CLAIMS

1. A method for automatically calibrating at least one movable near field-of- view (NFOV) camera with respect to at least one stationary wide field-of-view (WFOV) camera, wherein said cameras are aimed to produce overlapping camera images which are supplied to a computer together with pan (P), tilt (T) and zoom (Z) values, respectively, of said at least one NFOV camera, said calibration method comprising the computer-implemented steps of:

(a) receiving a WFOV image produced by a WFOV camera;

(b) receiving an overlapping NFOV image produced by a NFOV camera having a selected set of P, Z and T values;

(c) identifying a feature point in said WFOV image;

(d) identifying a feature point in said NFOV image which may match the feature point in said WFOV image;

(e) removing outliers during feature matching between the NFOV and WFOV images;

(ef) forming a transformation matrix [A] for the matched feature point in the WFOV and NFOV images;

(fg) determining an accuracy valve of match between said feature point in said WFOV and NFOV images;

(gh) repeating steps (c) - (e) for a plurality of other matched feature points in said WFOV and NFOV images;

(hi) selecting a plurality of matched feature points having a highest accuracy of match;

(ij) determining a centroid position (N_{CX}, N_{CY}) of the NFOV image;

(jk) multiplying the transformation matrix [A] by the centroid position (N_{CX}, N_{CY}) of the NFOV image to obtain a transformation centroid position (N'_{CX}, N'_{CY}) of the NFOV image;

whereby the transformation centroid position (N'_{CX}, N'_{CY}) of the NFOV image is used as the (X, Y) coordinates of the WFOV image for the selected set of P, T and Z values of the NFOV camera.

2. The method defined in claim 1, wherein steps (b) – (j) are repeated for another selected set of P, T and Z valves of the NFOV camera.

3. The method defined in claim 1, further comprising the steps of (1) determining the combined matching accuracy valve of the selected plurality of matched feature points, and (2) selecting another set of P, T and Z values if the combined accuracy value is less than a prescribed threshold.

4. The method defined in claim 3, wherein the prescribed threshold is selected in dependence upon the particular surveillance application of the NFOV and WFOV cameras.

5. The method defined in claim 1, wherein the selected number of matched feature points in step (gh) is five.

~~6. The method defined in claim1, wherein said WFOV and NFOV cameras are placed at an elevated level above ground to view a scene.~~

76. The method defined in claim1, wherein said WFOV and NFOV cameras are placed at an elevated level above ground to view a scene.

87. The method defined in claim 1, wherein said computer is operative to store the mapping between the P, T and Z values of said at least one NFOV camera and the (X, Y) coordinates of the WFOV image of said at least one WFOV cameras.

~~9~~8. The method defined in claim 1, wherein said method is operative to calibrate a single movable NFOV camera with respect to a single stationary WFOV camera.

~~10~~9. The method defined in claim 1, wherein said method is operative to calibrate a single movable NFOV camera with respect to a plurality of stationary WFOV cameras.

~~11~~10. The method defined in claim 1, wherein said method is operative to calibrate a plurality of movable NFOV cameras with respect to a single of stationary WFOV camera.

~~12~~11. The method defined in claim 1, wherein said method is operative to calibrate a plurality of movable NFOV cameras with respect to a plurality of stationary WFOV cameras.

~~13~~12. The method defined in claim ~~12~~11, wherein each one of the said NFOV cameras is calibrated with respect to a corresponding one of said WFOV cameras.