950, the ratio $\gamma=g(x,y)_h/g(x,y)_1$ is computed. As shown in FIG. 9C, steps 945 and 950 are repeated for the four vertical lines and gray shade regions, where $g(x,y)_h$ represents the pixel p(x,y) with the highest gray level, and $g(x,y)_1$ represents the pixel p(x,y) with the lowest gray level.

FIG. 9D illustrates a specific implementation of step 910 in FIG. 9A. In step 955, the center point and boundary ratio are used to determine the region of the image boundary. In step 960, a starting point white pixel is located to use for back-tracking through the remainder of the white pixels for each line segment.

FIG. 9E illustrates a specific implementation of step 915 in FIG. 9A. In step 965, a user is allowed to enter the current brightness and contrast of the image. In step 970, the system of the invention computes the average image gray level. In step 975, the system calculates the corresponding gray level of variance based on a derived function. In step 980, the system computes the predicted focus magnitude.

It should be noted that the accuracy of the image analysis program module may be verified by utilizing a language debugging tool. After being presented with the disclosure herein, those of ordinary skill in the relevant art will also realize that split-half and back tracking strategies may also be imposed throughout the coding process. The program module results may also be compared with simulation results. For example, to check the accuracy of the constructed regression line, the same data points also were analyzed and compared with the results obtained from a statistics package and hand calculation.

The term computer program product as used herein generally refers to media such as a computer program medium or a computer usable medium. A removable storage drive, a hard disk installed in a hard disk drive, a computer diskette, a cd, and signals are examples of computer program media and serve as means for providing software to a workstation. In other words, a computer program product is a product on which a module (for example, a computer program module) of the present invention may be stored for execution.

Those skilled in the art will appreciate that various adaptations and modifications of the above-described embodiments can be configured without departing from the scope and spirit of the present invention. Therefore, it is to be understood that, within the scope of the appended claims, the invention may be practiced and constructed other than as specifically described herein.

We claim:

1. A method for testing quality of an image produced by a display sighting system, comprising:

using a computer to perform the following:

analyzing at least one measurable aspect of the image in an objective manner to determine at least one difference in said measurable aspect of the image and a corresponding measurable aspect of a recalled representation of the image; and

presenting said difference via a visual display device.

2. The method of claim 1, wherein said recalled representation of the image is theoretically displayed.

3. The method of claim 1, further comprising, before said analyzing step, capturing the image with at least one camera.

4. The method of claim 3, wherein said analyzing step includes analyzing at least one angular orientation of the image in an objective manner to determine at least one possible difference in the angular orientation and a corresponding angular orientation in a recalled representation of the image.

5. The method of claim 4, wherein said analyzing step further includes analyzing at least one center point location of the image in an objective manner to determine at least one possible difference in the center point location and a corresponding center point location in the recalled representation of the image.

6. The method of claim 5, wherein said analyzing further includes analyzing at least one optical power of the image in an objective manner to determine at least one possible difference in the focus and a corresponding focus in a recalled representation of the image.

7. The method of claim 4, wherein said analyzing step further includes determining a number of center lines.

8. The method of claim 5, wherein the recalled representation of the image includes a test pattern having at least one vertical line.

9. The method of claim 6, wherein the recalled representation of the image includes a test pattern having at least one horizontal line.

10. The method of claim 3, wherein said analyzing step includes analyzing at least one gray shade of the image in an objective manner to determine at least one possible difference in the at least one gray shade of the image and a corresponding gray shade in a recalled representation of the image.

11. The method of claim 10 wherein said analyzing step further includes analyzing at least one boundary location of the image in an objective manner to determine at least one possible difference in at least one field-of-view of the image and a corresponding field-of-view in the recalled representation of the image.

12. The method of claim 11, wherein said analyzing step further includes analyzing brightness, contrast, and number of gray levels of the image in an objective manner to determine at least one possible difference in an image quality figure of merit of the image and a corresponding image quality figure of merit in the recalled representation of the image.

13. The method of claim 3, wherein said capturing includes capturing the image via a data acquisition card interposed between a narrow-angle camera and a portable computer system.

14. The method of claim 13, wherein said capturing further includes capturing the image via a data acquisition card interposed between a wide-angle camera and the portable computer system.

15. A system for testing an image produced by a display sighting system, comprising:

a computer to execute a first module for analyzing at least one measurable aspect of the image in an objective manner;

a computer to execute a second module for comparing the at least one measurable aspect of the image with a corresponding at least one measurable aspect of a recalled representation of the image to determine at least one difference in the image and the recalled representation of the image from the comparison; and

a computer to execute a third module for presenting said difference via a visual display device.

16. A computer-readable medium having computer executable instructions for performing the method of claim 1.

17. A computer-readable medium having computer executable instructions for performing the method of claim 6.

18. A computer-readable medium having computer executable instructions for performing the method of claim 11.

19. The method according to claim 1 further comprising storing a representation of the image as it should appear if it is displayed accurately as a recalled representation of the image.

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