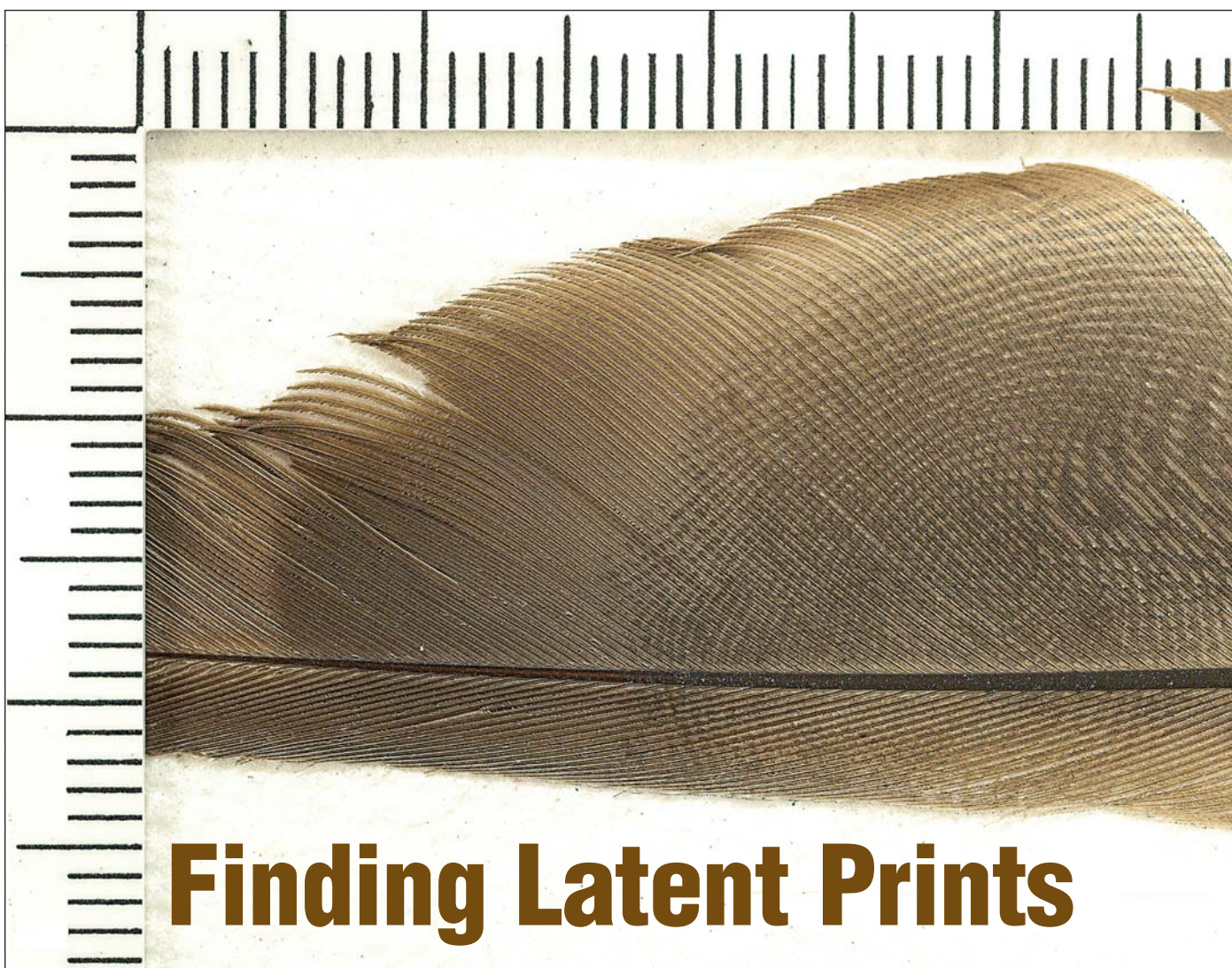


EVIDENCE TECHNOLOGY MAGAZINE

The magazine dedicated exclusively to the technology of evidence collection, processing, and preservation
Volume 6, Number 3 • May-June 2008



Finding Latent Prints

SOME OF THE TOPICS IN THIS ISSUE

- Prints from the skin of cadavers
- Comparison and analysis of pedal evidence
- Photo management at mass gravesites in Iraq
- Interview with a fire/arson investigator

IMAGE CLARIFICATION WORKFLOW

A balance of power and ease of use with ClearID v2.0 Image Clarification Workflow software

A product review written by Jim Hoerricks

A FEW WEEKS AGO, I received a call from Ocean Systems asking if I would like to beta test their newest software—ClearID v2.0 Image Clarification Workflow. The new program has filters that were designed for use with Adobe's Photoshop graphics-editing program. As a user of Ocean Systems' earlier version of the software—ClearID v1.0—I was quite interested to see how they had improved their product. (Before I go any further with this product review, I should state that I have been an Ocean Systems customer for some time and



have always been impressed by the fact that their products are at the leading edge of technology. The company is also very creative in the application of that technology in non-traditional areas. Having stated that, I should

also say that I intend to be objective in my review of this product.)

We can begin with a brief history of the company. A number of years ago, Ocean Systems recognized that digital images and digital video were becoming more prevalent as evidence in law enforcement. The company soon focused its efforts on providing tools that would be needed to help address the new digital reality. Remember: Even when you are dealing with digital CCTV video, you are really just dealing with a series of still images. So for Ocean Systems,

**From time to time, we provide our readers with product reviews written by individuals who are acknowledged to be experts in the field. Opinions expressed in these reviews are those of the author and do not necessarily represent those of Evidence Technology Magazine.*



One of the common problems that video analysts encounter is the presence of visual artifacts caused by interlacing on the image. Ocean Systems' ClearID v2.0 Image Clarification Workflow software

can help you solve that problem. The image on the left is an example of an original image. The image on the right shows how the image can be clarified by using CID Video Field Alignment.

clarification of still images became the goal—and ClearID image-clarification filters was their solution.

Ocean Systems' success with its dTective video-analysis software led some people in law-enforcement to assume that the company was only focused on the video analysts. But with the recent release of its new ClearID Image Clarification Workflow software, that perception began to change. The ClearID Image Clarification Workflow product works for all types of analysts who need a clarified image that will help them arrive at a proper conclusion, including questioned-document examiners and latent-print examiners. ClearID Image Clarification Workflow can help with still images from any source, including analog video, digital video, still cameras, and scanners.

The role of Photoshop in image enhancement

Today, a significant number of law-enforcement agencies have funding sources that will allow them to purchase image-enhancement tools. In this pursuit, a common piece of software that has found a home in many agencies is Adobe's Photoshop. But while Photoshop is a popular and powerful solution, it also requires a fairly large amount of learning and hands-on practicing before the user is both confident and competent. The learning curve involved is very steep. If the user is not an experienced graphic designer or photographer, then there can be the potential for

“Novice users will find its ease of use to be a plus in maximizing their investment in new technology. Power users will benefit from a versatile toolset that will help them speed up their work.”

some very frustrating confusion.

Nevertheless, a large number of law-enforcement agencies are asking their officers to get active and proficient in the area of image analysis and image enhancement.

With so many users new to this entire process, Ocean Systems set out to address the learning-curve issue.

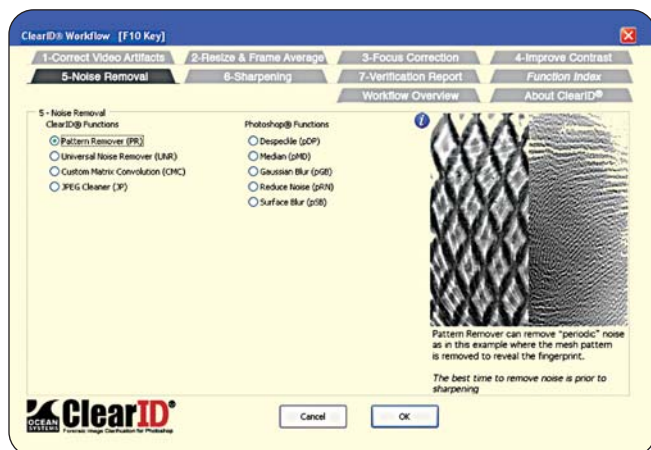
According to Chris Russ, senior scientist with Ocean Systems, the company's original ClearID program—Version 1.0—provided an expanded set of forensic-image clarification modules for Adobe Photoshop that were powerful and easy to use. But the over-all learning curve of the workflow was still too steep for many users. “We quickly realized that we were going to have to develop an easy-to-understand and easy-to-follow process,” said Russ. “With hundreds of functions in Photoshop and even more in

ClearID v1.0, where does a person start? Which tools should a person use? Why? And in what order? How does a new Photoshop user get started without feeling like he has been dumped into the deep end of the swimming pool without a life preserver?” The company's answer to all of those questions resulted in the recent introduction of ClearID v2.0 Image Clarification Workflow.

Ease of use is an important quality

I tried ClearID v2.0 Image Clarification Workflow and found it very easy to use. How easy is it to use? It is as easy as pressing the F10 key on your keyboard. That single command launches the ClearID Workflow menu and lets you begin to work through the various steps.

Those familiar with my classroom and textbook work will know that I tend to get preachy about the concept of *what-how-why*: knowing *what* to do, *how* to do it, and *why* that single procedure and sequence of your work is important. The ClearID v2.0 Image Clarification Workflow interface addresses these issues for you. The tabbed interface lays out a workflow that is labeled *Step One* through *Step Seven*, steps that will guide you through the image-clarification process. The ClearID Workflow, like the workflow outlined in my book, *Forensic Photoshop*, is designed as a guide for proper image analysis. It provides appropri-



One of the features of the software is a Workflow menu with tabs that guide you through a seven-step image-clarification process: Correct Video Artifacts; Resize and Frame Average; Focus Correction; Improve Contrast; Noise Removal; Sharpening; and Verification Report. The menu on the left illustrates noise removal using Pattern Remover. The one on the right illustrates focus correction using Interactive Deblur.

Noise Removal; Sharpening; and Verification Report. The menu on the left illustrates noise removal using Pattern Remover. The one on the right illustrates focus correction using Interactive Deblur.

ate tools at each stage of the process while maintaining the integrity of the original image.

And how important is maintaining the integrity of the original image? It is a very important issue. "ClearID Workflow was designed specifically for law enforcement," said Russ. "The objective of the software was to create a powerful yet easy-to-use solution with a consistent set of tools that are forensically sound and defensible should the need arise in court."

The tools available with ClearID Workflow

This program provides a number of tools including the following: video-artifact correction; resize-and-frame averaging; focus correction; contrast improvement; noise removal; sharpening; and a verification report.

One of the fascinating and useful features involves hashing. After you press OK, ClearID Workflow opens a new layer and saves the settings that you just applied in the new layer name, along with the last six digits of the Secure Hash Algorithm (SHA-1) that gets applied to your layer after it was processed. Yes, you read that right: The program hashes each layer. Anyone performing the same operation on the same source image will get the same SHA-1 hash value. This ensures that the results can be reproduced and verified.

One question I am repeatedly asked in my classes concerns note-taking. "What do I write down? How detailed should I be? What if I miss something?" Well, ClearID Workflow addresses that issue with the Verification Report that does all the work for you. Simply click *OK* on *Step Seven*—and then select a location to save your report. The log file that you saved can then be read easily in *Notepad*. This report is an essential part in aiding others who might want to reproduce your results.

If you get confused at any point in your processing, there is no need to worry because ClearID v2.0 Workflow has integrated indexed contextual help just a mouse-click away. In each tab of the workflow, you will find a sample image showing the types of results you can get from this

"Those who are working in environments such as ASCLD/LAB or ISO will be glad to know that ClearID v2.0 Workflow fits within SWGFAST's Friction Ridge Digital Image Guidelines."

stage of the process. You will also find a blue circle with an "i" in the middle. This is your doorway to the help menu. In other software products, you usually have to search around a bit and know something about your search topic. But that is not the case here. With one click of the mouse, you are taken to the exact page in the help document that relates to the step on which you are working.

If you are relatively new to the world of Photoshop plug-ins, you may not realize just how huge this is. Many image analysts (myself included) have used a wide variety of tools that were developed specifically for photographers and designers. We have taken all the tools a plug-in suite had to offer just to get to the few that would apply to our needs. We tend to pay hundreds of dollars for a plug-in suite—and then we only use the one or two filters that apply specifically to our needs. And if we need help, we are left searching through a lot of non-applicable help files that were written for a totally different audience, an audience that is using the filters for a different reason. The ClearID v2.0 Image Clarification Workflow contextually indexed help is a definite advantage, especially for the novice user or someone who is inexperienced.

Will it fit into your work environment?

In a standards-based environment, a latent-print examiner will want to have the best digital record or depiction of the friction-ridge impressions

that are to be developed as evidence. In other words, you want to know how well a particular product will fit into your workplace. Those who work in environments such as ASCLD/LAB or ISO will be glad to know that ClearID v2.0 Image Clarification Workflow fits within SWGFAST's Friction Ridge Digital Imaging Guidelines (Section 1.4.1 and 1.5.3).

During the time that I have been working in this field, I have seen many technological tools come and go. Very few of them have been good enough to provide a significant improvement to my work. Those that were good enough were immediately added to my "must-have" list—and I was not bashful about sharing the news of those tools with the rest of the law-enforcement community.

The new ClearID software is the newest addition to my "must-have" list. Novice users will find its ease of use to be a plus in maximizing their investment in new technology. Power users will benefit from a versatile toolset that helps them speed up their work through presets and automation. ☺

The ClearID v2.0 Image Clarification Workflow software is available from Ocean Systems. You can download a 30-day evaluation copy at this website:
www.OceanSystems.com

About the Author

Jim Hoerricks is a forensic image analyst with a major metropolitan police department. He is also the author of Forensic Photoshop, a book that provides a comprehensive imaging workflow for forensic professionals. His opinions in this article do not represent those of his department. You can learn more about Jim Hoerricks and his work at his blog:

forensicphotoshop.blogspot.com