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| **Joint Collaborative Team on 3D Video Coding Extensions**  **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  9th Meeting: Sapporo, JP, 3–9 July 2014 | Document: JCT3V-I0085 |

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| *Title:* | **3D-CE2 related: Separate enabling flag for intra coding tools** | | |
| *Status:* | Input document | | |
| *Purpose:* | Proposal | | |
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# Proposed Text

I.7.3.2.1.2 Video parameter set extension 2 syntax

|  |
| --- |
| vps\_extension2( ) { |
| … |
| if ( !VpsDepthFlag[ layerId ] ) { |
| **…** |
| } else { |
| **mpi\_flag**[ layerId ] |
|  |
| **lim\_qt\_pred\_flag**[ layerId ] |
| **intra\_view\_prediction\_flag**[layerId] |
| **segment\_intra\_dc\_coidng\_flag**[layerId] |
| **depth\_modeling\_mode\_flag**[layerId] |
| **segment\_inter\_dc\_coding\_flag**[layerId] |
|  |
| } |
| … |
| } |

**intra\_view\_prediction\_flag**[ layerId ]equal to 1 specifies that intra-view prediciton mode is used for the layer with nuh\_layer\_id equal to layerId. intra\_view\_prediction\_flag[ layerId ] equal to 0 specifies that intra-view prediction mode is not used for the layer with nuh\_layer\_id equal to layerId. When not present, the value of intra\_view\_prediction\_flag [ layerId ] is inferred to be equal to 0.

**segment\_intra\_dc\_coding\_flag**[ layerId ]equal to 1 specifies that segment-wise intra DC coding is used for the layer with nuh\_layer\_id equal to layerId. segment\_intra\_dc\_coding\_flag[ layerId ] equal to 0 specifies that segment-wise intra DC coding is not used for the layer with nuh\_layer\_id equal to layerId. When not present, the value of segment\_intra\_dc\_coding\_flag[ layerId ] is inferred to be equal to 0.

**depth\_modeling\_mode\_flag**[ layerId ]equal to 1 specifies that depth map modelling mode is used for the layer with nuh\_layer\_id equal to layerId. depth\_modeling\_mode\_flag[ layerId ] equal to 0 specifies that depth map modelling mode is not used for the layer with nuh\_layer\_id equal to layerId. When not present, the value of depth\_modeling\_mode\_flag [ layerId ] is inferred to be equal to 0.

**segment\_inter\_dc\_coding\_flag**[ layerId ]equal to 1 specifies that segment-wise inter DC coding is used for the layer with nuh\_layer\_id equal to layerId. segment\_inter\_dc\_coding\_flag[ layerId ] equal to 0 specifies that segment-wise inter DC coding is not used for the layer with nuh\_layer\_id equal to layerId. When not present, the value of segment\_inter\_dc\_coding\_flag[ layerId ] is inferred to be equal to 0.

I.7.3.8.5 Coding unit syntax

|  |
| --- |
| … |
| if( sdcEnableFlag ) |
| **sdc\_flag**[ x0 ][ y0 ] |
| if( CuPredMode[ x0 ][ y0 ] = = MODE\_INTRA ) { |
| if( PartMode = = PART\_2Nx2N && pcm\_enabled\_flag &&   log2CbSize >= Log2MinIpcmCbSizeY &&  log2CbSize <= Log2MaxIpcmCbSizeY ) |
| **pcm\_flag**[ x0 ][ y0 ] |
| if( pcm\_flag[ x0 ][ y0 ] ) { |
| while( !byte\_aligned( ) ) |
| **pcm\_alignment\_zero\_bit** |
| pcm\_sample( x0, y0, log2CbSize ) |
| } else { |
| pbOffset = ( PartMode = = PART\_NxN ) ? ( nCbS / 2 ) : nCbS |
| for( j = 0; j < nCbS; j = j + pbOffset ) |
| for( i = 0; i < nCbS; i = i + pbOffset ) { |
| if( depth\_modeling\_mode\_flag[ nuh\_layer\_id ] || intra\_view\_prediction\_flag[ nuh\_layer\_id ] ) |
| intra\_mode\_ext( x0 + i ,  y0+ j , log2CbSize ) |
| if( dim\_not\_present\_flag[ x0 + i ][ y0 + j ] ) |
| **prev\_intra\_luma\_pred\_flag**[ x0 + i ][ y0 + j ] |
| } |
| … |

The variable sdcEnableFlag is derived as specified in the following:

* If CuPredMode[ x0 ][ y0 ] is equal to MODE\_INTER, sdcEnableFlag is set equal to ( vps\_ segment\_inter\_dc\_coding\_flag[ nuh\_layer\_id ]  &&  PartMode  = = PART\_2Nx2N )
* Otherwise, if CuPredMode[ x0 ][ y0 ] is equal to MODE\_INTRA, sdcEnableFlag is set equal to (  segment\_intra\_dc\_coding\_flag [ nuh\_layer\_id ]  &&  PartMode[ x0 ][ y0 ]  = = PART\_2Nx2N )
* Otherwise (CuPredMode[ x0 ][ y0 ] is equal to MODE\_SKIP), sdcEnableFlag is set equal to 0

**sdc\_flag**[ x0 ][ y0 ] equal to 1 specifies that segment-wise DC coding of residual blocks is used for the current coding unit. sdc\_flag[ x0 ][ y0 ] equal to 0 specifies that segment-wise DC coding of residual blocks is not used for the current coding unit. When not present, the value of sdc\_flag[ x0 ][ y0 ] is inferred to be equal to 0.

I.7.3.8.5.1 Intra mode extension syntax

|  |
| --- |
| intra\_mode\_ext( x0 , y0 , log2CbSize ) { |
| if( log2CbSize < 6 ) |
| **dim\_not\_present\_flag**[ x0 ][ y0 ] |
| if ( depth\_modeling\_mode\_flag[ nuh\_layer\_id ] && intra\_view\_prediction\_flag[ nuh\_layer\_id ]  && !dim\_not\_present\_flag[ x0 ][ y0 ] ) |
| **depth\_intra\_mode\_flag**[ x0 ][ y0 ] |
| if( DepthIntraMode[ x0 ][ y0 ] = = INTRA\_DEP\_DMM\_WFULL ) |
| **wedge\_full\_tab\_idx**[ x0  ][ y0 ] |
| } |

**dim\_not\_present\_flag**[ x0 ][ y0 ] equal to 1 specifies that the depth\_intra\_mode\_flag syntax element is not present and that intra modes with intraPredMode in the range of 0 to 34 is used for the current prediction unit. dim\_not\_present\_flag[ x0 ][ y0 ] equal to 0 specifies that that the depth\_intra\_mode\_flag syntax element might be present. When not present, the value of dim\_not\_present\_flag[ x0 ][ y0 ] is inferred to be equal to 1.

The variable DimFlag [ x0 ][ y0 ] is derived as specified in the following:

DimFlag[ x0 ][ y0 ] = !dim\_not\_present\_flag[ x0 ][ y0 ]

**depth\_intra\_mode\_flag**[ x0 ][ y0 ] is used to specify the depth intra mode of the current prediction unit.

The variable DepthIntraMode[ x0 ][ y0 ] is derived as specified in the following:

* If depth\_modeling\_mode\_flag[ nuh\_layer\_id ] is equal to 1 and intra\_view\_prediction\_flag [ nuh\_layer\_id ] is equal to 0, DepthIntraMode[ x0 ][ y0 ] is set equal to 0.
* Otherwise if depth\_modeling\_mode\_flag[ nuh\_layer\_id ] is equal to 0 and intra\_view\_prediction\_flag [ nuh\_layer\_id ] is equal to 1, DepthIntraMode[ x0 ][ y0 ] is set equal to 1.

- Otherwise, depth\_modeling\_mode\_flag[ nuh\_layer\_id ] is derived as follow.

DepthIntraMode[ x0 ][ y0 ] = dim\_not\_present\_flag[ x0 ][ y0 ] ? −1 : depth\_intra\_mode\_flag[ x0 ][ y0 ]

specifies the value for the depth intra mode and the associated names.

Table ‑ – Specification of DepthIntraMode and associated name

|  |  |
| --- | --- |
| **DepthIntraMode** | **Associated name** |
| −1 | INTRA\_DEP\_NONE |
| 0 | INTRA\_DEP\_DMM\_WFULL |
| 1 | INTRA\_DEP\_IVP\_CPREDTEX |

**wedge\_full\_tab\_idx**[ x0 ][ y0 ]specifies the index of the wedgelet pattern in the corresponding pattern list when DepthIntraMode[ x0 ][ y0 ] is equal to INTRA\_DEP\_DMM\_WFULL.

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I.7.3.8.5.2 Coding unit extension syntax

|  |
| --- |
| … |
| if( DimFlag [ x0 + k ][ y0 + j ] | | sdc\_flag[ x0 ][ y0 ] ) { |
| if( CuPredMode[ x0 ][ y0 ] = = MODE\_INTRA ) { |
| **depth\_dc\_flag**[ x0 + k ][ y0 + j ] |
| dcNumSeg = DimFlag [ x0 + k ][ y0 + j ] ? 2 : 1 |
| } else |
| … |

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