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## (12) United States Patent

#### Cha et al.

#### (54) METHOD OF EFFECTIVELY PREDICTING MULTI-LAYER BASED VIDEO FRAME, AND VIDEO CODING METHOD AND APPARATUS USING THE SAME

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- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1477 days.
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#### (30) Foreign Application Priority Data

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- (51) Int. Cl.
- *H04N 7/12* (2006.01)
- (58) **Field of Classification Search** ...... None See application file for complete search history.

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#### (57) **ABSTRACT**

A method and apparatus are provided for effectively predicting a video frame that use all of the advantages of an intra mode and an intra BL mode in multi-layer structure basedvideo coding. The method includes reconstructing the intra block of a lower layer using the previously reconstructed first neighboring blocks of the intra block; subtracting the first neighboring blocks from previously stored the second neighboring blocks of an upper layer corresponding to the first neighboring blocks; creating a differential predicted block based on a predetermined intra prediction mode by performing intra prediction using virtual differential neighboring blocks that are created as a result of the subtraction; adding the differential predicted block and the reconstructed intra block; and subtracting a predicted block, which is created as a result of the addition, from a block of the upper layer corresponding to the intra block.

#### 25 Claims, 11 Drawing Sheets



Α



FIG. 2

М	A	В	C	D	E	F	G	H
I	8	þ	C	đ				
J	6	f	g	h				
K	I	j	k	l				
L	m	n	0	D				

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