CLAIMS

1. A system for generating road map data, the system comprising:

one or more processor(s); and

a memory having instructions stored therein, the instructions, when executed by the one or more processor(s), cause the one or more processor(s) to:

collect first 2D training image data comprising first map images of a geographical area acquired by ~~one or more~~a first image acquisition apparatus;

collect second 2D training image data comprising second map images of the geographical area acquired by ~~the one or more~~a second image acquisition apparatus;

construct a 3D map for the geographical area based on the first training image data and the second training image data;

determine a likelihood of a potential missing feature in the 3D map based on the first 2D training image data and the second 2D training image data;

collect third 2D training image data comprising third map images of the geographical area acquired by ~~the one or more~~a third image acquisition apparatus if the likelihood of the potential missing feature is above a predetermined threshold; and

generate the road map based on the first 2D training image data, the second 2D training image data and the third 2D training image data;

wherein at least one of the first image acquisition apparatus and the second image acquisition apparatus acquires images at a lower image resolution than the third image acquisition apparatus.

~~2. The system of claim 1, wherein the one or more image acquisition apparatus comprises a first image acquisition apparatus, a second image acquisition apparatus and a third image acquisition apparatus; and~~

~~wherein the first map images are acquired by the first image acquisition apparatus, the second map images are acquired by the second image acquisition apparatus and the third map images are acquired by the third image acquisition apparatus.~~

~~3. The system of claim 2, wherein at least one of the first image acquisition apparatus and the second image acquisition apparatus acquires images at a lower image resolution than the third image acquisition apparatus.~~

~~4~~2. The system of claim ~~2~~ 1~~or claim 3~~, wherein the third image acquisition apparatus is a 3D camera.

~~5~~3. The system of claims ~~2~~ ~~4~~1 or 2, wherein the one or more processor(s) is configured to:

use sensor data to identify a first position of the first image acquisition apparatus and a second position of the second image acquisition apparatus to determine a difference between the first position and the second position.

~~6~~4. The system of claim ~~5~~3, wherein the one or more processor(s) is configured to:

construct the 3D map for the geographical area based on the first 2D training image data, the second 2D training image data and the difference between the first position and the second position.

~~7~~5. The system of any one of ~~claims 1-6~~the preceding claims, wherein the one or more processor(s) is configured to:

compare the 3D map with a groundtruth map stored in the memory to determine the likelihood of the potential missing feature.

~~8~~6. The system of any one of ~~claims 1-7~~the preceding claims, wherein the potential missing feature is one of: a building, a traffic sign or a traffic light.

~~9~~7. The system of any one of the preceding claims~~claims 1-8~~, wherein the one or more image acquisition apparatus is mounted onto one or more vehicles or one or more drivers of the one or more vehicles.

~~10~~8. A method for generating road map data, the method comprising using one or more processor(s) to:

collect first 2D training image data comprising first map images of a geographical area acquired by ~~one or more~~a first image acquisition apparatus;

collect second 2D training image data comprising second map images of the geographical area acquired by ~~the one or more~~a second image acquisition apparatus;

construct a 3D map for the geographical area based on the first training image data and the second training image data;

determine a likelihood of a potential missing feature in the 3D map based on the first 2D training image data and the second 2D training image data;

collect third 2D training image data comprising third map images of the geographical area acquired by ~~the one or more~~a third image acquisition apparatus if the likelihood of the potential missing feature is above a predetermined threshold; and

generate the road map based on the first 2D training image data, the second 2D training image data and the third 2D training image data;

wherein at least one of the first image acquisition apparatus and the second image acquisition apparatus acquires images at a lower image resolution than the third image acquisition apparatus.

~~11. The method of claim 10,~~

~~wherein the one or more image acquisition apparatus comprises a first image acquisition apparatus, a second image acquisition apparatus and a third image acquisition apparatus; and~~

~~wherein the first map images are acquired by the first image acquisition apparatus, the second map images are acquired by the second image acquisition apparatus and the third map images are acquired by the third image acquisition apparatus.~~

~~12. The method of claim 11, wherein at least one of the first image acquisition apparatus and the second image acquisition apparatus acquires images at a lower image resolution than the third image acquisition apparatus.~~

~~13~~9. The method of claim 8 ~~11 or claim 12~~, wherein the third image acquisition apparatus is a 3D camera.

~~14~~10. The method of claim 8 or 9~~s 11-13~~, wherein the one or more processor(s) is configured to:

use sensor data to identify a first position of the first image acquisition apparatus and a second position of the second image acquisition apparatus to determine a difference between the first position and the second position.

~~15~~11. The method of claim ~~14~~10, wherein the one or more processor(s) is configured to:

construct the 3D map for the geographical area based on the first 2D training image data, the second 2D training image data and the difference between the first position and the second position.

~~16~~12. The method of ~~claims 10-15~~any one of claims 8 to 11, wherein the one or more processor(s) is configured to:

compare the 3D map with a groundtruth map stored in the memory to determine the likelihood of the potential missing feature.

~~17~~13. The method of any one of claims 8 to 12~~claims 10-16~~, wherein the potential missing feature is one of: a building, a traffic sign or a traffic light.

~~18~~14. The method of any one of claims 8 to 13~~claims 9-15~~, wherein the one or more image acquisition apparatus is mounted onto one or more vehicles or one or more drivers of the one or more vehicles.

~~19~~15. A non-transitory computer-readable medium storing computer executable code comprising instructions for generating a road map data according to the method of any one of claims ~~1~~ 8 to ~~18~~14.

~~20~~16. A computer executable code comprising instructions for generating a road map data according to the method of any one of claims ~~1~~ 8 to ~~20~~14.