

CLAIMS

What is claimed is:

1. A method implemented by a decoder, the method comprising:
receiving, by the decoder, a bitstream comprising a sequence parameter set (SPS) and a coded picture, wherein the SPS includes a SPS video parameter set identifier (sps_video_parameter_set_id), and wherein the coded picture is in a set of video coding layer (VCL) network abstraction layer (NAL) units associated with a layer having a NAL unit header layer identifier (nuh_layer_id);
setting, by the decoder, a general layer index corresponding to the nuh_layer_id (GeneralLayerIdx[nuh_layer_id]) equal to zero when the sps_video_parameter_set_id is equal to zero; and
decoding, by the decoder, the coded picture from the VCL NAL units based on the GeneralLayerIdx[nuh_layer_id] to produce a decoded picture.
2. The method of claim 1, wherein GeneralLayerIdx[nuh_layer_id] is equal to a current layer index.
3. The method of any of claims 1-2, further comprising inferring, by the decoder, that a value of a video parameter set (VPS) independent layer flag for the GeneralLayerIdx[nuh_layer_id] (vps_independent_layer_flag[GeneralLayerIdx[nuh_layer_id]]) is equal to one when sps_video_parameter_set_id is equal to zero.
4. The method of any of claims 1-3, wherein vps_independent_layer_flag[GeneralLayerIdx[nuh_layer_id]] specifies whether the layer with index GeneralLayerIdx[nuh_layer_id] uses inter-layer prediction.
5. The method of any of claims 1-4, wherein the sps_video_parameter_set_id specifies a value of a VPS parameter set identifier (vps_video_parameter_set_id) when greater than zero.
6. The method of any of claims 1-5, wherein the SPS does not refer to a VPS and no VPS is referred to when decoding each coded layer video sequence referring to the SPS when the sps_video_parameter_set_id is equal to zero.

7. The method of any of claims 1-6, wherein the set of VCL NAL units are part of the layer when the set of VCL NAL units all have a particular value of `nuh_layer_id`.
8. A method implemented by an encoder, the method comprising:
- encoding, by the encoder, a coded picture and a sequence parameter set (SPS) into a bitstream, wherein the coded picture is encoded in a set of video coding layer (VCL) network abstraction layer (NAL) units, wherein the VCL NAL units are associated with a layer having a NAL unit header layer identifier (`nuh_layer_id`), and wherein the SPS includes a SPS video parameter set identifier (`sps_video_parameter_set_id`);
 - performing, by a hypothetical reference decoder (HRD) on the encoder, a set of bitstream conformance tests on the bitstream by:
 - setting, by a hypothetical reference decoder operating at the encoder, a general layer index corresponding to the `nuh_layer_id` (`GeneralLayerIdx[nuh_layer_id]`) equal to zero when the `sps_video_parameter_set_id` is equal to zero; and
 - decoding, by the HRD operating on the encoder, the coded picture from the VCL NAL units based on the `GeneralLayerIdx[nuh_layer_id]` to produce a decoded picture; and
 - storing, at the encoder, the bitstream for communication toward a decoder.
9. The method of claim 8, wherein `GeneralLayerIdx[nuh_layer_id]` is equal to a current layer index.
10. The method of any of claims 8-9, further comprising inferring, by the HRD operating on the encoder, that a value of a video parameter set (VPS) independent layer flag for the `GeneralLayerIdx[nuh_layer_id]` (`vps_independent_layer_flag[GeneralLayerIdx[nuh_layer_id]]`) is equal to one when `sps_video_parameter_set_id` is equal to zero.
11. The method of any of claims 8-10, wherein `vps_independent_layer_flag[GeneralLayerIdx[nuh_layer_id]]` specifies whether the layer with index `GeneralLayerIdx[nuh_layer_id]` uses inter-layer prediction.
12. The method of any of claims 8-11, wherein the `sps_video_parameter_set_id` specifies a value of a VPS parameter set identifier (`vps_video_parameter_set_id`) when greater than zero.

13. The method of any of claims 8-12, wherein the SPS does not refer to a VPS and no VPS is referred to when decoding each coded layer video sequence referring to the SPS when the `sps_video_parameter_set_id` is equal to zero.
14. The method of any of claims 8-13, wherein the set of VCL NAL units are part of the layer when the set of VCL NAL units all have a particular value of `nuh_layer_id`.
15. A video coding device comprising:
a processor, a receiver coupled to the processor, a memory coupled to the processor, and a transmitter coupled to the processor, wherein the processor, receiver, memory, and transmitter are configured to perform the method of any of claims 1-14.
16. A non-transitory computer readable medium comprising a computer program product for use by a video coding device, the computer program product comprising computer executable instructions stored on the non-transitory computer readable medium such that when executed by a processor cause the video coding device to perform the method of any of claims 1-14.
17. A decoder comprising:
a receiving means for receiving a bitstream comprising a sequence parameter set (SPS) and a coded picture, wherein the SPS includes a SPS video parameter set identifier (`sps_video_parameter_set_id`), and wherein the coded picture is in a set of video coding layer (VCL) network abstraction layer (NAL) units associated with a layer having a NAL unit header layer identifier (`nuh_layer_id`);
a setting means for setting a general layer index corresponding to the `nuh_layer_id` (`GeneralLayerIdx[nuh_layer_id]`) equal to zero when the `sps_video_parameter_set_id` is equal to zero; and
a decoding means for decoding the coded picture from the VCL NAL units based on the `GeneralLayerIdx[nuh_layer_id]` to produce a decoded picture.
18. The decoder of claim 17, wherein the decoder is further configured to perform the method of any of claims 1-7.

19. An encoder comprising:
- an encoding means for encoding a coded picture and a sequence parameter set (SPS) into a bitstream, wherein the coded picture is encoded in a set of video coding layer (VCL) network abstraction layer (NAL) units, wherein the VCL NAL units are associated with a layer having a NAL unit header layer identifier (nuh_layer_id), and wherein the SPS includes a SPS video parameter set identifier (sps_video_parameter_set_id);
 - a hypothetical reference decoder (HRD) means for performing a set of bitstream conformance tests on the bitstream by:
 - setting a general layer index corresponding to the nuh_layer_id (GeneralLayerIdx[nuh_layer_id]) equal to zero when the sps_video_parameter_set_id is equal to zero; and
 - decoding the coded picture from the VCL NAL units based on the GeneralLayerIdx[nuh_layer_id] to produce a decoded picture; and
 - a storing means for storing the bitstream for communication toward a decoder.
20. The encoder of claim 19, wherein the encoder is further configured to perform the method of any of claims 8-14.