# Draft Text Specification

The proposed text changes are for the contribution JCTVC-O0277.doc for the Intra Block Copy MV difference coding fixed length scheme B. The changes are marked in yellow as compared to JCTVC-N01005\_v3.doc.

#### 7.2 Specification of syntax functions and descriptors

....

– ue(v): unsigned integer 0-th order Exp-Golomb-coded syntax element with the left bit first. The parsing process for this descriptor is specified in subclause 9.2.

– he(v): huffman entropy coding for unsigned integer with the left bit first. The parsing process for this descriptor is specified in subclause 9.4.

....

#### 7.8.3.9 Motion vector difference syntax

|  |  |
| --- | --- |
| mvd\_coding( x0, y0, refList ) { | **Descriptor** |
| **abs\_mvd\_greater0\_flag**[ 0 ] | ae(v) |
| **abs\_mvd\_greater0\_flag**[ 1 ] | ae(v) |
| if( !intra\_mc\_flag[ x0 ][ y0 ] ) { |  |
| if( abs\_mvd\_greater0\_flag[ 0 ] ) |  |
| **abs\_mvd\_greater1\_flag**[ 0 ] | ae(v) |
| if( abs\_mvd\_greater0\_flag[ 1 ] ) |  |
| **abs\_mvd\_greater1\_flag**[ 1 ] | ae(v) |
| } |  |
| if( abs\_mvd\_greater0\_flag[ 0 ] ) { |  |
| if( !intra\_mc\_flag[ x0 ][ y0 ] ) { |  |
| if( abs\_mvd\_greater1\_flag[ 0 ] ){ |  |
| **abs\_mvd\_minus2**[ 0 ] | ae(v) |
| } |  |
| } |  |
| else { |  |
| **Abs\_mvd**[0] | he(v) |
| } |  |
| **mvd\_sign\_flag**[ 0 ] | ae(v) |
| } |  |
| if( abs\_mvd\_greater0\_flag[ 1 ] ) { |  |
| if( !intra\_mc\_flag[ x0 ][ y0 ] ) { |  |
| if( abs\_mvd\_greater1\_flag[ 1 ] ){ |  |
| **abs\_mvd\_minus2**[ 1 ] | ae(v) |
| } |  |
| } |  |
| else { |  |
| **Abs\_mvd**[1] | he(v) |
| } |  |
| **mvd\_sign\_flag**[ 1 ] |  |
| **}** | ae(v) |
| **}** |  |

#### 

#### 7.4.9.9 Motion vector difference semantics

**…**

**abs\_mvd\_minus2**[ compIdx ] plus 2 specifies the absolute value of a motion vector component difference.

When abs\_mvd\_minus2[ compIdx ] is not present, it is inferred to be equal to −1.

**abs\_mvd**[compIdx] specifies the absolute value of a motion vector component difference.

When abs\_mvd[ compIdx ] is not present, it is inferred to be equal to −1.

**mvd\_sign\_flag**[ compIdx ] specifies the sign of a motion vector component difference as follows

…

#### 9.4 Parsing process for Huffman codes

### 9.4.1 General

This process is invoked when the descriptor of a syntax element in the syntax tables in subclause 7.3 is equal to he(v) .

Inputs to this process are bits from non-zero the intraBC Mvd.

Outputs of this process are syntax element values.

Syntax elements coded as he(v) is Huffman coded. A Huffman code book represent by a Huffman tree must be given. The codebook must be the same as the codebook in the encoder. One can find the Huffman codebook for IntraBC horizontal Mvd and vertical Mvd respectively in Annex F.

The parsing process for these syntax elements begins with reading the bits starting at the current location in the bitstream and search through the Huffman Tree from root node down to the leaf node. The syntax value is stored in the leaf node of Huffman tree. This process is specified as follows:

node = root of Huffman tree

while (node is not a leaf)

reading currentBit   
 if ( currentBit ==0)  
 node = node.leftChild

else

node = node.rightChild

return node.value

1. Annex F  
     
   Huffman Codebook for IntraBC Mvd Encoding  
   1. General

This annex specifies Huffman Codebook used for IntraBC Motion vector difference encoding.

Table F‑1 – Huffman Codebook for IntraBC Mvd

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Horizontal Mvd | Horizontal Mvd Huffman Code | Code Len. | Vertical Mvd | Vertical Mvd Huffman Code | Code Len. |
| -120 | 1010010001101 | 13 | -56 | 111011111 | 9 |
| -119 | 1011100001111 | 13 | -55 | 111011011111 | 12 |
| -118 | 1011100001101 | 13 | -54 | 10001011011 | 11 |
| -117 | 10010001101001 | 14 | -53 | 101110001111 | 12 |
| -116 | 1110100100111 | 13 | -52 | 10111000101 | 11 |
| -115 | 1110100100101 | 13 | -51 | 11101101101 | 11 |
| -114 | 1010010001111 | 13 | -50 | 101110001101 | 12 |
| -113 | 10010001101011 | 14 | -49 | 111011011101 | 12 |
| -112 | 11100100101 | 11 | -48 | 10011111 | 8 |
| -111 | 1000101000001 | 13 | -47 | 111011001 | 9 |
| -110 | 111010010001 | 12 | -46 | 10001011001 | 11 |
| -109 | 1001000110111 | 13 | -45 | 1011100001 | 10 |
| -108 | 100000000011 | 12 | -44 | 1000101011 | 10 |
| -107 | 1000101000011 | 13 | -43 | 11010010101 | 11 |
| -106 | 111001000011 | 12 | -42 | 1101001001 | 10 |
| -105 | 111001000001 | 12 | -41 | 11010010111 | 11 |
| -104 | 11101001011 | 11 | -40 | 10100001 | 8 |
| -103 | 101110000101 | 12 | -39 | 1000101111 | 10 |
| -102 | 100000000001 | 12 | -38 | 1011101101 | 10 |
| -101 | 101110000011 | 12 | -37 | 100111001 | 9 |
| -100 | 11100100011 | 11 | -36 | 101000111 | 9 |
| -99 | 101110000001 | 12 | -35 | 1110110101 | 10 |
| -98 | 10010001001 | 11 | -34 | 100111011 | 9 |
| -97 | 101001000101 | 12 | -33 | 1011101111 | 10 |
| -96 | 10010001011 | 11 | -32 | 1011011 | 7 |
| -95 | 11100100111 | 11 | -31 | 101110101 | 9 |
| -94 | 10011000001 | 11 | -30 | 11001011 | 8 |
| -93 | 100010100011 | 12 | -29 | 1000101001 | 10 |
| -92 | 10101010111 | 11 | -28 | 1011111 | 7 |
| -91 | 10100100101 | 11 | -27 | 111011101 | 9 |
| -90 | 10100100001 | 11 | -26 | 11001001 | 8 |
| -89 | 100100011001 | 12 | -25 | 110100111 | 9 |
| -88 | 10000000011 | 11 | -24 | 1010111 | 7 |
| -87 | 11011000011 | 11 | -23 | 11010001 | 8 |
| -86 | 1110100001 | 10 | -22 | 1110011 | 7 |
| -85 | 11011000001 | 11 | -21 | 101110011 | 9 |
| -84 | 1001011011 | 10 | -20 | 1001011 | 7 |
| -83 | 10100100111 | 11 | -19 | 101000101 | 9 |
| -82 | 10001010011 | 11 | -18 | 1101011 | 7 |
| -81 | 10101010101 | 11 | -17 | 10010001 | 8 |
| -80 | 1011100011 | 10 | -16 | 110111 | 6 |
| -79 | 10010001111 | 11 | -15 | 1100111 | 7 |
| -78 | 1101111001 | 10 | -14 | 1110001 | 7 |
| -77 | 1010001001 | 10 | -13 | 1111111 | 7 |
| -76 | 1100010111 | 10 | -12 | 1010011 | 7 |
| -75 | 1110100111 | 10 | -11 | 10010011 | 8 |
| -74 | 1101111011 | 10 | -10 | 1011001 | 7 |
| -73 | 10011000011 | 11 | -9 | 1111101 | 7 |
| -72 | 111000111 | 9 | -8 | 100001 | 6 |
| -71 | 1010101001 | 10 | -7 | 10001001 | 8 |
| -70 | 100101111 | 9 | -6 | 1000111 | 7 |
| -69 | 1101100011 | 10 | -5 | 1110101 | 7 |
| -68 | 1001110001 | 10 | -4 | 111101 | 6 |
| -67 | 1100010101 | 10 | -3 | 1001101 | 7 |
| -66 | 1001110011 | 10 | -2 | 110001 | 6 |
| -65 | 1110100011 | 10 | -1 | 1010101 | 7 |
| -64 | 101010111 | 9 | 0 | 0 | 1 |
| -63 | 110111111 | 9 | 1 | 1010100 | 7 |
| -62 | 1001011001 | 10 | 2 | 110000 | 6 |
| -61 | 1000010011 | 10 | 3 | 1001100 | 7 |
| -60 | 111001011 | 9 | 4 | 111100 | 6 |
| -59 | 1010001011 | 10 | 5 | 1110100 | 7 |
| -58 | 101100101 | 9 | 6 | 1000110 | 7 |
| -57 | 1000010001 | 10 | 7 | 10001000 | 8 |
| -56 | 11101111 | 8 | 8 | 100000 | 6 |
| -55 | 1001100011 | 10 | 9 | 1111100 | 7 |
| -54 | 100001011 | 9 | 10 | 1011000 | 7 |
| -53 | 1000101011 | 10 | 11 | 10010010 | 8 |
| -52 | 111000101 | 9 | 12 | 1010010 | 7 |
| -51 | 1000000011 | 10 | 13 | 1111110 | 7 |
| -50 | 110110011 | 9 | 14 | 1110000 | 7 |
| -49 | 101111001 | 9 | 15 | 1100110 | 7 |
| -48 | 11011101 | 8 | 16 | 110110 | 6 |
| -47 | 101100111 | 9 | 17 | 10010000 | 8 |
| -46 | 101110011 | 9 | 18 | 1101010 | 7 |
| -45 | 111010111 | 9 | 19 | 101000100 | 9 |
| -44 | 101100011 | 9 | 20 | 1001010 | 7 |
| -43 | 111010101 | 9 | 21 | 101110010 | 9 |
| -42 | 11100001 | 8 | 22 | 1110010 | 7 |
| -41 | 111001101 | 9 | 23 | 11010000 | 8 |
| -40 | 100101001 | 9 | 24 | 1010110 | 7 |
| -39 | 111001111 | 9 | 25 | 110100110 | 9 |
| -38 | 100111011 | 9 | 26 | 11001000 | 8 |
| -37 | 101111011 | 9 | 27 | 111011100 | 9 |
| -36 | 100110011 | 9 | 28 | 1011110 | 7 |
| -35 | 100000011 | 9 | 29 | 1000101000 | 10 |
| -34 | 101000111 | 9 | 30 | 11001010 | 8 |
| -33 | 110001001 | 9 | 31 | 101110100 | 9 |
| -32 | 10010011 | 8 | 32 | 1011010 | 7 |
| -31 | 101000011 | 9 | 33 | 1011101110 | 10 |
| -30 | 10111011 | 8 | 34 | 100111010 | 9 |
| -29 | 100101011 | 9 | 35 | 1110110100 | 10 |
| -28 | 10011111 | 8 | 36 | 101000110 | 9 |
| -27 | 101000001 | 9 | 37 | 100111000 | 9 |
| -26 | 100000111 | 9 | 38 | 1011101100 | 10 |
| -25 | 100010111 | 9 | 39 | 1000101110 | 10 |
| -24 | 1101001 | 7 | 40 | 10100000 | 8 |
| -23 | 11011011 | 8 | 41 | 11010010110 | 11 |
| -22 | 11000111 | 8 | 42 | 1101001000 | 10 |
| -21 | 10011011 | 8 | 43 | 11010010100 | 11 |
| -20 | 10111111 | 8 | 44 | 1000101010 | 10 |
| -19 | 11001101 | 8 | 45 | 1011100000 | 10 |
| -18 | 10101001 | 8 | 46 | 10001011000 | 11 |
| -17 | 10101111 | 8 | 47 | 111011000 | 9 |
| -16 | 1000111 | 7 | 48 | 10011110 | 8 |
| -15 | 10101101 | 8 | 49 | 111011011100 | 12 |
| -14 | 1101011 | 7 | 50 | 101110001100 | 12 |
| -13 | 10100111 | 8 | 51 | 11101101100 | 11 |
| -12 | 1011011 | 7 | 52 | 10111000100 | 11 |
| -11 | 10001001 | 8 | 53 | 101110001110 | 12 |
| -10 | 1100001 | 7 | 54 | 10001011010 | 11 |
| -9 | 1100101 | 7 | 55 | 111011011110 | 12 |
| -8 | 11111 | 5 | 56 | 111011110 | 9 |
| -7 | 100000101 | 9 |  |  |  |
| -6 | 10000111 | 8 |  |  |  |
| -5 | 101100001 | 9 |  |  |  |
| -4 | 11101101 | 8 |  |  |  |
| -3 | 100100001 | 9 |  |  |  |
| -2 | 11001111 | 8 |  |  |  |
| -1 | 101001011 | 9 |  |  |  |
| 0 | 0 | 1 |  |  |  |
| 1 | 101001010 | 9 |  |  |  |
| 2 | 11001110 | 8 |  |  |  |
| 3 | 100100000 | 9 |  |  |  |
| 4 | 11101100 | 8 |  |  |  |
| 5 | 101100000 | 9 |  |  |  |
| 6 | 10000110 | 8 |  |  |  |
| 7 | 100000100 | 9 |  |  |  |
| 8 | 11110 | 5 |  |  |  |
| 9 | 1100100 | 7 |  |  |  |
| 10 | 1100000 | 7 |  |  |  |
| 11 | 10001000 | 8 |  |  |  |
| 12 | 1011010 | 7 |  |  |  |
| 13 | 10100110 | 8 |  |  |  |
| 14 | 1101010 | 7 |  |  |  |
| 15 | 10101100 | 8 |  |  |  |
| 16 | 1000110 | 7 |  |  |  |
| 17 | 10101110 | 8 |  |  |  |
| 18 | 10101000 | 8 |  |  |  |
| 19 | 11001100 | 8 |  |  |  |
| 20 | 10111110 | 8 |  |  |  |
| 21 | 10011010 | 8 |  |  |  |
| 22 | 11000110 | 8 |  |  |  |
| 23 | 11011010 | 8 |  |  |  |
| 24 | 1101000 | 7 |  |  |  |
| 25 | 100010110 | 9 |  |  |  |
| 26 | 100000110 | 9 |  |  |  |
| 27 | 101000000 | 9 |  |  |  |
| 28 | 10011110 | 8 |  |  |  |
| 29 | 100101010 | 9 |  |  |  |
| 30 | 10111010 | 8 |  |  |  |
| 31 | 101000010 | 9 |  |  |  |
| 32 | 10010010 | 8 |  |  |  |
| 33 | 110001000 | 9 |  |  |  |
| 34 | 101000110 | 9 |  |  |  |
| 35 | 100000010 | 9 |  |  |  |
| 36 | 100110010 | 9 |  |  |  |
| 37 | 101111010 | 9 |  |  |  |
| 38 | 100111010 | 9 |  |  |  |
| 39 | 111001110 | 9 |  |  |  |
| 40 | 100101000 | 9 |  |  |  |
| 41 | 111001100 | 9 |  |  |  |
| 42 | 11100000 | 8 |  |  |  |
| 43 | 111010100 | 9 |  |  |  |
| 44 | 101100010 | 9 |  |  |  |
| 45 | 111010110 | 9 |  |  |  |
| 46 | 101110010 | 9 |  |  |  |
| 47 | 101100110 | 9 |  |  |  |
| 48 | 11011100 | 8 |  |  |  |
| 49 | 101111000 | 9 |  |  |  |
| 50 | 110110010 | 9 |  |  |  |
| 51 | 1000000010 | 10 |  |  |  |
| 52 | 111000100 | 9 |  |  |  |
| 53 | 1000101010 | 10 |  |  |  |
| 54 | 100001010 | 9 |  |  |  |
| 55 | 1001100010 | 10 |  |  |  |
| 56 | 11101110 | 8 |  |  |  |