

## CLAIMS

1. A method of decoding video data, the method comprising: determining a prediction block, which includes a plurality of prediction samples, for a current block based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modifying a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein modifying the prediction sample comprises: determining one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and modifying the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; and reconstructing a sample of the current block based on the modified prediction sample and a residual value, wherein determining one or more reference samples that are external to the current block comprises: determining, as part of using PDPC, a row that is above the current block; determining, as part of using PDPC, an x-coordinate in the determined row, wherein the x-coordinate in the determined row is based on the angle of the angular intra prediction mode; and determining, as part of using PDPC, a reference sample of the one or more reference samples based on the determined row and the determined x-coordinate, wherein determining, as part of using PDPC, the x-coordinate in the determined row comprises: determining, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determining, as part of using PDPC, the x-coordinate in the determined row based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.
2. The method of claim 1, wherein determining one or more reference samples that are external to the current block comprises determining the one or more reference samples having at least one of an x-coordinate and a y-coordinate that is different than at least one of the respective x-coordinate and y-coordinate of the prediction sample in the prediction block.
3. The method of claim 1, wherein the x-coordinate in the determined row is based on an x-coordinate of the prediction sample and a y-coordinate of the prediction sample plus 1.
4. The method of claim 1, wherein the reference sample is a first reference sample of the one or more reference samples, and wherein determining one or more reference samples that are external to the current block further comprises: determining a column that is left of the current block; determining a y-coordinate in the determined column, wherein the y-coordinate in the determined column is based on an x-coordinate of the prediction sample and a y-coordinate of the prediction sample plus 1; and determining a second reference sample of the one or more reference samples based on the determined column and the determined y-coordinate.
5. A method of decoding video data, the method comprising: determining a prediction block, which includes a plurality of prediction samples, for a current block based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modifying a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein modifying the prediction sample comprises: determining one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and modifying the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; and reconstructing a sample of the current block based on the modified prediction sample and a residual value, wherein

determining one or more reference samples that are external to the current block comprises: determining, as part of using PDPC, a column that is left of the current block; determining, as part of using PDPC, a y-coordinate in the determined column, wherein the y-coordinate in the determined column is based on the angle of the angular intra prediction mode; and determining, as part of using PDPC, a reference sample of the one or more reference samples based on the determined column and the determined y-coordinate; and wherein determining, as part of using PDPC, the y-coordinate in the determined column comprises: determining, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determining, as part of using PDPC, the y-coordinate in the determined column based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

6. The method of claim 1, wherein determining one or more reference samples that are external to the current block based on the angular intra prediction mode comprises: determining a set of one or more samples based on the angular intra prediction mode; and at least one of interpolating, rounding with offset, or rounding without offset the set of one or more samples to generate the one or more reference samples.

7. The method of claim 1, wherein determining one or more reference samples that are external to the current block based on the angular intra prediction mode comprises: determining that one or more samples external to the current block identified based on the angular intra prediction mode are not stored in a reference line buffer; and determining the one or more reference samples based on a last reference sample stored in the reference line buffer.

8. The method of claim 1, wherein modifying the prediction sample of the prediction block comprises modifying a first prediction sample of the prediction block, and wherein the one or more reference samples comprise a first set of one or more reference samples, the method further comprising: determining, for a second prediction sample of the same prediction block, that at least one reference sample of a second set of one or more reference samples for the second prediction sample are not stored in a reference line buffer; and one of not applying PDPC to the second prediction sample or applying PDPC using only reference samples available in reference line buffer.

9. The method of claim 1, further comprising: determining a plurality of weights based on at least one of the x- and y-coordinates of the prediction sample, wherein modifying the prediction sample comprises modifying the prediction sample to generate the modified prediction sample based on the determined one or more reference samples, the determined weights, and the prediction sample.

10. A method of encoding video data, the method comprising: determining a prediction block, which includes a plurality of prediction samples, for a current block based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modifying a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein modifying the prediction sample comprises: determining one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and modifying the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; determining a residual value for a residual block based on the modified prediction sample and a sample value in the current block; and signaling information indicative of the residual value, wherein determining one or

more reference samples that are external to the current block comprises: determining, as part of using PDPC, a row that is above the current block; determining, as part of using PDPC, an x-coordinate in the determined row, wherein the x-coordinate in the determined row is based on the angle of the angular intra prediction mode; and determining, as part of using PDPC, a reference sample of the one or more reference samples based on the determined row and the determined x-coordinate, wherein determining, as part of using PDPC, the x-coordinate in the determined row comprises: determining, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determining, as part of using PDPC, the x-coordinate in the determined row based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

11. The method of claim 10, wherein determining one or more reference samples that are external to the current block comprises determining the one or more reference samples having at least one of an x-coordinate and a y-coordinate that is different than at least one of the respective x-coordinate and y-coordinate of the prediction sample in the prediction block.

12. The method of claim 10, wherein the x-coordinate in the determined row is based on an x-coordinate of the prediction sample and a y-coordinate of the prediction sample plus 1.

13. The method of claim 10, wherein the reference sample is a first reference sample of one or more reference samples, and wherein determining one or more reference samples that are external to the current block further comprises: determining a column that is left of the current block; determining a y-coordinate in the determined column, wherein the y-coordinate in the determined column is based on an x-coordinate of the prediction sample and a y-coordinate of the prediction sample plus 1; and determining a second reference sample of the one or more reference samples based on the determined column and the determined y-coordinate.

14. A method of encoding video data, the method comprising: determining a prediction block, which includes a plurality of prediction samples, for a current block based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modifying a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein modifying the prediction sample comprises: determining one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and modifying the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; determining a residual value for a residual block based on the modified prediction sample and a sample value in the current block; and signaling information indicative of the residual value, wherein determining one or more reference samples that are external to the current block comprises: determining, as part of using PDPC, a column that is left of the current block; determining, as part of using PDPC, a y-coordinate in the determined column, wherein the y-coordinate in the determined column is based on the angle of the angular intra prediction mode; and determining, as part of using PDPC, a reference sample of the one or more reference samples based on the determined column and the determined y-coordinate; and wherein determining, as part of using PDPC, the y-coordinate in the determined column comprises: determining, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determining, as part of using PDPC, the y-coordinate in the determined column based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

15. The method of claim 10, wherein determining one or more reference samples that are external to the current block based on the angular intra prediction mode comprises: determining a set of one or more samples based on the angular intra prediction mode; and at least one of interpolating, rounding with offset, or rounding without offset the set of one or more samples to generate the one or more reference samples.

16. The method of claim 10, wherein determining one or more reference samples that are external to the current block based on the angular intra prediction mode comprises: determining that one or more samples external to the current block identified based on the angular intra prediction mode are not stored in a reference line buffer; and determining the one or more reference samples based on a last reference sample stored in the reference line buffer.

17. The method of claim 10, wherein modifying the prediction sample of the prediction block comprises modifying a first prediction sample of the prediction block, and wherein the one or more reference samples comprise a first set of one or more reference samples, the method further comprising: determining, for a second prediction sample of the same prediction block, that at least one reference sample of a second set of one or more reference samples for the second prediction sample are not stored in a reference line buffer; and one of not applying PDPC to the second prediction sample or applying PDPC using only reference samples available in reference line buffer.

18. The method of claim 10, further comprising: determining a plurality of weights based on at least one of the x- and y-coordinates of the prediction sample, wherein modifying the prediction sample comprises modifying the prediction sample to generate the modified prediction sample based on the determined one or more reference samples, the determined weights, and the prediction sample.

19. A device for decoding video data, the device comprising: a memory configured to store a prediction block; and a video decoder comprising at least one of fixed-function or programmable circuitry, wherein the video decoder is configured to: determine the prediction block, which includes a plurality of prediction samples, for a current block, for storage in the memory, based on an angle of an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modify a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein to modify the prediction sample, the video decoder is configured to: determine one or more reference samples that are external to the current block based on the angular intra prediction mode; and modify the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; and reconstruct a sample of the current block based on the modified prediction sample and a residual value, wherein to determine one or more reference samples that are external to the current block, the video decoder is configured to: determine, as part of using PDPC, a row that is above the current block; determine, as part of using PDPC, an x-coordinate in the determined row, wherein the x-coordinate in the determined row is based on the angle of the angular intra prediction mode; and determine, as part of using PDPC, a reference sample of the one or more reference samples based on the determined row and the determined x-coordinate, wherein to determine, as part of using PDPC, the x-coordinate in the determined row, the video decoder is configured to: determine, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determine, as part of using PDPC, the x-coordinate in the determined row based on one of the cotangent or

tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

20. The device of claim 19, wherein to determine one or more reference samples that are external to the current block, the video decoder is configured to determine the one or more reference samples having at least one an x-coordinate and a y-coordinate that is different than at least one of the respective x-coordinate and y-coordinate of the prediction sample in the prediction block.

21. The device of claim 19, wherein the x-coordinate in the determined row is based on an x-coordinate of the prediction sample and a y-coordinate of the prediction sample plus 1.

22. The device of claim 19, wherein the reference sample is a first reference sample, and wherein to determine one or more reference samples that are external to the current block, the video decoder is configured to: determine a column that is left of the current block; determine a y-coordinate in the determined column, wherein the y-coordinate in the determined column is based on an x-coordinate of the prediction sample and a y-coordinate of the prediction sample plus 1; and determine a second reference sample of the one or more reference samples based on the determined column and the determined y-coordinate.

23. A device for decoding video data, the device comprising: a memory configured to store a prediction block; and a video decoder comprising at least one of fixed-function or programmable circuitry, wherein the video decoder is configured to: determine the prediction block, which includes a plurality of prediction samples, for a current block, for storage in the memory, based on an angle of an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modify a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein to modify the prediction sample, the video decoder is configured to: determine one or more reference samples that are external to the current block based on the angular intra prediction mode; and modify the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; and reconstruct a sample of the current block based on the modified prediction sample and a residual value, wherein to determine one or more reference samples that are external to the current block, the video decoder is configured to: determine, as part of using PDPC, a column that is left of the current block; determine, as part of using PDPC, a y-coordinate in the determined column, wherein the y-coordinate in the determined column is based on the angle of the angular intra prediction mode; and determine, as part of using PDPC, a reference sample of the one or more reference samples based on the determined column and the determined y-coordinate wherein to determine the y-coordinate in the determined column, the video decoder is configured to: determine, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determine, as part of using PDPC, the y-coordinate in the determined column based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

24. The device of claim 19, wherein to determine one or more reference samples that are external to the current block based on the angular intra prediction mode, the video decoder is configured to: determine a set of one or more samples based on the angular intra prediction mode; and at least one of interpolate, round with offset, or round without offset the set of one or more samples to generate the one or more reference samples.

25. The device of claim 19, wherein to determine one or more reference samples that are external to the current block based on the angular intra prediction mode, the video decoder is configured to: determine that one or more samples external to the current block identified based on the angular intra prediction mode are not stored in a reference line buffer; and determine the one or more reference samples based on a last reference sample stored in the reference line buffer.

26. The device of claim 19, wherein to modify the prediction sample of the prediction block, the video decoder is configured to modify a first prediction sample of the prediction block, wherein the one or more reference samples comprise a first set of one or more reference samples, and wherein the video decoder is configured to: determine, for a second prediction sample of the same prediction block, that at least one reference sample of a second set of one or more reference samples for the second prediction sample are not stored in a reference line buffer; and one of not apply PDPC to the second prediction sample or apply PDPC using only reference samples available in reference line buffer.

27. The device of claim 19, wherein the video decoder is configured to: determine a plurality of weights based on at least one of the x- and y-coordinates of the prediction sample, wherein to modify the prediction sample, the video decoder is configured to modify the prediction sample to generate the modified prediction sample based on the determined one or more reference samples, the determined weights, and the prediction sample.

28. The device of claim 19, further comprising a display configured to display the current block.

29. The device of claim 19, wherein the device comprises one or more of a camera, a computer, a mobile device, a broadcast receiver device, or a set-top box.

30. A device for encoding video data, the device comprising: a memory configured to store a prediction block; and a video encoder comprising at least one of fixed-function or programmable circuitry, wherein the video encoder is configured to: determine the prediction block, which includes a plurality of prediction samples, for a current block, for storage in the memory, based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modify a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein to modify the prediction sample, the video encoder is configured to: determine one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and modify the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; determine a residual value for a residual block based on the modified prediction sample and a sample value in the current block; and signal information indicative of the residual value, wherein to determine one or more reference samples that are external to the current block, the video encoder is configured to: determine, as part of using PDPC, a row that is above the current block; determine, as part of using PDPC, an x-coordinate in the determined row, wherein the x-coordinate in the determined row is based on the angle of the angular intra prediction mode; and determine, as part of using PDPC, a reference sample of the one or more reference samples based on the determined row and the determined x-coordinate, wherein to determine the x-coordinate in the determined row, the video encoder is configured to: determine, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determine, as part of using PDPC, the x-coordinate in the determined row based on one of the cotangent or tangent of the angle of the angular intra

prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

31. The device of claim 30, wherein to determine one or more reference samples that are external to the current block, the video encoder is configured to determine the one or more reference samples having at least one of an x-coordinate and a y-coordinate that is different than at least one of the respective x-coordinate and y-coordinate of the prediction sample in the prediction block.

32. The device of claim 30, wherein the x-coordinate in the determined row is based on an x-coordinate of the prediction sample and a y-coordinate of the prediction sample plus 1.

33. The device of claim 30, wherein the reference sample is a first reference sample of the one or more reference samples, and wherein to determine one or more reference samples that are external to the current block, the video encoder is configured to: determine a column that is left of the current block; determine a y-coordinate in the determined column, wherein the y-coordinate in the determined column is based on an x-coordinate of the prediction sample and a y-coordinate of the prediction sample plus 1; and determine a second reference sample of the one or more reference samples based on the determined column and the determined y-coordinate.

34. The device of claim 30, A device for encoding video data, the device comprising: a memory configured to store a prediction block; and a video encoder comprising at least one of fixed-function or programmable circuitry, wherein the video encoder is configured to: determine the prediction block, which includes a plurality of prediction samples, for a current block, for storage in the memory, based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modify a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein to modify the prediction sample, the video encoder is configured to: determine one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and modify the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; determine a residual value for a residual block based on the modified prediction sample and a sample value in the current block; and signal information indicative of the residual value, wherein to determine one or more reference samples that are external to the current block, the video encoder is configured to: determine, as part of using PDPC, a column that is left of the current block; determine, as part of using PDPC, a y-coordinate in the determined column, wherein the y-coordinate in the determined column is based on the angle of the angular intra prediction mode; and determine, as part of using PDPC, a reference sample of the one or more reference samples based on the determined column and the determined y-coordinate, wherein to determine, as part of using PDPC, the y-coordinate in the determined column, the video encoder is configured to: determine, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determine, as part of using PDPC, the y-coordinate in the determined column based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

35. The device of claim 30, wherein to determine one or more reference samples that are external to the current block based on the angular intra prediction mode, the video encoder is configured to: determine a set of one or more samples based on the angular intra prediction

mode; and at least one of interpolate, round with offset, or round without offset the set of one or more samples to generate the one or more reference samples.

36. The device of claim 30, wherein to determine one or more reference samples that are external to the current block based on the angular intra prediction mode, the video encoder is configured to: determine that one or more samples external to the current block identified based on the angular intra prediction mode are not stored in a reference line buffer; and determine the one or more reference samples based on a last reference sample stored in the reference line buffer.

37. The device of claim 30, wherein to modify the prediction sample of the prediction block, the video encoder is configured to modify a first prediction sample of the prediction block, wherein the one or more reference samples comprise a first set of one or more reference samples, and wherein the video encoder is configured to: determine, for a second prediction sample of the same prediction block, that at least one reference sample of a second set of one or more reference samples for the second prediction sample are not stored in a reference line buffer; and one of not apply PDPC to the second prediction sample or apply PDPC using only reference samples available in reference line buffer.

38. The device of claim 30, wherein the video encoder is configured to: determine a plurality of weights based on at least one of the on x- and y-coordinates of the prediction sample, wherein to modify the prediction sample, the video encoder is configured to modify the prediction sample to generate the modified prediction sample based on the determined one or more reference samples, the determined weights, and the prediction sample.

39. The device of claim 30, wherein the device comprises one or more of a camera, a computer, a mobile device, a broadcast receiver device, or a set-top box.

40. A computer-readable storage medium storing instructions that when executed cause one or more processors of a device for decoding video data to: determine a prediction block, which includes a plurality of prediction samples, for a current block based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modify a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein the instructions that cause the one or more processors to modify the prediction sample comprise instructions that cause the one or more processors to: determine one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and modify the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; and reconstruct a sample of the current block based on the modified prediction sample and a residual value, wherein the instructions that cause the one or more processors to determine one or more reference samples that are external to the current block comprise instructions that cause the one or more processors to: determine, as part of using PDPC, a row that is above the current block; determine, as part of using PDPC, an x-coordinate in the determined row, wherein the x-coordinate in the determined row is based on the angle of the angular intra prediction mode; and determine, as part of using PDPC, a reference sample of the one or more reference samples based on the determined row and the determined x-coordinate, wherein the instructions that cause the one or more processors to determine, as part of using PDPC, the x-coordinate in the determined row comprise instructions that cause the one or more processors to: determine, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determine, as part of using PDPC, the x-coordinate in the

determined row based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

41. A computer-readable storage medium storing instructions that when executed cause one or more processors of a device for encoding video data to: determine a prediction block, which includes a plurality of prediction samples, for a current block based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; modify a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein the instructions that cause the one or more processors to modify the prediction sample comprise instructions that cause the one or more processors to: determine one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and modify the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; determine a residual value for a residual block based on the modified prediction sample and a sample value in the current block; and signal information indicative of the residual value, wherein the instructions that cause the one or more processors to determine one or more reference samples that are external to the current block comprise instructions that cause the one or more processors to: determine, as part of using PDPC, a row that is above the current block; determine, as part of using PDPC, an x-coordinate in the determined row, wherein the x-coordinate in the determined row is based on the angle of the angular intra prediction mode; and determine, as part of using PDPC, a reference sample of the one or more reference samples based on the determined row and the determined x-coordinate, wherein the instructions that cause the one or more processors to determine, as part of using PDPC, the x-coordinate in the determined row comprise instructions that cause the one or more processors to: determine, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and determine, as part of using PDPC, the x-coordinate in the determined row based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

42. A device for decoding video data, the device comprising: means for determining a prediction block, which includes a plurality of prediction samples, for a current block based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; means for modifying a prediction sample of the plurality of prediction samples in the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein the means for modifying the prediction sample comprises: means for determining one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and means for modifying the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; and means for reconstructing a sample of the current block based on the modified prediction sample and a residual value, wherein the means for determining one or more reference samples that are external to the current block comprises: means for determining, as part of using PDPC, a row that is above the current block; means for determining, as part of using PDPC, an x-coordinate in the determined row, wherein the x-coordinate in the determined row is based on the angle of the angular intra prediction mode; and means for determining, as part of using PDPC, a reference sample of the one or more reference samples based on the determined row and the determined x-coordinate, wherein the means for determining, as part of using PDPC, the x-coordinate in the determined row comprises: means for determining, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and means for determining, as part of using

PDPC, the x-coordinate in the determined row based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

43. A device for encoding video data, the device comprising: means for determining a prediction block, which includes a plurality of prediction samples, for a current block based on an angular intra prediction mode that is not a DC, planar, horizontal, or vertical intra prediction mode; means for modifying a prediction sample of the plurality of prediction samples of the prediction block to generate a modified prediction sample using Position Dependent Intra Prediction Combination (PDPC), wherein the means for modifying the prediction sample comprises: means for determining one or more reference samples that are external to the current block based on an angle of the angular intra prediction mode; and means for modifying the prediction sample to generate the modified prediction sample based on the determined one or more reference samples; means for determining a residual value for a residual block based on the modified prediction sample and a sample value in the current block; and means for signaling information indicative of the residual value, wherein the means for determining one or more reference samples that are external to the current block comprises: means for determining, as part of using PDPC, a row that is above the current block; means for determining, as part of using PDPC, an x-coordinate in the determined row, wherein the x-coordinate in the determined row is based on the angle of the angular intra prediction mode; and means for determining, as part of using PDPC, a reference sample of the one or more reference samples based on the determined row and the determined x-coordinate, wherein the means for determining, as part of using PDPC, the x-coordinate in the determined row comprises: means for determining, as part of using PDPC, one of a cotangent or tangent of the angle of the angular intra prediction mode; and means for determining, as part of using PDPC, the x-coordinate in the determined row based on one of the cotangent or tangent of the angle of the angular intra prediction mode, an x-coordinate of the prediction sample, and a y-coordinate of the prediction sample.

44. The method of claim 1, wherein the determining, as part of the PDPC, one of the cotangent or tangent of the angle of the angular intra prediction mode is based on at least one value stored in a table.

45. The method of claim 5, wherein the determining, as part of the PDPC, one of the cotangent or tangent of the angle of the angular intra prediction mode is based on at least one value stored in a table.