

CLAIMS

1. A system for facilitating generation of geographical information comprising:
an imaging module operable to obtain image data; and
a processor operable to receive the image data and generate a point cloud
5 having a plurality of data points using the image data,
wherein the processor is further operable to analyse the point cloud to extract at least one feature associated with the geographical information and generate the geographical information using the extracted feature.
2. The system according to claim 1, wherein the imaging module comprises at least
10 one 3D sensor operable to generate 3D image data as the image data.
3. The system according to claim 1 or 2, wherein the generation of the point cloud includes georeferencing of the image data.
4. The system according to any one of claims 1 to 3 further comprises a position and orientation system (POS) operable to send position and/or orientation related data
15 to the processor.
5. The system according to claim 4, wherein the processor is operable to parse the sent data and use the parsed information to perform the georeferencing of the image data.
6. The system according to any one of claims 1 to 5, wherein the processor is
20 operable to correct the point cloud radiometrically and/or geometrically.
7. The system according to any one of claims 1 to 6, wherein the processor is operable to compute an octree, and divide the point cloud into a plurality of cells based on the computed octree so that each of the plurality of cells have a same size.
8. The system according to claim 7, wherein the processor is operable to compute
25 a normal for each of the plurality of data points and create an eigenvalue for each of the plurality of cells based on the computed normal.

9. The system according to claim 8, wherein the processor is operable to compute at least one geometrical attribute for the each of the plurality of cells by normalizing the eigenvalues of the each of the plurality of cells.
10. The system according to claim 9, wherein the processor is operable to segment
5 the point cloud according to the geometrical attribute.
11. The system according to claim 10, wherein the processor is operable to classify each of the plurality of data points, based on the segmented point cloud according to the geometrical attribute.
12. The system according to any one of claims 1 to 11, wherein the imaging module
10 further comprises at least one 2D sensor operable to generate 2D image data.
13. The system according to claim 12, wherein the processor is operable to merge the 2D image data and the 3D image data.
14. The system according to any one of claims 9 to 11, wherein the processor is operable to re-compute the at least one geometrical attribute for the each of the plurality
15 of cells and/or re-classify the each of the plurality of data points, based on the merged image data.
15. The system according to any one of claims 1 to 14, wherein the processor is operable to receive a selection of a type of the geographical information to be generated and extract the at least one feature associated with the geographical
20 information to be generated.
16. The system according to any one of claims 1 to 15, wherein the geographical information includes at least one of a high definition map, plant information or public infrastructure information.
17. The system according to any one of claims 1 to 16, wherein the feature includes
25 at least one of geographical feature or object feature.
18. The system according to any one of claims 1 to 17, wherein the imaging module is operable to provide the image data which was obtained previously to the processor.

19. A method for facilitating generation of geographical information comprising:
- obtaining image data at an imaging module;
 - receiving, at a processor, the image data from the imaging module;
 - generating, at the processor, a point cloud having a plurality of data points using
5 the image data;
 - analysing, at the processor, the point cloud;
 - extracting, at the processor, at least one feature associated with the
geographical information; and
 - generating, at the processor, the geographical information using the extracted
10 feature.