CLAIMS

What is Claimed:

1. An apparatus for decoding media content, comprising one or more processors, wherein the one or more processors are configured to:

~~determine which attribute sub-bitstream to use for decoding visual volumetric content based on a message that indicates which attribute sub-bitstream of a plurality of attribute sub-bitstreams indicated in a parameter set associated with the visual volumetric content is active; and~~

~~decode the visual volumetric content using an active attribute sub-bitstream based on the message.~~obtain a parameter set associated with visual volumetric content;

receive a supplemental enhancement information (SEI) message that indicates which attribute sub-bitstream of a plurality of attribute sub-bitstreams indicated in the parameter set is active;

~~-~~determine an active attribute sub-bitstream and an inactive attribute sub-bitstream based on the SEI message; and

decode the visual volumetric content using the active attribute sub-bitstream and skip the inactive attribute sub-bitstream.

2. An apparatus for ~~media content processing~~encoding media content, comprising one or more processors, wherein the one or more processors are configured to:

determine to deactivate an attribute sub-bitstream of a plurality of attribute sub-bitstreams indicated in a parameter set associated with visual volumetric content; and

generate a message indicating the deactivation of the attribute sub-bitstream.

~~3. An apparatus for decoding media content, comprising one or more processors, wherein the one or more processors are configured to:~~

~~obtain a parameter set associated with visual volumetric content;~~

~~receive a message that indicates which attribute sub-bitstream of a plurality of attribute sub-bitstreams indicated in the parameter set is active;~~

~~determine an active attribute sub-bitstream and an inactive attribute sub-bitstream based on the message; and~~

~~decode the visual volumetric content using the active attribute sub-bitstream and skip the inactive attribute sub-bitstream.~~

~~4. A method for decoding media content, comprising:~~

~~determining which attribute sub-bitstream to use for decoding visual volumetric content based on a message that indicates which attribute sub-bitstream of a plurality of attribute sub-bitstreams indicated in a parameter set associated with visual volumetric is active; and~~

~~decoding the visual volumetric content using an active attribute sub-bitstream based on the message.~~

~~5. A method for processing media content, comprising:~~

~~determining to deactivate an attribute sub-bitstream of a plurality of attribute sub-bitstreams indicated in a parameter set associated with visual volumetric content; and~~

~~generating a message indicating the deactivation of the attribute sub-bitstream.~~

~~6. A method for decoding media content, comprising:~~

~~obtaining a parameter set associated with visual volumetric content;~~

~~receiving a message that indicates which attribute sub-bitstream of a plurality of attribute sub-bitstreams indicated in the parameter set is active;~~

~~determining an active attribute sub-bitstream and an inactive attribute sub-bitstream based on the message; and~~

~~decoding the visual volumetric content using the active attribute sub-bitstream and skipping the inactive attribute sub-bitstream.~~

3. The apparatus of claim 2, wherein the message comprises a supplemental enhancement information (SEI) message.

~~7.~~4. The apparatus of claim 1~~ or 2~~ or the apparatus of claim 3~~ or the method of claim 4 or 5 or 6~~, wherein the SEI message is signaled in a bitstream.

~~8. The apparatus of claim 1 or 2 or 3 or the method of claim 4 or 5 or 6, wherein the message comprises a supplemental enhancement information (SEI) message.~~

~~9.~~5. The apparatus of claim 1~~ or 2~~ or the apparatus of claim 3~~ or the method of claim 4 or 5 or 6~~, wherein the SEI message has a persistence scope that persists until an end of a bitstream.

~~10.~~6. The apparatus of claim 1 ~~or 2~~ or the apparatus of claim 3 ~~or the method of claim 4 or 5 or 6~~, wherein the SEI message has a persistence scope that persists until another SEI message that is different from the SEI message is received.

~~11.~~7. The apparatus of claim 1 ~~or 2~~ or the apparatus claim of 3 ~~or the method of claim 4 or 5 or 6~~, wherein the SEI message comprises an indicator that indicates a number of active attribute sub-bitstreams of the plurality of attribute sub-bitstreams indicated in the parameter set associated with the visual volumetric content.

~~12.~~8. The apparatus of claim 1 ~~or 2~~ or the apparatus of claim 3 ~~or the method of claim 4 or 5 or 6~~, wherein the parameter set comprises a visual volumetric video-based parameter set (VPS) that comprises attribute information for the plurality of attribute sub-bitstreams, wherein the SEI message refers to ~~a piece of the~~ attribute information for ~~the active~~a subset of the plurality of attribute sub-bitstream.

~~13. The apparatus of claim 1 or 2 or 3 or the method of claim 4 or 5 or 6, wherein the plurality of attribute sub-bitstreams indicate texture information, material information, transparency information, or reflectance information associated with the visual volumetric content.~~

~~14. The apparatus of claim 1 or 2 or 3 or the method of claim 4 or 5 or 6, wherein the parameter set indicates map information associated with a respective attribute sub-bitstream of the plurality of attribute sub-bitstreams, and the message indicates which map information of the map information associated with the respective attribute sub-bitstream of the plurality of attribute sub-bitstreams is active, wherein the visual volumetric content is decoded using active map information.~~

~~15. The apparatus of claim 1 or the method of claim 4, wherein the message comprises an indicator that the plurality of attribute sub-bitstreams indicated in the parameter set associated with the visual volumetric content are active.~~

~~16. The apparatus of claim 1 or the method of claim 4, wherein an inactive attribute sub-bitstream is determined based on the message, wherein the inactive attribute sub-bitstream is skipped for the decoding of the visual volumetric content.~~

~~17. The apparatus of claim 1 or the method of claim 4, wherein an attribute sub-bitstream that is indicated in the parameter set but not indicated in the message is determined to be an inactive attribute~~

~~sub-bitstream, wherein the inactive attribute sub-bitstream is skipped for the decoding of the visual volumetric content.~~

~~18. The apparatus of claim 2 or the method of claim 5, wherein the message indicates the deactivation of the attribute sub-bitstream by not referring to an indicator associated with the attribute sub-bitstream indicated in the parameter set.~~

~~19. The apparatus of claim 2 or the method of claim 5, wherein the deactivation of the attribute sub-bitstream is determined based on bitrate adaptation.~~

~~20. A non-transitory computer readable medium containing data content generated according to the method of any one of claims 4-19.~~

9. A method for decoding media content, comprising:

obtaining a parameter set associated with visual volumetric content;

receiving a supplemental enhancement information (SEI) message that indicates which attribute sub-bitstream of a plurality of attribute sub-bitstreams indicated in the parameter set is active;

determining an active attribute sub-bitstream and an inactive attribute sub-bitstream based on the SEI message; and

decoding the visual volumetric content using the active attribute sub-bitstream and skipping the inactive attribute sub-bitstream.

10. A method for encoding media content, comprising:

determining to deactivate an attribute sub-bitstream of a plurality of attribute sub-bitstreams indicated in a parameter set associated with visual volumetric content; and

generating a message indicating the deactivation of the attribute sub-bitstream.

11. The method of claim 10, wherein the message comprises a supplemental enhancement information (SEI) message.

12. The method of claim 9 or the method of claim 11, wherein the SEI message is signaled in a bitstream.

13. The method of claim 9 or the method of claim 11, wherein the SEI message has a persistence scope that persists until an end of a bitstream, or the SEI message has a persistence scope that persists until another SEI message that is different from the SEI message is received.

~~21.~~14. A computer readable medium including instructions for causing one or more processors to perform the method of any one of claims ~~4-19~~9-13.

~~22. A computer program product comprising instructions for performing the method of any one of claims 4-19 when executed by one or more processors.~~

~~23. A device comprising:~~

~~a media content processing or decoding apparatus according to any one of claims 1, 2, 3 and 7-19; and~~

~~at least one of (i) an antenna configured to receive a signal, the signal including data representative of an image, (ii) a band limiter configured to limit the received signal to a band of frequencies that includes the data representative of the image, or (iii) a display configured to display the image.~~

~~24. A device according to any one of claims 1, 2, 3 and 7-19, comprising:~~

~~a TV, a cell phone, a tablet, or a set top box (STB).~~

~~25.~~15. A signal comprising the SEI message according to the method of any one of claims ~~4-19~~9 and 11-13.