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CODING OF MOVING PICTURES AND AUDIO**

**ISO/IEC JTC1/SC29/WG11 MPEG2016/M39256  
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**Source**    **Telecom ParisTech, Canon Research Centre France**  
**Status**    **For consideration during MPEG #116**  
**Title**      **HEVC and L-HEVC Tile Brands**  
**Author**    Jean Le Feuvre, Cyril Concolato, Frederic Maze, Franck Denoual

## **1 Introduction**

This contribution proposes new brands to identify the required capabilities of a file reader to process files including HEVC tile tracks. It proposes a brand for simple use cases with no need for any L-HEVC tools, and a more complete brand for advanced cases requiring L-HEVC tools.

## **2 Simple Brand**

Add the following to annex D:

### **D.4.3 HEVC Tile Track brand**

The brand 'hvti' may be present among the `compatible_brands` of the `FileTypeBox`. The brand 'hvti' shall be used to indicate that the file is conformant with the HEVC tile storage tools specified in clause 10 with the following constraints applied:

- Extractors or aggregators shall not be present in any 'hvc2' or 'hev2' track.
- There shall be no lhv1 or lhe1 tracks in the file
- There shall not be any L-HEVC NAL units (with `nuh_layer_id` greater than 0) in the file.

Parsers of the 'hvti' brand shall perform bitstream reconstruction of tile data as specified in 10.5.4.

## **3 Complete Implicit Brand**

Add the following to annex D:

### **D.4.4 L-HEVC Tile Track Implicit brand**

The brand 'lhti' may be present among the `compatible_brands` of the `FileTypeBox`. The brand 'lhti' shall be used to indicate that the file is conformant with the L-HEVC file format specified in clause 9 and the HEVC and L-HEVC tile storage

tools specified in clause 10 with the following constraints applied:

- Extractors or aggregators shall not be present in any 'hvc2' or 'hev2' track. □
- Each track of type 'hvc1', 'hev1', 'hvc2', 'hev2', 'lhv1', or 'lhe1' shall not contain NAL units from more than one layer. □

Parsers of the 'lhti' brand shall perform bitstream reconstruction of tile data as specified in 10.5.4, shall perform implicit reconstruction of an L-HEVC bitstream from 'hvc2', 'hev2', 'lhv1', and 'lhe1' tracks as specified in 9.5.2.2 and are not required to process extractors and aggregators.

## 4 Complete Explicit Brand

Add the following to annex D:

### D.4.5 L-HEVC Tile Track Explicit brand

The brand 'lhte' may be present among the `compatible_brands` of the `FileTypeInfoBox`. The brand 'lhte' shall be used to indicate that the file is conformant with the L-HEVC file format specified in clause 9 and the HEVC and L-HEVC tile storage tools specified in clause 10 with the following constraints applied:

- Extractors or aggregators may be present in 'hvc2' or 'hev2' track, except when forbidden by the specification (i.e. not present in tile tracks). □
- Each 'hvc2' and 'hev2' track shall represent a valid HEVC sub-bitstream, and may contain aggregators, when allowed. The sub-bitstream shall be contained:
  - Natively,
  - through extractors,
  - or through tile track reconstruction mechanism as defined in 10.5.4

Parsers of the 'lhte' brand shall perform bitstream reconstruction of tile data as specified in 10.5.4, shall process extractors and aggregators, and are not required to perform implicit reconstruction as specified in 9.5.2.2.

## 5 Recommendation

We recommend adding the proposed brands in the on going AMD to 14496-15.