JCTVC-T0065 working draft, on top of:

R. Joshi and J. Xu, “HEVC screen content coding draft text 2,” in *Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11 19th Meeting*, JCTVC-S1005, Strasbourg, FR, 17–24 Oct. 2014.

#### 7.3.8.8 Palette syntax

|  |  |
| --- | --- |
| palette\_coding( x0, y0, nCbS ) { | Descriptor |
| … |  |
| if( indexMax > 0) { |  |
| **palette\_transpose\_flag** | ae(v) |
| **palette\_num\_indices** |  |
| for( i = 0; i < palette\_num\_indices; i++ ) | ae(v) |
| **palette\_index\_idc** |  |
| **last\_palette\_run\_type\_flag** | ae(v) |
| indicesLeft = palette\_num\_indices | ae(v) |
| } |  |
| scanPos = 0 |  |
| while( scanPos < nCbS \* nCbS ) { |  |
| … |  |
| if( indexMax > 0 && scanPos > = nCbS && palette\_run\_type\_flag[ xcPrev ][ ycPrev ]  ! = COPY\_ABOVE\_MODE && indicesLeft && scanPos < nCbS \* nCbS − 1) { |  |
| **palette\_run\_type\_flag**[ xC ][ yC ] | ae(v) |
| } |  |
| ~~if( palette\_run\_type\_flag[ xC ][ yC ] = = COPY\_INDEX\_MODE &&~~  ~~adjustedIndexMax > 0)~~ |  |
| **~~palette\_index\_idc~~** | ~~ae(v)~~ |
| indicesLeft –= 1 |  |
| if( indexMax > 0 && (indicesLeft | | palette\_run\_type\_flag != last\_palette\_run\_type\_flag)) { |  |
| maxPaletteRun = nCbS \* nCbS – scanPos – 1 |  |
| … |  |
| } |  |
| } |  |

**num\_palette\_index** specifies the number of palette index signalled in the current block.

**palette\_last\_run\_type\_flag** specifies the value of the last occurence of palette\_last\_run\_type\_flag.

**Table 9‑38 – Syntax elements and associated binarizations**

|  |  |  |  |
| --- | --- | --- | --- |
| … | … | … | … |
| palette\_coding( ) | … | … | … |
| palette\_escape\_val | 9.3.3.12 | cIdx, qP |
| palette\_num\_indices | 9.3.3.x | indexMax, palette\_share\_flag, nCbS |
| last\_palette\_run\_type\_flag | FL | cMax = 1 |
| … | … | … | … |

**9.3.3.xx Binarization process for palette\_num\_indices**

Input to this process is a request for a binarization for the syntax element palette\_num\_indices, indexMax, nCbS, and palette\_share\_flag.

Output of this process is the binarization of the syntax element.

The binarization of the syntax element palette\_num\_indices is a concatenation of a prefix bin string and (when present) a suffix bin string.

* The variable cRiceParam is set equal to 2 + indexMax / 6
* The variable stepSize is set to 32
* The variable ajustedIndices is set equal to palette\_num\_indices – indexMax
* The variable maxPositiveNum is set equal to nCbS \* nCbS – 1 – indexMax

If ajustedIndices is negative, it is mapped into positive as:

ajustedIndices <= (indexMax \* 32) ? (ajustedIndices >> 5) \* 33 + (ajustedIndices % 32): ajustedIndices + indexMax – 1 (9-aa)

Else it is updated as:

ajustedIndices <= (iMaxPositiveNum >> 5) ? ajustedIndices \* 33 – 1 : ajustedIndices + maxPositiveNum (9-bb)

The variable cMax is derived from cRiceParam as:

cMax = 4  <<  cRiceParam (9‑cc)

The binarization of the syntax element palette\_num\_indices is a concatenation of a prefix bin string and (when present) a suffix bin string.

For the derivation of the prefix bin string, the following applies:

* The prefix value of palette\_num\_indices, prefixVal, is derived as follows:

prefixVal = Min( cMax, ajustedIndices ) (9‑dd)

* The prefix bin string is specified by invoking the TR binarization process as specified in subclause 9.3.3.2 for prefixVal with the variables cMax and cRiceParam as inputs.

When the prefix bin string is equal to the bit string of length 4 with all bits equal to 1, the suffix bin string is present and it is derived as follows:

* The suffix value of palette\_num\_indices, suffixVal, is derived as follows:

suffixVal = ajustedIndices − cMax (9‑ee)

* The suffix bin string is specified by invoking the k-th order EGk binarization process as specified in subclause 9.3.3.3 for the binarization of suffixVal with the Exp-Golomb order k set equal to cRiceParam + 1.

**Table 9‑43 – Assignment of ctxInc to syntax elements with context coded bins**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| … | … | … | … | … | … | … |
| palette\_run\_type\_flag | 0, 1 (subclause 9.3.4.2.2) | na | na | na | na | na |
| last\_palette\_run\_type\_flag | 0 | na | na | na | na | na |
| … | … | … | … | … | … | … |

Table 9‑x – Values of initValue for ctxIdx of last\_palette\_run\_type\_flag

|  |  |  |  |
| --- | --- | --- | --- |
| **Initialization variable** | **ctxIdx of last\_palette\_run\_type\_flag** | | |
| **0** | **1** | **2** |
| **initValue** | 154 | 154 | 154 |