CLAIMS

[1] An image coding device comprising:

a variable length coding unit for performing a variable length coding on an intra prediction parameter used to generate a prediction image by performing a prediction process corresponding to a coding mode,

said variable length coding unit performing a variable length coding on an intra merge flag indicating whether or not said intra prediction parameter for a partition is identical to an intra prediction parameter for a neighboring partition located above or to the left of said partition,

wherein when there are two or more neighboring partitions located above or to the left of said partition, a first partition in a direction away from top left of said partition is regarded as said neighboring partition;

wherein when said intra prediction parameter for said partition is identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said variable length coding unit performs a variable length coding on an intra merge direction specifying one of neighboring partitions located above and to the left of said partition of which intra prediction parameter is identical to said intra prediction parameter, and

when said intra prediction parameter for said partition is not identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said variable length coding unit performs a variable length coding on said intra prediction parameter for said partition.

[2] An image decoding device comprising:
a variable length decoding unit for performing a variable length decoding on an intra prediction parameter used to generate a prediction image by performing a prediction process corresponding to a coding mode,

said variable length decoding unit performing a variable length decoding on an intra merge flag indicating whether or not said intra prediction parameter for a partition is identical to an intra prediction parameter for a neighboring partition located above or to the left of said partition,

wherein when there are two or more neighboring partitions located above or to the left of said partition, a first partition in a direction away from top left of said partition is regarded as said neighboring partition;

wherein when said intra prediction parameter for said partition is identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said variable length decoding unit performs a variable length decoding on an intra merge direction specifying one of neighboring partitions located above and to the left of said partition of which intra prediction parameter is identical to said intra prediction parameter, and

when said intra prediction parameter for said partition is not identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said variable length decoding unit performs a variable length decoding on said intra prediction parameter for said partition.

Claim 1: A video coding device comprising:

a coding control unit for selecting coding mode for each of coding blocks obtained by hierarchically dividing a coding block having a maximum size which is a processing unit of a coding process;

a prediction image generating unit for performing intra prediction or inter prediction on each of said coding blocks to generate an intra prediction image or an inter prediction image according to said coding mode;

a variable length coding unit for performing a variable length coding on an intra prediction parameter used to perform said intra prediction on a partition of said coding block to generate a coded data; and

said variable length coding unit generating an intra merge flag indicating whether or not said intra prediction parameter for said partition is identical to an intra prediction parameter for a neighboring partition located above or to the left of said partition,

wherein when there are two or more neighboring partitions located above or to the left of said partition on which said intra prediction is performed, a first partition in a direction away from top left of said partition is regarded as each of neighboring partitions located above and to the left of said partition,

wherein when said intra prediction parameter for said partition is identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said variable length coding unit generates an intra merge direction specifying one of neighboring partitions located above and to the left of said partition of which intra prediction parameter is identical to said intra prediction parameter, and

when said intra prediction parameter for said partition is not identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said variable length coding unit encodes said intra prediction parameter for said partition.

Claim 2: A video coding method comprising:

selecting coding mode for each of coding blocks obtained by hierarchically dividing

a coding block having a maximum size which is a processing unit of a coding process;

performing intra prediction or inter prediction on each of said coding blocks to generate an intra prediction image or an inter prediction image according to said coding mode;

performing a variable length coding on an intra prediction parameter used to perform said intra prediction on a partition of said coding block to generate a coding data; and

generating an intra merge flag indicating whether or not said intra prediction parameter for said partition is identical to an intra prediction parameter for said neighboring partition located above or to the left of said partition,

wherein when there are two or more neighbor partitions located above or to the left of said partition on which said intra prediction is performed, a first partition in a direction away from top left of said partition is regarded as each of neighboring partitions located above and to the left of said partition,

wherein when said intra prediction parameter for said partition is identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, an intra merge direction specifying one of neighbor partitions located above and to the left of said partition of which intra prediction parameter is identical to said intra prediction parameter is generated, and

when said intra prediction parameter for said partition is not identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said intra prediction parameter for said partition is encoded.

Claim 3: A video decoding device comprising:

a variable length decoding unit for performing a variable length decoding on coded data associated with hierarchically divided coding blocks to obtain coding mode for each of said coding blocks;

a prediction image generating unit for performing intra prediction or inter prediction on each of said coding blocks to generate an intra prediction image or an inter prediction image according to said coding mode;

said variable length decoding unit decoding an intra merge flag indicating whether or

not an intra prediction parameter for a partition is identical to an intra prediction parameter for a neighboring partition located above or to the left of said partition,

wherein when there are two or more neighboring partitions located above or to the left of said partition of said coding block on which said intra prediction is performed, a first partition in a direction away from top left of said partition is regarded as each of neighboring partitions located above and to the left of said partition,

wherein when said intra prediction parameter for said partition is identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said variable length decoding unit decodes an intra merge direction specifying one of neighboring partitions located above and to the left of said partition of which intra prediction parameter is identical to said intra prediction parameter, and

when said intra prediction parameter for said partition is not identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said variable length decoding unit decodes said intra prediction parameter for said partition.

Claim 4: A video decoding method comprising:

performing a variable length decoding process on coded data associated with hierarchically divided coding blocks to obtain coding mode for each of coding blocks;

performing intra prediction or inter prediction on each of said coding blocks to generate an intra prediction image or an inter prediction image according to said coding mode; and

decoding an intra merge flag indicating whether or not an intra prediction parameter for said partition is identical to an intra prediction parameter for said neighboring partition located above or to the left of said partition,

wherein when there are two or more neighboring partitions located above or to the left of a partition of said coding block on which said intra prediction is performed, a first partition in a direction away from top left of said partition is regarded as each of neighboring partitions located above or to the left of said partition,

wherein when said intra prediction parameter for said partition is identical to said

intra prediction parameter for said neighboring partition located above or to the left of said partition, an intra merge direction specifying one of neighboring partitions located above and to the left of said partition of which intra prediction parameter is identical to said intra prediction parameter is decoded, and

when said intra prediction parameter for said partition is not identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said intra prediction parameter for said partition is decoded.

Claim 5: A coded video data comprising coded data having coding mode for each of hierarchically divided coding blocks;

said coded data including

an intra merge flag indicating whether or not an intra prediction parameter used to perform intra prediction on a partition of said coding block is identical to an intra prediction parameter used to perform intra prediction on a neighboring partition located above or to the left of said partition, and

an intra merge direction specifying one of neighboring partitions located above and to the left of said partition of which intra prediction parameter is identical to said intra prediction parameter used to perform intra prediction on said partition when said intra prediction parameter used to perform intra prediction on said partition is identical to said intra prediction parameter used to perform intra prediction on a neighboring partition located above or to the left of said partition,

wherein a video decoding device for decoding said coded video data decodes intra merge flag for said partition of said coding block when coding mode of a target coding block is intra prediction mode,

said video decoding device decodes said intra merge direction when said intra merge flag indicates said intra prediction parameter used to perform intra prediction on a target partition is identical to said intra prediction parameter used to perform intra prediction on said neighboring partition located above or to the left of said partition, and

said video decoding device specifies one of neighboring partitions located above and to the left of said partition of which intra prediction parameter is identical to said intra

prediction parameter for said target partition according to said intra merge direction,

wherein when there are two or more neighboring partitions located above or to the left of said target partition, a first partition in a direction away from top left of said partition is regarded as each of neighboring partitions located above and to the left of said partition,

wherein when said intra prediction parameter for said target partition is not identical to said intra prediction parameter for said neighboring partition located above or to the left of said partition, said video decoding device decodes said intra prediction parameter for said partition.