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(54) Title: DEPTH IMAGE PROVISION APPARATUS AND METHOD

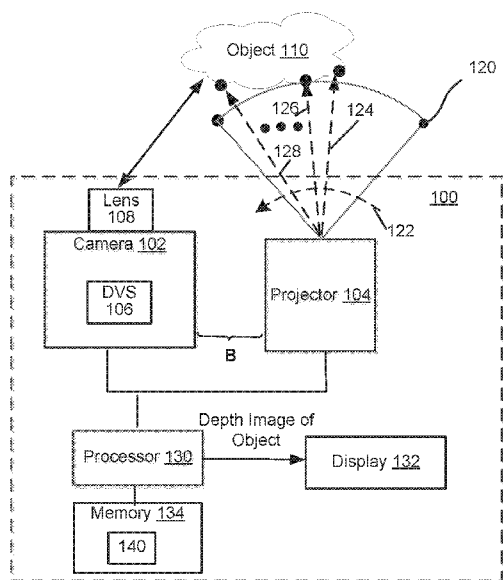


Fig. 1

(57) Abstract: Apparatuses, methods and storage media for providing a depth image of an object are described. In some embodiments, the apparatus may include a projector to project a light pattern on an object, and to move the projected light pattern over the object, to swipe the object with the light pattern, and a camera coupled with the projector. The camera may include a dynamic vision sensor (DVS) device, to capture changes in at least some image elements that correspond to an image of the object, during the swipe of the object with the light pattern. The apparatus may further include a processor coupled with the projector and the camera, to generate a depth image of the object, based at least in part on the changes in the at least some image elements. Other embodiments may be described and claimed.



A. CLASSIFICATION OF SUBJECT MATTER**G06T 7/557(2017.01)i, G06T 7/11(2017.01)i, G06T 7/20(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06T 7/557; H04N 5/232; H04N 5/33; G01B 11/22; G01B 11/24; G06T 7/60; G01B 11/25; G06T 5/10; G01B 11/00; G06T 7/00; G06T 7/11; G06T 7/20

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & keywords: projector, light pattern, dynamic vision sensor (DVS), depth image, pixel, light intensity

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2015-184308 A1 (NORTHWESTERN UNIVERSITY) 03 December 2015 See paragraphs [0059]-[0060], [0069], [0081]-[0084], [0107]; claims 1, 6; and figures 4B, 5C-5D, 9.	1-2, 4-25
Y		3
Y	US 2014-0240492 A1 (GOOGLE INC.) 28 August 2014 See paragraphs [0034]-[0035]; claim 1; and figure 1.	3
A	US 2014-0125994 A1 (TAE CHAN KIM et al.) 08 May 2014 See paragraphs [0004]-[0030]; and claims 1-2, 5.	1-25
A	US 2015-0292863 A1 (CANON KABUSHIKI KAISHA) 15 October 2015 See paragraphs [0021]-[0034]; claim 1; and figure 1.	1-25
A	US 2015-0371393 A1 (QUALCOMM INCORPORATED) 24 December 2015 See paragraphs [0050]-[0054]; claim 15; and figure 3.	1-25

 Further documents are listed in the continuation of Box C. See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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