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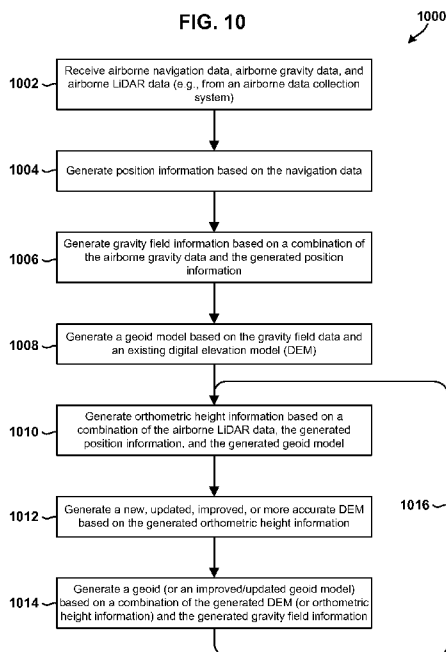
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[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR GENERATING A GEOID VIA THREE COMPUTATION SPACES AND AIRBORNE-ACQUIRED GRAVITY DATA



(57) Abstract: Airborne gravity measurements may be added to the collection of airborne LiDAR so that it may be used to produce a digital elevation model (DEM), which may be used along with gravity data to produce an improved geoid, which may be used to produce an improved DEM based on the improved orthometric heights. A computing device may be configured to receive airborne navigation, gravity and LiDAR data, generate position information based on the navigation data, generate gravity field information based on the gravity data and the position information, generate orthometric height information based on the LiDAR data and the position information, and generate a geoid based on the gravity field and orthometric height information. The computing device may also generate a geoid model based on the gravity field and an existing DEM, and generate the orthometric height information based on the LiDAR data, position information, and geoid model.



Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *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))*

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/070734**A. CLASSIFICATION OF SUBJECT MATTER****G01C 5/00(2006.01)i**

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

B. FIELDS SEARCHEDMinimum documentation searched (classification system followed by classification symbols)
G01C 5/00; G06F 17/10; G06F 17/50; G01V 1/28; G06F 17/40; G01S 5/02Documentation 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 modelsElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & keywords: airborne, gravity, geoid, LiDAR, orthometric height and navigation**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003-0154060 A1 (DAMRON, JAMES J.) 14 August 2003 See abstract, paragraphs [0051]-[0067], claim 1 and figures 1-4.	1-20
A	KR 10-0898617 B1 (PAN-ASIA ENGINEERING, LTD) 27 May 2009 See abstract, paragraphs [0013]-[0021], [0032]-[0039], claim 1 and figures 1-18.	1-20
A	HWANG et al., "Geodetic and geophysical results from a Taiwan airborne gravity survey: Data reduction and accuracy assessment", Journal of Geophysical Research: Solid Earth, Vol.112, B04407, 17 April 2007 See pages 1-10.	1-20
A	US 6016118 A (JACKSON et al.) 18 January 2000 See abstract, column 3, line 52 - column 5, line 58 and figures 1-7.	1-20
A	US 2006-0036367 A1 (BREWSTER, JAMES) 16 February 2006 See abstract, paragraphs [0028]-[0040], [0056]-[0059], [0090]-[0093] and figures 1-9.	1-20

 Further documents are listed in the continuation of Box C. 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

"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"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


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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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