

OFFICIAL RECORD OF FINDINGS

**THE YEAR TWO THOUSAND TWO
AND THE FIFTEENTH OF APRIL**

AT THE REQUEST OF:

The not-for-profit Association (no. 145 407 P), Preuve et Micrographie, the headquarters of which is located at 4, allée Verte, 750011 PARIS, acting on behalf of its President, Monsieur Lucien PAULIAC, in his position residing at this headquarters.

Which [association] has stated to me by its president, Monsieur Lucien PAULIAC, that the **standard NFZ42.013**, approved in December 2001, edited and distributed by the French Association of Standardisation (AFNOR, 11, avenue Francis de Pressensé 93571 SAINT-DENIS-LA PLAINE CEDEX) has for title : "*Electronic archiving, Specifications relative to the design and operation of information systems with the intent of ensuring the preservation and integrity of the documents stored in these systems*".

That in its chapter "*Introduction*", it specifies "*the present standard concerns solely systems used in optical disks of the type WORM (WRITE ONCE READ MANY).*"

"These disks have been chosen since it is not possible to erase a piece of information once it has been written to such as disk or to write another piece of information in the same location as the preceding."

"It is also impossible to modify in some way the piece of information once written. Because of the use of codes for error-correction and control required for the proper functioning of this type of medium, the probability that an attempt to modify information will result in a readable result is practically nil."

That these affirmations, coming from experts, are not exact, and may be deceitful.

That, contrary to the assertions of the Standard, the properties of a WORM medium permit:

- the erasure of a piece of information once written;
- “re-recording”;
- to make modifications to the written information with intelligible results, and this in spite of the use of codes for error-correction and control required for the proper functioning of this type of medium.

That these operations can be performed with equipment and software which are currently-available commercially.

That the manipulations can be performed with great ease by normal use of the equipment and the software, thus, without special knowledge of electronics or computer science.

That these falsifications or manipulations are not evident after the fact, and that the counterfeit media are just as useable as if they had not been altered.

That in order to preserve the rights and keep safe the interests of the requesting Association, I am required to proceed with all useful findings concerning this subject.

DEFERRING TO THIS REQUIREMENT :

I, Olivier BOUDOT, Clerk of a huissier de Justice entitled to make findings on behalf of the Société Civile Professionnelle Eric CRUSSARD, Huissier de Justice associated to the Tribunal de Grande instance of PARIS, Audiencier to the Court of Appeals of PARIS, 16 rue du Pont Neuf 75001 PARIS, undersigned,

Certify having travelled on this day to the headquarters of the requesting Association located 4, allée Verte, 750011 PARIS, where having been from 2:00 pm to 3:00 pm in the presence of Monsieur Lucien PAULIAC, president, I proceeded to make the following findings.

I – Protocol for the falsification of a WORM disk

I find that the medium chosen by Monsieur Lucien PAULIAC is a CD-R.

Monsieur Lucien PAULIAC states that it is a non-rewriteable medium on which the recording has an ablative result.

By this physical property, it is classified under the category of WORM media.

I find that Monsieur Lucien PAULIAC removes from its intact original packaging a blank CD-R that is immediately identified. This CD-R is hereafter identified as **CD-R X**.

I find that Monsieur Lucien PAULIAC make use of three machines, hereafter identified as Machine A, Machine B, Machine C.

Machine A: I find that it consists of a micro-computer HP Vectra VL420, running under Windows, equipped with a read/write CD-R drive “HPCD writer dvd combo 9900 SERIES” and the writing software “HP myCD”

Machine B: I find it consists of a micro-computer HP VL 600 running under *Windows 98*, equipped with a read/write drive “*HP CD-Writer*” and the writing software “*Easy CD creator*”

Machine C: I find it consists of a micro-computer *HP Brio* running under *Windows 98*, equipped with a CD drive (reader only).

For the following findings, I find that three files created initially on a 3.5” diskette will be used and identified hereafter as file 1, file 2, and file 3.

File 1: I find that it consists of the text of an article;

File 2: I find that it consists of a signed debt obligation;

File 3: I find that it consists of an order letter.

Copies of these three files are annexed to the present official record of finding, and preserved on a 3.5” diskette maintained in the offices of Maître Eric CRUSSARD.

II --- Modification of a piece of information

1st stage: recording

a) initial recording

I find that the original recording takes place on **machine A**, following simply the instructions displayed on the computer screen.

I find that the recording occurs in five stages.

- 1.1 The writing software opens, keeping simply the *default* settings.
- 1.2 Choose “*New CD*”, then “*data CD*”
- 1.3 Insertion of *CD-R X*.
- 1.4 The files contained on the diskette are copied to the recording window.
- 1.5 The write command is given, I find the write operation takes place.

b) read after recording

The *CD-R X* is mounted on the read/write drive of **machine B**.

- 1.6 I find upon reading that the three files are perfectly useable and are displayed just as in their original state.

2nd stage: falsification

a) falsification

It is decided to falsify *file 2* on **machine B**.

File 2 is a signed debt obligation. The contents of this debt obligation are as follows:

- “*I, the undersigned, Pierre DURAND, recognise having received from Monsieur Michel DUPONT the sum of 150 000 francs (one hundred fifty thousand francs) as a loan. I commit myself to return to him this sum in three years, that is on 16 December 2004, increased by annual interest of 8% (eight percent). Done in PARIS the 16 December 2001. Signed DURAND*”

To obtain the falsification, I find that Monsieur Lucien PAULIAC carries out eight manipulations.

- 2.1 I find that *file 2* is copied from the *CD-R X* onto the hard drive of **machine B**.
- 2.2 I find that Monsieur Lucien PAULIAC proceeds to falsify the identity of the person and the amount in digits and letters of the debt obligation, the sum in francs being transformed into euros, and the name of *Monsieur Pierre DURAND* being replaced by *Monsieur Pierre BOUDOT*.
- 2.3 *File 2* thus falsified is saved by Monsieur Lucien PAULIAC on the hard drive of **machine B**, under the same file name.
- 2.4 I find that Monsieur Lucien PAULIAC proceeds to open the write software of **machine B**, which, here also, is restricted to the *default* settings.
- 2.5 I find that Monsieur Lucien PAULIAC copies *file 2* from the hard drive to the recording window.
- 2.6 At the moment when the write order is given, I find the software opens a warning window indicating

Replace FILE 2
already written on the CD
by FILE 2
from c:\constat\file 2?

- 2.7 I find that Monsieur Lucien PAULIAC clicks on the *YES* button.
- 2.8 I find that the write of *file 2* to *CD-R X* is executed.

b) read after falsification

- 2.9 I find that *CD-R X* is installed on the read-only drive of *machine C*.
- 2.10 I find that, upon reading, *CD-R X* still contains the three files as it did originally.
- 2.11 I find that *file 2* is displayed in the falsified version.
- 1.12 I find that *files 1* and *3* are in their original versions.

2.13 I find that no read access to the unaltered version of *file 2* is offered.

III – REMOVAL OF A PIECE OF INFORMATION

a) 3rd stage: removal

Monsieur Lucien PAULIAC decides next to remove *file 3*.

3.1 I find the *CD-R X* is once again installed on *machine B*. The write session is opened, still with the *default* settings.

3.2 I find that the list of the three files contained on *CD-R X* appears in a window.

3.3 Monsieur PAULIAC selects *file 3* with a right click of the mouse.

3.4 The filename is bolded, while a menu appears.

3.5 Monsieur PAULIAC clicks on the menu's button.

3.6 A warning window then appears, indicating

Do you really want to delete the selected elements of the CD's structure? <input type="button" value="YES"/> <input type="button" value="NO"/>

3.7 Monsieur PAULIAC clicks on the "YES" button.

3.8 I find that the write takes place.

b) read after removal

3.9 I find that the *CD-R X* is installed on the read-only drive of *machine C*.

3.10 I find that only *files 1* and *2* remain on *CD-R X*.

3.11 I find that *file 1* is in the original version.

3.12 *File 2* is the falsified version.

3.13 I find that *file 3* has disappeared.

As a result of these different manipulations, I was able to find:

- That it is possible to erase a piece of information after it was recorded on a WORM disk;
- That it is possible to obliterate a pre-recorded file, which implies the possibility of recording another piece of information in the exact location of a pre-existing piece of information;
- That the modification of a piece of information recorded on a WORM medium is possible on this very WORM medium, and that the result of this modification is perfectly legible;
- That the codes for error-correction and control required for the proper functioning of this type of medium have no protective nor any revelatory action.

These are my findings.

CD-R X which was used for the present findings is preserved in the offices of Maître Eric CRUSSARD.

The French standard **NFZ42-013 December 2001** is also attached to the present official record of findings.

AND OF ALL THAT I HAVE DONE ABOVE AND CREATED THE PRESENT OFFICAL RECORD OF FINDINGS SERVES AND IS VALUED AS OF RIGHT.

This act is composed of seven leaves.

O. BOUDOT

E. CRUSSARD

[SIGNED AND SEALED]