

AFRL Applies for Patent On Digital Watermarking

ROME, N.Y., Aug. 31, 1998 --- Technology that may enforce copyright protection for digital images and videos has been developed by engineers at the Air Force Research Laboratory (AFRL) Information Directorate.

Working with researchers at Mission Research Corp. of Albuquerque, New Mexico, the Information Directorate has developed technology for embedding a secure digital watermark in digital images, allowing the identification of the author of digital imagery.

“One of the goals of digital watermarks is authentication for copyright protection,” said 2nd Lt. Arnold C. Baldoza of the directorate’s Information and Intelligence Exploitation Division. “The technology may also be implemented to enable the detection of digital image tampering.”

To prove ownership of a digital image, an invisible pattern – the watermark – is embedded into the image. The embedded watermark contains key information such as authentication or copyright codes. Ideally, this watermark can be detected in and retrieved from the image even after malicious attacks to remove it.

“Digital watermarking technology can be used to identify the author of copyrighted digital images . Its design allows the watermark to survive most common image processing operations such as compression, filtering, and blurring,” said Lieutenant Baldoza. “For material posted on the Internet, the author of copyrighted image could search for his watermark to determine if an unauthorized copy has been made. Furthermore, law enforcement officials could apply the technology to digital images of a crime scene as proof of a ‘chain of evidence.’” Military applications of the technology include authenticating source or content (detecting tampering) and tracing unauthorized disclosure of digital images.

The Information Directorate has filed for a digital watermarking patent on behalf of the United States Air Force and Jiri Fridrich of Mission Research Corp., who developed the technology under a Small Business Innovative Research (SBIR) contract.

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CONTACT: Francis L. Crumb, (315) 330-3053; E-Mail: crumbf@rl.af.mil