

WHAT IS CLAIMED IS:

1. A decoder, the decoder comprising circuitry configured to:
 - receive a bitstream including a coded current picture, the coded current picture including
 - 5 multiple coding tree units, each coding tree unit including one or more coding units;
 - construct, using the bitstream, a list of stored previously decoded pictures for use as
 - reference pictures for global motion compensation prediction for the coded current picture,
 - wherein none of the stored reference pictures is obtained by pixel interpolation of a decoded
 - picture using mapping parameters;
 - 10 for a current coding unit in the current picture, detect from header information in the
 - bitstream for the current coding unit, a flag indicating global motion compensation prediction is
 - enabled for the current coding unit, thereby indicating that each motion vector of the current
 - coding unit is determined relative to a reference picture in the list based on a motion vector of an
 - adjacent coding unit;
 - 15 if global motion compensation prediction is enabled for the current coding unit,
 - determine based on the header of the current coding unit if a motion model for the current coding
 - unit is translational motion, 4-parameter affine motion or 6-parameter affine motion;
 - determine at least a motion vector based on an adjacent coding unit, wherein:
 - if the motion model of the current coding unit is translational motion, determining the at
 - 20 least a motion vector further comprises determining a translational motion vector from the
 - motion vector of an adjacent coding unit, and decode the current coding unit using the
 - translational motion vector;
 - if the motion model of the current coding unit is 4-parameter affine motion, determining
 - the at least a motion vector further comprises determining two control point motion vectors from
 - 25 the motion vectors of adjacent coding units, and decode the current coding unit using the two
 - control point motion vectors; and
 - if the motion model of the current coding unit is 6-parameter affine motion, determining
 - the at least a motion vector further comprises determining three control point motion vectors
 - from the motion vectors of adjacent coding units, and decode the coding unit using the three
 - 30 control point motion vectors.

2. The decoder of claim 1, where the reference frames are indexed in the list by an order relative to a current frame.

3. The decoder of claim 1, wherein the header includes a picture parameter set or a sequence parameter set.

4. The decoder of claim 1, wherein the header includes a flag characterizing whether global motion is present for the current block.

5. The decoder of claim 1, further comprising:
an entropy decoder processor configured to receive the bit stream and decode the
bitstream into quantized coefficients;
an inverse quantization and inverse transformation processor configured to process the
quantized coefficients including performing an inverse discrete cosine;
a deblocking filter;
a frame buffer; and
an intra prediction processor.