stationary and pointed in a second direction and the first motor is configured to turn the image capture device 90 degrees about the vertical axis after the second plurality of images are generated. The image sensor may be configured to generate a third plurality of images at the different exposures when the image capture device is stationary and pointed in a third direction and the first motor is configured to turn the image capture device 90 degrees about the vertical axis after the third plurality of images are generated. The image sensor may be configured to generate a fourth plurality of images at the different exposures when the image capture device is stationary and pointed in a fourth direction and the first motor is configured to turn the image capture device 90 degrees about the vertical axis after the fourth plurality of images are generated.

[008] In some embodiments, the system may further comprise a processor configured to blend frames of the first plurality of images before the image sensor generates the second plurality of images. A remote digital device may be in communication with the image capture device and configured to generate a 3D visualization based on the first, second, third, and fourth plurality of images and the depth signals, the remote digital device being configured to generate the 3D visualization using no more images than the first, second, third, and fourth plurality of images. In some embodiments, the first, second, third, and fourth plurality of images are generated between turns that combined turns turning the image capture device 270 degrees around the vertical axis. The speed of rotation of the mirror around the horizontal axis increases as the first motor turns the image capture device. The angled surface of the mirror may be 90 degrees. In some embodiments, the LiDAR emits the laser pulses in a direction that is opposite the front side of the housing.

[009] An example method comprises receiving light from a wide-angle lens of an image capture device, the wide-angel lens being coupled to a housing of the image capture device, the light being received at a field of view of the wide-angle lens, the field of view extending away from a front side of the housing, generating a first plurality of images by an image sensor of an image capture device using the light from the wide-angle lens, the image sensor being coupled to the housing, the first plurality of images being at different exposures, horizontally turning the image capture device by a first motor substantially 270 degrees about a vertical axis, the first motor being coupled to the housing in a first position between the front side and a back side of the housing, the wide-angle lens being at a second position along the vertical axis, the second position being a no-parallax point, rotating a mirror with an angled surface around horizontal axis by a second motor, the second motor being coupled to

the housing, generating laser pulses by a LiDAR, the LiDAR being coupled to the housing at a third position, the laser pulse being directed to the rotating mirror while the image capture device horizontally turns, and generating depth signals by the LiDAR based on the laser pulses.

[0010] Generating the first plurality of images by the image sensor may occur before the image captured device horizontally turns. In some embodiments, the image sensor does not generate images while the first motor turns the image capture device and wherein the LiDAR generates the depth signals based on the laser pulses while the first motor turns the image capture device.

[0011] The method may further comprise generating a second plurality of images at the different exposures by the image sensor when the image capture device is stationary and pointed in a second direction and turning the image capture device 90 degrees about the vertical axis by the first motor after the second plurality of images are generated.

[0012] In some embodiments, the method may further comprise generating a third plurality of images at the different exposures by the image sensor when the image capture device is stationary and pointed in a third direction and turning the image capture device 90 degrees about the vertical axis by the first motor after the third plurality of images are generated. The method may further comprise generating a fourth plurality of images at the different exposures by the image sensor when the image capture device is stationary and pointed in a fourth direction. The method may comprise generating a 3D visualization using the first, second, third, and fourth plurality of images and based on the depth signals, the generating the 3D visualization not using any other images.

[0013] In some embodiments, the method may further comprise blending frames of the first plurality of images before the image sensor generates the second plurality of images. The first, second, third, and fourth plurality of images may be generated between turns that combined turns turning the image capture device 270 degrees around the vertical axis. In some embodiments, a speed of rotation of the mirror around the horizontal axis increases as the first motor turns the image capture device.

CLAIMS

1. An image capture device comprising:

a housing, the housing having a front side and a back side;

a first motor coupled to the housing at a first position between the front side and the back side of the housing, the first motor being configured to horizontally turn the image capture device substantially 270 degrees about a vertical axis;

a wide-angle lens coupled to the housing of the image capture device at a second position between the front side and the back side of the housing along the vertical axis, the second position being a no-parallax point, the wide-angle lens having a field of view away from the front side of the housing;

an image sensor coupled to the housing of the image capture device and configured to generate image signals from light received by the wide-angle lens;

a mount coupled to the first motor;

a LiDAR coupled to the housing of the image capture device at a third position, the LiDAR configured to generate laser pulses and generate depth signals;

a second motor coupled to the housing of the image capture device; and

a mirror coupled to the second motor, the second motor configured to rotate the mirror around a horizontal axis, the mirror including an angled surface configured to receive the laser pulses from the LiDAR and direct the laser pulses about the horizontal axis.

2. The image capture device of claim 1, wherein the image sensor is configured to generate a first plurality of images at different exposures when the image capture device is stationary and pointed in a first direction.

3. The image capture device of claim 2, wherein the first motor is configured to turn the image capture device about the vertical axis after the first plurality of images are generated.

4. The image capture device of claim 3, wherein the image sensor does not generate images while the first motor turns the image capture device and wherein the LiDAR generates depth signals based on the laser pulses while the first motor turns the image capture device.

5. The image capture device of claim 3, wherein the image sensor is configured to generate a second plurality of images at the different exposures when the image capture device is stationary and pointed in a second direction and the first motor is configured to turn

the image capture device 90 degrees about the vertical axis after the second plurality of images are generated.

6. The image capture device of claim 5, wherein the image sensor is configured to generate a third plurality of images at the different exposures when the image capture device is stationary and pointed in a third direction and the first motor is configured to turn the image capture device 90 degrees about the vertical axis after the third plurality of images are generated.

7. The image capture device of claim 6, wherein the image sensor is configured to generate a fourth plurality of images at the different exposures when the image capture device is stationary and pointed in a fourth direction and the first motor is configured to turn the image capture device 90 degrees about the vertical axis after the fourth plurality of images are generated.

8. The image capture device of claim 7, further comprising a processor configured to blend frames of the first plurality of images before the image sensor generates the second plurality of images.

9. The image capture device of claim 7, further comprising a remote digital device in communication with the image capture device and configured to generate a 3D visualization based on the first, second, third, and fourth plurality of images and the depth signals, the remote digital device being configured to generate the 3D visualization using no more images than the first, second, third, and fourth plurality of images.

10. The image capture device of claim 9, wherein first, second, third, and fourth plurality of images are generated between turns that combined turns turning the image capture device 270 degrees around the vertical axis.

11. The image capture device of claim 4, wherein a speed of rotation of the mirror around the horizontal axis increases as the first motor turns the image capture device.

12. The image capture device of claim 1, wherein the angled surface of the mirror is 45 degrees.

13. The image capture device of claim 1 wherein the LiDAR emits the laser pulses in a direction that is opposite the front side of the housing of the image capture device.

14. A method comprising:

receiving light from a wide-angle lens of an image capture device, the wide-angle lens being coupled to a housing of the image capture device, the light being received at a field of view of the wide-angle lens, the field of view extending away from a front side of the housing;

generating a first plurality of images by an image sensor of an image capture device using the light from the wide-angle lens, the image sensor being coupled to the housing of the image capture device, the first plurality of images being at different exposures;

horizontally turning the image capture device by a first motor substantially 270 degrees about a vertical axis, the first motor being coupled to the housing in a first position between the front side and a back side of the housing, the wide-angle lens being at a second position along the vertical axis, the second position being a no-parallax point;

rotating a mirror with an angled surface around horizontal axis by a second motor, the second motor being within the housing of the image capture device;

generating laser pulses by a LiDAR, the LiDAR being within the housing of the image capture device at a third position, the laser pulse being directed to the rotating mirror while the image capture device horizontally turns; and

generating depth signals by the LiDAR based on the laser pulses.

15. The method of claim 14, wherein generating the first plurality of images by the image sensor occurs before the image captured device horizontally turns.

16. The method of claim 15, wherein the image sensor does not generate images while the first motor turns the image capture device and wherein the LiDAR generates the depth signals based on the laser pulses while the first motor turns the image capture device.

17. The method of claim 16, further comprising:

generating a second plurality of images at the different exposures by the image sensor when the image capture device is stationary and pointed in a second direction; and

turning the image capture device 90 degrees about the vertical axis by the first motor after the second plurality of images are generated.

18. The method of claim 17, further comprising:

generating a third plurality of images at the different exposures by the image sensor when the image capture device is stationary and pointed in a third direction; and

turning the image capture device 90 degrees about the vertical axis by the first motor after the third plurality of images are generated.

19. The method of claim 18, further comprising:

generating a fourth plurality of images at the different exposures by the image sensor when the image capture device is stationary and pointed in a fourth direction.

20. The method of claim 19, further comprising generating a 3D visualization using the first, second, third, and fourth plurality of images and based on the depth signals, the generating the 3D visualization not using any other images.

21. The method of claim 17, further comprising blending frames of the first plurality of images before the image sensor generates the second plurality of images.

22. The method of claim 19, wherein first, second, third, and fourth plurality of images are generated between turns that combined turns turning the image capture device 270 degrees around the vertical axis.

23. The method of claim 14, wherein a speed of rotation of the mirror around the horizontal axis increases as the first motor turns the image capture device.