Current version: **4.0**

**Status:**  Draft  Internal Review  Community Review  Agreed

**Title:** Remote Period timing  
**Source:** Interoperability Working Group  
**Supporting Companies:** Comcast  
**Category:** **A,**  
**B** **Date:** 2017/01/31  
Use one of the following categories:  
**C** (correction)  
**A** (addition of feature)  
**B** (editorial modification)

**Reason for change:** Resolves ambiguity in timing of remote period  
**Summary of change:** Addition of text explaining preservation of timing throughout XLink dereferencing.  
**Consequences if not approved:** Uncertainty for implementers

**Sections affected:** 5.3.2.1.3 (new), 5.3.5 (new)

**Other comments:**

**Disclaimer:** This document is not yet final. It will be provided for public review until the deadline mentioned below. If you have comments on the document, please submit comments by one of the following means:

- at the github repository <https://github.com/Dash-IndustryForum/IOP/issues> (public at <https://gitreports.com/issue/haudiobe/DASH-IF-IOP>)
- [dashif+iop@groupspaces.com](mailto:dashif+iop@groupspaces.com) with a subject tag [DASH-IF-IOP], or Please add a detailed description of the problem and the comment.

For preceding discussion, see minutes of IWG on wiki.

**Commenting Deadline:** April 15<sup>th</sup>, 2017

**Expected Publication:** June 30<sup>th</sup>, 2017

### **5.3.2.1.3 Timing and dereferencing**

The only interface between DASH client and the XLink is the XLink URL (i.e., the **Period@xlink:href** attribute), and the complete remote Period element is replaced with Period element(s) from remote entity (body of HTTP response coming from XLink resolver). This means that XLink resolver is (in general case) unaware of the exact start time of the ad period.

In case of linear content, start of ad period is only known a short time before the playback. The recommended implementation is to update MPD the moment start of the ad period is known to the MPD generator.

The simplest approach to maintaining time across dereferencing is to have the MPD update add **Period@duration** attribute to latest (i.e., currently playing) main content period. This means that the MPD resolver needs to include **Period@duration** attribute into each of the Period elements returned in remote entity. The downside of this approach is that the DASH client needs to be able to update the currently playing period.

An alternative approach is to embed the desired value of **Period@start** of the first period of the remote entity in the XLink URL (e.g., using URL query parameters). This approach is described in sec. xxx. The downside of the approach is that the DASH specification does not constrain XLink URLs in any way, hence XLink resolver needs to be aware of this interface.

### **5.3.5 Use of query parameters**

Parameters can be passed into XLink resolver within the XLink URL. Sec 5.3.3.1.3 shows an example of this approach when SCTE 35 cue message is embedded into XLink URL.

This approach can be generalized and several parameters (i.e., name-value pairs) can be defined. SCTE 214-1 2016 takes this approach and defines parameters expressing splice time (i.e., **Period@start** of the earliest ad period), SCTE 35 cue message, and syscode (a geolocation identifier used in US cable industry). The first two parameters are also shown in example in sec 5.3.4.1 of this document.

Note 1: Effectively this creates a RESTful API for XLink dereferencing. While discussion above implies that these parameters are embedded by the MPD generator into the XLink URL, the parameter values may as well be calculated by the client.

Note 2: Same RESTful API approach can be used with MPD URLs as well.

Note 3: More parameters may be defined in the future version of these guidelines.