



WHITE PAPER

EXECUTIVE SUMMARY

In 2005, the U.S. Copyright Office embarked on a study of the issues raised by “orphan works”—copyrighted works whose owners may be difficult or impossible to identify and locate. Concerns had been raised that the uncertainty surrounding ownership of such works might needlessly discourage subsequent creators and users from incorporating such works in new creative efforts, or from making such works available to the public.


The Digital Watermarking Alliance, an international alliance of industry leading companies that deliver valuable digital watermarking solutions to a broad range of customers and markets around the world, believes digital watermarking technology can play a key role in providing content identification and copyright communication to address the issue of orphan works.

Balancing the needs of consumers with the rights of content owners is of paramount importance. Consumers deserve to have access to content options currently unavailable to them. Content owners and artists deserve to be recognized and compensated for their work, but the rapid proliferation of technology has made this balancing act increasingly difficult. The U.S. Supreme Court tackled this issue in its 2005 opinion on *Metro-Goldwyn-Mayer Studios v. Grokster*, in which the court ruled that file-sharing networks (also known as peer-to-peer or P2P networks) can be held liable when their users illegally exchange copyrighted material.

In its ruling, the Court identified digital watermarking as a technology that can be used by rights holders and file-sharing networks to communicate copyrights and deter piracy and illegal use of copyrighted entertainment content.

Digital watermarking technology is currently available from many suppliers, such as Cineva, Inc., a Dolby company, Digimarc, GCS Research, Gibson, Jura, MediaGrid, Media Sciences International, Philips Electronics, Signum, Teletrax, Thomson, Verance, Verimatrix, Widevine Technologies, and others.

Digital watermarking can enable content identification and copyright communication on a broad scale and can provide a range of solutions for identifying, securing, managing and tracking digital images, audio, video, and printed materials. In fact, digital watermarking technology has already been adopted by many photographers, movie studios, record labels, television broadcasters, and corporate enterprises as a way



to identify, protect, and manage the rights to their content while still offering their consumers the convenience and portability they have become accustomed to.

Digital watermarks can identify copyrighted content and associated rights, during and after distribution, to determine copyright ownership and enable rights management policy while enabling innovative new content distribution and usage models. Digital watermarking is a proven technology that is broadly deployed with billions of watermarked objects and hundreds of millions of watermark detectors in the market supporting various applications. For example, digital watermarking enabling communication of copyright and ownership information has been a standard feature of Adobe Photoshop for more than a decade and is used by companies, such as Warner Bros. movie studios, Microsoft and Corbis to identify their images.

The Digital Watermarking Alliance believes that policy makers can facilitate the adoption of technologies, such as digital watermarking, to enable content owners and users to improve their level of collaboration in addressing the challenge of orphan works. In particular, we urge the Copyright Office and Congress to consider:


1. Amending Chapter 5 of the Copyright Act , expressly authorizing courts to consider whether a copied digital work included a publicly-readable digital watermark—by which the copyright owner could have been identified and contacted—in determining whether infringement of the work was “willful;”
2. If provisions akin to those proposed by the Glushko/Samuelson Copyright Clearance Initiative are adopted, then listing a search for a publicly-readable digital watermark - by which the copyright owner could have been identified and contacted -- as one of the factors appropriate for consideration in determining whether a user’s inquiry was a “reasonable efforts search;” and;
3. Recommending that the Copyright Office host a web page with information about digital watermark reader software that can be freely downloaded by the public, to check audio, video and image content for watermarked data by which the copyright owner of such content may be identified and contacted.

PROBLEM

Today, a large number of “orphan works” —presumably copyrighted works whose owners cannot be identified or located—exists. Typically, such works are excerpts or newly digitized versions of books, movies, photos, and music whose ownership information has been stripped away or lost during distribution, re-formatting, or editing.

Unfortunately for those individuals and organizations seeking permission to use such works, much of this rich material ends up left untouched due to the fact that ownership cannot be determined.

In its study of the problem, the U.S. Copyright Office solicited responses from the public. From libraries and business to legal institutions and individuals, the problem of orphan works is clear. A few examples from the responses:

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- 198 of 397 sampled works were deemed to have unresolved copyright issues during the digitization of The Core Historical Literature of Agriculture by the A.R. Mann Library at Cornell University.
 - More than 100,000 photographs made by participants on oceanographic voyages had no identifying photographer or copyright information, causing The Scripps Archives at the University of California, San Diego to only publish 4,000 of these images online.
 - Countless other libraries, universities, artists, teachers, and students have been unable to use works because of the inability to identify or locate copyright owners.

SOLUTION: IDENTIFY COPYRIGHTED WORKS WITH DIGITAL WATERMARKING

When music, movies, images, programming, or books are digitized, their identity (the detailed information about the content, its copyright ownership or the purchaser's rights) is often lost, having been reduced to ones and zeros that only computers can read. This makes the content difficult to manage, protect, and track, leaving the door wide open for both casual—and malicious—digital piracy and copyright infringement.

As a result, content often circulates anonymously, without owner identification, or without an easy means to contact the owner/distributor to obtain rights for use.

The U.S. Supreme Court recently tackled this issue in its 2005 opinion in *Metro-Goldwyn-Mayer Studios v. Grokster*, in which the court ruled that file sharing networks (also known as peer-to-peer or P2P networks) can be held liable when their users illegally exchange copyrighted material.

In its ruling, the Court identified digital watermarking as a technology that can be used by rights holders and file-sharing networks to communicate copyrights and deter piracy and illegal use of copyrighted entertainment content.

Digital watermarking is the science of hiding extra information, such as identification or control signals, in media content. For example, the digital “pixels” making up a movie or a photograph can be slightly altered in value to represent extra information, while not visibly impairing the appearance of the movie to human viewers.

The extra information represented by digital watermarks travels with the content—persisting through changes in file format and through transformation between digital and analog form.

Digital watermarks enable copyright holders to communicate their ownership, usually with a public detector, enabling infringement detection and promoting licensing. A digital watermark embedded within a piece of content can carry a persistent copyright owner identifier. That identifier can be linked to information about the content owner and copyright information in an associated database or to appropriate usage rules and billing information. Digital watermarks are broadly deployed within billions of watermarked objects, and there are hundreds of millions of detectors in the market supporting various



applications.

For example, photographs can be embedded with the photographer owner's ID to determine copyright information and usage rights. The same can occur with video (e.g., TV news and commercials), DVDs, and music.

In fact, millions of copies of digital watermark reader software are currently in distribution, and thousands of creative professionals, organizations, and businesses use digital watermarking to embed copyright notification information into their content, such as images. Leading image-editing applications commonly incorporate digital watermarking technology as a standard feature.

Once an image, musical recording, movie, or TV program contains a digital watermark, these digitally watermarked media objects can be searched and monitored as they are distributed over the public Internet or broadcast systems to determine their location and compliance with usage rights. The digital watermark can provide a link to a publicly accessible database, where complete contact details for the copyright holder or image distributor are stored. This makes it easy for users to license the image in question, license a similar image, or commission a new work.

Current digital watermarks are robust against attack. Attempts to impair a digital watermark require impairing the host content, *e.g.*, making a movie blurry, or a song noisy. Moreover, such tampering with a copyright protection measure may trigger liability under the Digital Millennium Copyright Act.¹


CONCLUSION: POLICY RECOMMENDATION

Digital watermarks are available and widely deployed today and can help speed and facilitate deployment of online digital content by enabling identification of copyrighted content, facilitating rights management policy, and enhancing consumer experiences.

Content owners can currently digitally watermark image, audio and video for media serialization, copyright notification, and monitoring. We believe that policy makers should consider facilitating the adoption of technologies that can enable content owners and users to improve their level of collaboration to address the challenge of orphan works. In particular, we urge the Congress and the Copyright Office to consider:

1. Amending Chapter 5 of the Copyright Act , expressly authorizing courts to consider whether a copied digital work included a publicly-readable digital watermark -- by which the copyright owner could have been identified and contacted—in determining whether infringement of the work was "willful;"
2. If provisions akin to those proposed by the Glushko/Samuelson Copyright Clearance Initiative are adopted, then listing a search for a publicly-readable digital watermark—by which the copyright owner

¹ *E.g.*, Section 1202(b) provides "No person shall, without the authority of the copyright owner or the law, (1) intentionally remove or alter any copyright management information, ... (3) distribute, import for distribution, or publicly perform works, copies of works, or phonorecords, knowing that copyright management information has been removed or altered..."



could have been identified and contacted—as one of the factors appropriate for consideration in determining whether a user’s inquiry was a “reasonable efforts search;” and;

3. Recommending that the Copyright Office host a web page with information about digital watermark reader software that can be freely downloaded by the public, to check audio, video and image content for watermarked data by which the copyright owner of such content may be identified and contacted.

In addition to addressing these ideas through direct legislation, the avenue of legislative report language could also be considered. Courts, for instance, could be invited to consider an award of enhanced damages if an infringement plaintiff proves that they marked the copied content with a digital watermark by which the copyright owner of such content could have been identified and contacted. Similarly, courts could be invited to consider a defendant’s unsuccessful attempt to identify or contact a copyright owner by reference to such a digital watermark in assessing a reduced damages award. Private sector organizations, such as the various library associations, could be urged to develop best practice models leveraging advances in technology of the kind discussed above.

In conclusion, we appreciate the opportunity to share our thoughts on ways in which technology can be used to help address the growing challenge of orphan works. We stand ready to assist in whatever manner may be helpful as the Copyright Office and Congress address the orphan works issue.