CLAIMS

1. A video predictive encoding device comprising:

input means that inputs a plurality of pictures forming a video sequence;

encoding means that encodes the pictures by either intra-frame prediction or inter-frame prediction to generate compressed picture data including information on a target picture frame size, a maximum number of storable reconstructed pictures, and a maximum frame size specified as an encoding constraint and encodes the compressed picture data along with encoding specification data regarding the information on the target picture frame size, the maximum number of storable reconstructed pictures, and the maximum frame size;

decoding means that decodes the compressed picture data to reconstruct the pictures;

picture storage means that stores one or more of the reconstructed pictures as reference pictures to be used for encoding a subsequent picture; and

memory control means that controls a picture buffer memory in the picture storage means,

wherein when a frame size of the input pictures is not more than 1/(2^L) (where L is an integer of one or more) of the maximum frame size of the pictures, the memory control means determines that (2^L) times the maximum number of reconstructed pictures are storable in the frame memory.

2. The video predictive encoding device according to claim 1,

wherein the memory control means fixes memory pointers pointing storage locations of reconstructed pictures in the memory, when determining the maximum number of reconstructed pictures storable in the frame memory.

3. A video predictive decoding device comprising:

input means that inputs encoded data comprising compressed picture data which includes information on a target picture frame size, a maximum number of storable reconstructed pictures, and a maximum frame size specified as an encoding constraint, wherein a plurality of pictures forming a video sequence are encoded by either intra-frame prediction or inter-frame prediction;

decoding means that decodes the compressed picture data and the compressed picture data constituting the information on the target picture frame size, the maximum number of storable reconstructed pictures, and the maximum frame size to reconstruct the pictures and the information on the target picture frame size, the maximum number of storable reconstructed pictures, and the maximum frame size;

picture storage means that stores one or more of the reconstructed pictures as reference pictures to be used for decoding a subsequent picture; and

memory control means that controls the picture storage means,

wherein when a frame size of the input pictures is not more than 1/(2^L) (where L is an integer of one or more) of the maximum frame size of pictures, the memory control means determines that (2^L) times the maximum number of reconstructed pictures are storable in a frame

memory.

4. The video predictive decoding device according to claim 3, wherein the memory control means fixes memory pointers pointing storage positions of reconstructed pictures in the memory, when determining the maximum number of reconstructed pictures storable in the frame memory.

5. A video predictive encoding method executed by a video predictive encoding device, comprising:

an input step of inputting a plurality of pictures forming a video sequence;

an encoding step of encoding the pictures by either intra-frame prediction or inter-frame prediction to generate compressed picture data including information on a target picture frame size, a maximum number of storable reconstructed pictures, and a maximum frame size specified as an encoding constraint and encoding the compressed picture data along with encoding specification data regarding the information on the target picture frame size, the maximum number of storable reconstructed pictures, and the maximum frame size;

a decoding step of decoding the compressed picture data to reconstruct pictures;

a picture storage step of storing one or more of the reconstructed pictures as reference pictures to be used for encoding a subsequent picture; and

a memory control step of controlling a picture buffer memory in

the picture storage step,

wherein when a frame size of the input pictures is not more than 1/(2^L) (where L is an integer of one or more) of the maximum frame size of pictures, the memory control step determines that (2^L)times the maximum number of reconstructed pictures are storable in the frame memory.

6. A video predictive decoding method executed by a video predictive decoding device, comprising:

an input step of inputting encoded data comprising compressed picture data which includes a target picture frame size, a maximum number of storable reconstructed pictures, and a maximum frame size specified as an encoding constraint, wherein a plurality of pictures forming a video sequence are encoded by either intra-frame prediction or inter-frame prediction;

a decoding step of decoding the compressed picture data and the compressed picture data constituting the information on the target picture frame size, the maximum number of storable reconstructed pictures, and the maximum frame size to reproduce pictures and the information on the target picture frame size, the maximum number of storable reconstructed pictures, and the maximum frame size;

a picture storage step of storing in picture storage means one or more of the reconstructed pictures as reference pictures to be used for decoding a subsequent picture; and

a memory control step of controlling the picture storage means,

wherein when a frame size of the input pictures is not more than

1/(2^L) (where L is an integer of one or more) of the maximum frame size of pictures, the memory control step determines that (2^L)times the maximum number of reconstructed pictures are storable in a frame memory.

7. A video predictive encoding program comprising:

an input module that inputs a plurality of pictures forming a video sequence;

an encoding module that encodes the pictures by either intra-frame prediction or inter-frame prediction to generate compressed picture data including information on a target picture frame size, a maximum number of storable reconstructed pictures, and a maximum frame size specified as an encoding constraint and encodes the compressed picture data along with encoding specification data regarding the information on the target picture frame size, the maximum number of storable reconstructed pictures, and the maximum frame size;

a decoding module that decodes the compressed picture data to reconstruct pictures;

a picture storage module that stores one or more of the reconstructed pictures as reference pictures to be used for encoding a subsequent picture; and

a memory control module which controls a picture buffer memory in the picture storage module,

wherein when a frame size of the input pictures is not more than 1/(2^L) (where L is an integer of one or more) of the maximum frame size of pictures, the memory control module determines that (2^L) times

the maximum number of reconstructed pictures are storable in the frame memory.

8. A video prediction decoding program comprising:

an input module that inputs encoded data comprising compressed picture data which includes a target picture frame size, a maximum number of storable reconstructed pictures, and a maximum frame size specified as an encoding constraint, wherein a plurality of pictures forming a video sequence are encoded by either intra-frame prediction or inter-frame prediction;

a decoding module that decodes the compressed picture data and that compressed picture data constituting the information on the target picture frame size, the maximum number of storable reconstructed pictures, and the maximum frame size to reproduce pictures and the information on the target picture frame size, the maximum number of storable reconstructed pictures, and the maximum frame size;

a picture storage module that stores one or more of the reconstructed pictures as reference pictures to be used for decoding a subsequent picture; and

a memory control module which controls the picture storage module,

wherein when a frame size of the input pictures is not more than 1/(2^L) (where L is an integer of one or more) of the maximum frame size of pictures, the memory control module determines that (2^L) times the maximum number of reconstructed pictures are storable in a frame memory.

New Claims for PPH

1. A video predictive decoding device comprising:

input means that inputs encoded data comprising compressed picture data which includes information on a target picture frame size, a maximum number of storable reconstructed pictures, and a maximum frame size specified as an encoding constraint, wherein a plurality of pictures forming a video sequence are encoded by either intra-frame prediction or inter-frame prediction;

decoding means that decodes the compressed picture data, and the compressed picture data indicating the information on the target picture frame size, the maximum number of storable reconstructed pictures and the maximum frame size, to reconstruct the pictures, and the information on the target picture frame size, the maximum number of storable reconstructed pictures and the maximum frame size; and

picture storage means that stores one or more of the reconstructed pictures as reference pictures to be used for decoding a subsequent picture,

wherein the maximum number of reconstructed pictures storable in a frame memory is determined as 2 times when a frame size of the input pictures is not more than 1/2 of the maximum frame size of the pictures.

2. The video predictive decoding device according to claim 1, wherein the maximum number of reconstructed pictures storable in a frame memory is determined as 4 times when a frame size of the input

pictures is not more than 1/4 of the maximum frame size of the pictures.

3. A video predictive decoding method executed by a video predictive decoding device, comprising:

an input step of inputting encoded data comprising compressed picture data which includes information on a target picture frame size, a maximum number of storable reconstructed pictures, and a maximum frame size specified as an encoding constraint, wherein a plurality of pictures forming a video sequence are encoded by either intra-frame prediction or inter-frame prediction;

a decoding step of decoding the compressed picture data, and the compressed picture data indicating the information on the target picture frame size, the maximum number of storable reconstructed pictures and the maximum frame size, to reconstruct the pictures, and the information on the target picture frame size, the maximum number of storable reconstructed pictures and the maximum frame size; and

a picture storage step of storing in picture storage means one or more of the reconstructed pictures as reference pictures to be used for decoding a subsequent picture,

wherein the maximum number of reconstructed pictures storable in a frame memory is determined as 2 times when a frame size of the input pictures is not more than 1/2 of the maximum frame size of the pictures.

4. The video predictive decoding method according to claim 3, wherein the maximum number of reconstructed pictures storable in a

frame memory is determined as 4 times when a frame size of the input pictures is not more than 1/4 of the maximum frame size of the pictures.

5. The video predictive decoding method according to claim 3 or 4, wherein memory pointers pointing storage locations of reconstructed pictures in a memory are fixed when determining the the maximum number of reconstructed pictures storable in a frame memory.