

WHAT IS CLAIMED IS:

1. A device comprising:
a memory configured to store point cloud data; and
one or more processors coupled to the memory and implemented in circuitry, the one or more processors configured to:
obtain a first laser angle;
obtain a second laser angle;
obtain a laser angle difference for a third laser angle;
determine a predicted value based on the first laser angle and the second laser angle; and
determine the third laser angle based on the predicted value and the laser angle difference for the third laser angle.
2. The device of claim 1, wherein the one or more processors are further configured to decode a vertical position of a point of the point cloud data based on the third laser angle.
3. The device of claim 2, wherein the one or more processors are configured to decode the vertical position of the point based on the third laser angle and a laser correction value for a laser having the third laser angle.
4. The device of claim 1, wherein the one or more processors are configured to, as part of obtaining the laser angle difference for the third laser angle, decode a syntax element specifying the laser angle difference for the third laser angle as a signed integer 0-th order Exp-Golomb-coded syntax element with left bit first.
5. The device of claim 1, wherein the one or more processors are configured to, as part of obtaining the second laser angle, decode a syntax element specifying a laser angle difference for the second laser angle including a signed integer 0-th order Exp-Golomb-coded syntax element with left bit first.

6. The device of claim 1, wherein the one or more processors are configured to, as part of determining the predicted value, perform a linear prediction to determine the predicted value based on the first laser angle and the second laser angle.
7. The device of claim 6, wherein the one or more processors are configured to, as part of performing the linear prediction to determine the predicted value, determine the predicted value as $2 * \text{the first laser angle} + -1 * \text{the second laser angle}$.
8. The device of claim 1, wherein the one or more processors are further configured to decode a syntax element indicating a vertical plane position based on the third laser angle.
9. The device of claim 1, wherein:
 - the first laser angle specifies a tangent of an elevation angle of a first laser relative to a horizontal plane defined by a first axis and a second axis of the point cloud data,
 - the second laser angle specifies a tangent of an elevation angle of a second laser relative to the horizontal plane, and
 - the third laser angle specifies a tangent of an elevation angle of a third laser relative to the horizontal plane.
10. The device of claim 9, wherein the first laser, the second laser, and the third laser are included in a laser package.
11. The device of claim 1, further comprising a display to present imagery based on the point cloud data.

12. A device comprising:
a memory configured to store point cloud data; and
one or more processors coupled to the memory and implemented in circuitry, the one or more processors configured to:
obtain a first laser angle;
obtain a second laser angle;
determine a predicted value based on the first laser angle and the second laser angle; and
encode a laser angle difference for a third laser angle, wherein the laser angle difference is equal to a difference between the third laser angle and the predicted value.
13. The device of claim 12, wherein the one or more processors are configured to encode a vertical position of a point of the point cloud data based on a laser having the third laser angle.
14. The device of claim 13, wherein the one or more processors are configured to encode the vertical position of the point based on the third laser angle and a laser correction value for a laser having the third laser angle.
15. The device of claim 12, wherein the one or more processors are configured to encode the syntax element specifying the laser angle difference for the third laser angle as a signed integer 0-th order Exp-Golomb-coded syntax element with left bit first.
16. The device of claim 12, wherein the one or more processors are further configured to encode a syntax element specifying a laser angle difference for the second laser angle, wherein:
the laser angle difference for the second laser angle indicates a difference between the second laser angle and the first laser angle, and
the syntax element specifying the laser angle difference for the second laser angle is encoded as a signed integer 0-th order Exp-Golomb-coded syntax element with left bit first.

17. The device of claim 12, wherein the one or more processors are configured to, as part of determining the predicted value, perform a linear prediction to determine the predicted value based on the first laser angle and the second laser angle.

18. The device of claim 17, wherein the one or more processors are configured to, as part of performing the linear prediction to determine the predicted value, determine the predicted value as $2 * \text{the first laser angle} + -1 * \text{the second laser angle}$.

19. The device of claim 12, wherein:
the first laser angle specifies a tangent of an elevation angle of a first laser relative to a horizontal plane defined by a first axis and a second axis of the point cloud data,
the second laser angle specifies a tangent of an elevation angle of a second laser relative to the horizontal plane, and
the third laser angle specifies a tangent of an elevation angle of a third laser relative to the horizontal plane.

20. The device of claim 19, further comprising a laser package comprising the first laser, the second laser, and the third laser.

21. The device of claim 12, further comprising a sensor to generate the point cloud data.

22. A method comprising:
obtaining a first laser angle;
obtaining a second laser angle;
obtaining a laser angle difference for a third laser angle;
determining a predicted value based on the first laser angle and the second laser angle; and
determining the third laser angle based on the predicted value and the laser angle difference for the third laser angle.

23. The method of claim 22, further comprising decoding a vertical position of a point of the point cloud data based on the third laser angle.

24. The method of claim 22, wherein decoding the vertical position of the point of the point cloud data comprises decoding the vertical position of the point based on the third laser angle and a laser correction value for a laser having a third laser angle.

25. The method of claim 22, wherein obtaining the laser angle difference for the third laser angle comprises decoding a syntax element specifying the laser angle difference for the third laser angle as a signed integer 0-th order Exp-Golomb-coded syntax element with left bit first.

26. The method of claim 22, wherein obtaining the predicted value comprises performing a linear prediction to determine the predicted value based on the first laser angle and the second laser angle.

27. The method of claim 22, further comprising decoding a syntax element indicating a vertical plane position based on the third laser angle.

28. The method of claim 22, wherein:
the first laser angle specifies a tangent of an elevation angle of a first laser relative to a horizontal plane defined by a first axis and a second axis of the point cloud data,
the second laser angle specifies a tangent of an elevation angle of a second laser relative to the horizontal plane, and
the third laser angle specifies a tangent of an elevation angle of a third laser relative to the horizontal plane.

29. A method comprising:
obtaining a first laser angle;
obtaining a second laser angle;
determining a predicted value based on the first laser angle and the second laser angle; and
encoding a laser angle difference for a third laser angle, wherein the laser angle difference is equal to a difference between the third laser angle and the predicted value.

30. The method of claim 29, further comprising encoding a vertical position of a point of the point cloud data based on a laser having the third laser angle.
31. The method of claim 29, wherein determining the predicted value comprises determining the predicted value by performing a linear prediction based on the first laser angle and the second laser angle.
32. A device comprising:
means for obtaining a first laser angle;
means for obtaining a second laser angle;
means for obtaining a laser angle difference for a third laser angle;
means for determining a predicted value based on the first laser angle and the second laser angle; and
means for determining the third laser angle based on the predicted value and the laser angle difference for the third laser angle.
33. A device comprising:
means for obtaining a first laser angle;
means for obtaining a second laser angle;
means for determining a predicted value based on the first laser angle and the second laser angle; and
means for encoding a laser angle difference for a third laser angle, wherein the laser angle difference is equal to a difference between the third laser angle and the predicted value.

34. A computer-readable storage medium having stored thereon instructions that, when executed, cause one or more processors to:
- obtain a first laser angle;
 - obtain a second laser angle;
 - obtain a laser angle difference syntax element for a third laser angle, wherein the laser angle difference syntax element indicates a laser angle difference for the third laser angle;
 - determine a predicted value based on the first laser angle and the second laser angle; and
 - determine the third laser angle based on the predicted and the laser angle difference for the third laser angle.
35. A computer-readable storage medium having stored thereon instructions that, when executed, cause one or more processors to:
- obtain a first laser angle;
 - obtain a second laser angle;
 - determine a predicted value based on the first laser angle and the second laser angle; and
 - encode a laser angle difference for a third laser angle, wherein the laser angle difference is equal to a difference between the third laser angle and the predicted value.