

CLAIMS:

1. A method of georeferencing a first image of a scene acquired from a first imaging device based on at least one second image of the scene acquired from a second imaging device, the method comprising:
 - obtaining data indicative of an eligibility parameter for one or more areas of the scene;
 - selecting one or more pivot areas among the one or more areas of the scene, wherein the eligibility parameter of the pivot areas satisfy a predefined criterion;
 - for at least some of the selected pivot areas, identifying tie points for the first and second images; and
 - solving the external orientation of the first image using the identified tie points and a first imaging device model.
2. The method according to claim 1, wherein obtaining data indicative of an eligibility parameter of a given area is performed using an external orientation of the first image and an external orientation of the second image at the given area.
3. The method according to claim 2, wherein the eligibility parameter associated to a given area enables to assess a quality of a synthetic view that would result from synthesizing a zone of the second image with the external orientation of the first image wherein the zone of the second image corresponds to the given area of the scene.
4. The method according to claim 1, wherein an external orientation of the first image is approximately predetermined and an external orientation of the second image is accurately predetermined.
5. The method according to claim 1, wherein the eligibility parameter for a given area of the scene is defined as an angle between the local line of sight of the second image and the local line of sight of the first image at said given area.

6. The method according to claim 5, wherein the eligibility parameter satisfies the predefined criteria when the angle is below a predetermined threshold.
7. The method according to claim 1, wherein each pivot area of the scene correspond to a first pivot zone in the first image and to a second pivot zone in the second image and wherein identifying tie points comprises detecting first and second tie pixels by image matching process between the first and second pivot zones.
8. The method according to claim 1, wherein detecting first and second tie pixels comprises determining a transformation between the first and second pivot zones and applying said transformation to a set of pixels of the first pivot zone.
9. The method according to claim 8, wherein determining a transformation between the first and second pivot zones comprises determining a view transformation for synthesizing a view of the second pivot zone with the approximate external orientation of the first image and a residual transformation for passing from the synthesized view to the first pivot zone.
10. The method according to claim 1, wherein one or more subsequent second images of the scene with predetermined accurate external orientations are provided and wherein the solving the external orientation comprises calculating coordinates of the tie points in a ground referential by ray tracing using the one or more subsequent second images.
11. The method according to claim 1, wherein one or more subsequent second images of the scene with predetermined accurate external orientations are provided and wherein the selecting one or more pivot area is performed with said subsequent second images and each pivot area is associated with a second image.
12. The method according to claim 1, further comprising solving an internal orientation of the first image.

13. The method according to claim 1, further comprising capturing a plurality of overlapping images using the first imaging device and creating a panorama thereby providing the first image.

14. The method according to claim 13, further comprising relative referencing of the plurality of overlapping images.

15. The method according to claim 1, wherein the second imaging device and the first imaging device are identical.

16. A method of geo-locating a target in a scene using a first image of the scene acquired from a first imaging device and at least one second image of the scene acquired from a second imaging device, the method comprising:

- georeferencing the first image according to the method of claim 1;
- identifying target pixel coordinates in the first image and in the second image;
- determining the target ground coordinates using ray intersection.

17. The method according claim 16, wherein identifying the target pixel coordinates in the second image comprises:

- identifying a first target zone in the first image;
- determining a corresponding second target zone in the second image ;
- determining a transformation between the first and second target zones; and
- applying said transformation to the target pixels in the first image.

18. A data processing apparatus comprising means for carrying out the method according to claim 1.

19. A data processing apparatus for georeferencing a first image of a scene acquired from a first imaging device based on at least one second image of the scene acquired from a second imaging device, , the data processing apparatus comprising:

- an analysis and selection unit configured for :
 - o obtaining data indicative of an eligibility parameter for one or more areas of the scene; and

- o selecting one or more pivot areas among the one or more areas of the scene, wherein the eligibility parameter of the pivot areas satisfy a predefined criteria;
 - an identification unit configured for identifying, for at least some of the pivot areas, tie points between the first and second images;
 - a calculation unit configured for solving the external orientation of the first image based on the identified tie points and on a first imaging device model.
- 20.** An imaging device including the data processing apparatus according to claim 19.