

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

**ISO/IEC JTC1/SC29/WG11 MPEG2016/M38646  
 May 2016, Geneva (CH)**

**Source**    **Telecom ParisTech, Canon Research Centre France**  
**Status**    **For consideration at the 115<sup>th</sup> MPEG meeting**  
**Title**      **On base tile track code points**  
**Author**    Jean Le Feuvre, Cyril Concolato, Franck Denoual, Frédéric Mazé

## 1 Introduction

This contribution addresses FRNB comment 124 on DIS, still marked as “revisit”:

|        |  |  |                  |
|--------|--|--|------------------|
| 10.6.4 | <p>Given that hvc1 cannot be used to carry extractors and shall contain a complete HEVC bitstream, the change made at DIS stage to introduce different code-points for the base tile track doesn't make a lot of sense. FRNB believes that existing code points introduced for LHEVC are enough (hev2/hvc2 and lhe2/lhv2).</p> <p>The same comment was made in contribution m37225</p> | <p>Remove sentence:<br/>         “Non-tile track use the regular sample descriptions defined for HEVC and L-HEVC, but with the following code points.”<br/>         remove the table following it.</p> <p>Add the following sentence:<br/>         “An HEVC track referencing tile tracks shall use the ‘hev2’ or ‘hvc2’ sample description type, whether extractors are used or not. An L-HEVC track referencing tile tracks shall use the ‘lhv1’ or ‘lhe1’ sample description type.”</p> | <b>[revisit]</b> |
|--------|--|--|------------------|

## 2 Discussion

The code points for the base tile track were introduced during DIS editing to differentiate an hev1/lhev1 track not carrying tile data from an hev2/lhev2 carrying tile data. The main concern was the usage of hvc1/hev1 tracks for the tile base track in tiling mode.

It has however since then been decided that the hev1/hvc1 track should be kept backward compatible, with no extractors and containing a complete conformant HEVC bitstream. The code points introduced now only apply to hev2/hvc2 and lhv1/lhe1. However readers for these these track types shall already support:

- extractor resolving if ‘scal’ track references are present
- implicit reconstruction otherwise

This is exactly the same set of functionalities as specified for tile base track:

- extractor resolving if ‘scal’ track references are present
- implicit reconstruction otherwise, explicitly signaled through the ‘sabt’ track reference

Introducing a new code point makes sense for application parsing codec parameters, e.g. in an adaptive streaming context; however in the current L-HEVC case, a reader detecting “hev2” code point has no clue if extractors or implicit reconstruction is used for this track, and if the purpose of the track is to provide an HEVC sub-bitstream or a split tile representation.

We therefore believe that keeping the base track type untouched is much simpler, and that the only restriction should be as stated in the FRNB proposal:

“An HEVC track referencing tile tracks shall use the ‘hev2’ or ‘hvc2’ sample description types, whether extractors are used or not. An L-HEVC track referencing tile tracks shall use the ‘lhv1’ or ‘lhe1’ sample description types, whether extractors are used or not.”

### **3 Conclusion**

We recommend MPEG to revert to the original design and remove introduced code points on the base tile track, keeping only hev2/hvc2 and lhv1/lhe1.