

WHAT IS CLAIMED IS:

1. A decoder, the decoder comprising circuitry configured to:
receive a bitstream;
5 identify, as a function of the bitstream, a current frame, and a cropped sub-frame of
the current frame;
determine, as a function of the bitstream, a scaling constant associated with the
cropped sub-frame; and
reconstruct pixel data of the cropped sub-frame using the scaling constant.
- 10 2. The decoder of claim 1, wherein the cropped sub-frame is signaled in the
bitstream.
3. The decoder of claim 2, wherein the cropped sub-frame is signaled in a sequence
parameter set (SPS).
4. The decoder of claim 2, wherein the cropped sub-frame is signaled using at least a
15 vertical offset and at least a horizontal offset.
5. The decoder of claim 4, wherein:
the at least a vertical offset includes an sps_conf_win_top_offset and an
sps_conf_win_bottom_offset; and
the at least a horizontal offset includes an sps_conf_win_left_offset and an
20 sps_conf_win_right_offset.
6. The decoder of claim 1, wherein the scaling constant includes a vertical
scaling component and a horizontal scaling component.
7. The decoder of claim 1, wherein the scaling constant is signaled within the bit
stream.
- 25 8. The decoder of claim 7, wherein the scaling constant is signaled in a picture parameter
set (PPS).
9. The decoder of claim 7, wherein the scaling constant is signaled as a function of a
pps_pic_width_in_luma_samples parameter, a pps_scaling_win_right_offset parameter,
and a pps_scaling_win_left_offset parameter.

10. The decoder of claim 1, wherein the decoder is configured to scale the cropped sub-frame by interpolating pixel values.
11. A method, the method comprising:
 - receiving, by a decoder, a bitstream;
 - 5 identifying, by the decoder and as a function of the bitstream, a current frame, and a cropped sub-frame of the current frame;
 - determining, by the decoder and as a function of the bitstream, a scaling constant associated with the cropped sub-frame; and
 - reconstructing, by the decoder, pixel data of the cropped sub-frame using the scaling
 - 10 constant.
12. The method of claim 11, wherein the cropped sub-frame is signaled in the bitstream.
13. The method of claim 12, wherein the cropped sub-frame is signaled in a sequence parameter set (SPS).
14. The method of claim 12, wherein the cropped sub-frame is signaled using at least a vertical offset and at least a horizontal offset.
15. The method of claim 14, wherein:
 - the at least a vertical offset includes an `sps_conf_win_top_offset` and an
 - 20 `sps_conf_win_bottom_offset`; and
 - the at least a horizontal offset includes an `sps_conf_win_left_offset` and an
 - `sps_conf_win_right_offset`.
16. The method of claim 11, wherein the scaling constant includes a vertical scaling component and a horizontal scaling component.
17. The method of claim 11, wherein the scaling constant is signaled within the bit
- 25 stream.
18. The method of claim 17, wherein the scaling constant is signaled in a picture parameter set (PPS).
19. The method of claim 17, wherein the scaling constant is signaled as a function of a `pps_pic_width_in_luma_samples` parameter, a `pps_scaling_win_right_offset` parameter,
- 30 and a `pps_scaling_win_left_offset` parameter.

20. The method of claim 11, wherein the decoder is configured to scale the cropped sub-frame by interpolating pixel values.