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

Status: For consideration at the 70th MPEG meeting
Title: Analysis of the LASeR study of CD 4.1
Author: Cyril Concolato, ENST

1. Introduction

This document presents an analysis[1] of the LASeR study of CD version 4.1 (i.e. m11177). Since a lot of changes have been added recently to the study to reflect the work done in the Core Experiment on harmonization with SVG, this document highlights points that need clarifications.

This document summarizes the issues with the current study but a copy of m11177 is attached with some of the modifications applied directly to the study using tracked changes. The issues are listed roughly in study order.

2. Major issues in the current study

2.1.   Usage of namespaces

The study uses namespaces to identify features which are defined by MPEG from features which are defined by the SVG Working Group. While this is a good way to clarify the document, a section explaining the relation ship between an XML language and the LASeR binary format should be added. Moreover, the link between the SVG language and the LASeR language should be clarified by plain English and not only schema. A proposal to improve this is given in the attached study.

2.2.   Definition of the last id

The specification is unclear on what is the use of the ID $2^{idBits}-1$. This feature is not related to SVG but to the binary encoding. Clarifcation on its use should be added to the CD.

2.3.   Usage of Service ID

It seems that the service ID is a notion that is related to the session not to the scene. The Save and Restore commands are already scoped by the scene stream to which they belong, so the service ID does not need to be sent. It could be generated locally on the client to create scoped storage. Moreover, the current study is unclear where this id is stored at the root svg element level or at the LASeRHeader level.

2.4.   Untransformed Hint attribute

This attribute should be encoded has a LASeR attribute of the svg elements. Its semantics is relevant to the way the scene is rendered while attributes in the LASeRHeader are relevant to the way the scene is encoded.

2.5.   LASeR Commands

While the introduction of the LASeR Commands explains the purpose of these commands, it does not explain how the commands are applied to the scene tree namely how the commands fit in the SVG document object model. The intent, I believe, is that commands are applied to the decoded

---

[1] This work has been partially financed by the European project DANAE (http://danae.rd.francetelecom.com).

scene tree, which could be the DOM tree, if DOM support is present. Moreover the overview does not present the PostEvent command.

The behavior of the commands is unclear because of the use of names from different vocabularies: tree description vocabulary, XML vocabulary. This should be clarified. We should use the DOM vocabulary but clearing stating that DOM is not required.

An example of misleading terms: "inserts an element in a parent list.","insertion point is the root svg element" or "the child is inserted at the end of the children list."

The index replacement command is restricted to the svg:g element while in SVG many elements may have children, e.g. svg:flowRoot. The replacement command is unclear about replacement of text content. Text in SVG is expressed as text within the svg:text element not as a sub-element, nor as an attribute. This means that the current study does not allow for replacement of text.

In the add command, it should be stated what happens if addition of two different types of data is found in the bitstream. In this command operandField should be changed to operandAttribute.

The study should clarify what happens to the reference to elements that deleted because they are children of elements being deleted by a Delete command.

In the restore command, the specification states that the restore command should be ignored if types do not match but it does not specify what happens with the the restoration that were already applied within this command.

2.6.   Scene description elements

In general, this section should be reorganized. For each element, we suggest to have a (normative) semantics, a (normative) binary syntax and an (informative) xml syntax section.

We should avoid using the word 'properties' which has a particular meaning in SVG/CSS.

The specification should clearly state the relationship of the image element with the SVG image element. We suggest having some restrictions but that the semantics of SVG are respected.

For backward compatibility with SVG, the script element misses an attribute describing the type of script it contains.

The trigger element specification is mixing xml syntax, BIFS, SVG references. It should be cleaned. The hyperlinking behavior of this element should be removed and the svg:a element should be added as a possible element of a LASeR scene, because this behavior does not result form a "The purpose of this delegation is the simplification of the encoding".

The simplification of the binary encoding of an attribute is not a sufficient reason to deviate from the harmonization between SVG and LASeR, a special datatype could be used for the event attribute.

The section defining the binary syntax should be rewritten in order to extract the textual content from the SDL syntax.

2.7.   SAF

The section "4.2 Time and terminal model specification" needs rephrasing because it is a copy/paste of the CD from the LASeR section. It is completely unclear.

A section describing or at least refering to the non-normative XML representation of a SAF bitstream should be created.