

The flower standard

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Abstract: We propose a novel intellectual property protection method. We call it the flower standard and offer the proposed service at flower-standard.com. In the proposed method, the user embeds our flower sign to their file, e.g. picture, video, document, etc. and uploads its hash to our service. They can upload other information e.g. their Web site address. They can upload their hash to other services that provide time-stamping service. We time-stamp the request, and make it available to the public.

I. Introduction

Creations of the mind for which exclusive rights are recognized in law, are called Intellectual Property. Common types of intellectual property rights include copyright, trademarks, patents, and industrial design rights. We see four levels of intellectual property protection:

Unregistered copyright and trademark: The user puts a copyright sign on their work. In this method the publication time is not secure. The user cannot prove the publication time.

Modern poor man's copyright[1]: The user sends themselves an e-mail containing their idea. Using a portable device, they can show the e-mail to others. E-mail services e.g. Gmail and AOL do not allow to change the sent date. Unless one has access to the e-mail server, they cannot change the sent date. This is extremely unlikely. The service provider may accept money to shift the date backwards in time but this is dangerous for them because the person making the request may be a spy or police. Consequently, it is very unlikely that they accept it. If it is possible, standard copyright offices may also be compromised using this technique. Even better protection is possible by using multiple service providers.

Flower standard: See below.

Copyright and trademark registration: This is the official solution but slow/obscure. The delay is several months and nobody knows what happens. Someone from the copyright office may steal the idea. It is also expensive to protect a large number of ideas.

In this paper, we propose a novel protection method. We call it the flower standard and offer the proposed service at flower-standard.com which is currently available. In the proposed method, the user embeds our flower sign to their file, e.g. picture, video, document, etc. and uploads its hash to our service. They can upload other information e.g. Web site address. They can upload their hash to other services that provide time-stamping service. We time-stamp the request, and make it available to the public.

II. The flower standard

The problem with the poor man's copyright is that, the user cannot show the publication time to public. They can show the publication time to a lawyer at court but they cannot show it to geographically distant persons. One solution to this problem may be generating a large number of e-mail addresses and sending to themselves the idea using these e-mail addresses. It is then possible to give the e-mail account and its password to interested parties. They can check if the e-mail was really sent at the indicated time. It is however better to have a method where everybody can instantly check the publication time.

A well-known solution to this problem is trusted time-stamping. In trusted time-stamping a user takes a secure hash of their file and uploads the hash to a well-known time-stamping service which publishes the time-stamp[2]. We note that file hosting, protect hosting and social networking sites can be used for this service. For example, a user can send a secure hash of their file to Twitter which provides the publication time to public. Since Twitter is a trusted service, we have enough confidence that the publication time is correct. The user can publish their hash using other popular services e.g. Sourceforge or Google code which provide the publication time.

The above approach can provide a better protection than the standard copyright office. The service provider may accept money to shift the date backwards in time but this is dangerous for them because the person making the request may be a spy or police. The user can also upload their hash to multiple sites in order to prove that the publication time is secure. It is very unlikely that services like Sourceforge, Google and Twitter would

all accept money. Uploading the hash to multiple sites will also reduce the risk of undetected accidental time-shift.

One problem remains however, which is indicating to the public that a file is protected and where it is protected. Clearly, it is not possible to embed all this information into the file. We need a sign which will indicate that the file is protected using the above method. The standard copyright sign does provide this information. Therefore, we designed a flower sign to be embedded in the file to be protected. This model of operation is illustrated in Fig. 1.



Figure 1. Flower sign

The flower sign can be seen at the corner. The text is “Protected by flower-standard.com”. Using this method, the user can also indicate to the trusted time-stamp service their Web site address. This will allow for identifying the owner of a work. For audio files we designed a voice file to be embedded in the audio file. It can be listened at:

<http://flower-standard.com/flowers/fs-sound.wav>.

The overall model of operation is illustrated below in Fig. 2. The user first downloads a flower sign from flower-standard.com, embeds the flower sign into their file and they send its SHA-1 hash to well-known sites providing time-stamping service. Then they send the links to these sites where the SHA-1 hash was uploaded in the previous step, the SHA-1 hash itself, and their Web site address to flower-standard.com. Now they can share the file using Facebook, Twitter, e-mail, etc. Other users who see the file, will see the flower sign and check flower-standard.com. They will send the file's SHA-1 hash and see the publication time, and author's Web site.

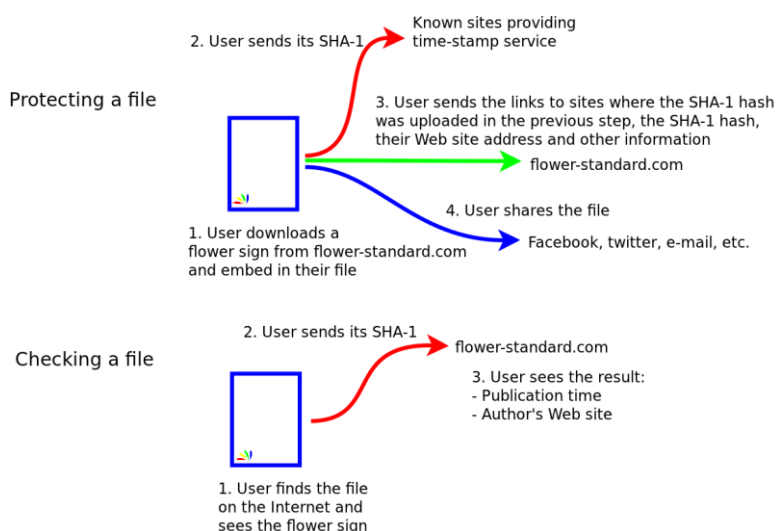


Figure 2. Model of operation

References

- [1] Poor man's copyright. Wikipedia.
- [2] Trusted time-stamping. Wikipedia.