|  |  |
| --- | --- |
| **ITU – Telecommunications Standardization Sector**STUDY GROUP 16 Question 6**Video Coding Experts Group (VCEG)**53rd Meeting: 20–26 February 2016, San Diego, US | Document VCEG-BA10 |

|  |  |
| --- | --- |
| Question: | Q.6/SG16 (VCEG) |
| Source: | Alexis Michael TourapisYeping SuDavid SingerKrasimir Kolarov**Apple Inc**Chad Fogg**Motion Picture Laboratories Inc.** | Tel:Email: | +1-408-228-7983atourapis@apple.comyeping\_su@apple.com singer@apple.comkolarov@apple.com chad.fogg@gmail.com  |
| Title: | Generalized Constant and Non-Constant Luminance Code Points in ITU-T Rec. H.264/MPEG-4 AVC |
| Purpose: | Proposal |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Abstract**

Two new code points were proposed in contribution m36979 [1] and adopted in the HEVC [2][3] specification. These two new code points allowed the definition of the non-constant luminance and constant luminance representations for any colour primaries and transfer characteristics, unlike previous practice where a corresponding code point for any new colour primaries had to be specified. In this contribution it is requested that this code points are also added in the ITU-T Rec. H.264/MPEG-4 AVC [4][5] specification.

# Proposal

During the 22nd JCTVC meeting, the general non-constant luminance and constant luminance representation systems [1] were adopted in the HEVC [2][3] specification. These code points permit the usage of matrix coefficients that can appropriately match the colour primaries that are used for a particular signal, thus potentially improving the characteristics and quality of the representation. This is done without having to explicitly define these matrix coefficients, as was done in the past. This can simplify and essentially future-proof this specifications, e.g. if new colour primaries are defined that need such representations.

In this contribution, it is requested that these code points are also added in the ITU-T Rec. H.264/MPEG-4 AVC [4][5] specification. The H.264/MPEG-4 AVC specification is expected to be used by a variety of applications in the near future, and thus having this capability is highly recommended.

We thus propose that these specs are appropriately amended. The current text that is provided in [7] should likely be used.

# References

1. A.M. Tourapis, Y. Su, D. Singer, C. Fogg, “Generalized Constant and Non-Constant Luminance Code Points”, MPEG document M36979, Geneva, SW, Oct. 2015
2. ITU-T H.265, “High efficiency video coding“
3. ISO/IEC 23008-2:2014, “Information technology -- High efficiency coding and media delivery in heterogeneous environments -- Part 2: High efficiency video coding, Second Edition”
4. ITU-T H.264, “Advanced video coding for generic audiovisual services”
5. ISO/IEC 14496-10:2014, “Information technology -- Coding of audio-visual objects -- Part 10: Advanced Video Coding”
6. Information technology -- MPEG systems technologies -- Part 8: Coding-independent code points, ISO/IEC 23001-8:2013,<http://www.iso.org/iso/catalogue_detail.htm?csnumber=62088>
7. High Efficiency Video Coding (HEVC) Screen Content Coding: Draft 5, JCTVC document JCTVC-V1005, Geneva, SW, Oct. 2015

**Apple Inc does not have any current or pending patent rights relating to the technology described in this contribution.**

**MovieLabs Inc does not have any current or pending patent rights relating to the technology described in this contribution.**