

# *Digital media art: creating, intervening and investigating in the intersection between media, art and computing*

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**Adérito Fernandes-Marcos**, [aderito.marcos@uab.pt](mailto:aderito.marcos@uab.pt) /  
[aderito.marcos@gmail.com](mailto:aderito.marcos@gmail.com)

*(UAb, CIAC, INESC-TEC, LE@D, Artech-Int)*



## *Foundations: the Pioneers (Dada)*

### DADA characteristics:

- ✓ unconformity with accepted rules and conventions.
- ✓ scandal was the leitmotiv to shock their audience into self-awareness
- ✓ embraced chaos (anti logic) and irrationality
- ✓ presented as anti-art
- ✓ certain form of nihilism (an extreme form of skepticism that denies all existence)

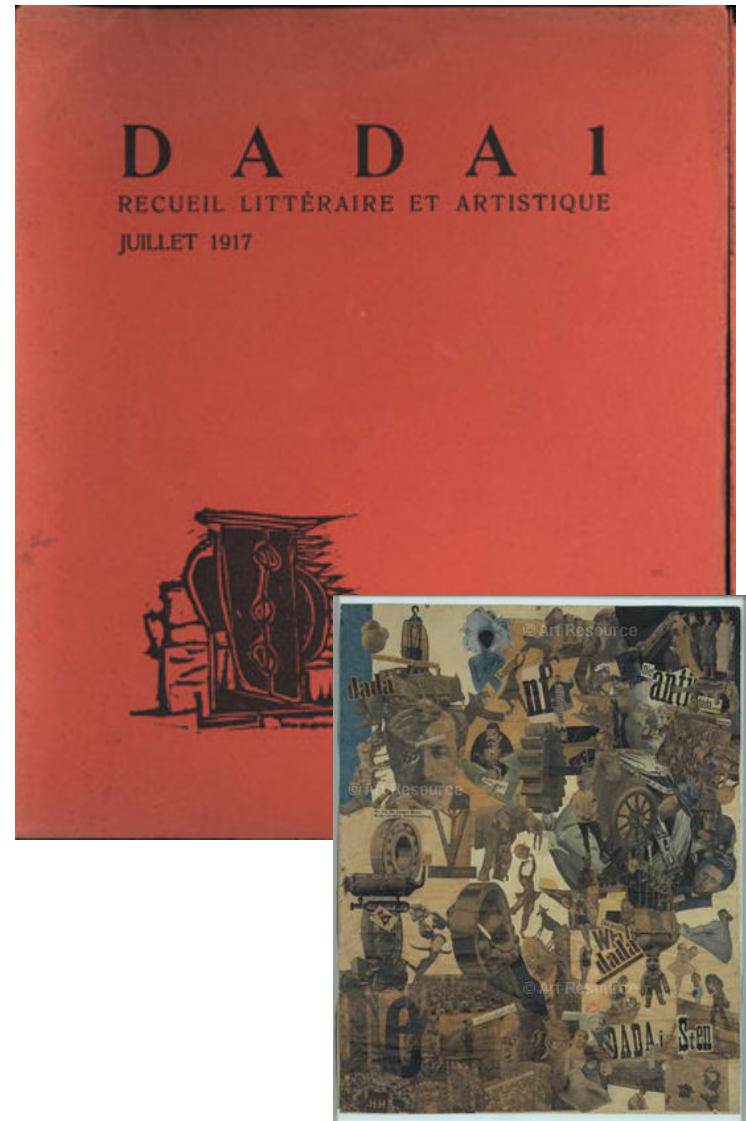


*"Fountain", by Marcel Duchamp*

*Foundations: the Pioneers (Dada)*

Dadaists adopted the principles of abstraction, spontaneity and chance and employed the technique of collage and odd juxtapositions of image and text to create a sense of the absurd.

Dadaists were united not by a common style, but by their rejection of conventions in art and thought.

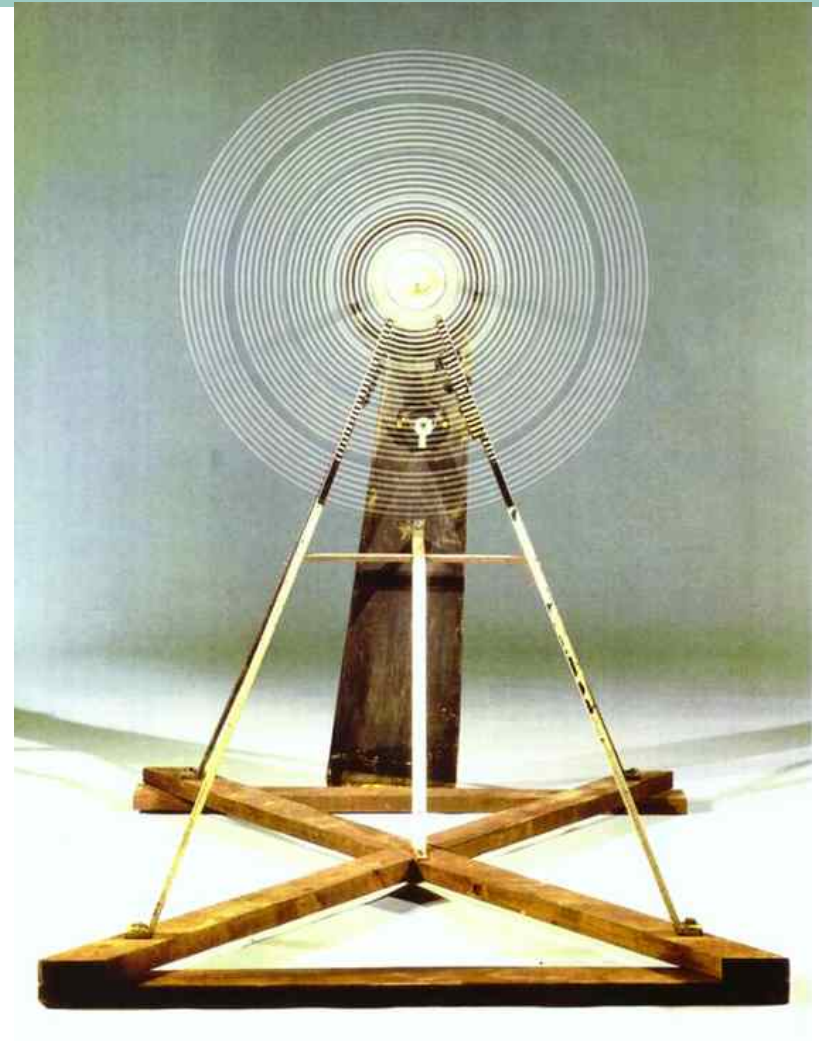


*Foundations: the Pioneers (mixed)*

“an interactive machine that invited users to interact with concentric rotating glass plates to generate visual effects”

Main Characteristics:

- interactive
- spontaneous and dynamic
- appealing for other senses



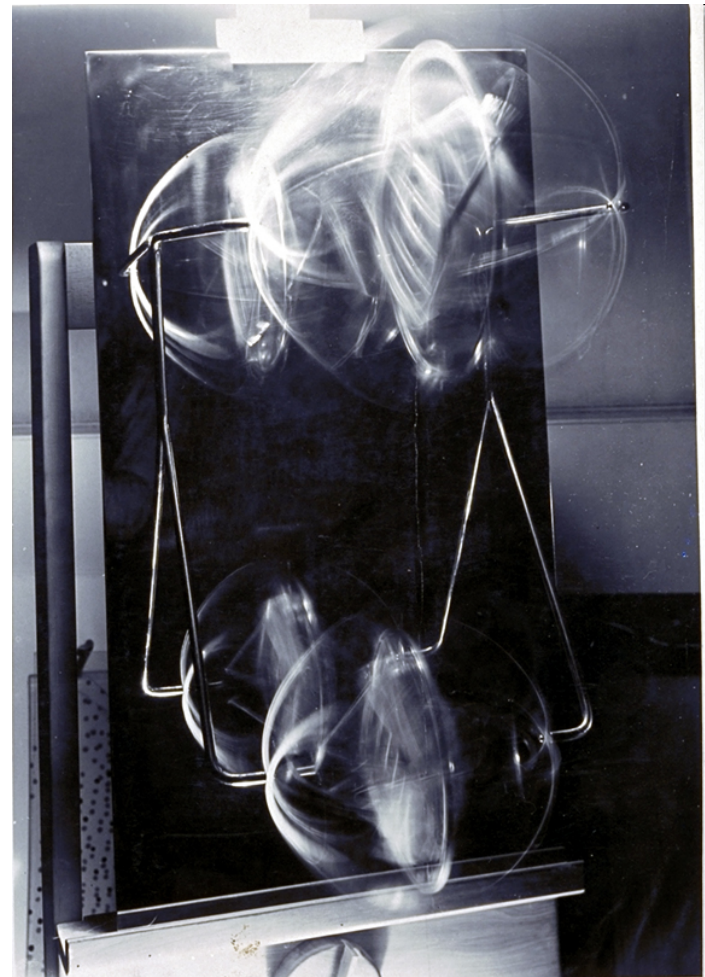
*“Rotary Glass Plates”, by Marcel Duchamp & Man Ray (1920)*

*Foundations: the Pioneers (mixed)*

“a device for creating light sculptures by projecting silhouettes in movement.”

Main Characteristics:

- volatile (a certain sense of *virtuality*)
- spontaneous and dynamic
- appealing for other senses



*“Kinetic Sculpture Moving”, by  
László Moholy-Nagy (1933)*



*Foundations: the Pioneers (Fluxus)*

Fluxus art movement has extensively explored the idea of **instruction-based generated** art along with the **immersion of the audience** in the event, forcing an **interaction** between the spectator and the artworks

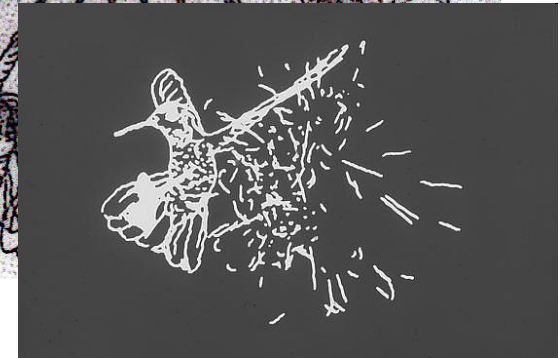
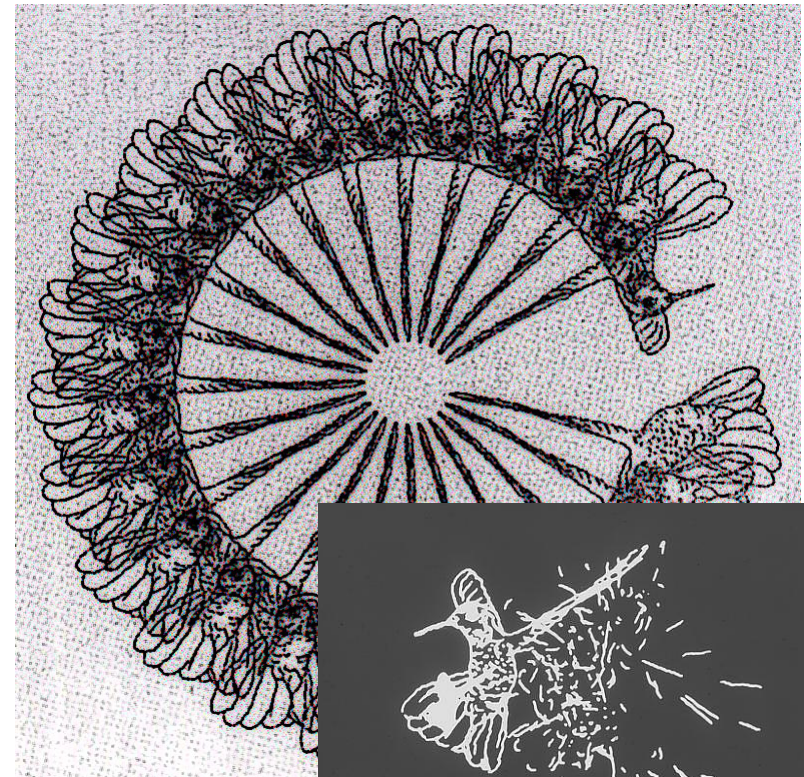


*“Musique télépathique n° 5 (Telepathic Music #5)”, by Robert Filliou (1978)*

*Foundations: the Pioneers (mixed)*

Art as “experimental research in **computer-generated transformations** of visuals through mathematical functions.”

The hummingbird is a good example of computer-generated animation.

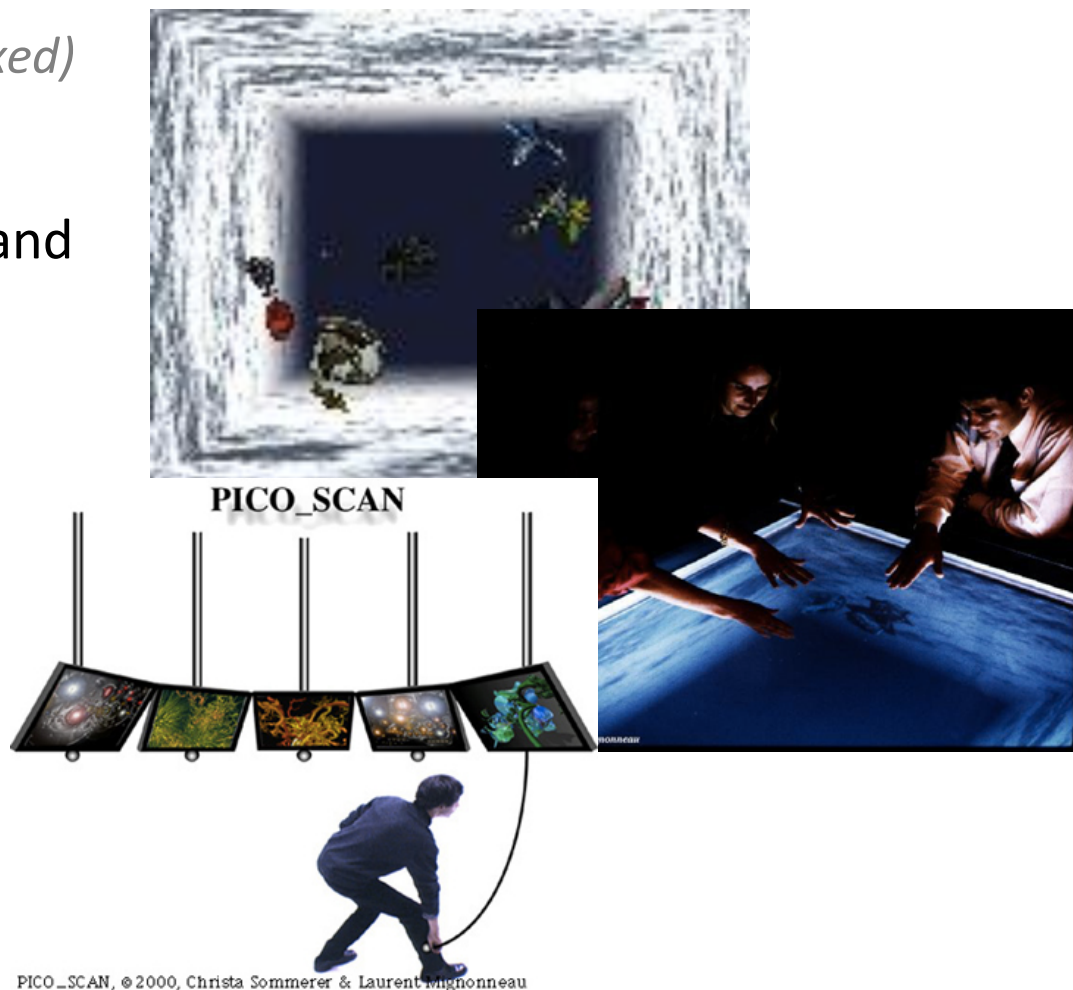


*“Hummingbird”, by Charles Csuri (1967)*

*Foundations: the Pioneers (mixed)*

“Art as a living process” and  
“artificial live” as art

Pioneered the today’s  
artificial live artworks



PICO\_SCAN, ©2000, Christa Sommerer & Laurent Mignonneau

*“AVolve” (1994), “Pico-Scan” (2000), Sommerer & Mignonneau*

## *Foundations: the Pioneers Contribution to today's Digital Media-Art*

The pioneers have created and explored new paradigms, namely:

- unconformity with accepted rules and conventions.
- embraced chaos (anti logic) and irrationality
- **Interactivity**
- spontaneous and dynamic
- appealing for other senses
- volatile (a certain sense of **virtuality**);
- concept is king
- not necessarily aesthetic
- **instruction-based** generated art
- immersion of the audience in the artwork
- computer-generated transformations and **controlled randomness**

# The Digital (Communication) Medium

## *Foundations: the Digital Medium*

- ✓ From Latin *arte factu*- «made with art»
- ✓ Art and culture are social phenomena, resulting from social interaction, as well from individual and collective imaginary manifestations, that together establish a common **communicational and informational space** embracing **artefacts** said to be cultural and artistic.
- ✓ These **artefacts**, where some are possibly non-tangible, constitute, in fact, the resulting product from the artistic and cultural phenomenon. They are expressions of our imaginary.

*Foundations: the Digital Medium*

... common *communicational and informational space*, supported by cultural and artistic artifacts

i.e, the central element here is **INFORMATION (or informative content)**

... and the artistic and cultural **Artefacts** can be defined as **Informational Objects**

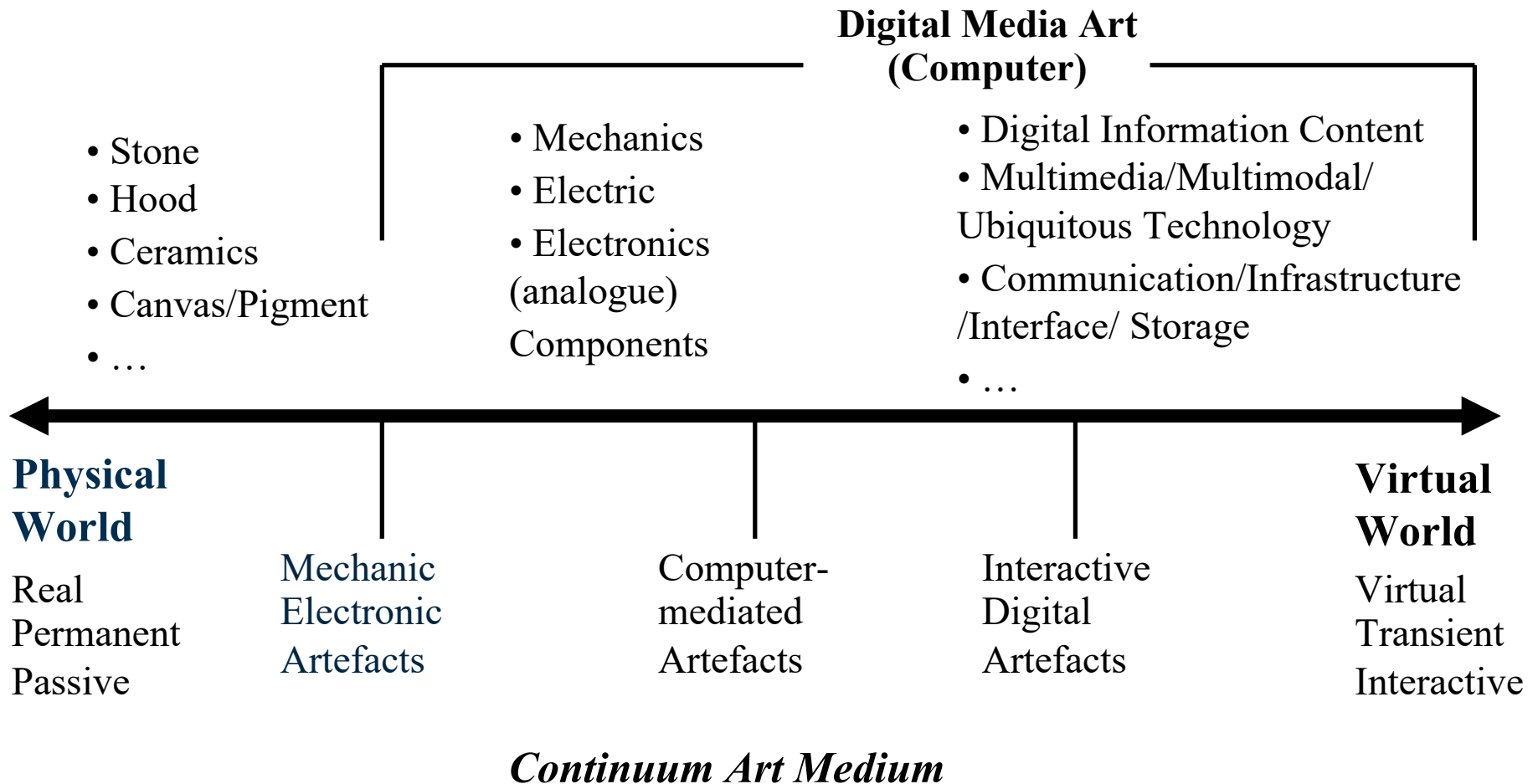
## *Foundations: the Digital Medium*

- ✓ **Art objects** or **Artefacts** might be described as **symbolic objects** that aim at stimulating emotions.
- ✓ They **reach us through our senses** (visual, auditory, tactile, or other).
- ✓ They **are displayed by means of (un)physical material** (stone, paper, wood, mechanics, electronics, digital, etc.) and combine some patterns to produce an aesthetic composition.
- ✓ Their creator intends **to convey some message, offer a certain experience**, normally to suggest some state of mind or **to induce an emotion** and the consequent feeling.

*Foundations: the Digital Medium*

- ✓ The digital medium is defined here as the **set of digital/computer technologies ranging from digital information formats, infrastructures to processing tools** that together can be taken as a continuum art medium used by artists to create digital **artefacts**.
- ✓ Digital media art applies the digital/computer medium **both as raw material** (e.g. information content) and **as a tool** to enhance creativity.

*Foundations: the Digital Medium*

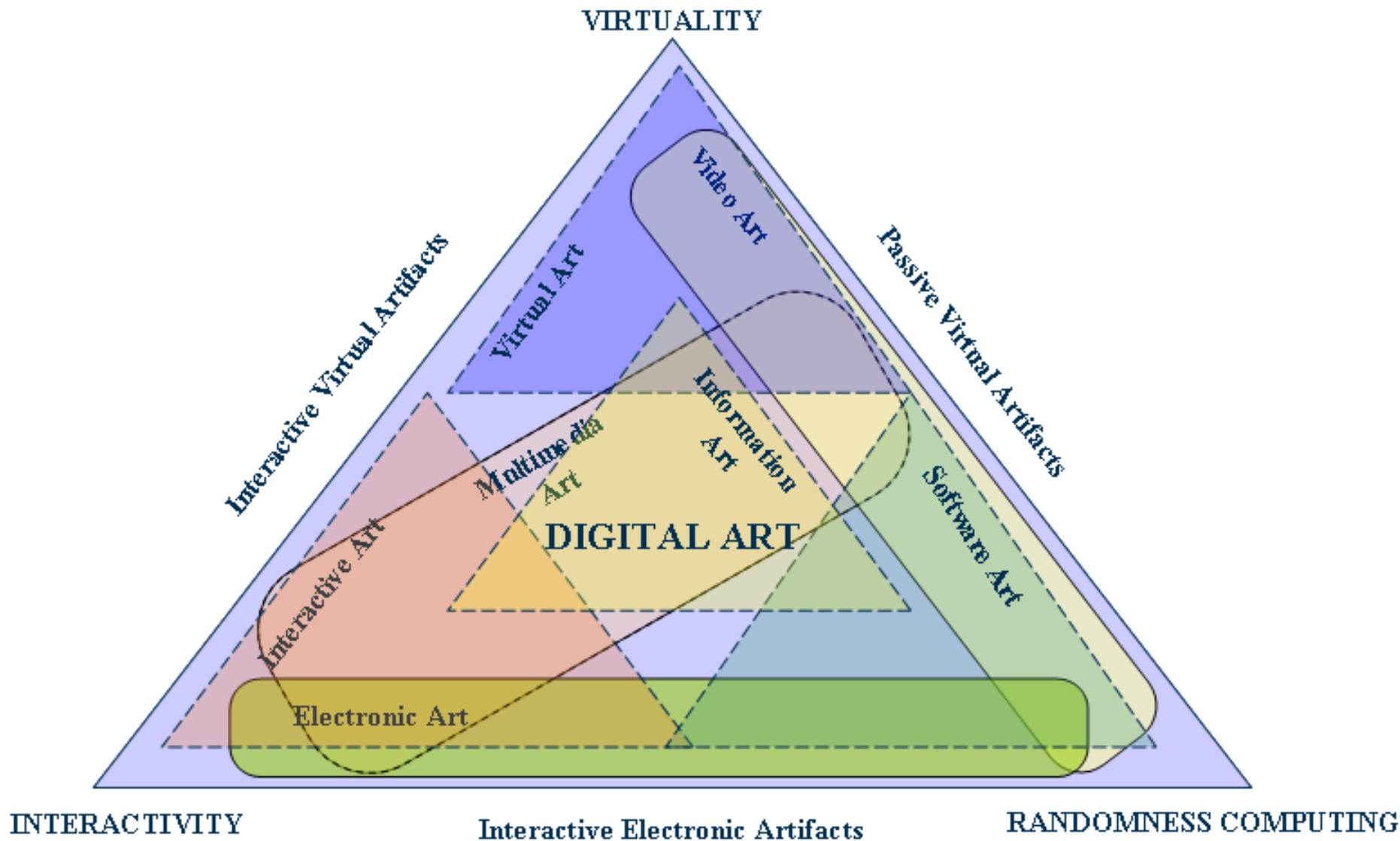


# Digital media art' differential characteristics

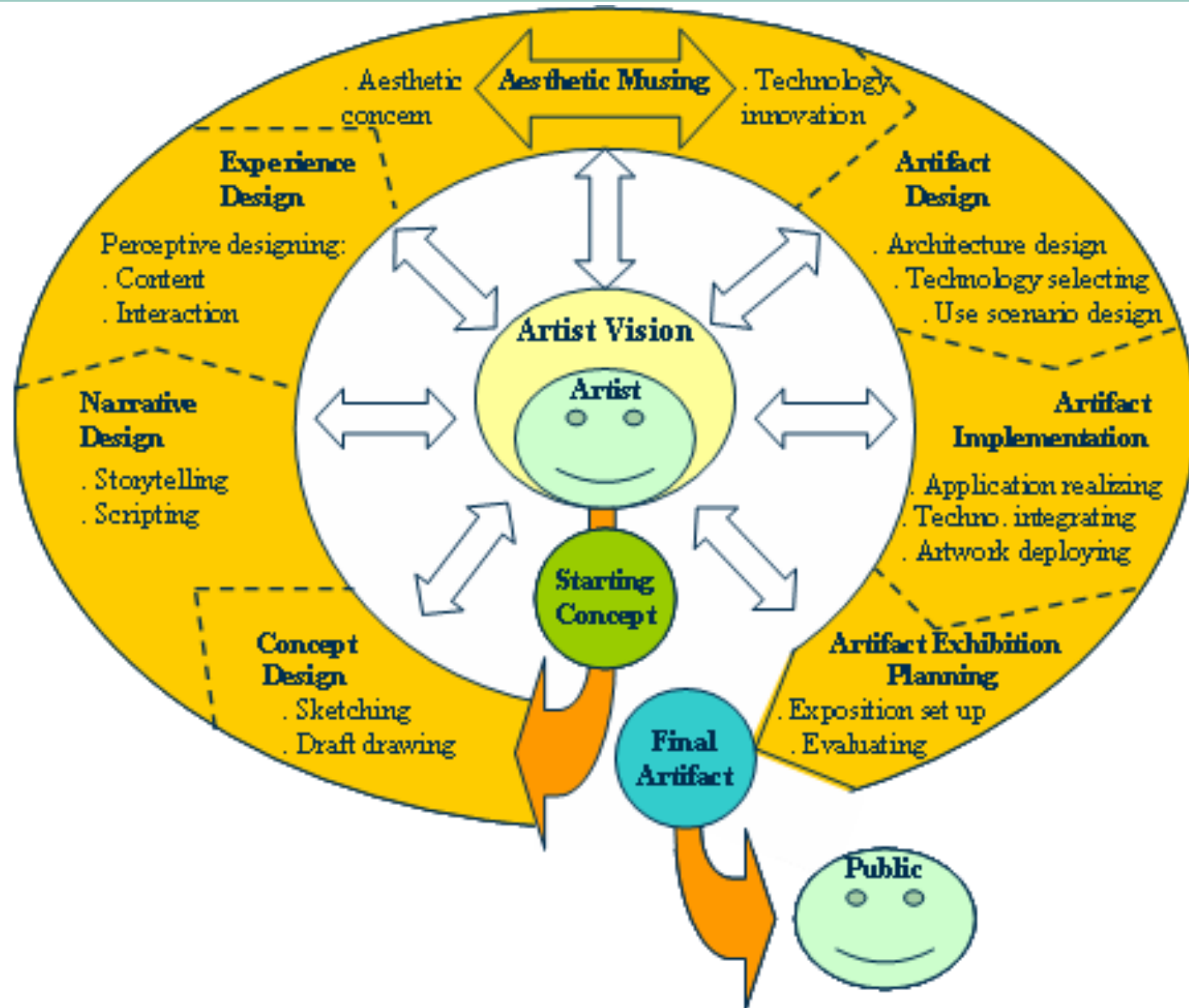
*Lessons Learned: Digital Media Art' Differential Characteristics*

**Digital media art** is mainly based on three grounding concepts:

- ✓ **Randomness Access**: perceived level of non-determinism in the instantiation of the artefact (or part of) created by an algorithm based on instructions previously configured by the creative artist or by the audience itself;
- ✓ **Virtuality**: the physical object is migrated into a *virtual* or *conceptual object*. The *concept* itself becomes perceptible through its virtualization/perception;
- ✓ **Interactivity**: the viewer may assume an active role in influencing and changing the artwork itself.



# Digital media art: creating, intervening and investigating in the intersection between media, art and computing



*Lessons Learned: Digital Media Art' Differential Characteristics*

The **digital media art's creation process** relies mainly on:

- ✓ *Collaborations between artist(s) and a **multidisciplinary team**, from art, science, technology, design, etc.*
- ✓ **Design of the artefact's message and its development.** The digital/computer medium is always present and traversing the overall creation process.

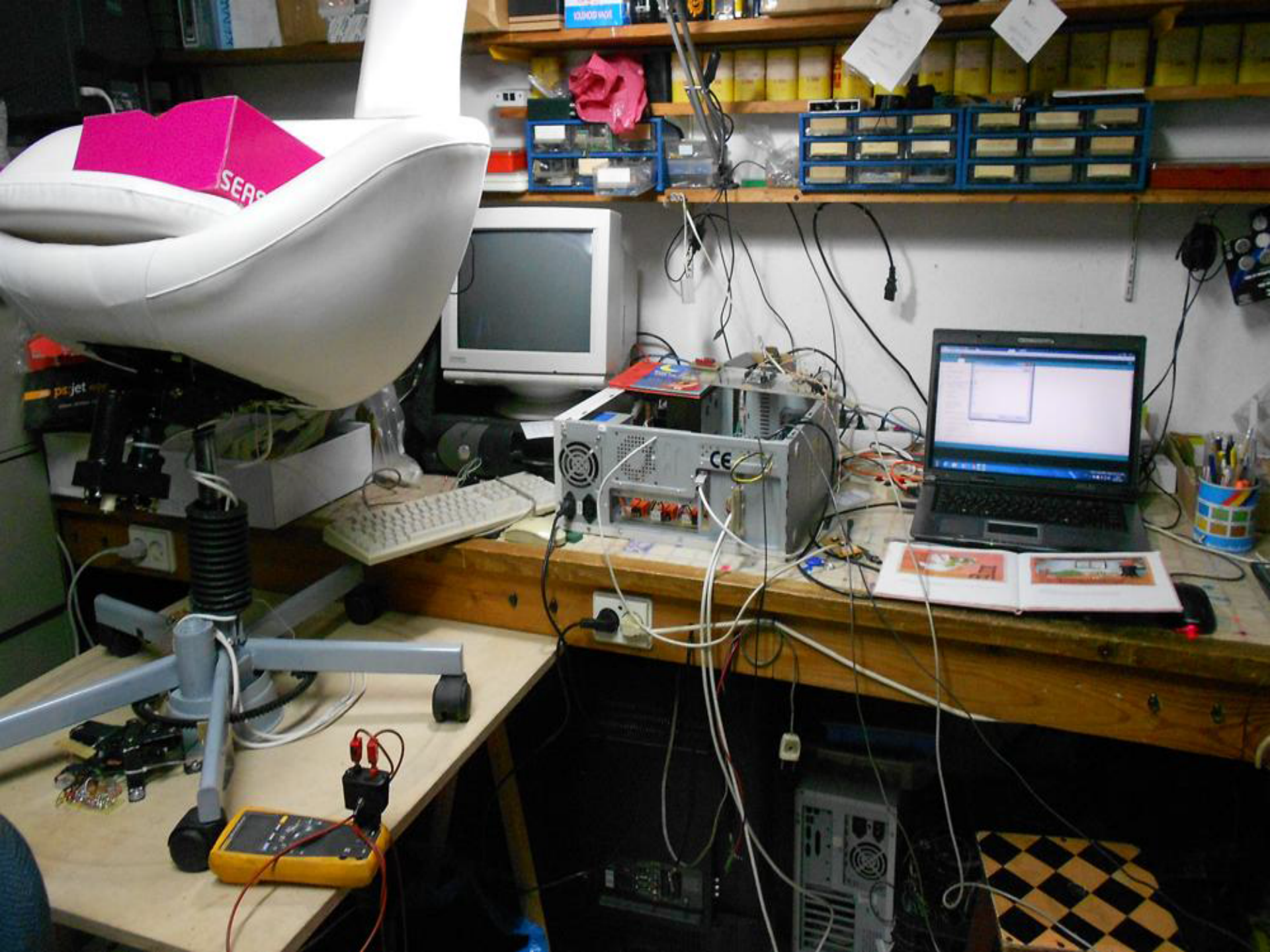
It is a **non-linear process!**

*Lessons Learned: Digital Media Art' Differential Characteristics*

*The process of developing the computer/digital components of the artefact follows, to a large extent, the procedures adopted in the **development of small and medium-scale computer systems and applications.***

*Lessons Learned: Digital Media Art' Differential Characteristics*

*However, contrary to the traditional design process where the solving of a problem guides the designer's action, in digital media art the systematization does not appear primarily for such purpose, but rather to enhance a meaningful experience of aesthetic contemplation that comes from the creation/fruition of the artefact.*



# Research in digital media art

*What is research in arts*

It looks for **new knowledge** of the following nature:

- ✓ **Aesthetics Thinking or Aesthetics Narratives;**
- ✓ **New/Amplifications of Meanings;**
- ✓ **Thoughts and Perspectives of Seeing;**
- ✓ **Artistic Experiences, Practices, Techniques, Approaches, etc.**

That has to be **understandable** (comprehensive) and **demonstrable** to others; **supported in evidence, replicable,** and **defendable before peers** (or an examination panel)!

*Lessons Learned: research approach in Digital Media Art*

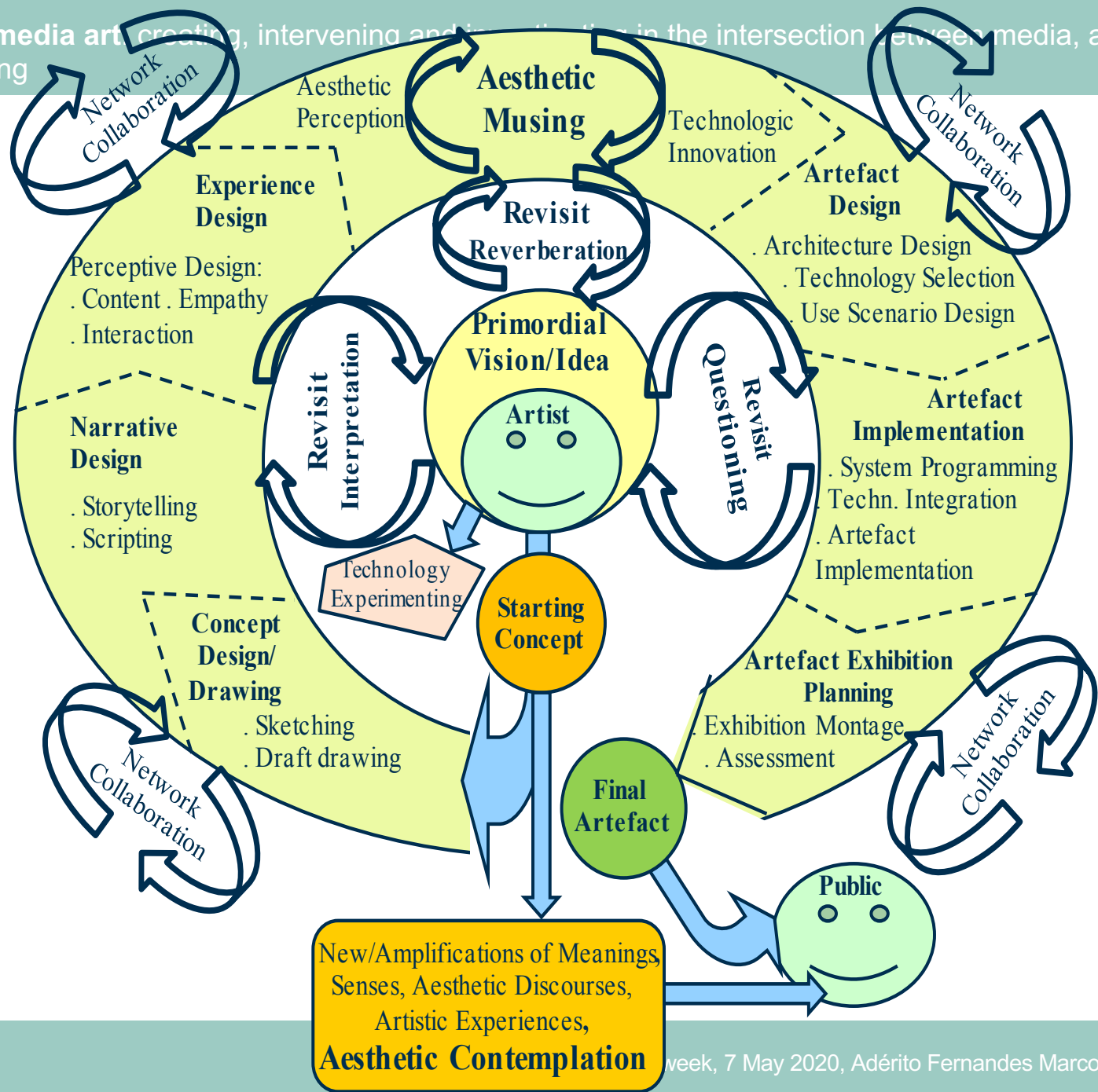
The artist-researcher **immerses** in a journey of **intense reflection**, resulting from:

- ✓ the **gradual maturation** of his/her primordial vision (theoria);
- ✓ the **practical experimentation with technologies and materials** (praxis)
- ✓ and the **materialization of prototypes** of and of the artefact itself (poesis);
- ✓ while in the scenario of exhibition, use and enjoyment.

It is a journey **full of inner conflicts and questioning**, in relation to the process, the materials, the primordial idea and the public.

*Lessons Learned: research approach in Digital Media Art*

- Thus, research in digital media art is essentially a **practice-based approach** following the creation cycle, thus, **around the set up of the Artefact(s)**
- The **deeper the process of reflection-experimentation-construction** (materialization) carried out at the appropriate times, which include pauses and periods of intense activity, **the greater the propensity** to achieve results to reach high **aesthetic quality** in the perspective of the experience provided and of the **reflections realized**, thus of the **research results obtained**.

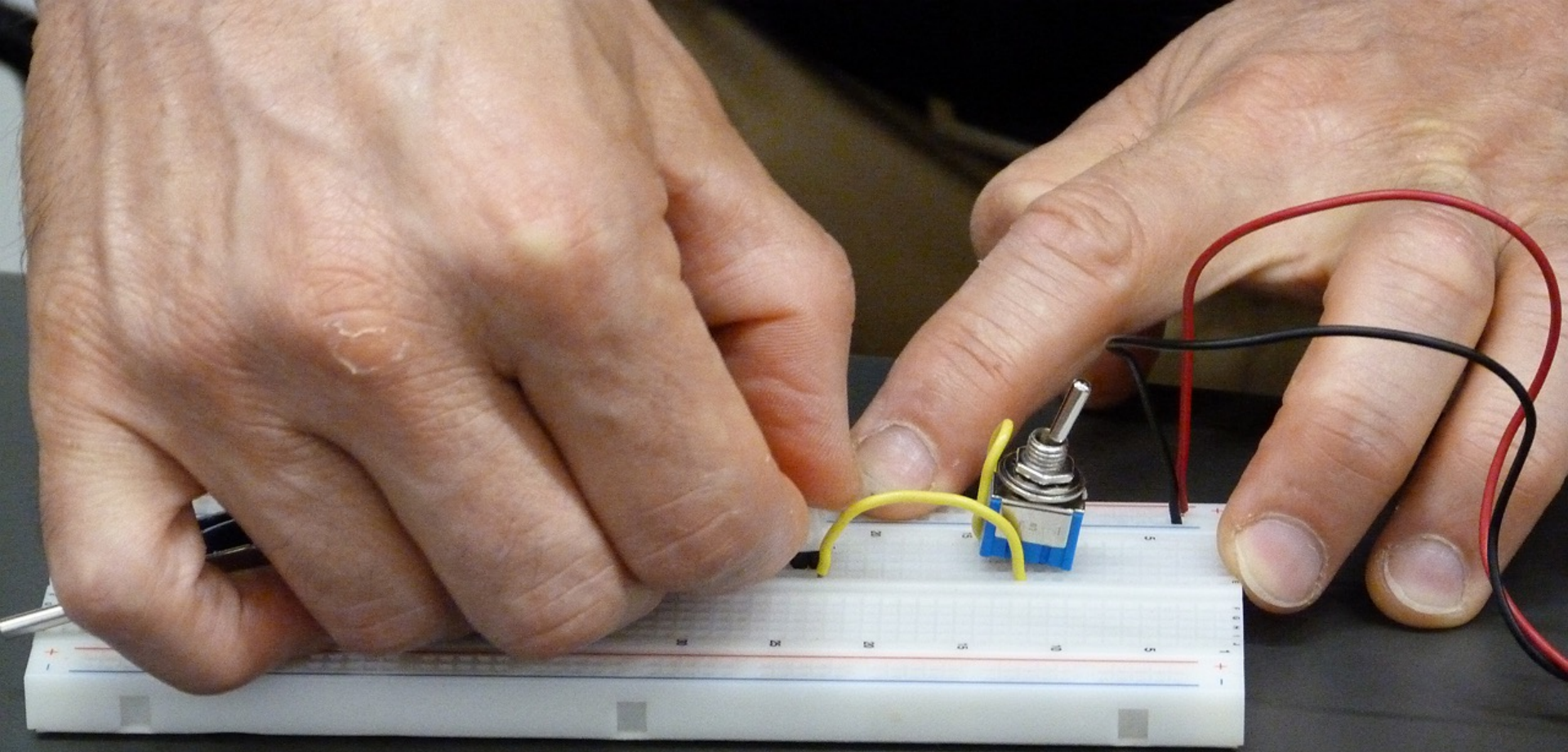


New/Amplifications of Meanings,  
Senses, Aesthetic Discourses,  
Artistic Experiences,  
**Aesthetic Contemplation**

*Lessons Learned: research approach in Digital Media Art*

## ***Aesthetic Musing:***

*This activity plays a central role in the creative cycle, since it represents the **moments of contemplation** where the artist/creative person revises, revisiting his/her seminal vision in the light of the decisions made (or only planned) during design and development of the artefact.*



*Lessons Learned: research approach in Digital Media Art*

## ***Techniques / tools for practice-based research:***

- ***Time planning around the cycle, including milestones (without losing flexibility)***
- ***Freely experimenting technology***
- ***Board book to register sketches, observations, reflections, decisions, results and drawbacks, etc.***
- ***Impose a gradual maturation of the artefact***
- ***Team-work / exhibition planning / inquiries design / capture in video / analyze the public fruition***

# Digital media art from master and doctoral students

## Artefacts

Digital textile artefact that studies the interaction of **e-materials** with the traditional **tapestry technique**

Explores a kind of **interactive visual-sound-musical language**



*"Interactive Carpet "Óbidos / Oppidum"", by Teresa Barradas et al. (2014)*

## Artefacts

Uses the **principles of sound art** to explore the concept of the **user's sound portraits**

Performer immerses himself in a performative and **choreographic dimension of self-representation** (self-portraiture)



*"Sculpture Presence", by Rudolfo Quintas, Mirian Tavares and A. Fernandes-Marcos (2015)*

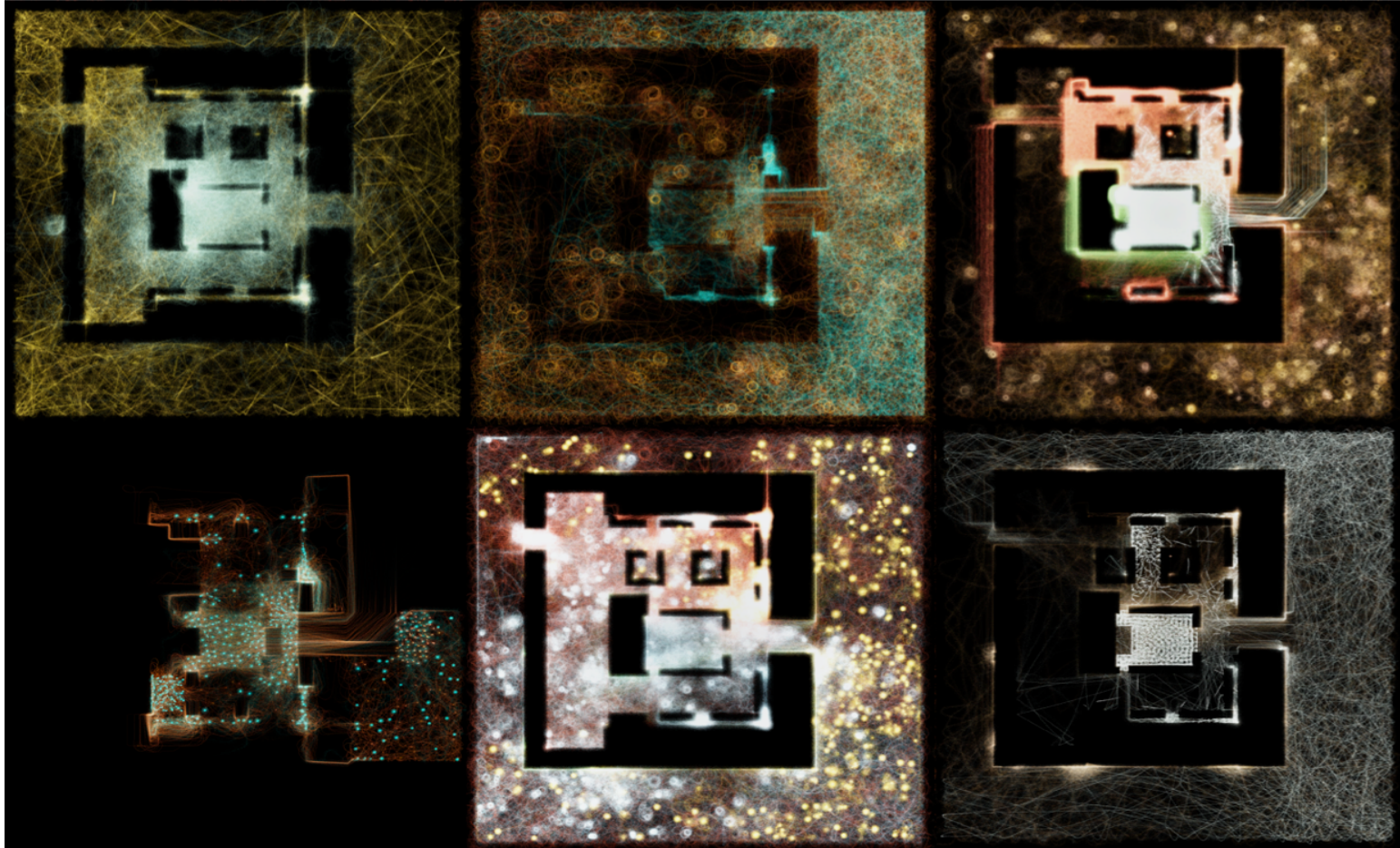
## Artefacts

Develops a **pictorial, dynamic representation** that represents the place of the pilgrimage, which is changing as a result of the **interaction** of the user who manipulates a **pendulum**.



*“Between the Sacred and the Profane in the Feasts of S. João d’Arga”, by Dominguez et al. (2014)*

*Artefacts*



*Examples of visual compositions generated by the artefact*

## Artefacts

**Video mapping** to explores religious physical artefacts thus offering a spiritual / philosophical experience



*"The New Light", Óbidos, by Rudolfo Quintas (2013)*

## References:

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- Candy L. & Edmonds E. (2018). Practice-Based Research in the Creative Arts: Foundations and Futures from the Front Line. In LEONARDO. Vol. 51, n.1. p.63-69. ISSN 0024-094X.
- Robin Nelson (2013), “PRACTICE AS RESEARCH IN THE ARTS – Principles, Protocols, Pedagogies, Resistances”, Palgrave MacMillan, ISBN: 978-1-137-28290-3.
- Hazel Smith & Roger T. Dean (Eds.), (2014), “Practice-led Research, Research-led Practice in the Creative Arts”, , Edinburgh University Press Ltd., ISBN: 978-0-7486-3628-0.
- Sullivan, G., (2005), “Art Practice as Research - Inquiry in the Visual Arts”, SAGE Publications, Inc., ISBN: 978-1-412-90536-7;

## Two reference conferences:

- ARTECH – International Conference in Digital and Interactive Arts
  - 9<sup>th</sup> Edition Braga 23-25 October 2019
  - <http://2019.artech-international.org/>
- ARTeFACTo – Int. Conference on Transdisciplinary Studies on Artefacts in Arts, Technology and Society
  - Inaugural edition: <http://artefacto.artech-international.org/artefacto-conference-2018/>
  - 2nd Edition - <http://artefacto.artech-international.org/artefacto-conference-2020/>

## Additional information

- <http://dmad.dcet.uab.pt> (info DMAD)
- “PRESENCE” - <https://youtu.be/PMaUHHcQ66U>
- <http://arbor.pt/index.php/teste/videos> (“ARBOR”)
- <https://youtu.be/XaJb05YFFRc> (Artistic residence Cerveira, 2015)
- “Pontos G – Chakras Invertidos”
  - <http://artefacto.artech-international.org/paulo-cesar-teles/>
  - <https://www.facebook.com/aderito.marcos/videos/10217772929494046/?t=22>



Family photo – ARTECH 2019, Braga, 23-25 October 2019

<https://www.facebook.com/artechinternational/>



**Collaboration** between students from **Computer Science** and **Digital Media Art** is devisable and desirable!

**Amazing results** may result from this multidisciplinary collaboration!

Thank you