

DigitalTechne documentation

Release 0.2

the Digital Techne Team

May 19, 2024

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After the Internet Identity authentication, the user will land in the home page, where all the available activities will be shown

According to the role, the user will be presented just with the enabled actions

Welcome

Administrator

USER ADMINISTRATION

Owner

SHOW ARTWORK

ADD NEW ARTWORK

BUY DNA CARTRIDGES

Laboratory

LOAD CARTRIDGE CODE IN BLOCKCHAIN

Common Functions

ON LINE MANUAL

Dossier



This page will show you the artworks hosted on DigitalTechne. They are divided in two sections:

- Artworks that you own
- Publicly available artworks

For both sections the data shown is the same: the main information about the opera (title, author and so on), along with a picture

Clicking on a picture will lead you to the detailed information [Chapter 4](#)

A green check icon will indicate that the DNA ink has already been placed on the opera and the genomic record has been recorded in BlockChain

Dossier							
Personal Files							
Opera Image	Author	Work Name	Opera type	Opera Location	Private	Nft Id	DNA mark present
	Henri de Toulouse Lautrec	Le Jockey	CANVASS	Albi, Musée Toulouse-Lautrec	true		✗
						Rows per page: 100	1-1 of 1 < >
ADD AN OPERA DOSSIER							
Public Dossiers							
Opera Image	Author	Work Name	Opera type	Opera Location	Private	Nft Id	DNA mark present
	Henri de Toulouse Lautrec	Au salon de la Roue des Mou...	CANVASS	Albi, Musée Toulouse-Lautrec	false		✓
						Rows per page: 100	1-1 of 1 < >

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New Dossier

The owner of an artwork will create a folder of information in BC, containing:

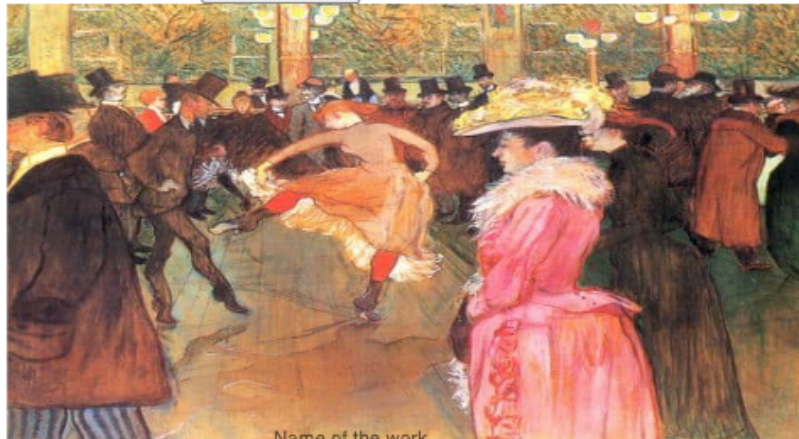
- Base artwork info (this page)
- Support documentation (proof of ownership, condition report and so on), see here for data input [Chapter 5](#)
- DNA info, see here for details [Chapter 6](#)

The basic information of an opera is mainly:

- artwork image
- the title
- the author
- the location of the opera
- the physical support
- some flags to specify the privacy level (owner, location, support info,...)
- date of insertion (auto)
- owner (inferred from the logged user)

New Artwork

Upload file ballo-al-moulin-rouge.jpg



Name of the work

Ballo al Moulin Rouge

Author

Henri de Toulouse Lautrec

Place where the Opera is located

Albi, Musée Toulouse-Lautrec

Type of work

PAPER



Private

☐

INSERT



Dossier Detail






This page will show you all the information about the artwork:

- detailed information
- a collection of documents

Clicking on each document icon you can download the file, or show the image in full resolution


The button **Mark Artwork with DNA Ink** will allow you to register the association among the ink on the physical artwork and its digital representation (the information shown in this page). See details there: [Chapter 6](#)

When the Dna mark is already registered, a different button will appear: **Verify DNA mark**. It will allow you to verify the authenticity of the mark. The descriptive page is here [Chapter 8](#)

Dossier Detail



Image



Id	1
Owner	2vxsx-fae
Name of the work	Au salon de la Roue des Moulins
Author	Henri de Toulouse Lautrec
Opera type	CANVASS
Support Type	
Opera Location	Albi, Musée Toulouse-Lautrec
Reserved	
DNA mark present	×

MARK ARTWORK WITH DNA INK

Documents

Opera Image	Author	Document Type	Title	File name	Type
	Robert Capa	2vxsx-fae	first photography	Au_salon_sepia80.jpg	image/jpeg
	Federico Zeri	2vxsx-fae	Artwork Attribution	Au_salon_attribution.pdf	application/pdf

Rows per page: 100 1-2 of 2 < >

NEW DOCUMENT


New Document

In order to better describe the opera, it is usually very useful to add some documents, being them scientific (chemical analysis, f.i.), legal (certificates of ownership, ..), or artistic (studies, attributions and so on).

Documents can be added in any moment, and each document record contains:

- the document itself
- the author of the document
- the title of the document
- document type
- privacy status
- insert date (automatically inserted)
- person that inserted the document (auto)
- file name (auto)
- mime type (auto)

New Document relating to Opera Dossier



Upload file

Au_salon_attribution.pdf

Title

Attribution

Author

Federico Zeri

Document Type

authenticity attribution

×

Private

☐

INSERT

Artwork Mark

Initially you have to put the ink on the artwork. The position is important, you have to specify it while you insert data in blockchain.

After usage the cartridge will be useless, the DNA material will be destroyed by a chemical reaction, in order to avoid unwanted further usage



Please note that the ink is completely transparent at the naked eye, and, obviously has been engineered for a long lasting stability



Using an ultra violet lamp, the ink spot will be visible



6.1 Insert in BlockChain

And then the blockchain operation:

- select from the first pull down menu the identifier of the ink cartridge
- select from the second pull down menu the artwork side (front, back or frame)

- select from the third pull down menu the drop position

ArtworkMark



DNA Code

mark_dull_code
b1dc49ea-047b-4465-9afe-51f0... ▼

Mark Side

mark_side
front

Mark Position

mark_position
top_left ✕

INSERT

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At the end of this blockchain operation a green check mark will appear in the opera documentation

Purchase

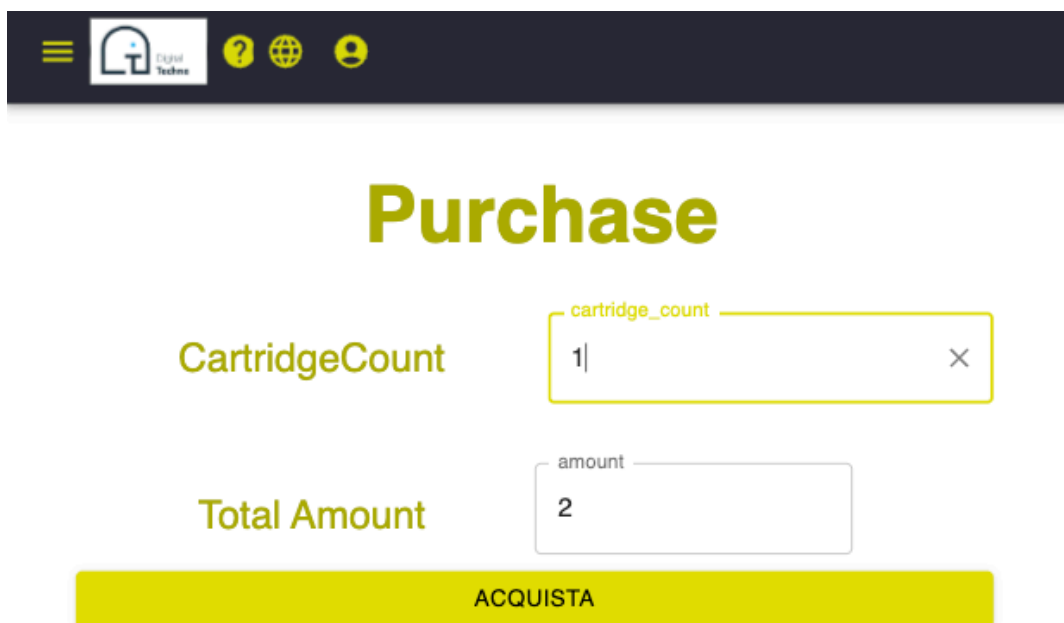
At the core of the Signature Kit there is the Ink Cartridge, containing the unique genetic material.

Please note that the effective DNA analysis is held inside the blockchain, what is transferred to the owner is an anonymous identifier

Cartridges are available in the DigitalTechne warehouse, and can be purchased for the artwork signing. They will be available in different forms and cost:

- single use cartridges
- multiple copies cartridges (print runs of litographies f.i.)
- custom labelled for third party solutions
- bulk purchase
- ...

The current interface is just a placeholder that will enable the use of cartridges by the artwork owner, and does non involve any real payment



The screenshot shows a web interface for purchasing cartridges. At the top is a dark navigation bar with a menu icon, the DigitalTechne logo, and three circular icons (help, globe, user). Below the navigation bar, the word "Purchase" is displayed in a large, bold, yellow font. The interface contains two input fields: "CartridgeCount" with a value of "1" and a "cartridge_count" label above it, and "Total Amount" with a value of "2" and an "amount" label above it. Both fields have a close button (X) on the right. At the bottom, there is a prominent yellow button labeled "ACQUISTA".

Verify

An important feature of the system is the ability to verify the correctness of the association. In any moment you can prove that the physical artwork is correctly tied to the information in blockchain.

The control, although not real time, can be easily done:

- using a swab you collect a small amount of the DNA material from the physical artwork
- let a laboratory analyze the specimen
- load the laboratory results on DigitalTechne
- have a look at the differences

Verify operation on DigitalTechne is shown here:

- upload the file with the laboratory results
- select from the first pull down menu the artwork side (front, back or frame)
- select from the second pull down menu the drop position

VerifyMark

DNA Record (XLS) *

MarkSide

PosizioneDNA

Insert DNA

Scegli file

mark_side

front

mark_position

top_center

×

Locl, alleli ed ...odificato.xlsx

VERIFY

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The result is a page that will show the genomic details, where the differences will be highlighted. Moreover, the system will show also the possible differences of the ink position on the artwork

```
62   {
63     Locus: "D18S51",
64     Alleli: "7, 9, 10, 10.2, 11, 12, 13, 13.2, 14, 14.2, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27",
65     Esempio di un profilo DNA: 9.25
66   },
67   {
68     Locus: "Amelogenin",
69     Alleli: "X, Y",
70     Esempio di un profilo DNA: "X,Y"
71   },
72   {
73     Locus: "D5S818",
74     Alleli: "7, 8, 9, 10, 11, 12, 13, 14, 15, 16",
75     Alleli: "7, 8, 9, 10, 11, 12, 13, 14, 15, 17",
76     Esempio di un profilo DNA: 12.15
77   },
78   {
79     Locus: "FGA",
80     Alleli: "17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 26.2, 27, 28, 29, 30, 30.2, 31.2, 32.2, 33.2, 42.2, 43.2, 44.2, 45.2, 46.2, 47.2, 48.2, 50.2, 51.2",
81     Esempio di un profilo DNA: "20,26.2"
82   },
83   {
84     mark_location: "front top_left",
85     mark_location: "front top_center"
```