CLAIMS

~~WHAT IS CLAIMED IS:~~

1. An apparatus for decoding video data, the apparatus comprising:

a memory; and

a processor implemented in circuitry and configured to:

obtain at least a portion of a picture included in a bitstream;

determine, from the bitstream, that weighted prediction is enabled for at least the portion of the picture;

based on the determination that weighted prediction is enabled for at least the portion of the picture, identify a zero value picture order count offset indicating a reference picture from a reference picture list; and

reconstruct at least the portion of the picture using at least a portion of the reference picture identified by the zero value picture order count offset.

2. The apparatus of claim 1, wherein the processor is further configured to:

obtain, from the bitstream, a plurality of portions of the picture, the plurality of portions including at least the portion of the picture reconstructed using the reference picture identified by the zero value picture order count offset;

identify a plurality of corresponding picture order count offsets for the plurality of portions of the picture, wherein the zero value picture order count offset is a corresponding picture order count offset of the plurality of corresponding picture order count offsets associated with the reference picture; and

reconstruct the picture using a plurality of reference pictures identified by the plurality of corresponding picture order count offsets.

3. The apparatus of claim 1, wherein the processor is further configured to determine that weighted prediction is enabled by parsing the bitstream to identify one or more weighted prediction flags for the picture.

4.- The apparatus of claim 3, wherein the one or more weighted prediction flags for

the portion of the picture comprises a sequence parameter set weighted prediction flag and a picture parameter set weighted prediction flag.

5. The apparatus of claim 4, wherein the sequence parameter set weighted prediction flag and the picture parameter set weighted prediction flag are flags for uni-directional predicted frames.

6. The apparatus of claim 4, wherein the sequence parameter set weighted prediction flag and the picture parameter set weighted prediction flag are flags for bi-directional predictive frames.

7. The apparatus of claim 4, wherein the picture parameter set weighted prediction flag is constrained by the sequence parameter set weighted prediction flag.

8. The apparatus of claim 1, wherein the processor is further configured to:

obtain at least a portion of a second picture included in the bitstream;

determine, from the bitstream, that weighted prediction is disabled for the portion of the second picture; and

based on the determination that weighted prediction is disabled for the portion of the second picture, determine that a second zero value picture order count offset is not allowed as indicating a second reference picture from the reference picture list for the portion of the second picture.

9. The apparatus of claim 8, wherein the processor is further configured to:

based on the determination that the second zero value picture order count offset is not allowed, parse a syntax element of the bitstream that indicates a picture order count offset for the second reference picture by generating a reconstructed value of the syntax element as a signaled value plus 1 based on the weighted prediction being disabled for the second picture; and

reconstruct the second picture using the reconstructed value of the syntax element.

10. The apparatus of claim 8, wherein a value of a reference picture syntax element

specifies an absolute difference between a picture order count value of the second picture and a previous reference picture entry in the reference picture list for the second reference picture as a signaled value plus one when weighted prediction is disabled.

11. The apparatus of claim 1, wherein the reference picture is associated with a first set of weights and the picture is associated with a second set of weights different than the first set of weights;

wherein the reference picture has a different size than the picture; and

wherein the reference picture is signaled as a short-term reference picture with a picture order count least significant bit value equal to zero.

12. The apparatus of claim 1, wherein the picture is a non-instantaneous decoding refresh (non-IDR) picture.

13. The apparatus of claim 1, wherein the processor is configured to:

determine from the bitstream, a layer identifier for the reference picture indicating a layer of a layer index for inter-layer prediction; and

wherein the zero value picture order count offset is identified by inferring a zero value from a picture order count for the reference picture not being signaled when the layer identifier is different than a current layer identifier.

-14.- The apparatus of claim 1, wherein the apparatus comprises a mobile device with a camera coupled to the processor and the memory for capturing and storing the picture.

15. The apparatus of claim 1, further comprising a display.

16. A method for decoding video data, the method comprising:

obtaining, from a bitstream, at least a portion of a picture;

determining, from the bitstream, that weighted prediction is enabled for the portion of the picture;

based on the determination that weighted prediction is enabled for the portion of the

picture, identifying a zero value picture order count offset indicating a reference picture from a reference picture list; and

reconstructing at least the portion of the picture using at least a portion of the reference picture identified by the zero value picture order count offset.

17. The method of claim 16, further comprising:

obtaining, from the bitstream, a plurality of portions of the picture, the plurality of portions including at least the portion of the picture reconstructed using the reference picture identified by the zero value picture order count offset;

identifying a plurality of corresponding picture order count offsets for the plurality of portions of the picture, wherein the zero value picture order count offset is a corresponding picture order count offset for the picture of the plurality of corresponding picture order count offsets; and

reconstructing the picture using a plurality of reference pictures identified by the plurality of corresponding picture order count offsets.

18. The method of claim 16, further comprising, determining that weighted prediction is enabled by parsing the bitstream to identify one or more weighted prediction flags for the picture.

19.- The method of claim 18, wherein the one or more weighted prediction flags for the picture comprise a sequence parameter set weighted prediction flag and a picture parameter set weighted prediction flag.

20. The method of claim 19, wherein the sequence parameter set weighted prediction flag and the picture parameter set weighted prediction flag are flags for uni-directional predicted frames.

21. The method of claim 19, wherein the sequence parameter set weighted prediction flag and the picture parameter set weighted prediction flag are flags for bi-directional predictive frames.

22. The method of claim 19, wherein the picture parameter set weighted prediction flag is constrained by the sequence parameter set weighted prediction flag.

23. The method of claim 16, further comprising:

obtaining at least a portion a second picture included in the bitstream;

determining, from the bitstream, that weighted prediction is disabled for the second picture; and

parsing a second syntax element of the bitstream that indicates a picture order count offset for a second reference picture by generating a reconstructed value of the second syntax element as a signaled value plus 1 based on the weighted prediction being disabled for the second picture.

24. The method of claim 23, further comprising:

determining that the zero value picture order count offset is not allowed based on the parsing of the second syntax element; and

reconstructing the second picture using the reconstructed value of the second syntax element.

25. The method of claim 23, wherein a value of a reference picture syntax element specifies an absolute difference between a picture order count value of the second picture and a previous reference picture entry in the reference picture list for the second reference picture as the signaled value plus one when weighted prediction is disabled.

26. The method of claim 16, wherein the reference picture is associated with a first set of weights and the picture is associated with a second set of weights different than the first set of weights;

wherein the reference picture has a different size than the picture; and

wherein the reference picture is signaled as a short-term reference picture with a picture order count least significant bit value equal to zero.

27. The method of claim 16, wherein the picture is a non-instantaneous decoding refresh (non-IDR) picture.

28. The method of claim 16, wherein at least the portion of the picture is a slice.

29. The method of claim 16, further comprising:

determining from the bitstream, a layer identifier for the reference picture indicating a layer of a layer index for inter-layer prediction; and

wherein the zero value picture order count offset is identified by inferring a zero value from a picture order count for the reference picture not being signaled when the layer identifier is different than a current layer identifier.

30. An apparatus for encoding video data, the apparatus comprising:

a memory; and

a processor implemented in circuitry and configured to:

identify at least a portion of a picture;

select weighted prediction as enabled for the portion of the picture;

identify a reference picture for the portion of the picture;

generate a zero value picture order count offset indicating the reference picture from a reference picture list, based on the selection of weighted prediction as enabled; and

generate a bitstream, the bitstream comprising the portion of the picture and the zero value picture order count offset as associated with the portion of the picture.

31. A method for encoding video data, the method comprising:

identifying at least a portion of a picture;

determining that weighted prediction is selected as enabled for the portion of the picture;

identifying a reference picture for the portion of the picture;

generating a zero value picture order count offset indicating the reference picture from a reference picture list, based on determining that weighted prediction is selected as enabled; and

generating a bitstream, the bitstream comprising the portion of the picture and the zero value picture order count offset as associated with the portion of the picture.