CLAIMS

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

obtaining video data;

generating an access unit by encoding the video data; and

generating an access unit delimiter indicating a boundary of the generated access unit in association with each access unit,

wherein the access unit delimiter includes:

(i) a syntax element indicating a slice type value of slices consisting of the corresponding access unit; and

(ii) a random access point (RAP) syntax element indicating a unit type of a network abstraction layer (NAL) unit where the slices consisting of the corresponding access unit are stored,

wherein each of the syntax elements is generated when it is determined that the syntax element needs to be generated based on the syntax and is stored in the access unit delimiter, and

wherein when a random access point is present in the access unit, the RAP syntax element indicates a type of the random access point and determines whether to initiate decoding of the encoded bitstream.

2. The method for video encoding according to claim 1,

wherein when the RAP syntax element is set to be 0, the access unit to which the access unit delimiter containing the RAP syntax element is associated contains at least one of: an encoded slice of a trailing picture value, an encoded slice of a stepwise temporal sublayer access

(STSA) picture value, an encoded slice of a random access skipped leading (RASL) picture value, and an encoded slice of a random access decodable (RADL) picture value.

3. The method for video encoding according to claim 2,

wherein the access unit delimiter further includes a syntax element indicating an access unit order count value that identifies the associated access unit between adjacent access units, the access unit order count value is used to identify the boundary of the access unit, and a loss of the access unit is determined by analyzing the access unit order count value.

4. The method for video encoding according to claim 1,

wherein when the RAP syntax element is set to be 1, the access unit to which the access unit delimiter containing the RAP syntax element is associated includes at least one of: an encoded slice of an instantaneous decoder refresh (IDR) picture value, an encoded slice of a clean random access point (CRA) picture value, and an encoded slice of a gradual decoder refresh (GDR) picture value.

5. The method for video encoding according to claim 3,

wherein the access unit order count value is within a range of 0 to 225 based on the syntax.

6. The method for video encoding according to claim 2,

wherein the slice type value is set to a value of any of 0, 1, and 2 based on the syntax.

7. The method for video encoding according to claim 6,

wherein the slice type value indicates presence of at least one of an intra-prediction slice and an inter-prediction slice.

8. The method for video encoding according to claim 1, wherein when a value of the RAP syntax element is equal to 0, the access unit containing the access unit delimiter is an intra random access point (IRAP) AU; and when the value of the RAP syntax element is equal to 1, the access unit containing the access unit delimiter is a gradual decoder refresh (GDR) AU.

9. The method for video encoding according to claim 1, wherein when a value of the RAP syntax element is equal to 0, the access unit containing the access unit delimiter is a GDR AU; and when the value of the RAP syntax element is equal to 1, the access unit containing the access unit delimiter is an IRAP AU.

10. An apparatus for video encoding, the apparatus comprising:

at least one memory configured to store computer program code; and

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 9.

11. A non-transitory computer readable medium storing a program causing a computer to perform the method according to any one of claims 1 to 9.

12. A video decoding method performed by at least one processor, the method comprising:

obtaining an encoded video bitstream;

obtaining an access unit from the encoded video bitstream; and

obtaining an access unit delimiter indicating a boundary of the obtained access unit,

wherein the access unit delimiter includes:

(i) a syntax element indicating a slice type value of slices consisting of the corresponding access unit; and

(ii) a random access point (RAP) syntax element indicating a unit type of a network abstraction layer (NAL) unit where the slices consisting of the corresponding access unit are stored,

wherein each of the syntax elements is generated when it is determined that the syntax element needs to be generated based on the syntax and is stored in the access unit delimiter, and

wherein when a random access point is present in the access unit, the RAP syntax element indicates a type of the random access point and determines whether to initiate decoding of the encoded bitstream.