CLAIMS:

1. A method of video encoding or decoding performed by at least one processor, the method comprising:

obtaining video data comprising data of a plurality of semantically independent source pictures;

determining, among the video data, whether references are associated with any of a first access unit (AU) and a second AU according to at least one picture order count (POC) signal value included with the video data; and

outputting a first quantity of the references set to the first AU and a second quantity of the references set to the second AU based on the at least one POC signal value.

2. The method according claim 1,

wherein the references comprise at least one of pictures, slices, and tiles of the video data.

3. The method according to claim 2,

wherein determining whether the references are associated with any of the first AU and the second AU comprises comparing respective POC values of each of the references with the at least one POC signal value.

4. The method according to claim 3,

wherein determining whether the references are associated with any of the first AU and the second AU further comprises setting the first quantity of the references to the first AU, in

response to determining that each of the first quantity of the references respectively comprises one of a plurality of POC values less than the at least one POC signal value, and setting the second quantity of the references to the second AU, in response to determining that each of the second quantity of the references respectively comprises one of a second plurality of POC values equal to or greater than the at least one POC signal value.

5. The method according to claim 4,

wherein the references comprise the slices, and

wherein the at least one POC signal value is included in a slice header of the video data.

6. The method according to any one of claims 1 to 4,

wherein the video data comprises a video parameter set (VPS) data identifying a plurality of spatial layers of the video data which are shared across layers of an adaptive parameter set (APS), a picture parameter set (PPS), and a sequence parameter set (SPS).

7. The method according to claim 6,

wherein the at least one POC signal value is included in the video parameter set (VPS) of the video data.

8. The method according to claim 7, further comprising:

determining whether the VPS data comprises at least one flag indicating whether one or more of the references are divided into a plurality of sub-regions; and

determining, in a case where the at least one flag indicates that the one or more of the references are divided into the plurality of sub-regions, at least one of, in luma samples, a full picture width and a full picture height of a picture of the one or more of the references.

9. The method according to claim 8, further comprising:

determining, in the case where the at least one flag indicates that the one or more of the references are divided into the plurality of sub-regions, a signaling value, included in a sequence parameter set of the video data, specifying an offset of a portion of at least one of the sub-regions.

10. The method according to any one of claims 1 to 9,

wherein the plurality of semantically independent source pictures represent a spherical 360 picture.

11. The method according to any one of claims 6 to 10, wherein layer Identifiers (IDs) of any of APS, PPS and SPS network abstraction layer (NAL) units are lower than or the same as a layer ID of an NAL unit that refers to the any of the APS, PPS and SPS NAL units, and

wherein a layer of the any of the APS, PPS and SPS NAL units is a reference layer of the NAL unit.

12. The method according to any one of claims 6 to 11, wherein

a same value space of the APS is shared across the layers, and

a same value of sps_video_parameter_set_id is shared in the SPS.

13. The method according to any one of claims 1 to 12, wherein outputting the first quantity of the references set to the first AU and the second quantity of the references set to the second AU based on the at least one POC signal value is further based on whether the first quantity of the references comprises one of a plurality of POC values that is less than the at least one POC signal value.

14. An apparatus for video encoding or decoding, the apparatus comprising:

at least one memory configured to store computer program code;

at least one processor configured to access the computer program code and operate as instructed by the computer program code to perform the method according to any one of claims 1 to 13.

15. A non-transitory computer readable medium storing a program configured to cause a computer to perform the method according to any one of claims 1 to 13.