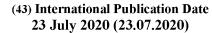
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- (74) Agent: GIN, Aaron, V.; McDonnell Boehnen Hulbert & Berghoff LLP, 300 South Wacker Drive, Chicago, IL 60606 (US).
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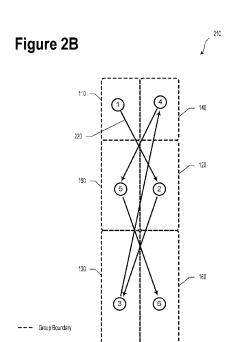
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- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) Title: SHOT REORDERING IN LIDAR SYSTEMS



(57) Abstract: Systems and methods described herein relate to LIDAR systems and their operation. An example method includes partitioning a plurality of light-emitter devices into a plurality of groups. Each light-emitter device is associated with a given group of the plurality of groups. The method also includes selecting a group from the plurality of groups according to a predetermined group order and selecting one or more light-emitter devices from the plurality of light-emitter devices of the selected group according to a firing order. The method yet further includes, at a predetermined shot dither time, causing the selected light-emitter device to emit at least one light pulse. The predetermined shot dither time is based on a shot dither schedule. The method may additionally include repeating the method to provide a complete scan in which each light-emitter device of the plurality of light-emitter devices has emitted at least one light pulse.

(88) Date of publication of the international search report: 24 September 2020 (24.09.2020)

#### INTERNATIONAL SEARCH REPORT

#### A. CLASSIFICATION OF SUBJECT MATTER

G01S 7/484(2006.01)i, G01S 17/931(2020.01)i, G01S 7/481(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) G01S 7/484; G01S 17/06; G01S 17/10; G01S 17/93; G01S 7/00; G01S 7/481; G01S 7/486; H05B 37/02; G01S 17/931

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: lidar, shot, reorder, emitter, group

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2015-129734 A (RICOH CO., LTD.) 16 July 2015 claim 1 and figure 29	1-20
Y	KR 10-2015-0076760 A (MANDO CORPORATION) 07 July 2015 paragraphs [0017]-[0024], claim 3 and figures 7-8	1-20
Y	KR 10-2018-0049937 A (KOREA PHOTONICS TECHNOLOGY INSTITUTE) 14 May 2018 claims 1-3, figures 4-6	4-8,15-18
A	US 2016-0047891 A1 (U.S.A. AS REPRESENTED BY THE ADMINISTRATOR OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION) 18 February 2016 paragraphs [0050]-[0055], claim 1 and figures 1-2	1-20
A	US 2018-0081041 A1 (APPLE INC.) 22 March 2018 paragraph [0044] and figure 7	1-20

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

- \* Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "D" document cited by the applicant in the international application
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
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- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search 10 August 2020 (10.08,2020)

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## INTERNATIONAL SEARCH REPORT

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