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# Atomized (re-)Staging

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2023

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AI/Algorithmic software piece, project by fabric | ch

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Funding: ZKM | Karlsruhe, Pro Helvetia, Ville de Lausanne, Canton de Vaud.  
Commissioned by ZKM | Karlsruhe and Centre Pompidou

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Location: Karlsruhe (DE), Paris (FR)

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Exhibited during Matter, Non-Matter, Anti-Matter – winter-spring 2022/23 at  
Zentrum für Kunst und Medien | ZKM (Karlsruhe, DE), and presented as part of the  
Moviment Festival/Exhibition (2023) at Centre Pompidou (Paris, FR)

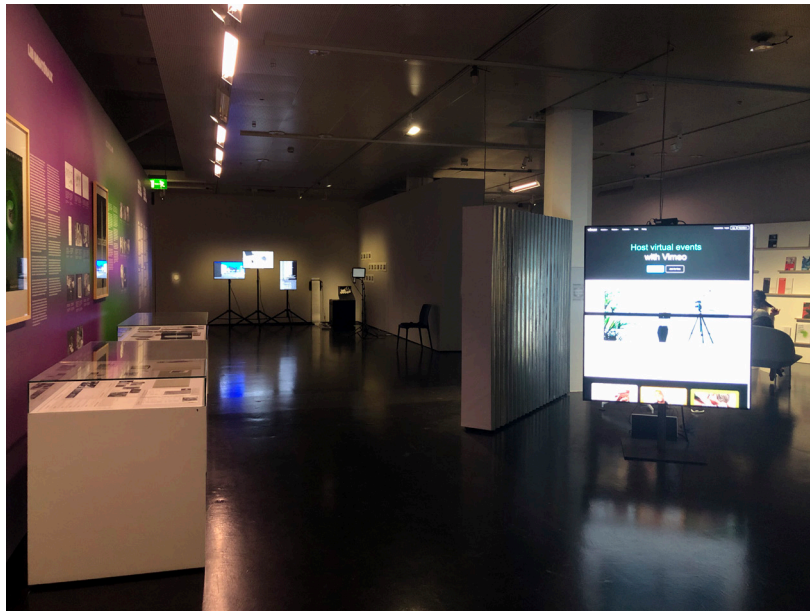
- Use: automated, ever-evolving digital exhibition, dynamically built out of over more than 200 digitized artworks from 2 past landmark exhibitions
- AI layer for automated curatorial and spatial exploration, in addition to base algorithmic software piece (scriptable rules)
- Live process and outputs exhibited in the museum, on the project's servers
- Resulting temporary digital exhibition (one new completed exhibit with all artworks every ~12 hours) displayed on iPads for walkable visits within the museum or elsewhere



[Img. 1]



[Img. 2]



[Img. 3, 4, 5]



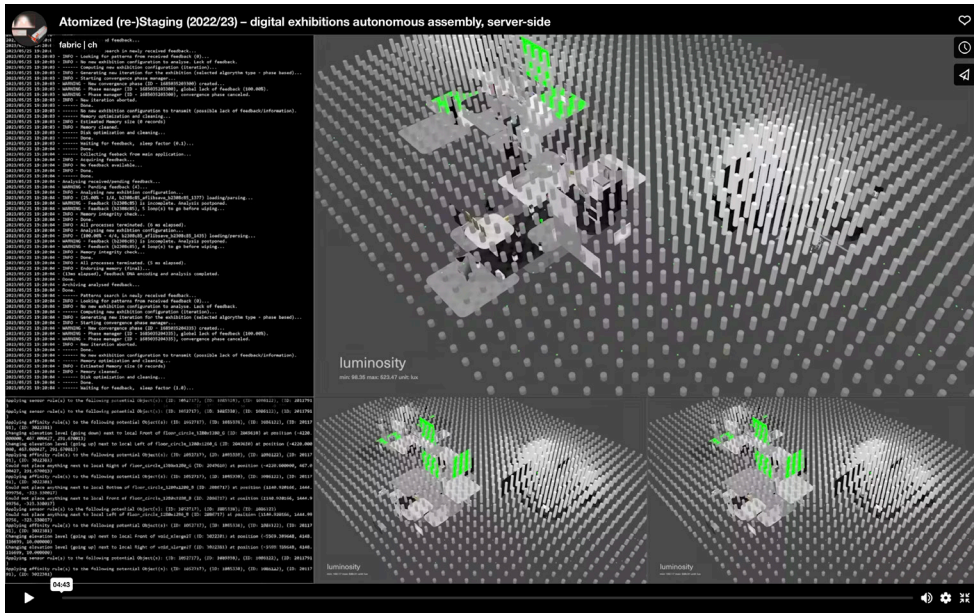
[Img. 6]



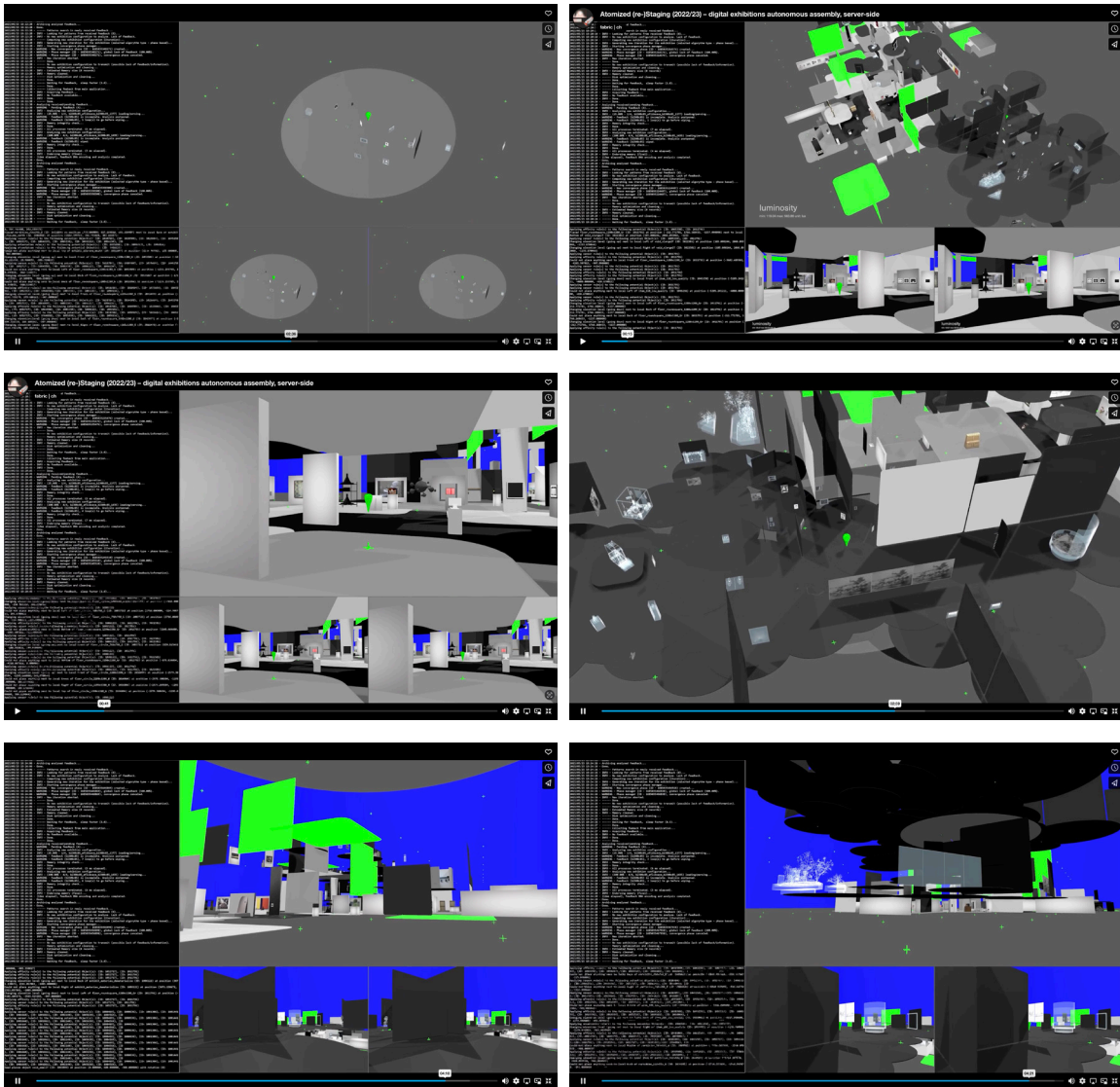
[Img. 7]



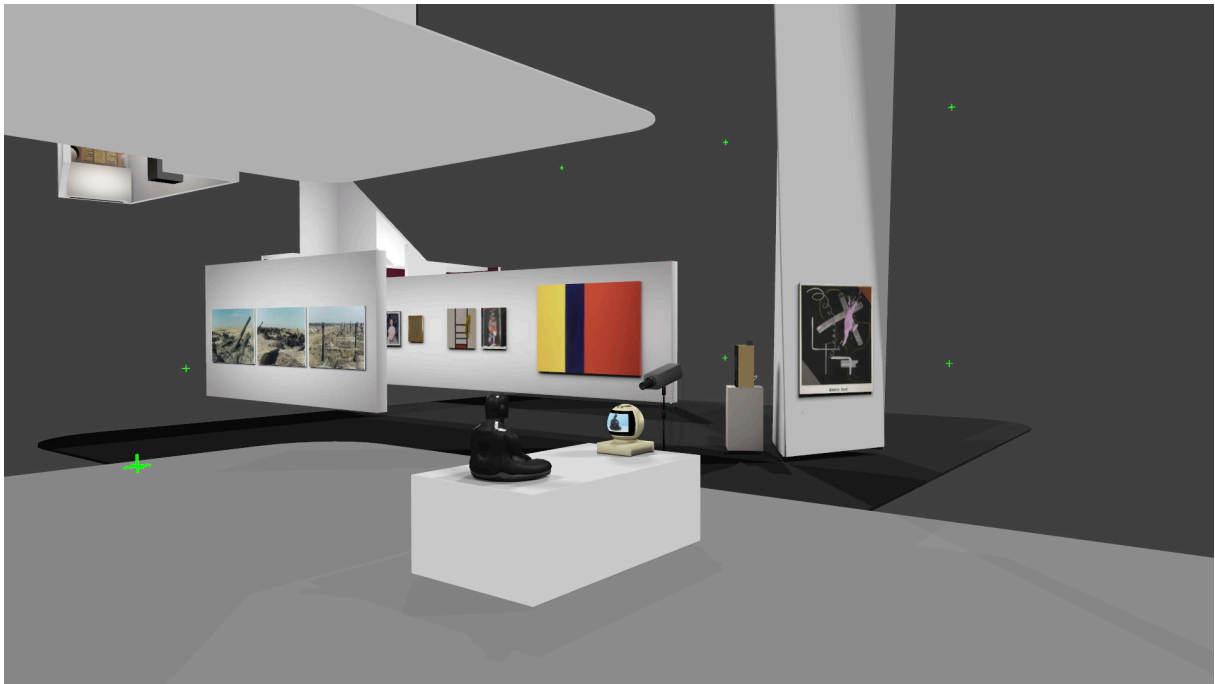
[Img. 8]



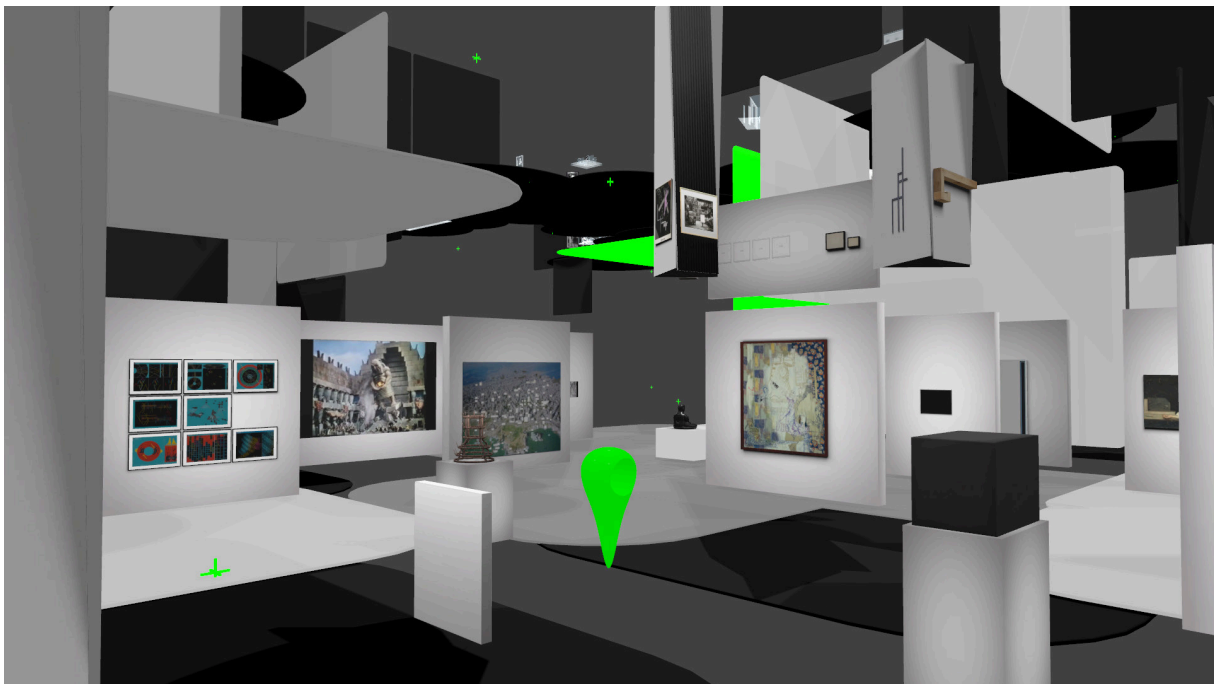
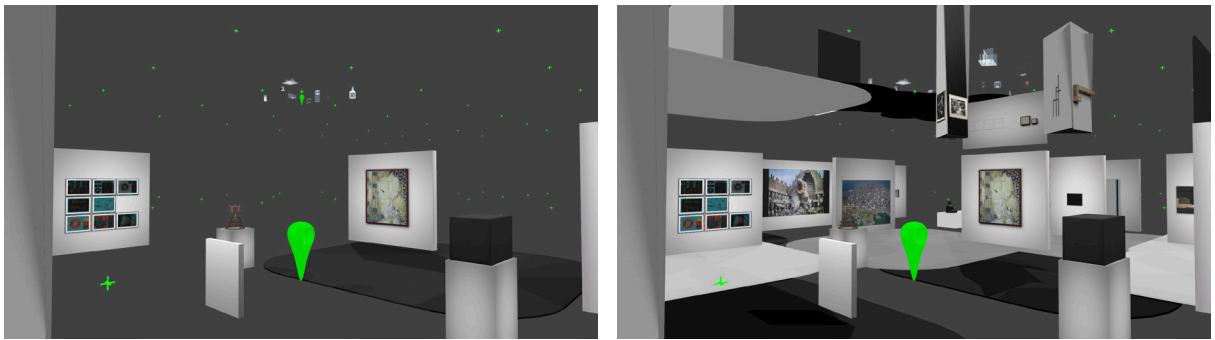
[Img. 9] <https://vimeo.com/831553592>



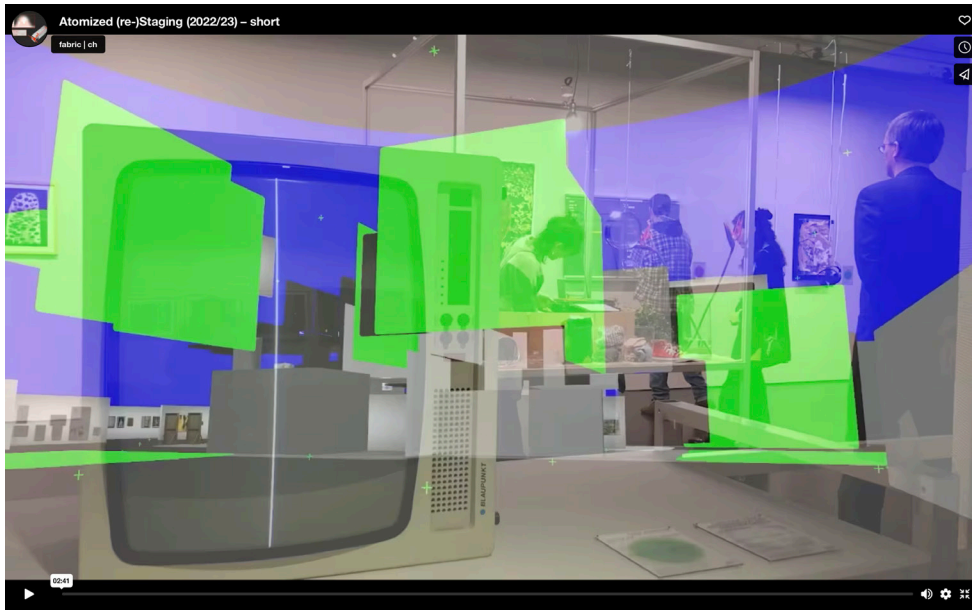
[Img. 10 - 15]



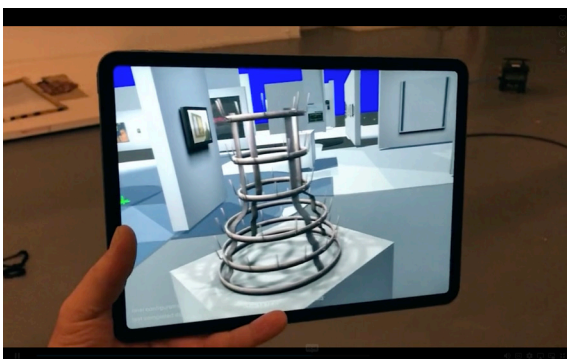
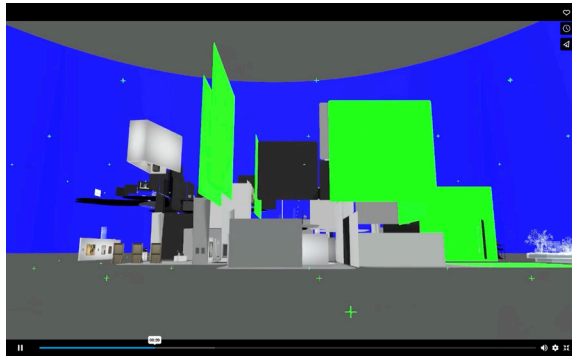
[Img. 16]



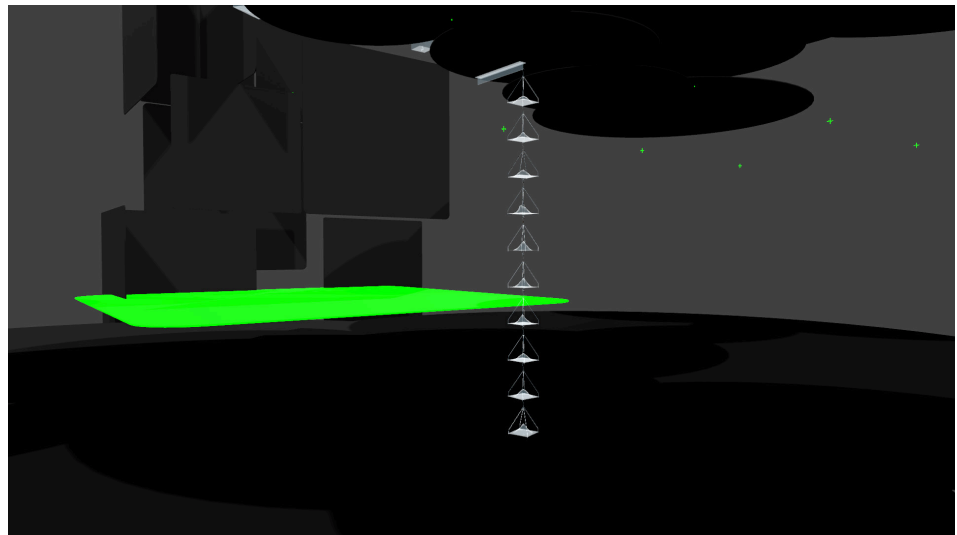
[Img. 17, 18, 19]



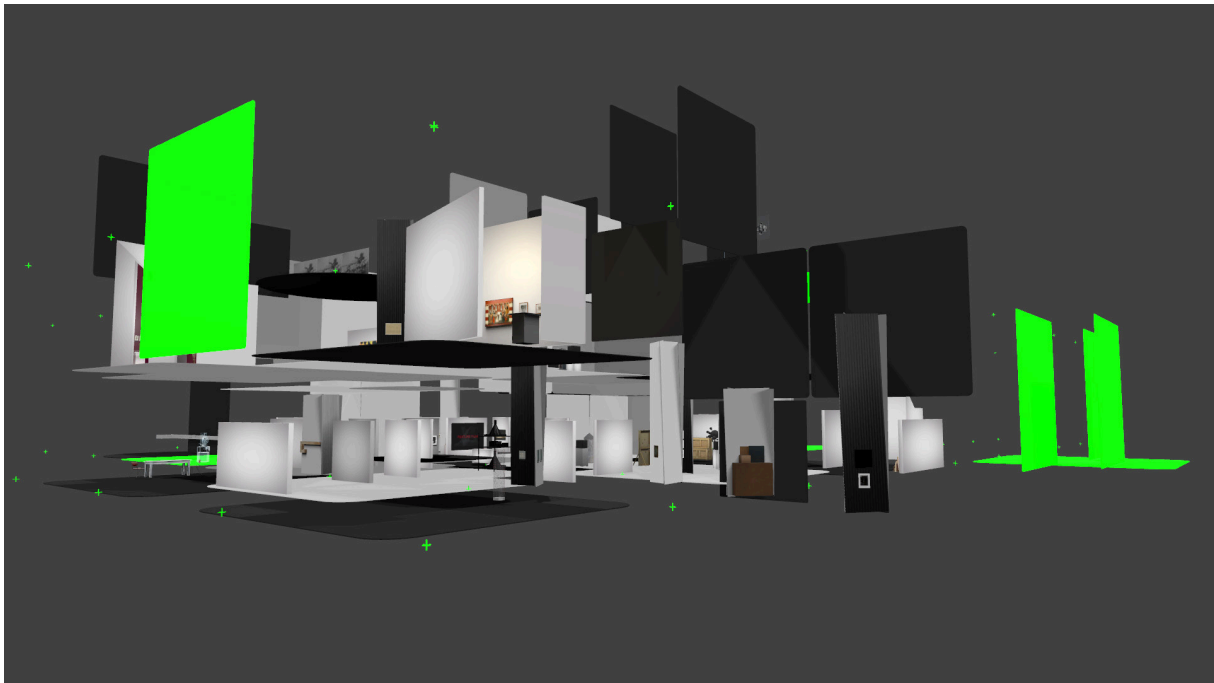
[Img. 20] <https://vimeo.com/336824155>



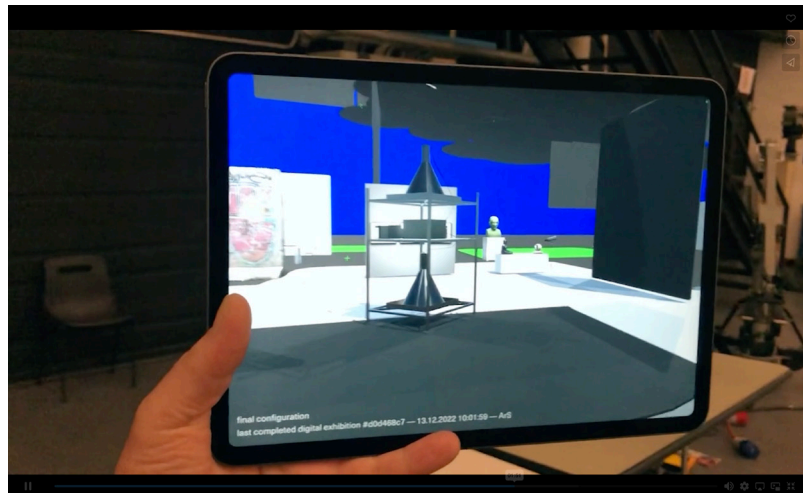
[Img. 21 - 26]



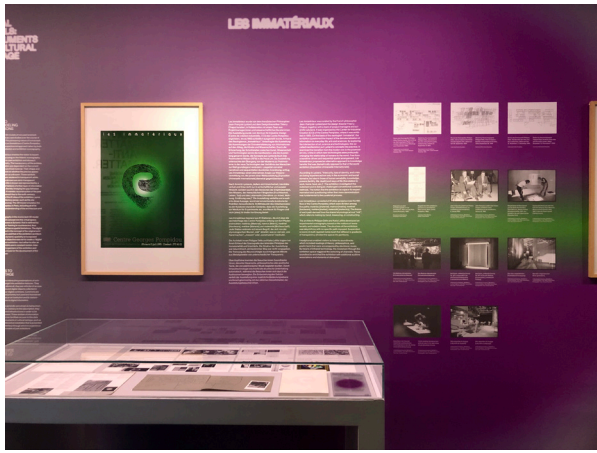
[Img. 27, 28, 29]



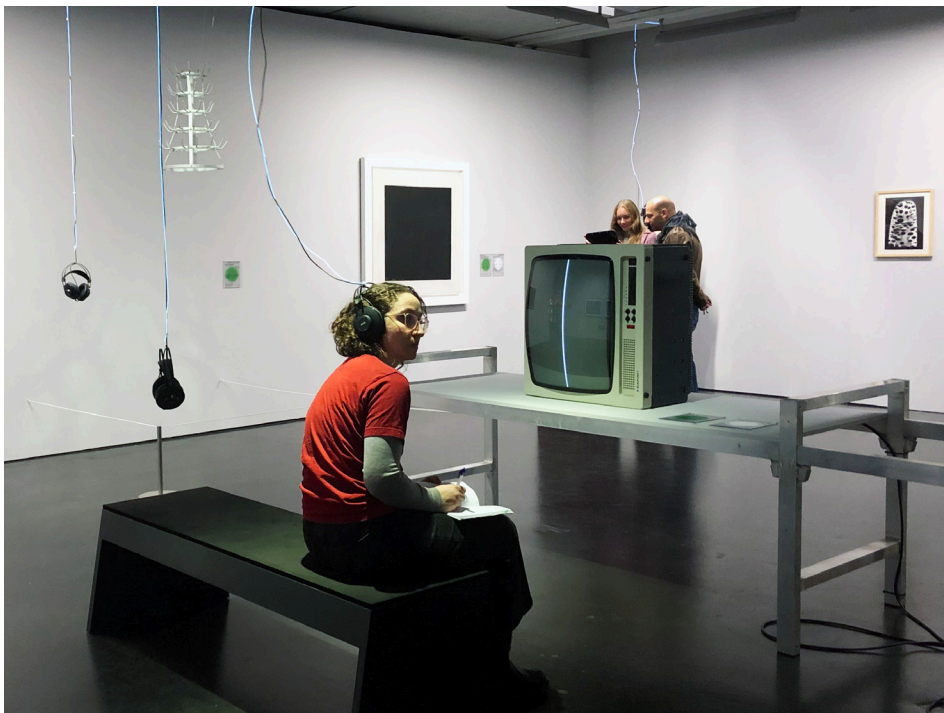
[Img. 30, 31]



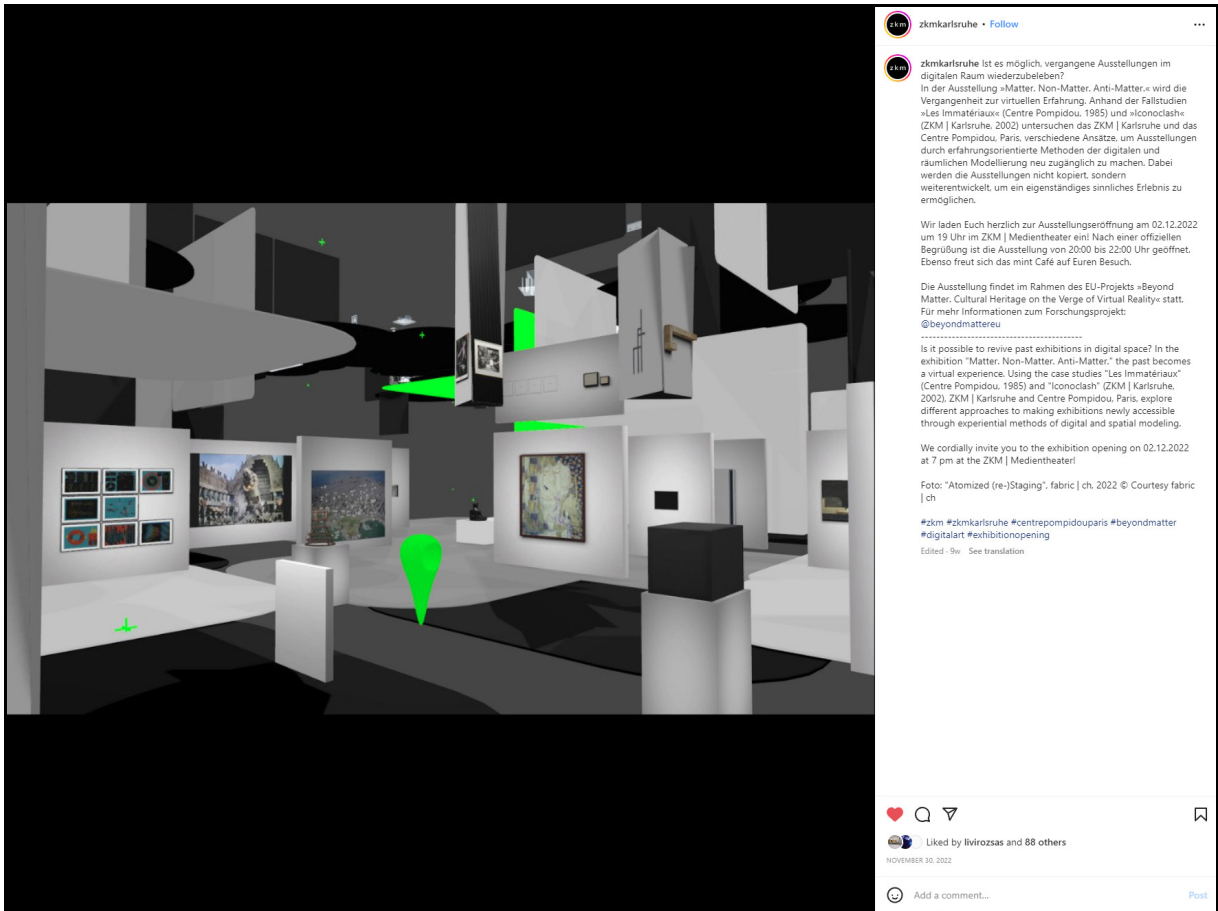
[Img. 32]



[Img. 33, 34]



[Img. 33, 34]



[Img. 35]

Image captions:

- [Img. 1] Our profound admiration goes to Peter Weibel (1944-2023), the artist, the influential and visionary director of the ZKM. The picture was taken during the opening of the exhibition Matter, Non-Matter, Anti-Matter in December 2022, shortly before his passing.
- [Img. 2] Atomized (re-)Staging installation, during the exhibition Matter, Non-Matter, Anti-Matter at ZKM | Karlsruhe.
- [Img. 3-5] Different views of the exhibition space and opening, with Atomized (re-)Staging as a perspective in the entrance area.
- [Img. 6] Based around two emblematic historical exhibitions (Les Immatériaux at the Centre Pompidou in 1985 and Iconoclash at the ZKM in 2002) and their digitized artworks, the digital exhibition constructed by Atomized (re-)Staging featured some of the iconic works from these past exhibits. In this case, N. J. Paik's Zen for TV.
- [Img. 7-8] 3 screens and a thermal printer make up the bulk of the piece's installation. This is the project server in full calculation and composition of an automated digital exhibition. The two screens on the left [Img. 8] show a dynamic 3D assembly of an exhibition, while the one on the right presents in text mode the calculations, the accelerated fabrication of the dataset and the choices made by the specially programmed AI that drives the whole.
- [Img. 9-15] Screenshots from a documentary video on the autonomous process of setting up the digital exhibition, based on atomized elements and their own rules of assembly.
- [Img. 16] One resulting exhibition situation, with a work by Nam June Paik (TV Buddha) in the foreground.
- [Img. 17-19] A succession of assembly steps, from the same viewpoint, with a progressive densification of space.
- [Img. 20-26] Screenshots from a second documentary video on the exhibition and the artworks on display, its algorithmic assembly process, and the immersive result accessible as an iPad app.
- [Img. 27-29] Several resulting exhibition situations, with a digitized work by Marcel Duchamp (Roue de bicyclette).
- [Img. 29] The green and blue elements that form part of the assembled elements naturally evoke the systems used for "editing" in post-production: green and blue screens. They thus offer the possibility that the world built can be edited live or a posteriori.
- [Img. 30-31] Inside and outside views.
- [Img. 32] Every exhibition resulting from the autonomous creative process can be visited in an immersive way, to scale and on foot, using a mobile screen device.
- [Img. 33-34] Views of the physical exhibition at the ZKM, with documentation material from the two original exhibitions to be re-exhibited and works by N. J. Paik, M. Duchamp, K. Malevitch and J. Cage.
- [Img. 35] Atomized (re-)Staging presented on the ZKM's Instagram account, as a communication to the exhibition Matter, Non-Matter, Anti-Matter

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## Atomized (re-)Staging

As an alternative digital version to two past exhibitions of historical significance – Les Immatériaux at Centre Pompidou, in 1985, and Iconoclash at ZKM, in 2002 –, fabric | ch was commissioned to create a new algorithmic piece exhibited at ZKM | Karlsruhe (DE), as part of an ongoing suite of experimental architecture works named Atomized (\*).

The new piece is displayed on its own servers amid calculations, while endlessly and autonomously re-staging the digitized artworks of these two past landmark exhibitions into new and ever evolving museography and combined screen-based experience.

Entitled Atomized (re-)Staging, the new spatial and museography experiment aims to autonomously build versions of digital exhibitions, in which the artworks themselves, considered as "elementary particles", aggregate to create their own continuously evolving museal space. It is based on more than 200 digitized artworks from the two past exhibitions.

Machine Learning is at work on the project's main server(s), which attempts to endlessly reorganize the interpretable digital objects within the computer-generated space. It explores the possibilities of spatial self-organization of works according to a selection of objective parameters (light, noise, size, viewing distance) and their rules of combination, certain functional elements of the digital exhibition (use of partitions, floors and their albedos, lighting, etc.), and other higher curatorial categories linked to the original exhibitions (materiality, representation). It also looks at the possibility of connecting the assemblage to live inputs (sensors). The system generates its own datasets of potential exhibits and gradually learns from these training sets, steadily converging on a result.

Each new result is then printed and stored for remote display on mobile screens (iPads), for extended observation by visitors within the museum and from any location, until a successor exhibition finding replaces it.

Each result becomes the new temporary exhibition that, with the help of mobile displays, can be visited in an immersive way by inventing one's own walking circuit. This path develops between the physical environment in which the visitor finds him-/herself and the digital counterpart – an almost hybrid "dérive" – and while maintaining a relationship of movement, space, and scale with the digital, or digitized artworks.

Convened and specified by fabric | ch, the concept of "atomization" is at the heart of this project and of the entire Atomized (\*) series of works (Atomized Functioning – 2016, Atomized (algorithmic) Functioning – 2018, Atomized (curatorial) Functioning – 2019/20, Atomized (re-)Staging – 2022/23). It marks the algorithmic and automated continuation of the collective's research and approaches to contemporary hybrid space over the past decade.

By "atomizing" entities into context-dependent elementary particles and re-aggregating them into new forms, and according to specific rules and scripts, the collective intensively explores the potential of contemporary spaces while addressing questions of digital materiality.

Atomized (re-)Staging has been commissioned by ZKM | Karlsruhe and Centre Pompidou (FR) in the context of the European research project Beyond Matter. The project has been exhibited at ZKM (exhibition Beyond Matter, 12.2022 - 04.2023) and presented at Centre Pompidou during Moviment festival (07.2023).

fabric | ch, June 2023

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# Contact

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fabric | ch (97-26)

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