

## WHAT IS CLAIMED IS:

1. A decoder, the decoder comprising circuitry configured to:  
receive a reference frame and a bitstream, wherein an adaptive resolution management is  
5 signaled in the bitstream;  
determine, for a current block, a scaling constant; wherein the scaling constant is signaled  
within the bitstream using a reference to an index of stored scaling constants;  
scale a block of the reference frame according to the scaling constant, the block of the  
reference frame corresponding to the current block;  
10 apply a spatial filter to the scaled block as a function of the adaptive resolution  
management; and  
reconstruct pixel data of the current block using the scaled block of the reference frame.
2. The decoder of claim 1, wherein the scaling constant further comprises a height scaling  
constant.
- 15 ~~2. the decoder is further configured to:~~  
~~receive a bit stream; and~~  
~~determine, from the bit stream, the scaling constant, wherein the scaling constant is~~  
~~signaled within the bit stream.~~
3. The decoder of claim ~~2~~1, wherein the scaling constant further comprises a width ~~bit~~  
20 ~~stream includes an index to a predetermined scaling constant.~~
4. The decoder of claim 1, wherein the decoder is configured to scale the block of the  
reference frame by interpolating pixel values~~receive the reference frame by accessing the~~  
~~reference frame from memory.~~
5. The decoder of claim ~~4~~4, wherein interpolating the pixel values is performed using a  
25 luma sample ~~the decoder is configured to scale the block of the reference frame by~~  
interpolation ~~interpolating process~~ pixel values.
6. The decoder of claim ~~9~~4, wherein interpolating the pixel values further comprises shifting  
a pixel value ~~is performed using sub-pixel prediction interpolation filters.~~
7. The decoder of claim 1, wherein reconstructing the pixel data includes processing the  
30 current block with an inter-prediction mode, wherein reconstructing includes determining

the current block by at least combining a predicted block with a residual, wherein the predicted block is determined using the scaled block of the reference frame.

8. The decoder of claim 1, wherein the current block includes a coding unit~~decoder is configured to receive a bit stream, wherein the bit stream includes a field characterizing a skip-adaptive-resolution-management mode.~~

9. ~~The decoder of claim 1, wherein the current block includes a coding tree unitdecoder is further configured to:~~

~~process, according to an adaptive-resolution-management mode, a plurality of blocks, wherein processing includes:~~

~~applying a first filter to a first current block of the plurality of current blocks; and~~

9. applying a second filter to a second current block of the plurality of current blocks, the plurality of blocks forming part of a frame.

10. The decoder of claim 1, wherein the spatial filter is a bicubic spatial filter.

~~10. further comprising:~~

~~an entropy decoder processor configured to receive a bit stream and decode the bit stream into quantized coefficients;~~

~~an inverse quantization and inverse transformation processor configured to process the quantized coefficients including performing an inverse discrete cosine;~~

~~a deblocking filter;~~

~~a frame buffer; and~~

~~an intra-prediction processor.~~

~~11. A method, the method comprising:~~

~~receiving a reference frame;~~

~~determining, for a current block, a scaling constant;~~

~~scaling a block of the reference frame according to the scaling constant, the block of the reference frame corresponding to the current block; and~~

~~reconstructing pixel data of the current block and using the scaled block of the reference frame.~~

~~12. The method of claim 11, further comprising:~~

~~receiving a bit stream; and~~

determining, from the bit stream, the scaling constant, wherein the scaling constant is signaled within the bit stream.

13. — The method of claim 12, wherein the bit stream includes an index to a predetermined scaling constant.

14. — The method of claim 11, wherein receiving the reference frame includes accessing the reference frame from memory.

15. — The method of claim 11, wherein the scaling the block of the reference frame includes interpolating pixel values.

16. — The method of claim 20, wherein interpolating the pixel values is performed using sub-pixel prediction interpolation filters.

17. — The method of claim 11, wherein reconstructing the pixel data includes processing the current block with an inter-prediction mode, wherein the processing further includes determining the current block by at least combining a predicted block with a residual, wherein the predicted block is determined using the scaled block of the reference frame.

18. — The method of claim 11, further comprising receiving a bit stream, wherein the bit stream includes a field characterizing a skip-adaptive-resolution-management mode.

19. — The method of claim 1, further comprising processing, according to an adaptive resolution-management mode, a plurality of blocks, wherein processing includes: applying a first filter to a first current block of the plurality of current blocks; and applying a second filter to a second current block of the plurality of current blocks, the plurality of blocks forming part of a frame.

20. — The method of claim 1, wherein at least one of the receiving, the determining, the scaling, and the reconstructing is performed by a decoder, the decoder comprising: an entropy decoder processor configured to receive a bit stream and decode the bit stream into quantized coefficients;

an inverse-quantization and inverse-transformation processor configured to process the quantized coefficients including performing an inverse discrete cosine;

a deblocking filter;

a frame buffer; and

an intra-prediction processor.

