G.8.5.2.1.12 Derivation process for a temporal inter-view motion vector predictor candidate

This process is not invoked when multi\_view\_mv\_pred\_flag is equal to 0.

Inputs to this process are:

– a luma location ( xP, yP ) of the top-left luma sample of the current prediction unit relative to the top-left luma sample of the current picture,

– variables nPSW and nPSH specifying the width and the height, respectively, of the current prediction unit,

– a reference index refIdxLX (with X being equal to 0 or 1) specifying a reference picture in the reference picture list RefPicListLX,

– a view identifier refViewIdx specifying a reference view.

Outputs of this process are:

– a flag availableFlagLXInterView specifying whether the inter-view motion vector candidate is available,

– a motion vector candidate mvLXInterView (if availableFlagLXInterView is equal to 1).

The derivation process as specified in subclause G.8.5.2.1.13 is invoked with the luma location ( xP, yP ), and the variables nPSW, nPSH, as the inputs and a flag availableDV and a disparity vector mvDisp as the outputs.

The reference layer luma location ( xRef, yRef ) is derived by

xRef = Clip3( 0, PicWidthInSamplesL – 1, xP + ( ( nPSW – 1 ) >> 1 ) + ( ( mvDisp[0] + 2 ) >> 2 ) ) (G‑)  
~~yRef = Clip3( 0, PicHeightInSamples~~~~L~~~~– 1, yP + ( ( nPSH – 1 ) >> 1 ) + ( (~~ ~~mvDisp[1] + 2 ) >> 2 )) (G‑86)~~

yRef = yP + ( ( nPSH – 1 ) >> 1 ) (G‑86)

Let refCU be the coding unit that covers the luma location ( xRef, yRef ) in the view component with ViewIdx equal to refViewIdx.

The flag availableFlagLXInterView is set equal to 0.

When the variable PredMode for the coding unit refCU is equal to MODE\_SKIP or MODE\_INTER, the following ordered steps are specified:

1. Let refPredFlagLY, with Y being replaced by 0 and 1, be the variables predFlagLY for the prediction unit refPU. Let refRefIdxLY, with Y being replaced by 0 and 1, be the variables refIdxLY for the prediction unit refPU. Let refMvLY, with Y being replaced by 0 and 1, be the variables mvLY for the prediction unit refPU. Let refRefPicListLY, with Y being replaced by 0 and 1, be the reference picture list RefPicListLY for the prediction unit refPU in the view component with ViewIdx equal to refViewIdx.
2. When refPredFlagL0 is equal to 1 and the picture order count of the picture refRefPicListL0[ refRefIdxL0 ] is equal to the picture order count of the picture RefPicListLX[ refIdxLX ], the flag availableFlagLXInterView is set equal to 1 and the motion vector mvLXInterView is derived by

mvLXInterView[ 0 ] = refMvL0[ 0 ] (G‑87)  
mvLXInterView[ 1 ] = refMvL0[ 1 ] (G‑88)

1. When availableFlagLXInterView is equal to 0 and refPredFlagL1 is equal to 1 and the picture order count of the picture refRefPicListL1[ refRefIdxL1 ] is equal to the picture order count of the picture RefPicListLX[ refIdxLX ], the flag availableFlagLXInterView is set equal to 1 and the motion vector mvLXInterView is derived by

mvLXInterView[ 0 ] = refMvL1[ 0 ] (G‑89)  
mvLXInterView[ 1 ] = refMvL1[ 1 ] (G‑90)

G.8.5.2.1.12 Derivation process for a disparity vector

Inputs to this process are:

– a luma location ( xP, yP ) of the top-left luma sample of the current prediction unit relative to the top-left luma sample of the current picture,

– variables nPSW and nPSH specifying the width and the height, respectively, of the current prediction unit

– a view identifier refViewIdx specifying a reference view.

Outputs of this process are:

– a flag availableDV specifying whether the disparity vector is available,

– a disparity vector mvDisp.

For N being A0, A1, B0, B1, or B2, and X being 0 or 1, flags availableFlagIvpMvNX and the components of disparity vectors ivpMvDispNX are set equal to 0. availableDV is set equal to 0.

The motion vector mvDisp and the availability flag availableDV are derived in the following ordered steps and the whole decoding process of this sub-clause terminates once availableDV is set to 1.

1. For each N being A1, B1, A0, B0, or B2, and ( xN, yN ) being ( xP − 1,  yP + nPSH − 1 ), ( xP + nPSW − 1,  yP − 1 ), ( xP + nPSW,  yP − 1 ), ( xP − 1,  yP + nPSH  ), or ( xP − 1,  yP − 1 ), the following applies.
2. When yP−1 is less than (( yC >> Log2CtbSizeY ) << Log2CtbSizeY), the following applies.

xB0 = ((xB0>>3)<<3) + ((xB0>>3)&1)\*7 (G‑91)  
xB1 = ((xB1>>3)<<3) + ((xB1>>3)&1)\*7 (G‑92)  
xB2 = ((xB2>>3)<<3) + ((xB2>>3)&1)\*7 (G‑93)

1. For each X from 0 to 1, the following applies, if availableN is equal to 1 and PredFlagLX[ xN ][ yN ] is equal to 1
   * If RefPicListX[ RefIdxLX[ xN ][ yN ] ] is an inter-view reference picture with ViewOrderIndex equal to refViewIdx, the following apply:

mvDisp = mvLXN[ xN ][ yN ] (G‑94)  
availableDV = 1 (G‑95)

* + Otherwise, if PredMode[ xN ][ yN ] is equal to MODE\_SKIP and IvpMvFlagLX[ xN, yN ] is equal to 1, the following apply:

ivpMvDispNX = IvpMvDispLX[ xN, yN ] (G‑96)  
availableFlagIvpMvNX = 1 (G‑97)

1. The derivation process for a disparity vector from temporal neighbour block as specified in G.8.5.2.1.16 is invoked with a luma location ( xP, yP ), variables nPSW and nPSH as inputs, and flag availableDV, disparity vector mvDisp, availableFlagIvpMvColX, and ivpMvDispColX as outputs
2. For each N being A1, B1, A0, B0, B2, and Col, the following applies.
3. For each X from 0 to 1, the following applies.
   * If availableFlagIvpMvNX is equal to 1, the following apply:

mvDisp = ivpMvDispNX (G‑98)

mvDisp[1] = 0  
availableDV = 1 (G‑99)

G.8.5.2.1.15 **Derivation process for a temporal inter-view motion vector merging candidate**

This process is not invoked when multi\_view\_mv\_pred\_flag is equal to 0.

Inputs to this process are:

– a luma location ( xP, yP ) of the top-left luma sample of the current prediction unit relative to the top-left luma sample of the current picture,

– variables nPSW and nPSH specifying the width and the height, respectively, of the current prediction unit,

– a prediction list indication X.

Outputs of this process are:

– a flag availableFlagLXInterView specifying whether the inter-view motion vector candidate is available,

– a motion vector candidate mvLXInterView (if availableFlagLXInterView is equal to 1).

– a reference index refIdxLX (with X being equal to 0 or 1) specifying a reference picture in the reference picture list RefPicListLX,

The derivation process for a disparity vector as specified in subclause G.8.5.2.1.13 is invoked with the luma location ( xP, yP ), and the variables nPSW and nPSH, as the inputs and a flag availableDV and a disparity vector mvDisp and as the outputs.

The reference layer luma location ( xRef, yRef ) is derived by

xRef = Clip3( 0, PicWidthInSamplesL – 1, xP + ( ( nPSW – 1 ) >> 1 ) + ( ( mvDisp[0] + 2 ) >> 2 ) ) (G‑)  
~~yRef = Clip3( 0, PicHeightInSamples~~~~L~~~~– 1, yP + ( ( nPSH – 1 ) >> 1 ) + ( ( mvDisp[1] + 2 ) >> 2 )) (G‑105)~~

yRef = yP + ( ( nPSH – 1 ) >> 1 ) (G‑105)

Let refCU be the coding unit that covers the luma location ( xRef, yRef ) in the view component with ViewIdx equal to refViewIdx.

The flag availableFlagLXInterView is set equal to 0.

When the variable PredMode for the coding unit refCU is equal to MODE\_SKIP or MODE\_INTER, the following ordered steps apply:

1. Let refPredFlagLY, with Y being replaced by 0 and 1, be the variables predFlagLY for the prediction unit refPU. Let refRefIdxLY, with Y being replaced by 0 and 1, be the variables refIdxLY for the prediction unit refPU. Let refMvLY, with Y being replaced by 0 and 1, be the variables mvLY for the prediction unit refPU. Let refRefPicListLY, with Y being replaced by 0 and 1, be the reference picture list RefPicListLY for the prediction unit refPU in the view component with ViewIdx equal to refViewIdx.
2. When refPredFlagLX is equal to 1, the following apply for each i from 0 to num\_ref\_idx\_lX\_active\_minus1, inclusive
   * When availableFlagLXInterView is 0, and the picture order count of the picture refRefPicListLX[ refRefIdxLX ] is equal to the picture order count of the picture RefPicListLX[ i ], the flag availableFlagLXInterView is set equal to 1 and the following applies.

mvLXInterView[ 0 ] = refMvLX[ 0 ] (G‑)  
mvLXInterView[ 1 ] = refMvLX[ 1 ] (G‑)  
refIdxLX = i (G‑)  
IvpMvFlagLX[ xP, yP ] = 1 (G‑)  
IvpMvDispLX[ xP, yP ] = mvDisp[ 0 ] (G‑)

1. When refPredFlagLY is equal to 1 (with Y equal to 1-X), the following apply for each i from 0 to num\_ref\_idx\_lX\_active\_minus1, inclusive,
   * When availableFlagLXInterView is 0, and the picture order count of the picture refRefPicListLY[ refRefIdxLY ] is equal to the picture order count of the picture RefPicListLX[ i ], the flag availableFlagLXInterView is set equal to 1 and the following applies.

mvLXInterView[ 0 ] = refMvLY[ 0 ] (G‑)  
mvLXInterView[ 1 ] = refMvLY[ 1 ] (G‑)  
refIdxLX = i (G‑)  
IvpMvFlagLX[ xP, yP ] = 1 (G‑)  
IvpMvDispLX[ xP, yP ] = mvDisp[ 0 ] (G‑)