|  |  |
| --- | --- |
| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  15th Meeting: Geneva, CH, 23 Oct. – 1 Nov. 2013 | Document: JCTVC-O1008\_v3 |

|  |  |  |  |
| --- | --- | --- | --- |
| *Title:* | **High efficiency video coding (HEVC) scalable extension Draft 4** | | |
| *Status:* | Output Document of JCT-VC | | |
| *Purpose:* | Draft of SHVC | | |
| *Author(s) or Contact(s):* | Jianle Chen, Qualcomm  Jill Boyce, Vidyo  Yan Ye, InterDigital  Miska M. Hannuksela, Nokia  Ye-kui Wang, Qualcomm | Email: | [cjianle@qti.qualcomm.com](mailto:cjianle@qti.qualcomm.com)  [jill@vidyo.com](mailto:jill@vidyo.com)  [Yan.Ye@interdigital.com](mailto:Yan.Ye@interdigital.com)  [miska.hannuksela@nokia.com](mailto:miska.hannuksela@nokia.com)  [yekuiw@qti.qualcomm.com](mailto:yekuiw@qti.qualcomm.com) |
| *Source:* | Editors | | |

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

# Abstract

Note (T.T): this modified WD includes following editorial fixes:

-profile\_ref\_minus1 semantics in subcluase F.7.4.3.1

-Profile, tier and level semantics in subclause F.7.4.4

…skipped…

F.7.4.3.1.1 Video parameter set extension semantics

**…skipped…**

**profile\_ref\_minus1**[ i ] specifies that the profile and tier information for the i-th profile\_tier\_level( ) syntax structure is inferred to be equal to the profile and tier information for the ( profile \_ref\_minus1[ i ] + 1 )-th profile\_tier\_level( ) syntax structure. The value of profile\_ref\_minus1[ i ] + 1 shall be less than or equal to i.

…skipped…

F.7.4.4. Profile, tier and level semantics

The profile\_tier\_level( ) syntax structure provides profile, tier and level information used for a layer set. When the profile\_tier\_level( ) syntax structure is included in a vps\_extension( ) syntax structure, the applicable layer set to which the profile\_tier\_level( ) syntax structure applies is specified by the corresponding lsIdx variable in the vps\_extension( ) syntax structure. When the profile\_tier\_level( ) syntax structure is included in a VPS, but not in a vps\_extension( ) syntax structure, the applicable layer set to which the profile\_tier\_level( ) syntax structure applies is the layer set specified by the index 0. When the profile\_tier\_level( ) syntax structure is included in an SPS, the layer set to which the profile\_tier\_level( ) syntax structure applies is the layer set specified by the index 0.

For interpretation of the following semantics, CVS refers to the CVS subset associated with the layer set to which the profile\_tier\_level( ) syntax structure applies.

When the syntax elements general\_profile\_space, general\_tier\_flag, general\_profile\_idc, general\_profile\_compatibility\_flag[ j ], general\_progressive\_source\_flag, general\_interlaced\_source\_flag, general\_non\_packed\_constraint\_flag, general\_frame\_only\_constraint\_flag, general\_reserved\_zero\_44bits are not present for the profile\_tier\_level( ) syntax structure specified by the index k , they are inferred to be equal to the corresponding values of the profile\_tier\_level() syntax structure specified by the index (  profile\_ref\_minus1[ k ]+1 ).

When the syntax elements sub\_layer\_profile\_space[ i ], sub\_layer\_tier\_flag[ i ], sub\_layer\_profile\_idc[ i ], sub\_layer\_profile\_compatibility\_flag[ i ][ j ], sub\_layer\_progressive\_source\_flag[ i ], sub\_layer\_interlaced\_source\_flag[ i ], sub\_layer\_non\_packed\_constraint\_flag[ i ], sub\_layer\_frame\_only\_constraint\_flag[ i ], sub\_layer\_reserved\_zero\_44bits[ i ] are not present for the profile\_tier\_level( ) syntax structure specified by the index k, they are inferred to be equal to the corresponding values of the profile\_tier\_level( ) syntax structure ~~layer set~~ specified by the index ( profile\_ref\_minus1[ k ]+1 ).

The specifications in subclause 7.4.4 apply, with following modifications.

**general\_tier\_flag** specifies the tier context for the interpretation of general\_level\_idc as specified in Annex A or subclause G.11 or subclause H.11.

**general\_profile\_idc**, when general\_profile\_space is equal to 0, indicates a profile to which the CVS conforms as specified in Annex A or in subclause G.11 or in subclause H.11. Bitstreams shall not contain values of general\_profile\_idc other than those specified in Annex A or subclause G.11 or subclause H.11. Other values of general\_profile\_idc are reserved for future use by ITU-T | ISO/IEC.

**general\_profile\_compatibility\_flag**[ j ] equal to 1, when general\_profile\_space is equal to 0, indicates that the CVS conforms to the profile indicated by general\_profile\_idc equal to i as specified in Annex A or in subclause G.11 or in subclause H.11. When general\_profile\_space is equal to 0, general\_profile\_compatibility\_flag[ general\_profile\_idc ] shall be equal to 1. The value of general\_profile\_compatibility\_flag[ j ] shall be equal to 0 for any value of j that is not specified as an allowed value of general\_profile\_idc in Annex A or in subclause G.11 or in subclause H.11.

**general\_level\_idc** indicates a level to which the CVS conforms as specified in Annex A or subclause G.11 or subclause H.11. Bitstreams shall not contain values of general\_level\_idc other than those specified in Annex A or subclause G.11 or subclause H.11. Other values of general\_level\_idc are reserved for future use by ITU-T | ISO/IEC.

**sub\_layer\_profile\_present\_flag**[ i ] equal to 1, specifies that profile information is present in the profile\_tier\_level( ) syntax structure for the representation of the sub-layer with TemporalId equal to i. sub\_layer\_profile\_present\_flag[ i ] equal to 0 specifies that profile information is not present in the profile\_tier\_level( ) syntax structure for the representations of the sub-layer with TemporalId equal to i. When profilePresentFlag is equal to 0, sub\_layer\_profile\_present\_flag[ i ] shall be equal to 0.…skipped…