#### Edge filtering process

##### Vertical edge filtering process

Inputs of this process are:

– picture sample arrays recPictureL, recPictureCb and recPictureCr.

– a luma location ( xC, yC ) specifying the top-left sample of the current luma coding block relative to the top-left luma sample of the current picture,

– a variable log2CbSize specifying the size of the current luma coding block,

– an array bS specifying the boundary filtering strength.

Outputs of this process are:

– the modified picture sample arrays recPictureL, recPictureCb and recPictureCr.

The filtering process for edges in the luma coding block of the current coding unit consists of the following ordered steps:

1. The variable nD is set equal to 1 << ( log2CbSize − 3 ).
2. For xDk set equal to xC+( k << 3 ), k=0..nD − 1, the following applies.

For yDm set equal to yC+( m << 2 ), m=0..nD\*2 − 1, the following applies.

* When bS[ xDk ][ yDm ] is greater than 0, the following ordered steps apply.

1. The decision process for luma block edge as specified in subclause 8.7.2.4.3 is invoked with the luma picture sample array recPictureL, the location of the luma coding block ( xC, yC ), the luma location of the block ( xDk, yDm ), a variable edgeType set equal to EDGE\_VER, and the boundary filtering strength bS[ xDk ][ yDm ] as inputs, the decisions dE, dEp, dEq, and the variables β, tC as outputs.
2. The filtering process for luma block edge as specified in subclause 8.7.2.4.4 is invoked with the luma picture sample array recPictureL, the location of the luma coding block ( xC, yC ), the luma location of the block ( xDk, yDm ), a variable edgeType set equal to EDGE\_VER, the decisions dE, dEp, dEq, and the variables β, tC as inputs and the modified luma picture sample array recPictureL as output.

The filtering process for edges in the chroma coding blocks of current coding unit consists of the following ordered steps:

1. The variable nD is set equal to 1 << ( log2CbSize − 3 ).
2. For xDk set equal to ( xC / 2 )+( k << 2 ), k=0..nD − 1, the following applies.

For yDm set equal to ( yC / 2)+( m << 2 ), m=0..nD − 1, the following applies.

* When bS[ xDk\*2 ][ yDm\*2 ] is greater than 1 and ((xDk >> 3) << 3 ) is equal to xDk, the following ordered steps apply.

1. The filtering process for chroma block edge as specified in subclause 8.7.2.4.5 is invoked with the chroma picture sample array recPictureCb, the location of the chroma coding block ( xC/2, yC/2 ), the chroma location of the block ( xDk, yDm ), a variable edgeType set equal to EDGE\_VER, and the boundary filtering strength bS[ xDk\*2 ][ yDm\*2 ] as inputs and the modified chroma picture sample array recPictureCb as output.
2. The filtering process for chroma block edge as specified in subclause 8.7.2.4.5 is invoked with the chroma picture sample array recPictureCr, the location of the chroma coding block ( xC/2, yC/2 ), the chroma location of the block ( xDk, yDm ), a variable edgeType set equal to EDGE\_VER, and the boundary filtering strength bS[ xDk\*2 ][ yDm\*2 ] as inputs and the modified chroma picture sample array recPictureCr as output.

##### Horizontal edge filtering process

Inputs of this process are:

– picture sample arrays recPictureL, recPictureCb and recPictureCr.

– a luma location ( xC, yC ) specifying the top-left sample of the current luma coding block relative to the top-left luma sample of the current picture,

– a variable log2CbSize specifying the size of the current luma coding block,

– an array bS specifying the boundary filtering strength.

Outputs of this process are:

– the modified picture sample arrays recPictureL, recPictureCb and recPictureCr.

The filtering process for edges in the luma coding block of the current coding unit consists of the following ordered steps:

1. The variable nD is set equal to 1 << ( log2CbSize − 3 ).
2. For yDm set equal to yC+( m << 3 ), m=0..nD − 1, the following applies.

For xDk set equal to xC + ( k << 2 ), k = 0..nD\*2 − 1, the following applies.

* When bS[ xDk ][ yDm ] is greater than 0, the following ordered steps apply.

1. The decision process for luma block edge as specified in subclause 8.7.2.4.3 is invoked with the luma picture sample array recPictureL, the location of the luma coding block ( xC, yC ), the luma location of the block ( xDk, yDm ), a variable edgeType set equal to EDGE\_HOR, and the boundary filtering strength bS[ xDk ][ yDm ] as inputs, the decisions dE, dEp, dEq, and the variables β, tC as outputs.
2. The filtering process for luma block edge as specified in subclause 8.7.2.4.4 is invoked with the luma picture sample array recPictureL, the location of the luma coding block ( xC, yC ), the luma location of the block ( xDk, yDm ), a variable edgeType set equal to EDGE\_HOR, the decisions dEp, dEp, dEq, and the variables β, tC as inputs and the modified luma picture sample array recPictureL as output.

The filtering process for edges in the chroma coding blocks of current coding unit consists of the following ordered steps:

1. The variable nD is set equal to 1 << ( log2CbSize − 3 ).
2. For yDm set equal to ( yC / 2 )+( m << 2 ), m=0..nD − 1, the following applies.

For xDk set equal to ( xC / 2 )+( k << 2 ), k=0..nD − 1, the following applies.

* When bS[ xDk\*2 ][ yDm\*2 ] is greater than 1 and (( yDm >> 3 ) << 3) is equal to yDm, the following ordered steps apply.

1. The filtering process for chroma block edge as specified in subclause 8.7.2.4.5 is invoked with the chroma picture sample array recPictureCb, the location of the chroma coding block ( xC/2, yC/2 ), the chroma location of the block ( xDk, yDm ), a variable edgeType set equal to EDGE\_HOR, and the boundary filtering strength bS[ xDk\*2 ][ yDm\*2 ] as inputs and the modified chroma picture sample array recPictureCb as output.
2. The filtering process for chroma block edge as specified in subclause 8.7.2.4.5 is invoked with the chroma picture sample array recPictureCr, the location of the chroma coding block ( xC/2, yC/2 ), the chroma location of the block ( xDk, yDm ), a variable edgeType set equal to EDGE\_HOR, and the boundary filtering strength bS[ xDk\*2 ][ yDm\*2 ] as inputs and the modified chroma picture sample array recPictureCr as output.