Claims

1. A method of decoding a video by considering a skip and split order, the method comprising:

receiving and parsing a bitstream of encoded video data;

obtaining, from the bitstream, information about a maximum size of a coding unit being a data unit in which a picture is decoded, information about an order of split information and skip mode information about coding units according to depths, and, according to the order of the split information and the skip mode information, information about a coded depth and an encoding mode according to a maximum coding unit of the picture; and

based on the information about the maximum size of the coding unit and the information about the coded depth and the encoding mode, decoding the encoded video data of the picture according to coding units having a tree structure including coding units of coded depths,

wherein the coding units according to depths are obtained by hierarchically splitting the maximum coding unit as a depth deepens, the depths being proportional to a number of times the maximum coding unit is split,

wherein the information about the order of the split information and the skip mode information indicates whether the split information is obtained earlier than the skip mode information or whether the skip mode information is obtained earlier than the split information.

2. The method of claim 1, wherein the order of the split information and the skip mode information is selectively set according to at least one of an image sequence to which a corresponding coding unit, among the coding units according to depths, belongs, a slice, a slice type according to a prediction direction, and a quantization parameter of a data unit.

3. The method of claim 1, wherein the order of the split information and the skip mode information is selectively set according to the depths of the coding units in the maximum coding unit.

4. The method of claim 3, wherein the obtaining comprises:

if a coding unit is the maximum coding unit, according to the order of the split information and the skip mode information, determining whether the maximum coding unit is predicted in a skip mode according to the skip mode information before determining whether the maximum coding unit is split according to the split information;

if the coding unit is not the maximum coding unit, determining whether the coding unit is split according to the split information before determining whether the coding unit is predicted in a skip mode according to the skip mode information; and

extracting the information about the coded depth and the encoding mode of the coded depth and the encoded video data according to coding units of the coded depth.

5. The method of claim 1, wherein the obtaining comprises:

if one piece of split and skip information obtained by combining the split information and the skip mode information is extracted for the coding units according to depths, analyzing a combination of the split information and the skip mode information based on a number of bits of the one piece of split and skip information.

6. The method of claim 1, wherein the encoding mode and the coded depth are determined, during encoding of the video data, by determining an encoding mode and a depth having a least encoding error for the maximum coding unit by performing encoding according to encoding modes individually based on coding units according to at least one depth, at least one prediction unit, and at least one transformation unit, according to regions obtained by hierarchically splitting the maximum coding unit as the depth deepens.

7. The method of claim 1, further comprising restoring video data in a spatial domain by performing deblocking filtering on the decoded video data.

8. An apparatus for decoding a video by considering a skip and split order, the apparatus comprising:

a receiver which receives and parses a bitstream of encoded video data;

a data obtainer which obtains, from the bitstream, information about a maximum size of a coding unit being a data unit in which a picture is decoded, information about an order of split information and skip mode information of coding units according to depths, and, according to the order of the split information and the skip mode information, information about a coded depth and an encoding mode according to a maximum coding unit of the picture; and

a decoder which, based on the information about the maximum size of the coding unit and the information about the coded depth and the encoding mode, decodes the encoded video data of the picture according to coding units having a tree structure including coding units of coded depths,

wherein the coding units according to depths are obtained by hierarchically splitting the maximum coding unit as a depth deepens, the depths being proportional to a number of times the maximum coding unit is split,

wherein the information about the order of the split information and the skip mode information indicates whether the split information is obtained earlier than the skip mode information or whether the skip mode information is obtained earlier than the split information.

9. A computer-readable recording medium having embodied thereon a program for executing the method of claim 1.

CLAIMS

1. A method of decoding a video, the method comprising:

receiving a bitstream of encoded video;

extracting, from the bitstream, split information of a coding unit in a maximum coding unit of a picture;

when the split information indicates a split for a current depth, splitting a coding unit of the current depth, independently from neighboring coding units, into coding units of a lower depth; and

when the split information indicates a non-split for the current depth, determining at least one partition from the coding unit of the current depth and decoding the coding unit of the current depth by performing a prediction based on the at least one partition,

wherein, when skip information for the coding unit of the current depth indicates a skip mode, the coding unit of the current depth is decoded by performing a prediction in the skip mode based on a partition having a size equal to a size of the coding unit of the current depth, and

when the skip information for the coding unit of the current depth does not indicate the skip mode, the coding unit of the current depth is decoded by performing a prediction in a prediction mode indicated by prediction mode information obtained from the bitstream.

2. The method of claim 1 wherein

the split information indicates whether a corresponding coding unit is split into coding units of a lower depth.

3. The method of claim 1, wherein, when the skip information for the coding unit of the current depth does not indicate the skip mode, the coding unit of the current depth is decoded by performing a prediction in a prediction mode indicated by prediction mode information, obtained from the bitstream, based on at least one partition having a size equal to or less than the size of the coding unit of the current depth.

4. The method of claim 3, wherein the at least one partition having a size equal to or less than the size of the coding unit of the current depth is obtained from the coding unit of the current depth based on partition type information obtained from the bitstream.

5. The method of claim 4, wherein the partition type information indicates one of a symmetric partition type and an asymmetric partition type.