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(54) **Title:** METHOD AND APPARATUS OF ENCODING/DECODING POINT CLOUD GEOMETRY DATA USING AZIMUTHAL CODING MODE

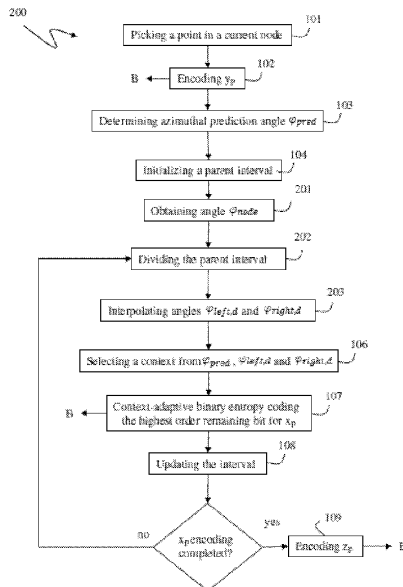


Fig. 8

(57) **Abstract:** There is provided methods and apparatus of encoding/decoding a point cloud into/from a bitstream of encoded point cloud data representing a physical object. The methods comprising an azimuthal coding mode providing a series of bits for encoding/decoding a coordinate of a point of the point cloud. The azimuthal coding mode uses angle interpolation to determine the left and rights angles $\phi_{left,d}$ and $\phi_{right,d}$ on the base of offsets and inherited angles associated with a parent interval used to encode a previous bit. The present invention avoids performing systematically an arc tangent function for the angle $\phi_{left,d}$ and an arc tangent function for the angle $\phi_{right,d}$ at each iteration of the azimuthal coding mode. It improves the compression efficiency compared to the usual azimuthal coding mode while maintaining a reasonable complexity. It also provides flexibility in the choice of the angles $\phi_{left,d}$ and $\phi_{right,d}$.

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