Netherlands Forensic Institute
Ministry of Security and Justice

Finding the link between camera and image

Camera individualisation with **PRNU Compare Professional**
from the Netherlands Forensic Institute

Camera individualisation with PRNU Compare Professional

Now that mobile phones equipped with cameras have become so widespread, digital images have become even more important in crime investigation. PRNU Compare is a software program that makes it possible to identify a specific camera as the source of a given photo or video, or to determine whether different photos have been taken by the same camera.

Typical example 1
In a child pornography case, a suspect denies taking any of the photos in question. His camera cannot be found. But by analysing the photos with PRNU Compare Professional, and comparing them with the suspect's holiday photos, it could be shown that all the images were taken with the same camera.

Typical example 2
A camera is found next to the body of a murder victim. The camera has no memory card, but one of the suspects is in possession of a memory card with some photos on it. Using PRNU Compare Professional, it could be shown that the photos on the card were made with the camera found next to the victim.

The examples in this leaflet are fictitious.

What is PRNU Compare Professional?

PRNU Compare Professional is a user-friendly software application that enables image analysis professionals to link digital cameras to digital images. The outcome is a correlation factor, which can be used to calculate the match likelihood ratio. PRNU Compare Professional can analyse single images, multiple images or video files, including even amateur-quality YouTube clips.

How does PRNU Compare Professional work?

Image sensors in cameras capture light with pixels. These pixels vary very slightly in size, a phenomenon known as Photo Response Non-Uniformity (PRNU). In this way, each camera has its own pattern of pixels, which it passes on to the photographs taken with it. By comparing these patterns, it is possible to link a given image to the camera that took it, in much the same way as a fingerprint can be linked to an individual person. In principle, this method can identify a given camera with a degree of likelihood higher than that found using DNA comparison.

The unique strength of PRNU Compare Professional

PRNU Compare Professional makes it easy to perform an unlimited number of comparisons (including single, cropped and large images), working with extensive databases (of up to 5,000 PRNU patterns). It is not only fast, but, thanks to its wide selection of advanced algorithms and its ability to analyse many images simultaneously, also very accurate and highly efficient. PRNU Compare Professional supersedes an earlier, open-source version, which had far fewer options and is no longer supported.

PRNU Compare Professional is easy to use with the aid of the manual. However, for those who wish to extract the maximum benefit from the product, a two-day 'hands on' workshop is offered at the Netherlands Forensic Institute (NFI).

To place an order

PRNU Compare Professional can be ordered by governmental organisations from the NFI for EUR 5,995 (excl. VAT). This covers an unlimited software licence and includes one year of support from the NFI. Orders can be placed by contacting the NFI Front Office (see back of leaflet). As soon as we have received your payment, you will be sent a link from which you can download the product.

Benefits at a glance
- ✓ Fast
- ✓ Easy to use
- ✓ Unlimited number of comparisons
- ✓ For all types of images, including single, cropped and very large
- ✓ Very accurate
- ✓ Highly efficient

The Netherlands Forensic Institute

The Netherlands Forensic Institute (NFI) is one of the world's leading forensic laboratories. Its mission is to strengthen the rule of law worldwide. As the role of forensic science in the fight against crime grows in importance, the NFI seeks to develop the most useful and advanced forensic products and services for a wide range of national and international clients.

Biometrics at the NFI

Biometrics research at the NFI covers the principal areas of biometric and identification expertise, including the detection and individualisation of fingermarks, the comparison of faces, writing and signatures, as well the analysis of speech, audio recordings, images and documents. NFI research also covers multimodal biometrics and the use of statistics to make the combination of expert opinion and automated analysis suitable for intelligence or evidential purposes.