

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;
 - 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
 - 10 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;
 - 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
 - 15 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 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
 - 20 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 the motion vectors of adjacent coding units, and decode the current coding unit using the two control point motion vectors; and
 - 25 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 control point motion vectors.
- 30 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.
- 5 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
10 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
15 an intra prediction processor.