

CLAIMS

1. A method for intra-prediction or inter-prediction processing of a video frame, comprising the steps of:

5

obtaining a reference sample;

obtaining a value of a subpixel offset; and

filtering, using a 4-tap interpolation filter, the reference sample to obtain a predicted sample value,

wherein filter coefficients of the 4-tap interpolation filter are defined as follows:

p	c_0	c_1	c_2	c_3
0	16	32	16	0
1	16	32	16	0
2	15	31	17	1
3	15	31	17	1
4	14	30	18	2
5	14	30	18	2
6	13	29	19	3
7	13	29	19	3
8	12	28	20	4
9	12	28	20	4
10	11	27	21	5
11	11	27	21	5
12	10	26	22	6
13	10	26	22	6
14	9	25	23	7
15	9	25	23	7
16	8	24	24	8
17	8	24	24	8
18	7	23	25	9
19	7	23	25	9
20	6	22	26	10

21	6	22	26	10
22	5	21	27	11
23	5	21	27	11
24	4	20	28	12
25	4	20	28	12
26	3	19	29	13
27	3	19	29	13
28	2	18	30	14
29	2	18	30	14
30	1	17	31	15
31	1	17	31	15

wherein p is a fractional part of the value of the subpixel offset, and c_0 , c_1 , c_2 , and c_3 are the filter coefficients.

- 5 2. An apparatus for intra-prediction or inter-prediction processing of a video frame, comprising:

a reference sample obtaining unit configured to obtain a reference sample;

a subpixel offset value obtaining unit configured to obtain a value of a subpixel offset;
and

- 10 a 4-tap interpolation filter configured to filter the reference sample to obtain a predicted sample value,

wherein filter coefficients of the 4-tap interpolation filter are defined as follows:

p	c_0	c_1	c_2	c_3
0	16	32	16	0
1	16	32	16	0
2	15	31	17	1
3	15	31	17	1
4	14	30	18	2
5	14	30	18	2
6	13	29	19	3
7	13	29	19	3
8	12	28	20	4
9	12	28	20	4
10	11	27	21	5
11	11	27	21	5
12	10	26	22	6
13	10	26	22	6
14	9	25	23	7
15	9	25	23	7
16	8	24	24	8
17	8	24	24	8
18	7	23	25	9
19	7	23	25	9
20	6	22	26	10

21	6	22	26	10
22	5	21	27	11
23	5	21	27	11
24	4	20	28	12
25	4	20	28	12
26	3	19	29	13
27	3	19	29	13
28	2	18	30	14
29	2	18	30	14
30	1	17	31	15
31	1	17	31	15

wherein p is a fractional part of the value of the subpixel offset, and c_0 , c_1 , c_2 , and c_3 are the filter coefficients.

5 3. A decoder, comprising:

one or more processors; and

a non-transitory computer-readable storage medium coupled to the processors and storing programming for execution by the processors, wherein the programming, when executed by the processors, configures the decoder to carry out the method according to claim 1.

10

4. An encoder, comprising:

one or more processors; and

a non-transitory computer-readable storage medium coupled to the processors and storing programming for execution by the processors, wherein the programming, when executed by the processors, configures the encoder to carry out the method according to claim 1.

5

5. A computer-readable storage medium having a program recorded thereon; where the program makes the computer execute method of claim 1.

6. A computer program stored on a medium configured to cause a computer to execute method of claim 1.

10