CLAIMS

1. An image processing device (501, 601, 701, 801) for use in an image encoder (600) and/or an image decoder (700), for deblocking a horizontal block edge (1303) between a first coding block (1301) and a second coding block (1302) of an image (1300),

- the image (1300) including a plurality of coding tree units, CTUs, arranged in a matrix of CTUs, the matrix consisting of multiple rows of CTUs and multiple columns of CTUs, wherein the plurality of CTUs are processed by the image processing device (501, 601, 701, 801) starting from a top-left CTU and ending at a bottom-right CTU of the matrix, wherein each row of CTUs is processed sequentially one after another and within each row of CTUs the CTUs are processed sequentially from the leftmost CTU of that row to the rightmost CTU of that row,
- wherein the first coding block (1301) is a lowermost coding block of a first CTU(17) among the plurality of CTUs, the first coding block (1301) having a block size of S_A samples perpendicular to the horizontal block edge (1303) by N samples parallel to the horizontal block edge (1303), wherein N = 8,
- wherein the second coding block (1302) is an uppermost coding block of a second CTU(25) among the plurality of CTUs, the second coding block (1302) having a block size of S_B samples perpendicular to the horizontal block edge (1303) by N samples parallel to the horizontal block edge(1303), wherein N = 8, wherein a row of CTUs of the matrix in which the second CTU is located is a row following consecutively a row in which the first CTU is located,
- wherein the horizontal block edge (1303) overlaps with a coding tree unit, CTU, block edge (1201) between the first CTU(17) and the second CTU(25) among the plurality of CTUs,

  wherein the image processing device (501, 601, 701, 801) comprises a filter (502, 602, 702, 802) for filtering the horizontal block edge (1303),

  - wherein the filter (502, 602, 702, 802) is configured to:
    - modify values of at most M_A samples of the first coding block (1301) as first filter output values, wherein the at most M_A samples are in a line perpendicular to and adjacent to the horizontal block edge (1303);
    - modify values of at most M_B samples of the second coding block (1302) as second filter output values, wherein the at most M_B

samples are in a line perpendicular to and adjacent to the horizontal block edge (1303);

- use values of at most I_A samples of the first coding block (1301) as first filter input values, for calculating the first filter output values and/or the second filter output values, wherein the at most I_A samples are in a line perpendicular to and adjacent to the horizontal block edge (1303); and
- use values of at most I_B samples of the second coding block (1302) as second filter input values, for calculating the first filter output values and/or the second filter output values, wherein the at most I_B samples are in a line perpendicular to and adjacent to the horizontal block edge (1303); wherein $I_A \neq I_B$ and $M_A \neq M_B$, $S_A \neq S_B$; $I_A = 4$, and $M_A = 3$.

2. The image processing device (501, 601, 701, 801) of claim 1,
wherein the image processing device (501, 601, 701, 801) comprises a determiner (803), configured to determine if the horizontal block edge (1303) is to be filtered and/or if a strong filtering or a weak filtering is to be performed, based upon:

- values of at most D_A samples of the first coding block (1301) as first filter decision values, wherein the D_A samples are in a line perpendicular to and adjacent to the horizontal block edge (1303), and
- values of at most D_B samples of the second coding block (1302) as second filter decision values, wherein the D_B samples are in a line perpendicular to and adjacent to the horizontal block edge(1201, 1303).

3. The image processing device (501, 601, 701, 801) of claim 2, wherein the first filter input values are identical to the first filter decision values, and wherein the second filter input values are identical to the second filter decision values.

4. An encoder for encoding an image (900, 1300), comprising an image processing device (501, 601, 701, 801) of any of the claims 1 to 3.

5. A decoder for decoding an image (900, 1300), comprising an image processing device (501, 601, 701, 801) of any of the claims 1 to 3.

6. A deblocking method, for deblocking a horizontal block edge (1303) between a first coding block (1301) and a second coding block (1302) of an image (1300),

- the image (1300) including a plurality of coding tree units, CTUs, arranged in a matrix of CTUs, the matrix consisting of multiple rows of CTUs and multiple columns of CTUs, wherein the plurality of CTUs are processed by the image processing device (501, 601, 701, 801) starting from a top-left CTU and ending at a bottom-right CTU of the matrix, wherein each row of CTUs is processed sequentially one after another and within each row of CTUs the CTUs are processed sequentially from the leftmost CTU of that row to the rightmost CTU of that row,
- wherein the first coding block (1301) is a lowermost coding block of a first CTU among the plurality of CTUs, the first coding block (1301) having a block size of S_A samples perpendicular to the horizontal block edge (1303) by N samples parallel to the horizontal block edge (1303), wherein N = 8,
- wherein the second coding block (1302) is an uppermost coding block of a second CTU among the plurality of CTUs, the second coding block (1302) having a block size of S_B samples perpendicular to the horizontal block edge (1303) by N samples parallel to the horizontal block edge(1303), wherein N = 8,
- wherein a row of CTUs of the matrix in which the second CTU is located is a row following consecutively a row in which the first CTU is located,
- wherein the horizontal block edge (1303) overlaps with a coding tree unit, CTU, block edge(1201) between the first CTU(17) and the second CTU(25) among the plurality of CTUs,

wherein the deblocking comprises a filtering, the filtering comprising the method steps of:

- - modifying (1403) values of at most M_A samples of the first coding block (1301) as first filter output values, wherein the at most M_A samples are in a line perpendicular to and adjacent to the horizontal block edge (1303),
- -modifying (1404) values of at most M_B samples of the second coding block (1302) as second filter output values, wherein the at most M_B samples are in a line perpendicular to and adjacent to the horizontal block edge (1303),
- - using (1401) values of at most I_A samples of the first coding block (1301) as first filter input values, for calculating the first filter output values and/or the second filter output values, wherein the at most I_A samples are in a line perpendicular to and adjacent to the horizontal block edge (1303); and
- - using (1402) values of at most I_B samples of the second coding block (1302) as second filter input values, for calculating the first filter output values and/or the second filter output values, wherein the at most I_B samples are in a line

perpendicular to and adjacent to the horizontal block edge (904, 905, 1201, 1303); wherein $I_A \neq I_B$ and $M_A \neq M_B$, $S_A \neq S_B$; $I_A = 4$, and $M_A=3$.

7. A non-transitory computer-readable medium carrying a program code for performing the method according to any of the claim 6 when the computer program runs on a computer.