CLAIMS

1. A video decoding apparatus comprising a processor and a memory, the processor, working together with the memory, configured to:

read one or more video coding layer network abstraction layer units, VCL NAL units, within an access unit, AU, in a video data stream;

generate a reconstructed version of a decoded picture from the one or more VCL NAL units;

read an adaptive loop filter adaptive parameter set, ALF APS,

the ALF APS being a suffix adaptive parameter set network abstraction layer unit type, APS NAL unit type, and

the suffix APS NAL unit type indicating that the ALF APS follows the one or more VCL NAL units within the AU; and

perform adaptive loop filtering on the reconstructed version of the decoded picture in a manner depending on one or more coefficients comprised by the ALF APS.

2. The video decoding apparatus of claim 1, wherein the processor, working together with the memory, is configured to read the one or more VCL NAL units prior to the reading of the ALF APS.

3. The video decoding apparatus of claim 1, wherein the one or more VCL NAL units represent one or more slices.

4. The video decoding apparatus of claim 3, wherein the processor, working together with the memory, is configured to read the ALF APS after the reading of data of the one or more slices.

5. The video decoding apparatus of claim 3, wherein the processor, working together with the memory, is configured to parse the one or more slices before the reading of the ALF APS.

6. The video decoding apparatus of claim 1, wherein the ALF APS comprises ALF control information.

7. The video decoding apparatus of claim 6, wherein the ALF control information comprises information regarding whether a Coding Tree Unit, CTU, is filtered or not.

8. The video decoding apparatus of claim 6, wherein the ALF control information comprises information regarding how a Coding Tree Unit, CTU, is filtered.

9. The video decoding apparatus of claim 1, wherein the video decoding apparatus is one of a computer or a mobile device.

10. A method for decoding a video data stream comprising:

reading one or more video coding layer network abstraction layer units, VCL NAL units, within an access unit, AU, in the video data stream;

generating a reconstructed version of a decoded picture from the one or more VCL NAL units;

reading an adaptive loop filter adaptive parameter set, ALF APS,

the ALF APS being a suffix adaptive parameter set network abstraction layer unit type, APS NAL unit type, and

the suffix APS NAL unit type indicating that the ALF APS follows the one or more VCL NAL units within the AU; and

performing adaptive loop filtering on the reconstructed version of the decoded picture in a manner depending on one or more coefficients comprised by the ALF APSA repeater.

11. The method of claim 10, wherein the ALF APS comprises ALF control information.

12. A video encoding apparatus comprising a processor and a memory, the processor, working together with the memory, configured to:

encode one or more video coding layer network abstraction layer units, VCL NAL units, within an access unit, AU, in a video data stream;

generate a reconstructed version of a decoded picture from the one or more VCL NAL units;

derive one or more adaptive loop filter coefficients based on the reconstructed version of the decoded picture; and

encode, in the data stream following the one or more encoded VCL NAL units, the one or more adaptive loop filter coefficients in an adaptive loop filter adaptive parameter set, ALF APS, such that

the ALF APS is a suffix adaptive parameter set network abstraction layer unit type, APS NAL unit type, and

the suffix APS NAL unit type indicating that the ALF APS follows the one or more VCL NAL units within the AU.

13. The video encoding apparatus of claim 12, wherein the processor, working together with the memory, is configured to encode the one or more VCL NAL units prior to the encoding of the ALF APS.

14. The video encoding apparatus of claim 12, wherein the one or more VCL NAL units represent one or more slices.

15. The video encoding apparatus of claim 14, wherein the processor, working together with the memory, is configured to encode the ALF APS after the encoding of data of the one or more slices.

16. The video encoding apparatus of claim 14, wherein the processor, working together with the memory, is configured to send the one or more slices before encoding a whole picture.

17. The video encoding apparatus of claim 14, wherein the processor, working together with the memory, is configured to send the one or more slices while collecting ALF parameters.

18. The video encoding apparatus of claim 12, wherein the ALF APS comprises ALF control information.

19. The video encoding apparatus of claim 18, wherein the ALF control information comprises information regarding whether a Coding Tree Unit, CTU, is filtered or not.

20. The video encoding apparatus of claim 18, wherein the ALF control information comprises information regarding how a Coding Tree Unit, CTU, is filtered.

21. The video encoding apparatus of claim 12, wherein the video encoding apparatus comprises one of a computer or a mobile device.

22. A method for video encoding a video data stream comprising:

encoding one or more video coding layer network abstraction layer units, VCL NAL units, within an access unit, AU, in the video data stream;

generating a reconstructed version of a decoded picture from the one or more VCL NAL units;

deriving one or more adaptive loop filter coefficients based on the reconstructed version of the decoded picture; and

encoding, in the data stream following the one or more encoded VCL NAL units, the one or more adaptive loop filter coefficients in an adaptive loop filter adaptive parameter set, ALF APS, such that

the ALF APS is a suffix adaptive parameter set network abstraction layer unit type, APS NAL unit type, and

the suffix APS NAL unit type indicating that the ALF APS follows the one or more VCL NAL units within the AU.

23. The method of claim 22, wherein the ALF APS comprises ALF control information.

24. A non-transitory computer readable medium storing instructions which, when executed, cause a computer to perform a method, the method comprising:

reading one or more video coding layer network abstraction layer units, VCL NAL units, within an access unit, AU, in the video data stream;

generating a reconstructed version of a decoded picture from the one or more VCL NAL units;

reading an adaptive loop filter adaptive parameter set, ALF APS,

the ALF APS being a suffix adaptive parameter set network abstraction layer unit type, APS NAL unit type, and

the suffix APS NAL unit type indicating that the ALF APS follows the one or more VCL NAL units within the AU; and

performing adaptive loop filtering on the reconstructed version of the decoded picture in a manner depending on one or more coefficients comprised by the ALF APSA repeater.

25. A non-transitory computer readable medium storing instructions which, when executed, cause a computer to perform a method, the method comprising:

encoding one or more video coding layer network abstraction layer units, VCL NAL units, within an access unit, AU, in the video data stream;

generating a reconstructed version of a decoded picture from the one or more VCL NAL units;

deriving one or more adaptive loop filter coefficients based on the reconstructed version of the decoded picture; and

encoding, in the data stream following the one or more encoded VCL NAL units, the one or more adaptive loop filter coefficients in an adaptive loop filter adaptive parameter set, ALF APS, such that

the ALF APS is a suffix adaptive parameter set network abstraction layer unit type, APS NAL unit type, and

the suffix APS NAL unit type indicating that the ALF APS follows the one or more VCL NAL units within the AU.