CLAIMS

1. An apparatus (144, 244) for inter prediction of a sample value of a current full-integer pixel of a plurality of pixels of a current block of a current frame of a video signal, wherein the apparatus (144, 244) comprises a processing unit configured to:

determine a motion vector of the current full-integer pixel on the basis of the current frame and a reference frame of the video signal or a non-translational motion compensation model;

determine for the current full-integer pixel a corresponding sub-integer pixel in the reference frame on the basis of the motion vector of the current full-integer pixel;

generate on the basis of a predefined set of filter support pixels in the current frame a set of corresponding filter support pixels in the reference frame, wherein the predefined set of filter support pixels in the current frame comprises one or more neighboring full-integer pixels and/or sub-integer pixels of the current full-integer pixel;

determine a respective motion vector of each of the sub-integer pixels of the filter support pixels in the current frame by determining a mean vector of the motion vector of the current full-integer pixel and one or more motion vectors of neighboring full-integer pixels of the current full-integer pixel;

determine a respective sample value of the corresponding sub-integer pixel of the current full-integer pixel and the corresponding filter support pixels in the reference frame; and

determine the inter predicted sample value of the current pixel in the current frame by applying a spatial high-pass filter to the sample value of the corresponding sub-integer pixel of the current full-integer pixel in the reference frame and to the sample values of the corresponding filter support pixels in the reference frame.

2. The apparatus (144, 244) of claim 1, wherein the predefined set of filter support pixels in the current frame comprises one or more vertically and/or horizontally neighboring half-integer pixels of the current full-integer pixel in the current frame.

3. The apparatus (144, 244) of claim 1 or 2, wherein the predefined set of filter support pixels in the current frame comprises one or more vertically and/or horizontally neighboring full-integer pixels of the current full-integer pixel in the current frame.

4. The apparatus (144, 244) of any one of the preceding claims, wherein the spatial high-pass filter is a 5-tap or a 3-tap filter.

5. The apparatus (144, 244) of claim 4, wherein the predefined set of filter support pixels in the current frame comprises one or more neighboring full-integer pixels and half-integer pixels of the current full-integer pixel and wherein the 5-tap filter has the following filter coefficients (-6, 9, 26, 9, -6).

6. The apparatus (144, 244) of claim 4, wherein the predefined set of filter support pixels in the current frame comprises one or more neighboring full-integer pixels and/or half-integer pixels of the current full-integer pixel and wherein the 5-tap filter has the filter coefficients (-1, 0, 10, 0, -1) or the 3-tap filter has the filter coefficients (-1, 10, -1).

7. The apparatus (144, 244) of any one of the preceding claims, wherein the processing unit of the apparatus (144, 244) is configured to determine the respective sample values of the corresponding sub-integer pixel of the current full-integer pixel in the reference frame and of the corresponding filter support pixels in the reference frame on the basis of a bilinear interpolation of the respective neighboring full-integer pixels in the reference frame.

8. The apparatus (144, 244) of claim 1, wherein the processing unit of the apparatus (144, 244) is further configured to determine the one or more motion vectors of neighboring full-integer pixels of the current full-integer pixel on the basis of the current frame and the reference frame of the video signal and/or a motion compensation model.

9. The apparatus (144, 244) of any one of the preceding claims, wherein the processing unit of the apparatus (144, 244) is configured to determine the inter predicted sample value of the current pixel in the current frame by applying a spatial high-pass filter to the sample value of the corresponding sub-integer pixel of the current full-integer pixel in the reference frame and to the sample values of the corresponding filter support pixels in the reference frame, in case the motion vector of the current full-integer pixel is determined on the basis of a non-translational motion compensation model, and to

determine the inter predicted sample value of the current pixel in the current frame on the basis of a conventional scheme, in case the motion vector of the current full-integer pixel is determined on the basis of a translational motion compensation model.

10. The apparatus (144, 244) of claim 9, wherein the non-translational motion compensation model is an affine, warping and/or panoramic motion compensation model.

11. The apparatus (144, 244) of any one of the preceding claims, wherein the processing unit is configured to apply an intermediate rounding operation in the filtering process.

12. A method (600) for inter prediction of a sample value of a current full-integer pixel of a plurality of pixels of a current block of a current frame of a video signal, wherein the method (600) comprises:

determining (601) a motion vector of the current full-integer pixel on the basis of the current frame and a reference frame of the video signal or on the basis of a non-translational motion compensation model;

determining (603) for the current full-integer pixel a corresponding sub-integer pixel in the reference frame on the basis of the motion vector of the current full-integer pixel;

generating (605) on the basis of a predefined set of filter support pixels in the current frame a set of corresponding filter support pixels in the reference frame, wherein the predefined set of filter support pixels in the current frame comprises one or more neighboring full-integer and/or sub-integer pixels of the current full-integer pixel;

determining a respective motion vector of each of the sub-integer pixels of the filter support pixels in the current frame by determining a mean vector of the motion vector of the current full-integer pixel and one or more motion vectors of neighboring full-integer pixels of the current full-integer pixel;

determining (607) a respective sample value of the corresponding sub-integer pixel of the current full-integer pixel and the corresponding filter support pixels in the reference frame; and

determining (609) the inter predicted sample value of the current pixel in the current frame by applying a spatial high-pass filter to the sample value of the corresponding sub-integer pixel of the current full-integer pixel in the reference frame and to the sample values of the corresponding filter support pixels in the reference frame.

13. An encoding apparatus (100) for encoding a current frame of a video signal, wherein the encoding apparatus (100) comprises an inter prediction apparatus (144) according to any one of claims 1 to 11, wherein the processing unit is configured to determine the motion vector of the current full-integer pixel on the basis of the current frame and reference frame of the video signal or on the basis of the non-translational motion compensation model.

14. A decoding apparatus (200) for decoding a current reconstructed frame of a compressed video signal, wherein the decoding apparatus (200) comprises an inter prediction apparatus (244) according to any one of claims 1 to 11, wherein the processing unit is configured to determine the motion vector of the current full-integer pixel on the basis of the current frame and reference frame of the video signal.

15. A computer program product comprising program code for performing the method of claim 12 when executed on a computer or a processor.