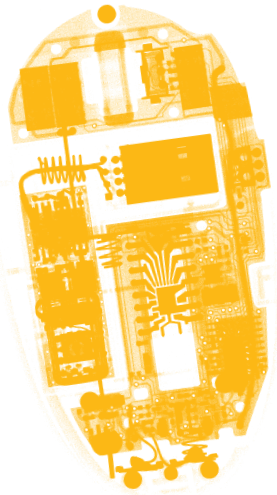# JSIGNER
## DIGITAL WATERMARKING FOR PHOTOGRAPHS

Watermarking is a technique that guarantees the traceability of usage of contents such as images and audio and video files. It involves embedding into files visible or invisible information that unequivocally identifies the owner of the material. This enables the content to be recognised over time, even following partial modifications.

Different types of information can be used to watermark a file, but the most widespread form is that used to protect intellectual property rights in their various forms – copyright, Creative Commons attribution… – which enables the content to be traced and guarantees its authenticity. Watermarks are characteristically non visible, robust or difficult to identify in the content, and non-removable.

### JSIGNER

JSigner is a web application designed to publish digitally watermarked content on a website.

The authenticity of images can thus be verified by the watermark, controlling improper use, unauthorised edits and plagiarism.

JSigner protects the intellectual property rights of content by:
- generating a watermark;
- embedding the watermark into the image;
- publishing the protected content;
- managing the watermark archive, guaranteeing verifications in the event of theft or tampering with watermarked images.
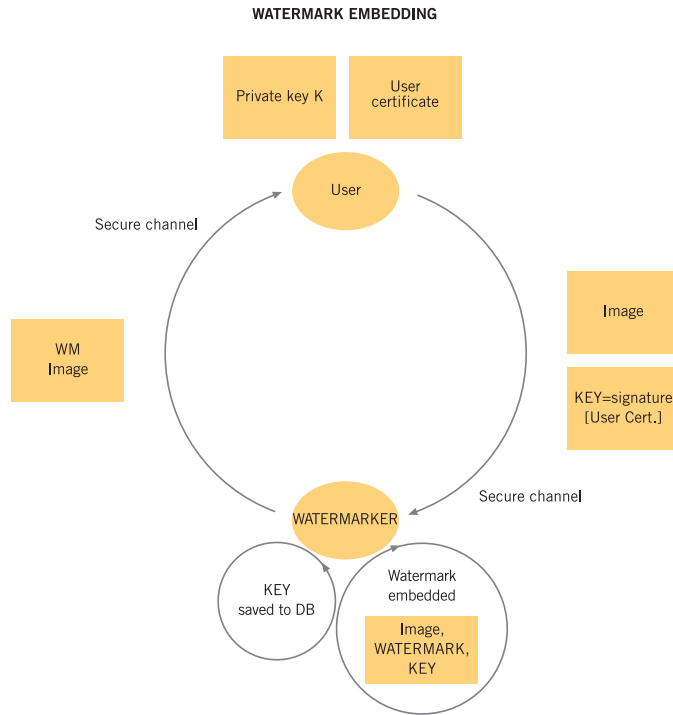
Jsigner enables users to embed additional digital information into an image, watermark content, publish on the web and manage the archive of watermarks used, making it possible to protect the intellectual property rights of any kind of multimedia content.

The robustness of the watermarking algorithm is not guaranteed for any type of modification that can be made to an image. Indeed the prototype must be calibrated and customised to respond to the demands of specific subjects such as museums, archives, galleries and in general all those concerned with the financial interests connected to protecting intellectual property rights of visual media.

Jsigner was tested by publishing watermarked images on Flickr, the most popular photo sharing social network.

## Embedding the watermark

**WATERMARK EMBEDDING**

| Private key K | User certificate |

User

Secure channel

Image

KEY=signature [User Cert.]

WM Image

Secure channel

WATERMARKER

KEY saved to DB

Watermark embedded

Image, WATERMARK, KEY

## Detecting the watermark

**WATERMARK DETECTION**

| Private key K | User certificate |

User (generic)

Secure channel

WM image

WM user certificate

Does the image belong to the user? YES/NO

Secure channel

DETECTOR

Search for KEY in DB, verifying signatures

Detection of Watermark

WM image, WATERMARK, KEY

TRANSPARENT TECHNOLOGY

CSP_JSI_PROD_ING_07.12