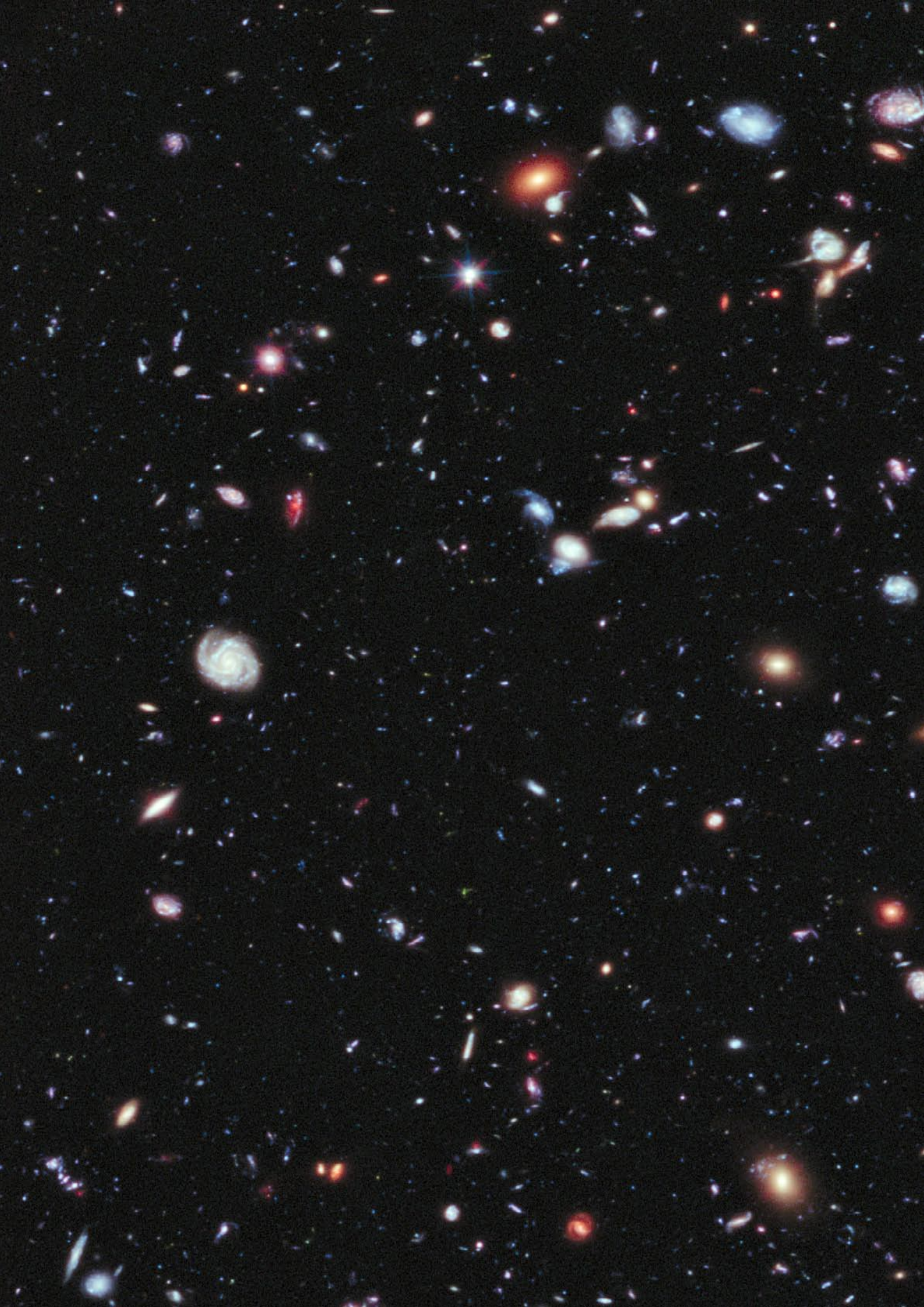1-48140288

As long as possible

AS Long As Possible (ASLAP)

A GIF animation loop, 2015

Duration 1.000 years

Started in Helsinki 28 March 2017 at 12:00:49.154 EEST

An art project by Juha van Ingen

The animation was created in collaboration with Janne Särkelä

The GIF Player was programmed by Jani Lindqvist

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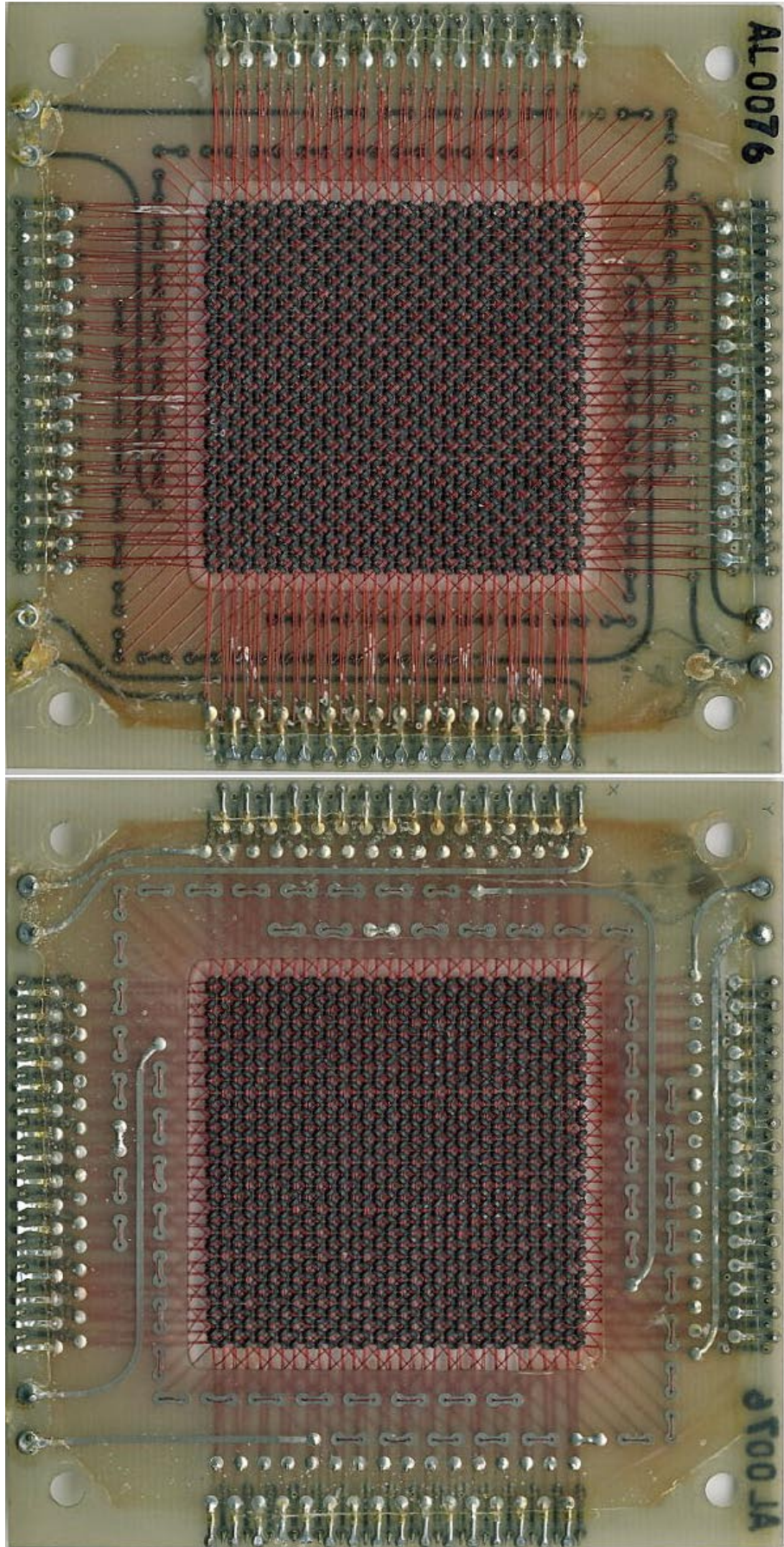
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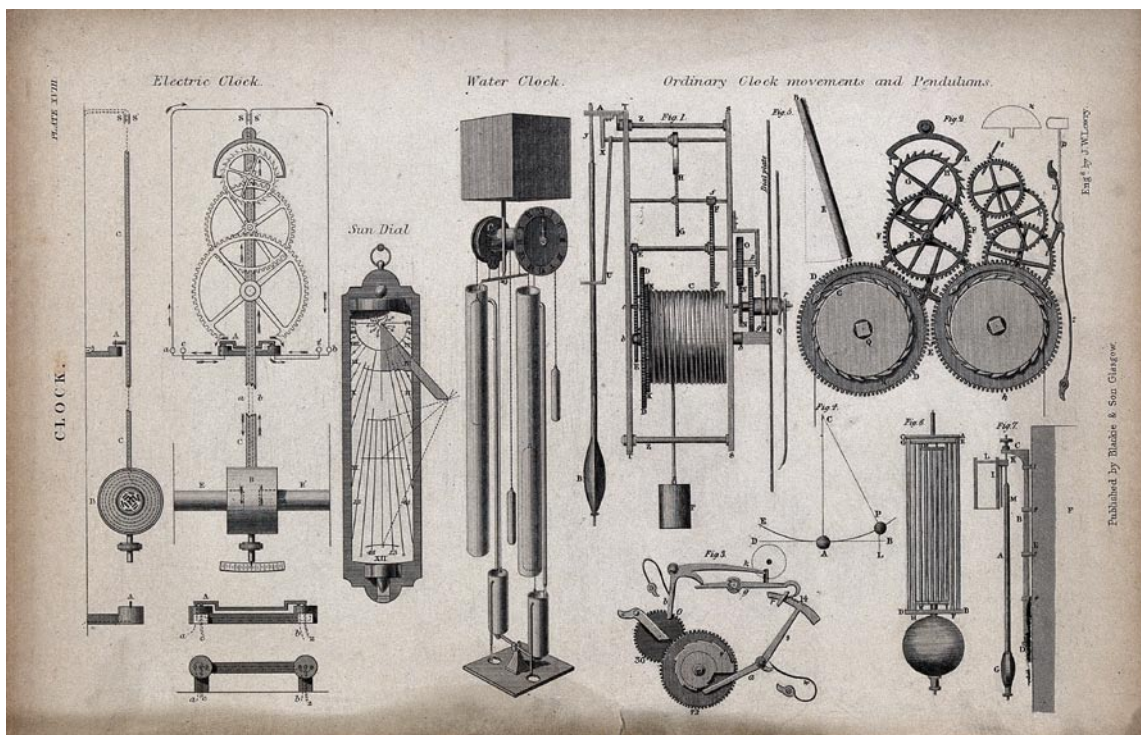
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Introduction

Juha van Ingen

..OCEAN, as a theme, is not a limitation, but an opportunity to dissolve borders and boundaries, to"become like water", to submerge a rigid landmass, to look at OCEAN as a way of action, a philosophical paradigm, a world of folklore, post-human ecology, or as a mass of water...

In 2015 I participated in an online exhibition part of The 5th edition of the Papay Gyro Nights Art Festival in Hong Kong. The festival was titled OCEAN by its organizers Sergei Ivanov and Tsz Man Chan. The technical limitation given to the artists was that the file size should be under 800 KB.

The theme made me think of the endless water cycle driven by the sun, the long journey of water evaporating from the oceans and Earth, and transpiring from plants until it turns into rain or snow and falls back to the earth, starting the cycle all over again. The task of making a long looped animation and keeping the file size down was difficult and it seemed that whatever I did, the file became too heavy. Then it struck me: What if I slowed the animation down? I had used GIFs in my art for quite a while and like many other artists I had always wanted the animation to be as fast as possible. It was exciting to suddenly find this new quality in the medium.

As I worked on Plunge, a 90 minute GIF animation loop for the festival, I started to dig deeper into the slow mode. What if I made an animation which would take months or even years to run? Even longer than a lifetime? Immediately after returning to Helsinki I took to work. First the goal was to make a GIF animation loop which would run for hundreds of years. I soon realized that technically it was beyond my competence, but luckily Janne Särkelä, who had helped me before by coding some web works, agreed to help me to build the file.

I decided that the loop should be 1000 years long, so even if it would be extremely long the duration would still be something people could relate to. The visual side was also a challenge in the beginning. At first it was tempting to add more content to the animation, but as a part of the technical problem of large file size it soon became obvious that the animation had to be simple and the focus should be on the essential: time.

I named the artwork AS Long As Possible, ASLAP, as a homage to John Cage's famous composition ORGAN²/ASLSP (1987). The abbreviation of Cage´s composition included an instruction to the performer of the piece: As SLow aS Possible.

In September 2015 the animation was ready and at that point I was faced with two questions: first, how to keep it playing for the next 1000 years, and secondly, how to present it to the public?

1000 years is a long time and because ideally the loop should repeat itself infinitely there has to be a survival strategy. The first idea was to have it on the Internet and secure the file in a block chain. The size of the animation file came to 12 GB, which though surprisingly small was still too large to be played by web browsers. The question also rose, what will happen after Internet? I decided to clone the file into five copies and place each of them in a separate unit. This way each of them could continuously and simultaneously play in five different countries. So if/when one loop would for any reason stop, a new replacement could be created and the loop would still play in all the other units. As an extra backup we produced time capsules with written documentation and digital files to be stored in steel boxes.

I was very eager to present the artwork immediately, but at the same time I didn't want to stop the loop once it had been started. For that reason I needed to find an institution with resources and long-term reliability to help keep it playing. I had a slot for a solo exhibition in September 2015 at the artist-run FISH Gallery in Helsinki and decided to exhibit the file and the idea of the artwork as an installation, hoping to get somebody interested. I knew that two years later, in 2017, the GIF format would turn 30 years old. It would be a perfect year to start the loop and it would give me two more years to find the resources.

Janne Särkelä built a short preview file (a 30 day loop) that we could play at the FISH Gallery exhibition, and the actual file of AS Long As Possible was displayed in a Raspberry Pi single board computer along with some screen prints from the animation.

The usual crowd came to the opening, among them curator and critic Pontus Kyander, who wrote an excellent essay "The Itch for Eternity" on the artwork. The exhibition might have gone unnoticed, if the New York based cultural blog, Hyperallergic, hadn't published an article by Claire Voon about it. The people of KIASMA in Helsinki heard of ASLAP and came to see the exhibition. As a lucky coincidence the artwork fitted into the theme of their upcoming ARS17 exhibition, and the museum even offered to acquire one loop for their collection!

 It was an interesting process to draft the agreement with the National Gallery, which maintains the collection of KIASMA. Many issues came up, like how the artwork might be modified in the future when our current computers will have disappeared, and what would happen when the hardware or software would undergo maintenance?

It soon became obvious that the playing ASLAP loop, to be safe, should always remain on the museum premises. For the showing of the artwork in other locations or exhibiting it at temporary exhibitions I should additionally have one transportable version made.

Meanwhile the first time capsule was deposited in the collection of the KUMU Art Museum of Estonia. The sealing event took place on 18 March 2017 at KUMU.

The first version of the ASLAP player was coded by Jouni Miikki. The final ASLAP player (2.0) was created by Jani Lindqvist. A simple and reliable program that works on Linux, PC and Mac. If the computer crashes or is destroyed, the player of the animation detects the clock of the new device it is installed in, and it continues to play the animation from the frame which it would have reached if played continuously.

Finally all was set to go and the ASLAP animation was started on 28 March 2017 at 12:00:49.154 EEST in KIASMA, Helsinki. It was exhibited at the ARS17 and will after the exhibition be kept playing until 3017 in the collection of The National Gallery of Finland.

The task is now to find homes for the four remaining loops and for the time capsules. I am going to exhibit the transportable version of the loop, hoping to generate some discussion on the questions the artwork raises. Although some of the questions surrounding our digital culture give cause for worrying, I myself see AS Long As Possible, ASLAP, as an optimistic work, in the sense that it trusts the maintenance of the continuing animation in the hands of future generations.

11.   The ASLAP file under construction.

12.   Testing materials for the time capsule.

13.   The Raspberry Pi prepared for the exhibition in FISH Gallery Helsinki, 2015.

14. Photographic prints of ASLAP frames in FISH Gallery.

15. A 30 day loop was playing from the same computer which contained the original ASLAP animation.

The Itch for Eternity

Pontus Kyander

The half-life ($t_{1/2}$) of Uranium 238 is approximately 4,5 million years. It is good to know that something is left when we all are gone. But the waste from a nuclear energy plant is considerably less radioactive already after 1.000 years, just 1/100th of its original levels. In Olkiluoto Island in Eurajoki, where the Finnish authorities have decided to store the Finnish nuclear waste, the 1.000-year anniversary will be a day to celebrate.[1] If they have it still, I think that moment will call for champagne and butter cookies. The uranium clock will continue to click, the underground deposit will pursue yet another 1.000-year circuit on its multi-million year journey towards its first half-life.

We deposit material in the ground, and we deposit it simultaneously in time. 100.000 years is a figure mentioned as a guaranteed safe period for a nuclear waste repository. It is a bold assumption that humanity will still be around to check on it.

We are slowly sinking through time, like a submarine falling through the depth and darkness of a bottomless ocean. If we ever knew how to operate the ship, the skill is long since forgotten. We paint simple figures with our fingertips on the condensation of the round pressure-safe windows. A diminutive message to the outer world. A smiley, maybe. We are here. We were here. Are you?

It takes me 3,5 minutes to walk from my home to the gallery where a prototype of AS Long As Possible (ASLAP) is shown, a work developed by artist Juha van Ingen, realised in collaboration with Janne Särkelä. Every frame in the GIF-animation is roughly 10 minutes long. There are 48.140.288 frames totally in the finished loop. Each frame is numbered, and the images consist of its number at the centre of each black frame.

Gasp. There is no way I am going to survive the completion of this work. It will finish its first round in 1.000 years. After that, it continues from frame nr 1, for future generations to enjoy a new beginning. Walking back from the gallery takes close to 5 minutes, as it is more uphill. Have I proved the relativity of time, or my relative shortness of breath?

ASLAP is not the longest existing artwork, but due to its loop it is endless, intended to be an eternal work. It departs from John Cage's composition Organ[2]/ASLSP (an acronym for As Slow As Possible) from 1987, a composition made to last for 639 years and which is played on the organ of St. Buchardi in Halberstadt, Germany, since 2001. It will finish in 2640. Simultaneously, Jem Finer's (of the Pogues) Longplayer is sounding from the Trinity Buoy lighthouse near Canary Wharf in London, where it has played since 2000. It will continue working its way through time until 1 December 2999.[2]

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1   http://www.posiva.fi/en/final_disposal/general_time_schedule_for_final_disposal#.Vj9Xl0uRNuZ. Read 7.11 2015.

2   Jem Finer, Longplayer is a project originally commissioned by Artangel in London which started playing on 1 January 2000. It is run by the Longplayer Trust. http://longplayer.org/about/. Read 1.11 2015.

1.000 years is a deliberate limitation. Any amount of time has to make sense. Canadian artist Rodney Graham uses in Parsifal (1882 - 38,969,364,735) from 1990 an additional sequence to Wagner's opera Parsifal written by the composer's assistant Engelbert Humperdinck. This short sequence was designed to be added and played in a loop, to extend Wagner's music at a change of stage sets that continuously proved taking too long, the music ending up too short. By using this loop together with a system of prime numbers and applying it to instrument by instrument, the printed score (which consists of only a few pages) will when executed extend over 39 billion years – three times longer than the estimated age of the Universe. "In some ways it is a musical joke", says Graham. "To me it redeems itself only because it is a joke of cosmic proportions".[3]

Somehow parallel to Juha van Ingen's ASLAP is the Japanese artist Tatsua Miyajima's LED based number sculptures and installation. In these works, the numbers keep changing, while intentionally omitting the number zero. Although Miyajima's works change, and have an intention to last "forever", they don't develop over time. They will appear very similar over time. It is probably easier to link ASLAP to conceptual artist On Kawara's series of paintings Today (from 1966 until the artists death 2014) where he painted the date of the day meticulously on a canvas, and his One Million Years (conceived in 1969) where a million years preceding the date of the conception of the work are listed, as well as a million years following the same date. This work exists in printed form and is frequently also performed in readings. In it's minimal aesthetics, ASLAP reminds of Kawara's Today series, while having less in common with its concept of registering the passing of time and places – the latter indirectly by the choice of different languages, depending on where Kawara made the paintings. Contrary to both these works, ASLAP is not a work relying on a specific physical object (paintings or books), nor on the human interaction with it, and neither is it tying itself to any given place or space.

One distinct difference between ASLAP and other enduring digital artworks, is that it already exists in its totality. It is not waiting to be executed. It is like a nuclear deposit, or a sculpture sunk into the abyss of time. It is a digital Stonehenge, primitive in form, intended for eternity.

GIF is an image format of almost antediluvian age on the Internet, as it was launched already in 1987. It is versatile and reasonably simple by means of programming, if not necessarily in terms of usage. It might not be the best of applications developed since, but it has the enormous benefit of being free of charge to use. With Flickr, Tumblr, Instagram and other recent social media, it has regained momentum after a period of decline, and also has a great application as used (at least in the period around 2015) in the little squares showing very short animations or just brand or institutional logos on the margins of various web magazines and home pages.

In the digital art world as well as the tech savvier parts of printed and digital media, ASLAP has raised more attention than within the wider art world. This is most likely due to the lack of art institutional support; instead the project has created a buzz outside the art circles. True, Hyperallergic art magazine was the first to acknowledge the unusual quality of ASLAP. "The work turns eternity into a composition, unraveling the dimensions of time into chunks we can

3   Alice Sanger, "Rodney GrahamParsifal (1882 - 38,969,364,735) 1990" on the Tate homepage; http://www.tate.org.uk/art/artworks/graham-parsifal-1882-38969364735-t11933/text-summary. Read 29.10 2015.

comprehend while also invoking questions of digital decay", writes the contributor Claire Voon.[4]The attention so far is astonishing, as it is given to a work which does not yet exist in its final version, and whose prototype so far was seen only by the few taking the extra steps to one of Helsinki's smallest and most idiosyncratic galleries, Fish, on their rare opening hours.

Then I saw an angel coming down from heaven, holding in his hand the key to the bottomless pit and a great chain. And he seized the dragon, that ancient serpent, who is the devil and Satan, and bound him for a thousand years, and threw him into the pit, and shut it and sealed it over him, so that he might not deceive the nations any longer, until the thousand years were ended. After that he must be released for a little while.

Then I saw thrones, and seated on them were those to whom the authority to judge was committed. Also I saw the souls of those who had been beheaded for the testimony of Jesus and for the word of God, and those who had not worshiped the beast or its image and had not received its mark on their foreheads or their hands. They came to life and reigned with Christ for a thousand years. The rest of the dead did not come to life until the thousand years were ended. This is the first resurrection.

The Book of Revelation, 20: 1-5

In Robert Musil's huge novel The Man Without Qualities, an important element in the fiction is the preparations for the 70-year anniversary of the Austrian emperor due to occur in 1918 – as this coincides with the 30-year anniversary of the German emperor, the event is secretly labelled "The Parallel Action". For some in the inefficient and generally useless festival committee, the occasion will be an opportunity to leap into a new Millennium, a Utopia built on the greatness of the Austrian-Hungarian Empire. We know from the history books, that this year proved instead to be the end of that same empire. The Millennium realm later discussed in Musil's novel is a vision of selfless mysticism on a much more individual level.

ASLAP will officially be "unveiled" in 2017, on the 30-year anniversary of the GIF file, and the centenary of Finnish independence. This is certainly a "Parallel Action" of memorable standing. The ironic gesture is obvious, but still intriguing: will there be a humanity in 1.000 years, or a nation called Finland, or GIF files, or technical platforms familiar with any such formats? Will there be an ASLAP there for future generations to enjoy? If so, what a venerable piece of work, having absorbed all that time, all the fateful events passing through the ten centuries, the thousand years, the more than 48 million frames having moved ahead one by one without a sound, only to be restarted for yet another millennium round.

In Christian Millennialism, it is usually assumed that the Millennium realm is either the preamble to the return of Christ, or its aftermath. Hitler's Third Reich was yet another variation on this dream of a world perfected. The Marxist's claim that the revolution will lead to a benign dictatorship of the proletariat and the subsequent state of Communism is certainly a version of these utopian and escapist visions of untroubled futures.

But imagine the future really being untroubled – by humanity? Imagine a world where nothing human exists anymore, apart from peculiar remnants like the mysterious black monolith of

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4   Claire Voon, "The 1000-year GIF" in Hyperallergic, September 21, 2015; http://hyperallergic. com/237627/the-1000-year-gif/. Read 29.10 2015.

Stanley Kubrick's film 2001: A Space Odyssey (1968). The dystopian trope of an Earth without the presence of humans is one which over time will gain increasing credibility, simply because it is unlikely that our species would be exempt from the fate of most other species of higher order the day the Earth is hit by a comet – if not extinct already by its own means. But before that has even happened: will our current civilisation be remembered by anyone, even by our own species in, say, only a couple of thousand years' time? We know of numerous other civilisations only through what's been preserved in physical form: majestic temples, inscriptions on stone or clay, brittle papyruses, objects from metal or stone, the occasional organic specimen preserved by almost miraculous coincidences. We find entire cities buried under the ground, dating no further than 1.000 years back, and still being forgotten about. They certainly had written documents, maybe archives, but our longstanding preference for paper, vellum and similar materials – rather than more enduring materials like metal, stone, glass or clay – means we miss records for the communities of our own ancestors dating only 25-30 generations back. What will be left of a culture that finally digitized most of its knowledge and its communication? That only rarely inscribed any messages of importance onto materials more solid than paper?

The pyramids were certainly meant to preserve for an afterworld (Earthly or Heavenly) the remains of the Egyptian Pharaos and their most important property, rulers of the most powerful and developed culture in the Western world for more than 2.000 years. Only a few centuries after its final decline the understanding of the Egyptian hieroglyphs was gone. It took yet another 1.500 years before the hieroglyphs were deciphered again. What will happen to our alphabet, our languages over time? Oblivion is almost certain. We can see how technical platforms and "languages" are invented, flourish and disappear with increasing speed. Walkmans, VHS tapes, Hi8, MiniDV, Laserdiscs, short lived video discs, a variety of cables designed to transport digital information, etc. have found temporary rest in cardboard boxes in basements, attics and garages while waiting to be brought to the nearest waste separation station. Who can handle our digitized information in a couple of thousand years' time – or maybe just a century ahead? Of what use will a GIF file be?

Inspired by the pyramids and the spectacular findings of archaeologists in the beginning of the 20th century, modern efforts have been made to preserve our civilisation – or at least a selection of its artefacts. At Oglethorpe University in Brookhaven, Georgia (USA), a "Crypt of Civilization" was built in the years 1937 to 1940, filled with a myriad of books, images and objects considered representative of our modern culture and finally sealed with all due precautions to ensure its content wont be destroyed by neither decay nor disaster. It is intended to be reopened in 8113 – based on a calculation assuming that the earliest fixed date in the Egyptian calendar was in 4241 BC, and extending this distance in time symmetrically into the future from 1936.

By 1970 the crypt had already been virtually forgotten, but a new interest came in the years around the most recent new millennium and a trust has been formed to somehow warrant its preservation.[5]

5   Oglethorpe Crypt of Civilization homepage; http://crypt.oglethorpe.edu. Read 29.10 2015.

Numerous "time capsules" have been created before and since – most notably the 1939 Westinghouse Time Capsule that also coined the expression time capsule (though originally called "Time Bomb"). But a distinction needs to be made: some time capsules are made for the future of our own civilisation, others are meant for the posterity of it, when it is lost and forgotten about. In a way, this expresses almost contrary views of the future. The founder of the Oglethorpe Crypt of Civilization, Thornwell Jacobs, addressed the future explorers of the crypt with the words: "The world is engaged in burying our civilization forever, and here in this crypt we leave it to you".[6]With a world on the brink of war (but which had not yet witnessed its climax, the atomic bombs on Hiroshima and Nagasaki), Jacob's concern is understandable.

A totally different expectation is expressed in a more short-lived time capsule found in 2012 in Vulkanny, Kamchatka (Russia). It was planted under the foot of a Lenin sculpture on 15 July 1979 in what was still the Soviet Union, greeting the "Socialist society in 2024":[7]

> "We say to you, who will join us in 45 years, … let your character be courageous. Let your songs be happier. Let your love be hotter. We do not feel sorry for ourselves because we are certain you will be better than us," the message says. "Improve the world and yourself in the name of communism, as Vladimir Ilyich Lenin taught us, as the Communist Party teaches us! Lenin is always with us!"

Time capsules like Crypt of Civilization are intended to overcome time. The 10.000 Year Clock being realized by the Long Now Foundation inside a mountain in Western Texas is a different story, as it is all about hanging on to time. This huge mechanical clock is designed to be rewinded by the occasional visitor – but if visited by no one, it will source the energy needed by other means. In one sense it is an optimistic work (just as its makers claim) as it will keep measuring time, and play its ever-changing chimes for us and for our descendants. But it will assumedly continue to measure time even without humanity present. It might have a rendezvous with posterity, without humanity attending.

The certainty that future generations will be better than our own may be in decline today. But nevertheless, the importance of a time capsule increases with the time it travels. For a long time, the importance will mainly be anecdotal or sentimental – like for the whisky bottle and newspaper from 1894 retrieved inside the foundation of a bridge in Kingussie, Scotland, in August 2015.[8]

Also ASLAP will gain increasing importance, while simultaneously the likelihood of its survival decreases. In a way, it exists and is realized already in its programming status, as a file. Like a folded blanket, it remains a blanket also while folded, but it is affirmed in its totality when unfolded. ASLAP, in its current form, is folded time. When playing, it will unfold over the great plains of future, from the tiny platform of a GIF file.

6   Quoted after "Crypt of Civilization" on Wikipedia; https://en.wikipedia.org/wiki/Crypt_of_Civilization. Read 31.10 2015

7   Unsigned, "Time Capsule Found Under Lenin Statue" in Moscow Times web edition 20.6 2012; http://www.themoscowtimes.com/news/article/time-capsule-found-under-lenin-statue/462327.html. Read 31.10 2015.

8   Unsigned, " 121-year-old time capsule found at bridge near Kingussie" in BBC News 26.8 2015; http://www.bbc.com/news/uk-scotland-highlands-islands-34054847. Read 1.11 2015.

16.   Exhibition view of ASLAP in ARS17.

17.   The hexadecimal code of the ASLAP frames which played during the ARS17 ehibition.
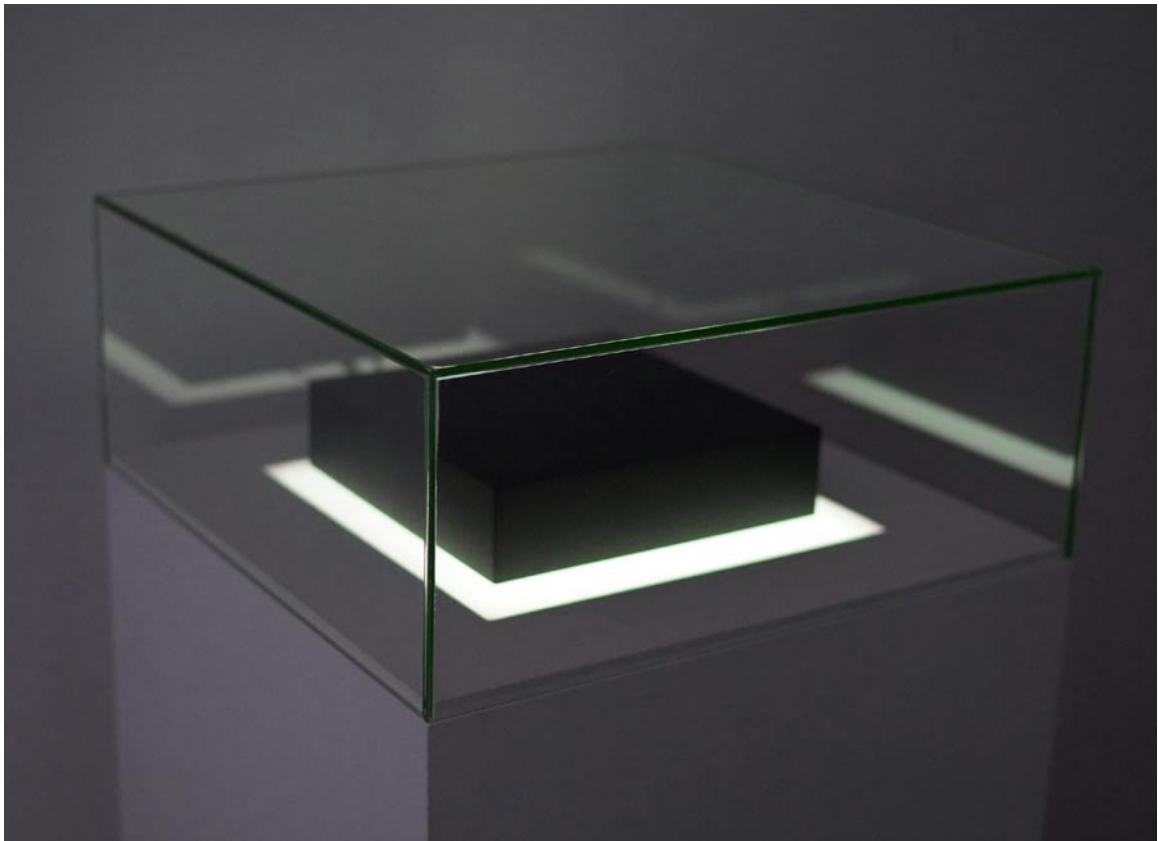
18.   The ASLAP time capsule is on its way to the storage of The Art Museum of Estonia.

19.   The ASLAP playback unit in the ARS17 ehibition.

AS Long As Possible
100(0) years of time-based media

Sanneke Huisman, Gaby Wijers and Jan Robert Leegte

Over a hundred years ago, the Russian avant-gardist Kazimir Malevich (1879–1935) painted a black square on canvas and in doing so caused a revolution in art. His Black Square (1915) can be considered both as complete abstraction and the absolute reduction of painting. On the other hand, the opposite is also true since the black painted square on the square canvas is inclusive: it implies all the possible images that could have been the subject of this painting. It is simultaneously the ultimate celebration of painting and its death because Black Square rejected a contemporaneous principle of painting: illusion.

It is hard not to think of this groundbreaking abstract image when confronted with Juha van Ingen's AS Long As Possible (2015), a GIF animation consisting of a vast series of numbered black screens that will unfold over a period of 1000 years at approximately one per ten minutes. The series of animation frames, 48 million in all, featuring white numbers on a black background, will never be interrupted and, through its continued perpetuation, it constitutes the 'ultimate' or at least most extreme GIF. However, AS Long As Possible also contradicts the experience of a GIF. A GIF animation is a rudimentary graphics animation file format, with a given range of medium-specific properties. Rather than using the GIF to show a short looped action, Van Ingen distils the format, showing an extremely slow sequence of numbered black frames that loops after 1000 years. Van Ingen's materialising of an online concept is closely linked to a core element of Post-Internet Art. The internet was its main tool and source of inspiration, but its outcomes were shown in a wide variety of contexts. After an initial period of experimentation on the net, this art movement eventually found its way into the gallery space. Its practitioners translated the very principles and preoccupations of what they found online into sculptural installations.

The screen, the main element of AS Long As Possible, is sunken into a wall and backlit, thus emphasising its staging. The GIF is transformed into an experience – a place for contemplation. Again, a striking similarity with Black Square comes to mind. Malevich openly referred to the Russian Orthodox Church by placing his painting in the place traditionally reserved for icons. By hanging his revolutionary painting in a high corner of the exhibition space, he gave his work an iconic status both literally and symbolically. A similarly loaded feeling is roused in the presentation of van Ingen's work. As well as the screen, AS Long As Possible also consists of six synchronised black boxes, the physical playback units purposed with playing the GIF animation for an eternity.

These playback units, of which only one is presented in the installation as a monochromatic container, refer to the black box as used in computer engineering: a device, system, or object that transforms input to output without revealing its working. Not only are the units in AS Long As Possible metaphorically black, they similarly hide the inner workings of the piece. A striking resemblance can be found with another classic box, Robert Morris's Box with the Sound of Its Own Making (1961) in which the box hides the mediatisation of the narrative of its making. The narrative explains, through sound, the construction of the

box; its endlessly looping tape player is hidden from view, just like the carrier of the GIF. Whereas Morris's work comments on the making of the box, and less so on the remediation of that narrative (audio recording), in AS Long As Possible, the material, the GIF itself, is the subject, thus the medium is stripped and performed. This brings another GIF to mind, Olia Lialina's browser-based GIF Summer (2015), which is closely linked to van Ingen's AS Long AS Possible because they both push the boundaries of the GIF as a medium. Summer is an animated piece in which we see the artist swinging back and forth, basking in bright sunlight, on an infinite loop. The swing is hung from the location browser-bar. The animation's 18 still images are located on 26 different websites, with each site redirecting the browser from one server to the next, displaying the images in sequence, thus creating a cross-domain animation. The work is literally scattered across the internet, making it impossible to watch offline – the complete opposite of AS Long As Possible.

While the speed and rhythm of the image sequence of Summer depend on the internet infrastructure that supports it, the course of time and interval between the frames of van Ingen's piece are meticulously controlled. What connects both works is that they both highlight the fragility of time-based media. Just one connection outage or web page down would result in breaking Olia Lialina's piece. Technically, one server failure could mess up the synchronisation of slides and disrupt van Ingen's work too. Both works require precautionary measures to ensure uninterrupted, continuous playback. Van Ingen stores a duplicate of his work on six backup playback units. In the unlikely event that all of these units are destroyed or broken, the file can be reconstructed from a special time capsule that contains all the necessary elements to enable the work to run again: a description of the artwork, the specifications of the GIF file, the original file, and the required documents. Despite its eternal ambition, the technical difficulty confronting the presentation of AS Long As Possible highlights its fragility. With every slide, one may wonder if it will indeed survive for a thousand years.

In AS Long As Possible, the number on the screen continuously increases as time passes by, which brings us back to how Black Square is confronted with the test of time. Black Square has been unfolding for over hundred years now, which has not been without setbacks. The black painted surface has started to crack, revealing the under layers of paint that, surprisingly, consist of a diverse range of colours. These under layers of coloured paint were put there for a reason: to create a black as deep as it currently is. Over time, the cracks in the paint afford us an insight into the painting's origin while at the same time revealing its age. It is similar to how the counting numbers in AS Long As Possible make us more aware of the work's concept. Time plays an indispensable role, conceptually as much as actually. Over the course of time, the core of a work, event, or experience can sometimes appear with more clarity.

AS Long As Possible **from a conservation perspective, Part I:**

On restorability

Cécile Dazord

In the restoration field, more often than not, practice comes before theory. *De facto*, the theoretical foundations of this field are quite circumscribed, since they are essentially based on a single reference: Cesare Brandi's *Teoria del restauro*, published in Italy in 1963 (translated for the first time into French in 2001 and in English in 2005). In terms of the conservation of contemporary works of art and, in particular, those subject to obsolescence, we have at our disposal, at best, conference abstracts and study days, which act as so many addenda to this theoretical base – elaborated exclusively from and for the traditional fine arts –; but no approach, not even the most concise and systematic, has thus far been capable of improving upon, let alone replacing it.

In the first pages of his *Teoria del Restauro,* Brandi refers to a distinction made by John Dewey between the identity or the potential unity of a work of art (which he classifies as universal) and its recognition or aesthetic experimentation (which comes from individual experience) – thus parenthetically elaborating the concepts of universality and pragmatism:

> « A work of art, no matter how old or classic, is actually and not just potentially a work of art when it lives in some individualized experience. As a piece of parchment, of marble, of canvas, it remains (subject, however, to the ravages of time) self-identical throughout the ages. But as a work of art, it is recreated every time it is aesthetically experienced.[1] »

This idea that the recognition of an object as a work of art is indispensable, the *sine qua non* and a prerequisite to any restoration treatment, is widespread. Frequently evoked in literature on the subject, although without further explanation, it has become a rhetorical expression, even a platitude: There is little doubt that a work of art must be perceived as such for it to undergo restoration treatment...

However, Dewey's assertion is particularly relevant in the context of contemporary art, because the very notion of a contemporary work of art – identifying what makes it so – is inherently problematic. Let us recall that contemporary art appeared and was termed as such by historians and critics and by the designation of institutions devoted to it in the 1960s and 1970s. One of contemporary art's main characteristics is its refusal of any kind of limits or rules in terms of materials, supports, techniques, styles, methods or approaches. In this, it positions itself as breaking with the traditional fine arts – even if the rejection of academicism and the ambition to explore an infinite number of possibilities were already in place in the early twentieth century, in the art and manifestos of the avant-garde.

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1   Cesare Brandi [citing John Dewey, *Arte come esperienza, La nuova Italia, Florence,* p. 130] In *Théorie de la restauration*, École national du patrimoine, Monum, Éditions du patrimoine, French translation from the Italian by Colette Deroche, 2000. English translation of Brandi, "Theory of Restoration" by Cynthia Rockwell, rev. Dorothy Bell, Ed. Nardini, Florence, 2005, cites the original text from John Dewey's *Art as Experience,* 1934, which was originally presented in the form of lectures at Harvard University in 1932.

The designation "contemporary art" remains prevalent today; it therefore has a longevity that seems exceptional (a good half-century), if not debatable – in a context that, quite the opposite, is influenced by the diminishing of products' lifespans, due to the combined phenomena of technical innovation, of trends and of the constant and widespread increase in production and consumption.

Since the early twentieth century, with the first collages or readymades, the artisanal nature traditionally inherent in art has been seriously put to the test by the fact that works of art are progressively integrating more objects and processes produced industrially in series. The uniqueness and non-repeatability intrinsic to works of art enter, in a sense, into contradiction with the multiple nature of serial objects, and with the coexistence of identical and replicable occurrences within a same series or generation. The characteristics of serial objects include their limited lifespan (in engineering terms, "product life cycle" or "product life-cycle management") as well as the need to renew their consumables (if they are to be put into use) and a utilitarian vocation - characteristics radically different from works of art that, to be integrated into the domain of heritage conservation, must fulfill several categorical imperatives: inalienability, authenticity, integrity, identity. Ethical issues in restoration, inherently based on the irreducible uniqueness of a work of art, of its materials and its permanence, become profoundly confused by the system of industrial objects. A very important and stimulating challenge in the conservation of contemporary artworks consists of studying the explicit articulation between two regimes of artifacts that appear to be utterly opposed, without one's "mode of existence" (as Simondon referred to it) taking precedence over the other's.

Utilizing a classical *distingo* between "type" and "occurrence," Luc Boltanski and Arnaud Esquerre specify the distinction between object and work in terms that will likely shed light on this subject in the field of heritage conservation:

> « One must first of all consider that one thing can be reproduced by being presented, analytically, as 'without difference' from another. This possibility is embodied by two pairings, one 'prototype vs. specimen,' the other 'original vs. copy.' Distinguishing these two pairings is necessary in that we consider it possible for something to be both prototype and specimen when it is a 'unique piece,' for example while it cannot be said that something can be both an original and a copy[2].» (pp. 176)

Even before the experiments by avant-garde artist in the early 1900s, an intimate connection between image production and machines began in the nineteenth century, first through photography, then the cinematograph. In 1859, twenty years after Arago's speech on daguerreotypes to the Chamber of Deputies, Baudelaire's virulent diatribes explicitly repudiated the mechanical art of photography:

> « In vain may our modern Fatuity roar, belch forth all the rumbling wind of its rotund stomach, spew out all the undigested sophisms with which recent philosophy has stuffed it from top to bottom; it is nonetheless obvious that this industry, by invading the territories of art, has become art's most mortal enemy,

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[2] Luc Boltanski, Arnaud Esquerre, *L'enrichissement, Une critique de la marchandise,* Paris, Gallimard, 2017, p. 176. Translation from the French by Laurie Hurwitz.

and that the confusion of their several functions prevents any of them from being properly fulfilled. Poetry and progress are like two ambitious men who hate one another with an instinctive hatred, and when they meet upon the same road, one of them has to give place. If photography is allowed to supplement art in some of its functions, it will soon have supplanted or corrupted it altogether, thanks to the stupidity of the multitude, which is its natural ally. It is time, then, for it to return to its true duty, which is to be the servant of the sciences and arts— but the very humble servant, like printing or shorthand, which have neither created nor supplemented literature.[3] »

Whether scorned or praised, photography's mechanical aspect gives it a marginal status. Film historian Christophe Gauthier refers to and expounds on a phrase by Robert Mandrou in his article "*History et Cinéma*," published in 1958 in the academic journal *Annales*, of which Mandrou served as secretary:

> « "An art that is more than an art," the formula is fortuitous in that it expresses so acutely the difficulty of grasping the modalities of expression – and diffusion – of the cinematographic spectacle, the ambivalence intrinsic to cinema, which is capable of producing works of art but which is also an industry [...] [4]»

At present, however, photography has obtained a heritage status, as evidenced by its increasing presence on museum walls, the high prices it attains on the art market and, since the 1980s, the use of the term "fine-art photography" (in French, "*photographie plasticienne*"), – the addition of the modifier specifying that some photographic production can indeed be called art in its own right. Photography and cinema have become academic disciplines, beginning notably with the prism of semiotics and the writings of Roland Barthes and Christian Metz in the late 1960s. Theory, history and, to a lesser extent, photography and film practice are now ubiquitous in higher education. Cinematheques, which first appeared in the 1930s, have definitively patrimonialized film, which is also very present in museums, on their walls and in their departments. Finally, art institutions, the art market, art criticism and the history of art certainly appear to have assimilated the place of the machine in contemporary art, as evidenced by the critical success of readymades, Pop art, Op and Kinetic art, video art, digital art, etc.

While the correlation between art and industry now seems to be accepted by institutions for the preservation of cultural heritage, the same does not apply from a conservation and restoration viewpoint. Although photography was included relatively late in the restoration field compared to the fine arts, it has been acknowledged since the 1980s. This has not been true of cinematographic film, for which restoration (in particular the training field) still remains outside the perimeter of conserving and restoring cultural heritage. Starting in the 2000s, different ways of addressing the specificity of contemporary works in terms of conservation and restoration have multiplied

3   "*Le public moderne et la photographie*" (The Modern Public and Photography) by Charles Baudelaire (1821-1867) is the second section of his Salon of 1859, published in the *Revue française*. This version comes from the translation in Jonathan Mayne (ed), *Art in Paris: 1845--62*, London: Phaidon, 1964, pp. 151-5.

4   Christophe Gauthier, "*Le cinema : une mémoire culturelle*" (Cinema: A Cultural Memory), 1895. *Mille huit cent quatre-vingt-quinze* [online], 52 | 2007, online September 01, 2010, consulted July 12, 2018. URL:http:// journals.openedition.org/1895/1012 DOI: 10.4000/1895.1012 Translation from the French by L.H.

– in the form of networks (more or less formal), conferences, study days, diverse publications and the establishment of dedicated departments in institutions[5]. The diminishing lifespan of products in the digital economy and the unprecedented acceleration of the turnover rate have awakened awareness of the need to address the conservation problem of objects threatened by obsolescence in an artistic and heritage context. Reversing the order of precedence in terms of historical chronology, professionals have primarily focused their attention on the most recent techniques – new media, new technologies or digital technologies.

While the conservation challenges posed by technical objects and the phenomena of obsolescence have been partly identified, the deontology is nonetheless far from being clearly established. In practice and in ways of thinking, the patrimonialization of objects or works that incorporate industrially produced artifacts or devices does not automatically make them eligible for restoration treatment; numerous epistemological obstacles remain. To return to Brandi and the assertion that the recognition of a work of art as such is a prerequisite for restoration treatment, if we reverse the phrase by inverting the terms used in his model – and thus identify something not based on its recognition *a priori* (or not) as a work of art in order to legitimize restoration treatment; but *a contrario*, base it on acknowledging (or not) *a posteriori* restoration treatment, which in formal logic is called a contraposition –, we perceive the great strength of his argument. *De facto*, in terms of contemporary art, photography, cinema or any form of artistic creation linked in some respect to industrial production, the issue of a restoration treatment's legitimacy often conceals an implicit argument about the status of the work in question. Conservation and restoration in this sense reveal that the perception of a work of art is still strongly resistant to incorporating serial objects, and remains deeply rooted in the traditional fine arts.

The mundane and trivial nature of objects produced in series, and the absence of the artist's hand or gesture, are often weighed against what is deemed to be the disproportionate cost of possible restoration treatments. This reflects an enormous confusion between a work's production cost and its market value – betraying an implicit tendency to perceive artworks based on the preciousness or rarity of their materials and the virtuosity of their execution.

Due to their original vocation as utilitarian and functional, one might consider that industrially produced objects are interchangeable (with something identical), substitutable (by an equivalent) or reparable (able to be restarted, regardless of the means and modifications introduced), without any type of forethought or analysis. However, if in the end such objects are standardized, their current uses in art – *a fortiori,* decontextualized, often subverted – are countless. It is precisely this aspect that must be identified and described in an approach rigorously informed by restoration ethics. For example, objects can be integrated into a work of art in a new or used state; they may be contemporaneous with, anterior to or older than the work into which they are incorporated or, on the contrary, they may be anticipatory in nature. They can be used as industrial products, specifically developed to adapt to an artistic need but with technical means

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5   The Variable Media Network, initiated by the Daniel Langlois Foundation in Quebec (and the Guggenheim Museum); the INCCA (International Network for the Conservation of Contemporary Art); the Cultural Heritage Agency in the Netherlands; and the Matters in Media Art website, a project of the New Art Trust, founded by private collectors in California, have largely contributed to this trend, which essentially began initiated with the formation of these groups. (Cf. http://www.variablemedia.net/, https://www.incca.org/, http://mattersinmediaart.org/)

and engineering tools; or, in contrast, they may be self-produced or tinkered with by artists with a "do it yourself" approach, etc.

A prevailing trend is to perceive contemporary works as reducible to an intention or concept – their materiality coming in second; an analogous trend is to perceive information technology as confining itself to a code or a set of dematerialized data likely to migrate indifferently, in keeping with technical evolutions. Contemporary works that incorporate processes related to information and communication technology fall even more under the scope of this paradigm. This approach is tantamount to seeking constituent elements that could be isolated and differentiated from all environments, settings or technical systems or, more generally, distanced from the passage of time. This approach satisfies *a priori* the demand for an artwork's permanence, as dictated by the inalienability in the context of cultural heritage preservation; it also satisfies a common bias in the conservation of contemporary works, that they remain contemporaneous – that is to say, that they be updated in a historical and continually renewed present – in a way, post-human. "If the artist were alive today," one commonly hears, "he would use such a technique..." This type of approach ignores the fact that technical objects are part of a technical system or milieu - in other words, a historical context that is dated and circumstantial (circumscribed) – and that, in this sense, they are vectors of a history that is independent of any artistic intentionality.

Conservation and restoration inevitably engage in negotiation with the passage of time and are caught between the archaeological and philological requirement to maintain works *dans leur jus* (in their original state) and the necessity to adapt to material and technical circumstances. Today, in theory, one can still project photochemical film; but in practice, films are increasingly being shown in digital versions – photochemical film is essentially relegated to heritage institutions (cinematheques or museums). The ethics of the discipline reside and are carried out in analyzing, debating and documenting the choices that are made. Just as the temporal regime of literary translations, which are continually being updated, remains distinct from that of the translated works, conservation and restoration treatments must be continually reconsidered.

In terms of temporality, the combined action of cultural heritage institutions and of the art market contributes greatly to confusing the matter – by inscribing works in a limitless temporal perspective and by giving them increased value in an economic context marked, in contrast, by a steady decline in their expected lifespan and in the value of commonplace objects – as perceived by Luc Boltanski and Arnaud Esquerre:

> « An industrial product always has as its future, in the medium- or long-term, becoming *rubbish*." [...] A majority of the things we admire in galleries where precious collections are exhibited or in museums, if not all of them, as anthropologist Michael Thompson suggests in his seminal book *Rubbish Theory*, were, at one time or another treated like rubbish. More generally, the most relevant things in an economy of enrichment can see their price increase over time, in keeping with a reverse movement of that which affects industrial products.[6]»

6   Luc Boltanski, Arnaud Esquerre, *Id*., Paris, Gallimard, 2017, p. 67. Translation from the French by L.H.

While in the 1970s, artists related to the Institutional Critique movement perceived museums as morbid microcosms that they were striving to avoid, *ASLAP* embodies an inverse tendency, one in which the museum – the need for conservation and restoration dictated by the inalienability of works – acts as a safeguard against the "becoming *rubbish*[7]" of artifacts destined to comply to the uses of the moment, in a present incessantly renewed and updated or, failing that, permanently frozen as *vintage* objects, the memory of a bygone past. Introducing the technical part of a work of art into restoration treatment leads above all to analyzing the modalities of integrating the technique into the work – what the technique does to the work, what the work does to the technique – in order to document, preserve and best translate the interaction from a historical and technically informed perspective.

7   Ibid.

AS Long As Possible **from a conservation perspective, Part II:**

The role of format in the conservation of digital artworks: ASLAP and the GIF format

Alexandre Michaan

On November 5, 1999, an unprecedented event marked the world of computer programming and emerging Internet culture: the "Burn All GIFs" Day. Standing in front of the Unisys company headquarters in San Francisco, developers and users fighting for free use of the GIF format – grouped together as the "League for Programming Freedom" after a call for participation on online discussion sites – protested by burning printed versions of GIF files on paper, thus symbolically destroying them.

This event was the culmination of a remarkable episode in the history of file formats and Internet culture, frequently referred to as the "GIF controversy,"[8] which lasted until 2004, when the patent threatening free usage of the GIF format finally expired. This patent was the direct cause of the 1999 protests, since although the GIF format had long been available free of charge (for nearly ten years), following the sudden announcement that users would be required pay a license fee; in fact, despite its ostensible freedom of use, the GIF format had since its invention used a patented compression algorithm. Today, the additional threat from this claim to tax the GIF is familiar to digital technology professionals: the risk of obsolescence accelerated by users' disinterest, the risk of a format's falling into oblivion when its community of users is forbidden to use it free of charge. In addition to the fact that "Burn All GIFs" Day mobilized the community of creators of online content – a community that at the time was thriving, and for whom the GIF had played a major role in their identity since the earliest days of the Web –, the event is extremely interesting in terms of the history of digital art conservation. It is the story of an organized reaction by a community of developers and users fighting against the very logic of proprietary format, a logic that is often associated today with problems of the obsolescence of formats in the context of research on digital conservation.

Such examples of formats, supports or techniques normally conditioned by industry, and that have survived thanks to the action of user communities threatened with their disappearance, can be found in other sectors relevant to the conservation of cultural heritage. One example is that of Polaroid photography, whose commercial production lines were shut down in 2008 when the brand officially decided to close the last of its factories devoted to the technique; thanks to the initiative of a small group of former Polaroid factory employees who bought back the necessary machines and restarted production on a small scale, the technique survived. Therefore, by proving through their success that the market still existed for instant photochemical photography, their actions influenced the preservation of specialized sectors in large industrial companies such as Fujifilm, faced with increasing demand for the technique; it even resulted in 2017 in the revival of the development of photochemical material for instant photography by Polaroid itself (which in the meantime, had completely shifted to digital) with the creation of the *OneStep 2* camera.

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8   *The GIF Controversy: A Software Developer's Perspective*; last revision June 20, 2004. Original text published January 27, 1995. © 1995-2003 Mike Battilana

In addition, the "Burn All GIFs" Day episode is just one link in a long, historical chain illustrating the GIF's unique and mobilizing character. Since its creation in 1987 by the CompuServe company, the GIF (Graphic Interchange Format) has been a striking example of the mechanisms of the re-appropriation and malleability of file formats so often found at work in the Internet culture. In fact, the main characteristics for which the GIF is known today – the ability to make animated images and to create an endless loop – are entirely absent from CompuServe's initial design; these were implemented later, and in part independently of the company at the format's origins. Initially developed to allow the encoding of color images in a simple, rapidly transferable file format (notably thanks to its data-compression algorithm, called LZW), the GIF – in contrast to other color formats from the same period, such as those used by MacPaint – only allowed animation by displaying a sequence of images as of 1989 and furthermore, did not acquire its looping function until 1995, thanks to a modification implemented by the Netscape navigator. It quickly became one of the most popular formats on the then booming web, but through an appropriation mechanism unrelated to its original owner CompuServe, and due to the interest users rapidly found in its broad spectrum of compatibility. Legible at the time as easily on an Apple IIGS as an Atari ST or a Commodore 64, the GIF became the ideal candidate for the initial stages of the World Wide Web which satisfied the increasing need for universal formats with wide-ranging compatibility and remained dissociated from any specific OS operating system. Thus displaying great freedom of use, the GIF format inevitably found itself at the center of controversy in 1994, when CompuServe announced that the image-compression algorithm it employed was in reality patented by Unisys - a company that, remarking the GIF's growing success, demanded users submit royalty payments and gave rise to the wave of protests that led to the 1999 protests.

After the Unisys patent expired in 2004, its renewed use in Internet culture quite quickly reflected the strength of its popularity[9] – so much so that today, it is certainly one of the oldest image formats still so widely used. In spite of the obsolescence that might have weakened its position, it succeeded in imposing itself on the scene – even on platforms such as Facebook, which, in 2015, although it previously considered the format too old and had not implemented a functionality to read GIF files – was obliged to add the option to its system to placate its users.

With *ASLAP: AS Long As Possible*, therefore Juha van Ingen did not choose a file format lightly; he did not choose it randomly, nor based on a simple technological contingency, ease of use or habit. On the contrary – he made an utterly conscious choice based on the specificities of the GIF format, specificities that largely surpass its technological nature and extend to issues that are historical and cultural and that relate to the collective psyche.

What the specific history of this format and its longstanding popularity show us, despite the usual constraints of obsolescence, is that this collective psyche of which the GIF is vector, does not involve only the particular aesthetics of the early years of the web and the first "memes," it also incorporates the fantasy of the durability of a format not subject to industry laws thanks to the action of user groups. Hearing Juha van Ingen talk about his work allows one to easily establish a link with this idea: "It's a very optimistic work, based on the fact that the next generations will take responsibility for it," he said in an interview at the Kiasma Museum of Contemporary Art in 2017. This aspect, fundamental to both the technical and conceptual understanding of his

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9   Steve Wilhite, the original developer of the GIF, even received a lifetime achievement award at the 2013 Webby Awards for creating this format.

work, is all the more palpable because the project of *ASLAP* itself, starting with its gestation in 2015, was conceived with the idea of "activating" the work's temporal process in 2017, on the 30-year anniversary of the GIF file. For this reason, the work's first physical iteration was installed and put into operation at Kiasma on March 28, 2017.

Even if *ASLAP* is far from an isolated example from a conservation standpoint, it is a particularly striking one: a very large number of digital works are dependent on their native format, so much so that it is impossible for them to be separated from it without seriously risking loss of their meaning or integrity. But today, digital heritage conservation strategies generally focus on the need for successive migrations, from carrier to carrier and from format to format, renewed at the pace of technological innovations and the phenomenon of obsolescence they bring with them. So how can we approach the conservation of a work such as *ASLAP*? And is it even possible to sustain such a project over time?

Because of the interdependence of the conceptual aspect of the work and its technical dimension – this interdependence also extends to its system in a broader sense, to its "installation" aspect – a conservation study devoted to a work such as *ASLAP* cannot be undertaken without considering a thorough inspection of all the elements of which it is composed, those that are purely technological (the playback and display devices[10]), as well as the accompanying installation elements (the framed digital photographs of certain images from the GIF file, the printed version of the source code of the GIF file), and, strictly speaking, the "content" (the GIF file itself, the computer environment and the reading program present in the memory of the computer).

The presentation in the installation of the source code of the frames of the GIF file played during the exhibition, printed on paper and presented in vitrines, is particularly interesting, in that it perfectly illustrates the need to understand the work in terms of the coherence between its various elements and the very format of the file it integrates. This is often the question at the very heart of conservation issues when dealing with digital-born works: to manage to associate in the same thought process, consideration for the work's conceptual aspect, for its digital "content" (here, the GIF file created by Janne Särkelä and reader software, specially developed for the work by Jani Lindqvist), and finally, for the materiality of the work as a whole, the perpetuation of one often being impossible without understanding of the importance of others. In the conservation of new media, we often observe that understanding the relationship among these elements - and in particular, the influence of the medium and/or the format on the work itself as it is received and perceived by the public – is the key to ensuring a work's durability in a way that respects its integrity.

10   Taking into account that these devices' nature, and thus the « technological form » of ASLAP, have already fluctuated depending on the installation iteration: the playback device –enclosed in a stainless-steel capsule designed by Juha van Ingen and crafted by Jukka Merta– have already evolved from a Raspberry Pi mini-computer, for the first 2015 iteration of the work, to a Mini Mac for the 2017 installation at KIASMA; and the display device from a 16:9 HD video monitor in 2015 to a projector beaming on a backlit black board in 2017.

ASLAP conditioned by its format? The specificity of the medium and its consequences in conservation

This interdependence between the work in general and the file format has, in fact, a major impact on the understanding of a work in heritage conservation, in that it is often the most difficult element to maintain in a situation of evolving formats and IT environments, and breaking the link it represents will always be synonymous with breaking with the work's coherence. In keeping with this idea, by imagining the work as a chain of components rather than just as simple content transferable from one medium to another, we quickly perceive that the veritable challenge in the conservation of this type of collection is to manage not to break this chain.

Hence in *ASLAP*'s case, a brief inspection of the work's technological aspect quickly reveals to what extent the work is constructed around reading the GIF file. As we mentioned earlier, in many ways, even conceptually, *ASLAP* represents a meditation on its own digital format. Exploring the way Juha van Ingen constructed the work reveals how greatly the work is shaped around the specificities of the GIF format itself, either by playing with its constraints or by subverting the habitual codes of its use (think, in particular, of the use of black and white and simple numbers, in contrast to the GIF's customary appearance, often deliberately kitschy and garish; and of the duration of the *ASLAP* file, in total contrast to the GIF's usual duration, which is extremely short).

Therefore, we might see several fundamental aspects of the work as coming out of a kind of "determinism by format": *ASLAP* was seemingly produced in such a way that it can only be implemented with the GIF, or at least with a file format that functions in an identical manner. This artwork could not have been conceived, for example, with a simple video file (the method most often used to replace GIF files on such sites as Imgur or Reddit, for instance, often utilizing MPEG4 files in a loop to recreate the impression of a GIF). Due to technical constraints, a video file of such duration would certainly represent a volume too large to be technically possible. Consequently, although one can imagine understanding the work "conceptually" through descriptions or explicatory documentation, it does not seem to be easily reproduced by any technological bias other than the GIF format. And in this, as is often the case, it is exceedingly dependent on the format's obsolescence.

One of the work's technical specificities illustrates perfectly this interdependent relationship between a file format and the understanding of the way the work was created: the number of images. In principle, the GIF is a file format made for image sequences in reduced quantity and very short in duration. As a result, the way this format was conceived implies that the display time of each image in its code has to be set in hundredths of a second. This element has a major effect on the format's limitations: it implies that the maximum time an image can be displayed is 655 seconds (slightly less than 11 minutes)[11].

11   The delays between each image are 2-byte unsigned integers and the unit is 100ths of a second. So the maximum duration in seconds is $(2 \wedge 16\text{-}1)/100 = 65535/100 = 655.35$ s, or about 11 minutes.

It is this maximum display time that formed the technical basis for conceiving the ASLAP GIF file, which conforms to the total number of images needed in order to create a loop whose duration equals 1,000 years – thus leading to a file containing 48,140,288 images[12].

The temporal limit of the GIF thus played a decisive role in the creation of the work and on the result: without having conserved information concerning the specificities of the file, understanding why the number of images in the sequence was decided as 48,140,288 would be impossible for a historian or researcher in the future.

As a result, although it may not necessarily seem impossible to imitate the behavior of the GIF file itself using other formats (as a sequence of still images appearing at a regular frequency), in reality such a method could potentially cause serious losses. As we have seen, without the GIF format, it would be difficult to access contextual historical information in order to anchor the work in a specific culture of GIF usage in digital art since the beginnings of net art – information necessary for a solid understanding of the work and its artistic and historical coherence. Moreover, the threat of obsolescence of the GIF file would also be joined by the risk of losses in the technological coherence of the work itself, which, if reprogrammed with a format other than GIF, would no longer make sense as a unique file. In terms of content, this is the very heart of *ASLAP*: a single file in a 1,000-year-long loop. As we evoked, this element is all the more important because today, the GIF is known and understood by the majority of the public, and therefore immediately identified in connection with the looping process, an aspect that is essential to understanding *ASLAP* [12]. This format is therefore not only ideal for the concept developed by Juha van Ingen, but it is also the format at the origin of the conceptual reflection that constitutes the work. Thus *ASLAP* is a typical example of a medium-specific artwork for which the disappearance of the medium inevitably implies the disappearance of all or some of the work's meaning. Accordingly, since then, from a conservation perspective, it is difficult to consider *ASLAP* as reducible to what one would be tempted to understand technically if we omitted the ensemble of its historical aspects and technical specificities – to a digital clock, that is, easily re-codable over time. In reality, we would be lulled into the illusion of respecting the temporal idea on which it rests, but while leaving out the complex multiplicity of its other aspects and the message it carries.

Conclusion

As one can now understand, it is difficult to give a concise answer or an ideal formula for the long-term conservation of a technological artwork such as *ASLAP*, and the question of the work's survival on the time scale provided by the artist, in order that the work be fully "deployed" – until the year 3017 for the duration of the first loop – is an extremely interesting challenge for the institutional world and in terms of the responsibility for conservation once the work has been patrimonialized. In a sense, since this challenge is itself inherent in the work, ultimately, the issues evoked in this text are intrinsically linked to the work's critical dimension, and consequently to the artistic intentions it conveys.

12   Each of these images is displayed exactly 655,09 seconds. This display time, slightly below the upper limitation of 655,35 seconds, was chosen so that the sequence could match as precisely as possible the 1,000 years total duration.

In this, *ASLAP* illustrates perfectly the challenge for the institutional conservatory model often associated with this type of work, since it requires not just the preservation of content disconnected from its "container," but on the contrary, the preservation of a crucial coherence between "content" and "container." This challenge becomes all the more complex since most of the approaches to preservation in the digital field prevalent today are based on preserving the "content," removed from their original "containers" and migrated regularly, as with computer-emulation strategies for obsolete software-based artworks, for instance. Especially since – if it is now widely accepted that technological obsolescence will always lead at some point to the need for migration of both hardware and software, as a result of the almost inevitable replacement of playback equipment –, various strategies are still being debated, often on a case-by-case basis. From integral hardware and software migration strategies (which rely on complete technological substitution, thus requiring re-coding to reshape content in new and different formats) to uniquely hardware migration strategies (consisting of running old, obsolete software on present-day machines using computer methods such as emulation), there is often no solution that excludes losing crucial information – be it aesthetic, historical or conceptual. Everything is a matter of compromise.

Thinking about the conservation of *ASLAP* therefore implies the idea of associating different approaches while making every effort not to abandon any of the works' fundamental aspects, neither the entire system nor the content and its particular format.

Translated from French by Laurie Hurwitz.

Cécile Dazord and Alexandre Michaan have been collaborating regularly since 2015, chiefly working on a study on cathode ray tube monitors in contemporary art, for which they are preparing a collection of writings on works threatened by technological obsolescence.

20. The KIASMA crew taking down the ASLAP installation after ARS17.

21.   ASLAP installation soon to be transported.
22.   The ASLAP loop silently playing in the collection storage of The National Gallery of Finland.

A MESSAGE FROM HUMANITY TO ITSELF

Kari Yli-Annala

In the late1980s' I started studying art at the Finnish Academy of Fine Arts. One day I visited an exhibition-event in the building: a group of three artists were moving their artworks and some other objects in and out of a room. At the door to the room there was a video camera that documented the process with a time-lapse-video with one second captured in every minute. The work was called OneManGroupShow and one of the artists was Juha van Ingen[1].

Van Ingen's specific attention to temporality is obvious in his works. The pasts and futures of memory, machines, formats and platforms to the material world are referred to by the processes of different speeds of consuming, preserving and decaying. His works tell us about the harsh irreversibility of time is something that we always must deal with. For example his single-channel video work (Dis)Integrator (1992) deals with this irreversibility through the material decay of the video-image. Deterioration is an integral part of any material process, and for Van Ingen the fragile and unstable VHS tape is a proper format to show that process.

Van Ingen was also one of the initiators in the series of 13 collaborative installments made by the artists group Industrial Situations (1993 – 1998). They were maverick exhibitions or events entangling with post-industrial technologies, the social systems of the art world and the strategies and tactics of the mediated society with more or less unconventional means[2].

Another project in which Van Ingen has been an active member is the still ongoing Forest Camp. The group of five Finnish artists started in 1998, and has since been faithfully following its strategy in making art: partly improvised anonymous collectivism. In all of the three collaborative projects the audience is invited to participate in the social use of technology. The approach might to some degree resemble curator Nicolas Bourriaud's concept of "relational art", by which he defined part of the 1990s art as "a set of artistic practices which take as their theoretical and practical point of departure the whole of human relations and their social context, rather than an independent and private space." [3]

However, according to Claire Bishop, relational art followed more or less the tendency of collecting cultural capital by giving the main role to the director-curator.[4] In retrospective Industrial Situations was more in line with the approach of independent and antagonistic artists-led practices described by Bishop, but it was also critical towards socially engaged art projects. The same applies also to Forest Camp.

1   Pontus Kyander: "Chronology". In *Marko Vuokola*, ed. by Pontus Kyander and Marko Vuokola. Garret Publications, 2018.

2   Kari Yli-Annala: "Pieni jälkiteollinen tuotanto – taiteilijoiden liikkuva kuva Suomessa 1992 – 1998". Kirsi Väkiparta (Ed.), *Sähkömetsä*. Finnish National Gallery/Central Art Archives, 2007

3   Nicolas Bourriaud: *Esthétique relationnelle*. Dijon, Les Presses du reel, 1998.

4   Claire Bishop: "Antagonism and Relational Aesthetics", *October Vol. 1 Issue 110, Fall 2004.*

In his personal oeuvre, van Ingen often examines the structural and functional systems of different media tools in close connection to the spectators' perceptive (or cognitive) systems and the social systems in the place of presentation[5].His art is made in the spirit of 20th century minimalism and system arts practices. There are repetition, geometric forms, monochromatism, existing technological systems in artistic use, and much attention is paid to the sensing of temporal processes. The spectator becomes a receiver, an inseparable part of the apparatus in question. This gives the spectator or audience the chance for an experience of being both inside and outside of "the box", without completely leaving it. The limits are set by the artist to reveal new dimensions of the everyday with the help of technological devices or even other, much simpler items. A good example of the latter is Van Ingen's Audiola (shown in Arnheim in 1993 and in Helsinki in 1994), a piece that foregrounds the aural territories in urban spaces. The audience wore black-painted swimming goggles and was instructed to go into different locations in the city to listen to the existing soundscapes of each place.

Audiola gives a new aural version of the question of the spectator's/audience's space, which became an issue in art after the invention of perspective in the Renaissance and was elaborated even further in the Baroque. The unconventional composition of Diego Velásquez's painting of the Spanish royal court, Las Meninas (1565, Prado Museum, Madrid), seems to situate the spectator at the same imaginary point where the king (or the painting being painted of the royal couple) seen in the mirror on the opposite wall is standing. It invites the spectator not only to engage in or travel inside and outside of the artwork, but to also think about his or her own absence and presence as a visitor in front of the artwork. According to James Elkins, Las Meninas is "monstrous" because of its ambiguity and the vastness of the interpretations that have been made of it[6].

In the 19th and 20th centuries, new industrial systems to produce and reproduce artworks made it possible to re-situate artworks and affected our relationship to them. New apparatuses and new art were born. In Marcel Duchamp's installation The Bride Stripped Bare by Her Bachelors, Even (La mariée mise à nu par ses célibataires, même, 1915 – 1923), also known as The Large Glass (Le Grand Verre), the spectator could see her own reflection together with the reflections of the other spectators arriving in the room. Also, "the bride" and "the bachelors" in the work seem to be engaged in some kind of wireless interaction. Linda Dalrymple Henderson has pointed out that the relation between wireless technology and longing erotic desire becomes even more explicit in a painting by Suzanne Duchamp from the same period, Radiation de Deux Seuls Éloignés (Radiation of Two Lone Ones at a Distance, 1916[7].

A similar kind of gesture of verifying the visitor's impact of the work was presented in the 20th century by artists and artist-engineers influenced by cybernetics and other system-based

5   *For instance, the extremely short video loops which he made in the early 2000s are repeated in such a rapid rhythm that they almost seem to be captured in some kind of a time prison.*

6   *James Elkins, "On monstrously ambiguous paintings". History and theory*, Vol. 32, No. 3, 1993. See i.e. Michel Foucault, *Les Mots et Les Choses*. Éditions Gallimard, 1966; Suzanne L. Stratton-Pruitt (Ed.), *Las Meninas*. Cambridge University Press 2002; Saige Walton, *Cinema's Baroque Flesh: Film, Phenomenology and the Art of Entanglement. Amsterdam University Press, 2016.*

7   *Henderson, Duchamp in Context: Science and Technology in the Large Glass and Related Works*, Princeton 1998, cited in Dieter Daniels, "Sending and receiving". *Tout-fait*, Vol. 1, issue 2, 2000 [accessed 24 Oct. 2018]. Available at: https://web.archive.org/web/20180913114739/http://www.toutfait.com/sending-and-receiving/

methods. The artists of the early period of video art made explorations with multi-channel "environments" (a term used by The Vasulkas), performances (Joan Jonas) or closed-circuit video surveillance systems in galleries (Peter Campus, Bruce Nauman) – as much a comment on technological control systems as a venture into totally new fields of the artists' own research. The practice of for instance The Vasulkas has always been about humans having dialogues with machines[8].

Van Ingen's art is close to these kinds of ideas, as they offer a relational position for the viewer to engage with the apparatus in question. Already in Audiola he prepared a place for the visitor as a receiver in the midst of the limitations and conditions of a partly pre-existing system, just as he did later in his pioneering net art works. One of them is Web-Safe (1999/2000), which consists of 212 web pages that open one after the other in an endless loop. The pages don't contain any images or text. The only content is the background colour, which is defined in the source code of each page and created by the web browser as the pages are viewed. The colours are from the Web-Safe-palette of colours, arranged in hexadecimal order which should look approximately the same in every browser and computer. The early computers displayed only 256 colours. When a color was unavailable, a different one had to be used. This led to attempts at making a standard color palette on 256-color displays. The most successful one included 216 colours. Van Ingen's use of 212 web pages each with their own web-safe color is explained in his website: "In Web-Safe the colours 00 33 FF, 33 00 FF, 00 FF 33 and 33 FF 00 are excluded from the 216 colour palette as testing revealed that Internet Explorer did not correctly render them on Windows (according to: Macromedia Using Dreamweaver 2 first edition 1998)"[9].

Web-Safe is an example of browser-based art, a sub genre of net art. Sanneke Huisman writes about how browser-based artworks can push the boundaries and show the fragility of time-based media in her article "AS Long As Possible: 1(0)00 years of time-based media", published on this occasion. Huisman brings into comparison Olia Lialina's browser-based GIF-animation Summer and van Ingen's ASLAP, his magnum opus so far.

In a later version, Web-Safe Re-Mix (2002), the artwork was unplugged and presented offline for an exhibition at the Arka Gallery in Vilnius. For the exhibition, the browser window was divided into four frames, each playing the 212 color loop from a different point. The image was projected on the gallery wall to produce new combinations of a seemingly endless colourscape. The system created by the changing colourfields gives the spectator permission not to process everything, and to contemplate the difference between the human cognition and the computer's "mind". Indeed, another net art work from the same period of working, Black & White (1998/2001), is described by van Ingen as "a small trip into the mind of your computer's processor" and a "reminder of the infallible structures of our times"[10].

Black & White is made of a loop of three webpages. The first page, containing only a white background color, automatically refreshes to a black page, which in turn refreshes to a page

8   Marita Sturken (Ed.), *Steina and Woody Vasulka: Machine Media. San Francisco: San Francisco Museum of Modern Art, 1996.*

9   *[accessed 24 Oct. 2018]. Available at: https://web.archive.org/web/20180304000319/https://www. juhavaningen.com/pages/websafe.html*

10   *Kari Yli-Annala, "On the Nature of the Artifact – Juha van Ingen's Art" [accessed 24 Oct. 2018]. Available at: https://web.archive.org/web/20180913114011/http://www.juhavaningen.com/pages/intro.html*

that divides the animation into two frames. Each loop duplicates the amount of frames until finally the browser crashes. The continuous process of endless divisions was expected to end up with a textural surface looking like an illusively unified field. However, because of the limited capability of the computers, the process "got frozen" and created images of rectangular black and white silhouette-like flat boxes in different formations, instead of infinite multiplicity of the divisions. However, van Ingen was fascinated with the results and printed the freeze-frame images out as singular pieces of artworks. He describes them as "minimalist abstractions of suburban cityscapes".

Van Ingen's original aim of Black & White filling the frame could almost be seen continuing in the video work Grid (silent video loop, dur. 8 min, 2014). In it a graticule from an editing program in the computer is layered again and again in the same frame by repeating it slowly on top of the previous layers. Since the laid rectangular graticules are not completely in sync, the stacked grids transform into a manifold or plane so thick with its layers that there seems to be no difference between it and a unified field. The difference lies with the chosen tools, and how the whole process has a very slow rhythm. Once again, the treatment of temporality is crucial in the realization of the work.

The video work (Dis)Integrator (1992) shows the found images of a man and a woman in conversation. The shot and a counter-shot of the two characters are taken from the science fiction horror film The Fly (1958), directed by Kurt Neumann. The couple is having an argument over the invention made by the man-scientist. The invention is a teleporter, which for him is like a television transmitting images. "Yes, but this is different", insists the woman. The short conversation is repeated over and over by copying it from one VHS-tape to another. With each generation it becomes more and more difficult to see the characters and hear the dialogue as the generation loss erodes the image and sound distinctively. Finally the appearances of the characters and the voices, reminiscent of a Studio Era Hollywood scene filmed with analog film technology, lose all of their colours, contours, contrasts and sounds and disappear completely into the noise of a magnetic video tape.

(Dis)Integrator reminds me of Alvin Lucier's seminal sound art work I Am Sitting in a Room (1969). In Lucier's work a recording of the artist's voice on an electromagnetic tape was played back into the very room where it was recorded, until the resonant frequencies of the room reinforced themselves over his speech[11].

The possibility to preserve sounds and images gives us an illusion of governing and taming time. But the formats are not eternal. The sculptural installation 1996 (Exhibited in Gallery Artina, Helsinki in 1995) is an another work that deals with VHS tape as an analogy to the flow of time. Consisting of unopened packs of VHS cassettes stacked together to form a minimalist sculpture installation, the work conceptualizes the duration of one year into one spatial object. The virtual duration of the work is 365 x 24 = 8760 hours. The "embalming" of the period of one year renders the duration as "mummified", or like a virtual break in time. The work can now be read as comments to the human tendency of building memorials and founding museums, where the fragments of recorded images from a lost time are collected, stored and exhibited. Made in 1995 and virtually containing the year 1996, it is also literally a work of the future at the moment of its making.

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11   *Alvin Lucier, Reflections: Interview, Scores, Writings 1965 – 1994. Edition MusikTexte, Köln 1995).*

Is 1996 a silent virtual resource of all the alternative directions, choices, developments that the events during the year 1996 could have followed, a ghostlike branch of bifurcated time? The ghostliness of the work grows and becomes more evident day by day as analog video technology grows older. The reconstruction of the work is much more difficult now, twenty years after its making. Since 1996 doesn't exist in any museum collection or gallery storage, and the VCRs of the world are being thrown away and disappearing, soon it will be impossible even get that many VHS cassettes anywhere.

When Van Ingen started his artist's practice in the 1980s, there was a sense of understanding that the white cube of the gallery space was confronted by a wildly expanding field of the new tools of the post-industrial era. So there was room for c-cassettes, home movies, polaroid photographs, photocopying machines, mail art and street arts like graffiti and breakdance. Yet the technologies are as mortal as our bodies. The Internet prophets seem to have given a misleading promise of the limitless archive of practices otherwise doomed to vanish from the world. Even net art works have to be preserved and maintained.

Leonardo Da Vinci's mural The Last Supper from the end of the 15th century has survived many centuries in spite of the experimental practice involved in his painting technique. When the work was finished its erosion had already started. However, because of the voluntary and sponsored maintenance by different human actors it has been preserved until present day. A different kind of example are Tony Conrad's Yellow Movies (1970's –). They consist of monochromatic cheap paint on a sheet of paper with a black frame. Yellow Movies have a temporal dimension since they will change color as time passes because of the effect of light and the material qualities of the paint. Here the temporality is inscribed as indefinite duration, and the concept of the movie is extended radically as well.[12]

What Conrad does to the concept of movie, van Ingen does to the GIF format in his most important work so far. The eternal GIF animation AS Long As Possible (ASLAP) has 48 140 288 frames which change in ca. 65 second intervals. This makes the total duration of 1000 years possible for the animation. "Because the work has a loop function, the animation is intended to play for ever", says van Ingen.[13]

In addition to this, and the several art projects of a very long, indefinite or endless length, ASLAP can be seen also a reminder of the project in the late 1970s, when NASA sent two space probes, Voyager 1 and 2, to deep space. They were equipped with recorded golden laser discs containing images, sounds and symbols as messages relating to life on Earth. There was hope that someday they might reach some alien civilization. Among the messages were spoken greetings from many nations to any possible intelligent life-form that the probes might encounter in the midst the infinity of cosmos.

12   *Tony Conrad, Yellow Movies*. Greene Naftali/Galerie Daniel Buchholz, 2009 and "Exhibition Spotlight: Tony Conrad's Yellow Movies" [accessed 24 Oct. 2018]. Available at: https://web.archive.org/web/20180709044842/ https://www.albrightknox.org/blog/exhibition-spotlight-tony-conrads-yellow-movies

13   The aspects of ASLAP as a time capsule and how it is related to other "longer than lifetime" artists projects are described by Pontus Kyander in his article "The Itch for Eternity" [accessed 13.9.2018]. Available at: https://web.archive.org/web/20180107164539/http://www.aslongaspossible.com/images/ASLAP_essay_Pontus_ Kyander.pdf

In the one-channel video Hello everybody (2018), Van Ingen uses the Voyagers' greetings as an important aspect in the work. The video consists of a one-shot video depicting blossoming cherry trees and people of different age underneath them spending cheerful and freewheeling time in a garden. The image is shot with a hand-held mobile phone camera which moves around slowly, engaging the viewer into fragility and happiness of the passing moment. The texts that you would expect to find from greeting cards appear over the image:

"Hi. How are you? Wish you peace, health and happiness."

"Good health to you now and forever."

Some of the texts reveal that the sender doesn't know the receiver of the greetings.

"Greetings to you, whoever you are. We come in friendship to those who are friends."
Finally it becomes clear that the greetings are not sent to people of our planet at all:

"Greetings to our friends in the stars. We wish that we will meet you someday."[14]

In the end of the video van Ingen reveals that the texts are English translations of the greetings spoken in different languages and sent in the Voyagers to deep space.

The last text in the video sounds more like farewell words of a performer: "Good night ladies and gentlemen. Goodbye and see you next time." Maybe there was at least a vague thought in the minds of the scientists who planned the Voyagers' trip that the messenger could outlive the human species altogether. The Voyagers will fall silent around 2030, once their power sources can´t produce any more energy for the equipment. Now it seems probable that the humankind will still inhabit the planet by then. Although the golden records in the Voyagers will remain functional for "at least a billion years" before "succumbing to erosion from micrometeorites and cosmic rays", the equipment to play them will be lost[15]. ASLAP, the eternal GIF animation from the dawn of the ancient digital era, will have a longer life, as a maintained message sent by humankind for itself.

14   "Greetings to the Universe in 55 Different Languages". [accessed 24 Oct. 2018]. Available at: https://voyager.jpl.nasa.gov/golden-record/whats-on-the-record/greetings/

15   "Their weakening radio signals, currently reporting on the surprisingly complex plasma bubble that surrounds the sun and marks the designated boundary between the solar system and interstellar space, are expected to fall silent around 2030, when the Voyagers' plutonium-powered electrical generators finally falter", wrote the producer of the Voyager Golden Record,Timothy Ferris, in the National Geographic in 2017. Timothy Ferris: "Why NASA's Interstellar Mission Almost Didn't Happen". National Geographic, August 2017 [Accessed 24 Oct. 2018]. Available at: https://web.archive.org/web/20180203150857/https://www.nationalgeographic.com/magazine/2017/08/explore-space-voyager-spacecraft-turns-40/

Cécile Dazord is a heritage curator. Since 2006, she has been responsible for contemporary art in the research department of the Centre for Research and Restoration of the Museums of France (C2RMF), where she specializes in the evolution of techniques and the phenomena of obsolescence as a conservation issue specific to contemporary works of art. The subject is discussed in particular through case studies regrouped in terms of technical issues: light sources (study of neons), audiovisual equipment or new media (study on cathode ray tube monitors), electric motorized movement (study in progress from a corpus of kinetic works of the 1950s and 1960s). At the same time, she is also working on a historical and critical reflection on the notion of obsolescence and on the technical aspect of contemporary works of art.

Laurie Hurwitz is an American-born curator, writer and translator based in Paris who works at the Maison européenne de la photographie, Paris, where she organizes exhibitions and manages the museum's video collection. She has written on photography and contemporary art for catalogs and magazines including ARTnews, Art & Auction, frieze, Metropolis, Connaissance des arts and Art in Print.

Sanneke Huisman (b. 1985) is an art historian and works as a freelance critic, writer and curator with a focus on contemporary and media art. She works for several cultural institutes in the Netherlands including the art magazine Metropolis M and the media art platform LIMA. At LIMA she initiated the programme THE LIMA COLLECTION and the exhibition series Cultural Matter. She has closely collaborated with many artists amongst which Raul Marroquin, David Garcia, Jonas Lund, Jan Robert Leegte, Olia Lialina, Julika Rudelius, Sefer Memişoğlu and Harm van den Dorpel.

Juha van Ingen (b. 1963) is a Helsinki based visual artist. Van Ingen utilizes various mediums in his works ranging from objects and spaces to moving image and sound. He often deals with processual dismantlement and re-construction replacing one process with another, decoding the contents of the medium he has selected and placing it in a new interpretative framework.

Pontus Kyander – is a writer and curator. He graduated with a Fil.Lic. degree from the University of Lund, Sweden. He was formerly the director of Trondheim kunstmuseum and Sørlandets kunstmuseum, both in Norway. He was as Public Art Manager responsible for programming and implementation of art in public spaces in Auckland, New Zealand, and a professor at Ewha University in Seoul, South Korea. Starting out as an art critic in the mid 1990s, he soon expanded into making documentary features on artists and developments on the global contemporary art scene for the national Swedish broadcasting corporation SVT. His

curating includes exhibitions like Nature of Man (1996), Waterfront (Kulturbro 2000), sur face (2001), Ernesto Neto (2002), From Dust to Dusk (2003), Seoul: Until Now (w. J. Lee 2005), Gustav Metzger, Work (2007), Entr'acte (2008), Super Structures (2009), Screaming from the Mountain: Landscapes and Viewpoints (2011), Lips Painted Red (2013), João Penalva (2014) and Act or Perish! Gustav Metzger - a Retrospective (w. D. Denegri, 2014-2016). His latest published books are Act or Perish! Gustav Metzger – a Retrospective (ed, D. Denegri & P. Kyander, 2016) and Marko Vuokola (ed P. Kyander & M. Vuokola, 2018). He currently lectures at the Academy of Fine Arts in Helsinki, Finland.

Jan Robert Leegte (b.1973, The Netherlands) started working as an artist on the Internet in 1997. In 2002, he shifted his main focus to implementing digital materials in the context of the physical gallery space, aiming to bridge the online art world with the gallery art world, making prints, sculpture, installations and projections, connecting to historical movements like land art, minimalism and conceptualism. As an artist Leegte explores the position of the new materials put forward by the (networked) computer. Photoshop selection marquees, scrollbars, Google Maps, code and software are dissected for their sculptural properties. His work has been exhibited internationally (Whitechapel Gallery, Stedelijk Museum Amsterdam, ZKM Karlsruhe). He is currently represented by Upstream Gallery Amsterdam. Jan Robert Leegte lives and works in Amsterdam, the Netherlands.

Jani Lindqvist (b. 1975) is a dedicated coder and hardware tinkerer and currently works as a software engineer in Barcelona. Jani has also been involved in organizing underground music and art events since 90s for example with Entropy one of the oldest still active organizers in Helsinki. He is interested in light/motor controlling software and software only for art projects.

Alexandre Michaan is a media art conservator based in Paris, graduate of the INP (National Institute for Cultural Heritage, France), who since 2013 has been specializing in the preservation of audiovisual and digital artworks. After a degree in history of art at the Ecole du Louvre, he pursued a master's program in photography conservation at the INP, where he focused on issues related to new media, with a special interest in the field of obsolescence of digital technologies in contemporary art. After a stay at the video conservation laboratory of the Dutch institute LIMA (formerly Netherlands Media Art Institute, Amsterdam), where he worked on preservation of obsolete software-based artworks for CD-ROM, he researched conservation issues of digital video artworks threatened by format obsolescence, with a thesis on artworks from the video collection of the Musée d'Art Moderne de la Ville de Paris, under the supervision of Cécile Dazord. He is currently working as a freelance conservator, and collaborated in the past years with several french institutions such as Centre Pompidou, FRAC Franche-Comté, Musée d'Art Moderne de la Ville de Paris and Maison Européenne de la Photographie, on conservation studies of video collections, digitization supervision, and technical assistance for artworks installations.

Janne Särkelä (b. 1977) is a musician, sound designer, developer and a media producer. Janne has performed intuitive and meditative long form ambient music sets as SARANA at local and international events for 20 years. SARANA has published two albums. As a sound designer and composer Janne's recent work includes experimental films by established and new artists. He helps artists of various disciplinaries to realize their works with his skills in programming and electronics. He has also had his own sound art installations presented. Janne is freelancing as an e-learning developer and a consultant.

Gaby Wijers is the director of LIMA. Previously she was coordinator of collection, preservation and related research at the NIMk, Amsterdam (NL); she has a background in information management, theater and informatics. She initiated, advised and participated in multiple national and international projects dealing with the documentation, preservation and acces of immaterial and interactive art, specialisation media art and performance. a.o.«ArtHost», «UNFOLD», «NACCA», «Transformation Digital Art», «Preservation of Media art Collections in the Netherlands», «Inside Installations», «Active Archieve», «GAMA», «Inside Movement Knowledge», «Obsolete Equipment», «Digitizing Contemporary Art». She participates in national and international networks such as Foundation for the Conservation of Contemporary Art (SBMK), Cultural Coalition for Digital Herritage (CCDD), Network for Difital Heritage (NDE), (is guestlecturer at Amsterdam University and honorable research fellow at Exeter University.

Kari Yli-Annala (b. 1965) is an artist-researcher whose expertise is in the history and theory of experimental moving image. He is a freelance part-time lecturer, a curator and the artistic director in AAVE AudioVisual Event moving image festival. He has written articles for several publications, including Sähkömetsä (Ed. by Kirsi Väkiparta. Central Art Archives, 2008), A Cultural History of the Avant-Garde in the Nordic Countries (Ed. Tania Ørum and Marianne Ping Huang. Editions Rodopi B.V. 2016) and Vilke, the catalogue of the collection of Finnish electric art (FixC, 2014).

23.   A parabolic satellite communication antenna at the biggest facility for satellite communication in Raisting, Bavaria, Germany.
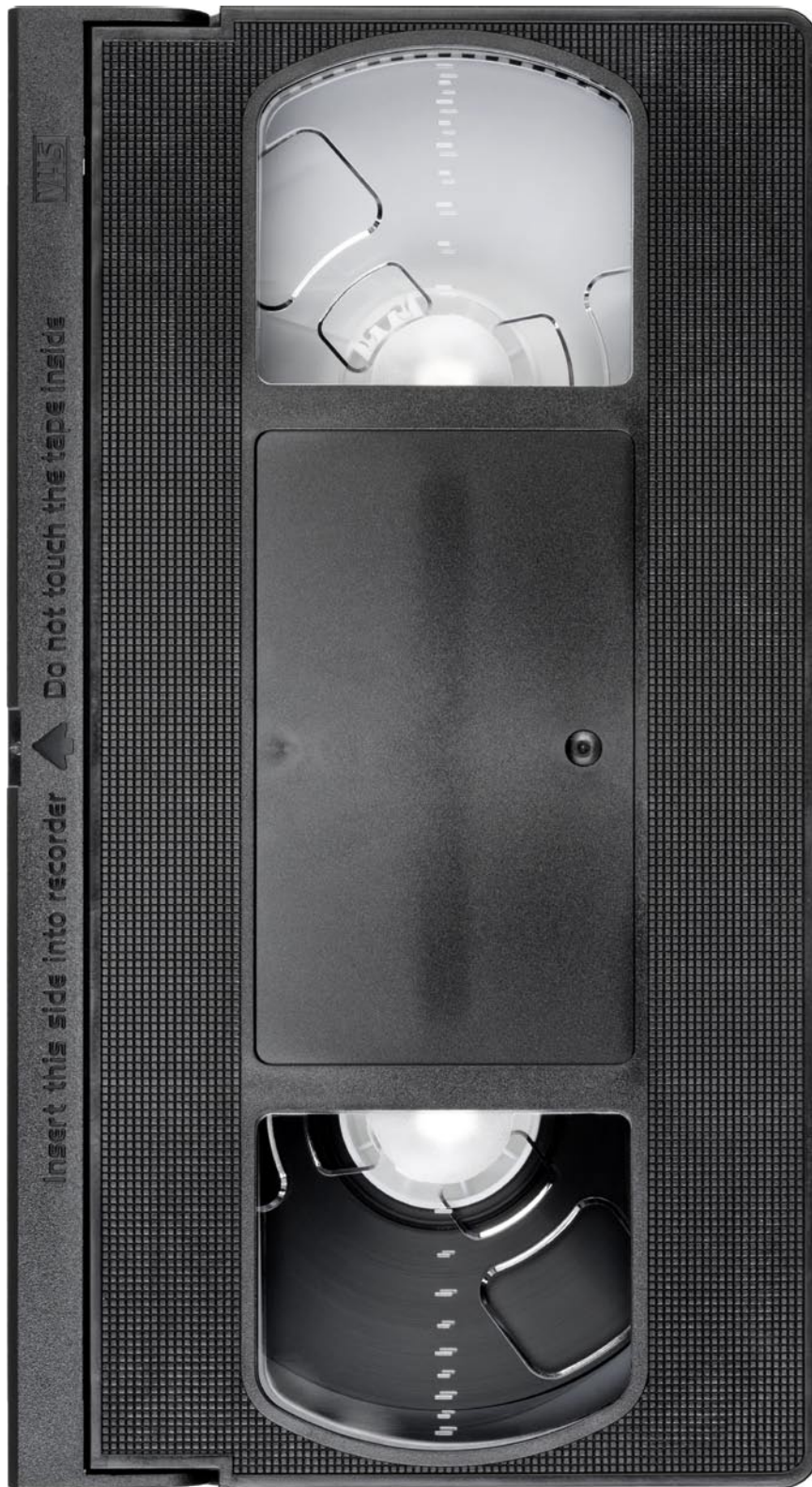
24. A flat shot of the top of a blank VHS tape/video tape. Specifically, a TDK "Superior Quality" 6 Hour tape.

25.   Monkey with a Ventolin inhalerin Bali, Indonesia.

26.   Eternity (1906) a painting by Mikalojus Konstantinas Ciurlionis.

As long as possible

Texts:
Cécile Dazord, Sanneke Huisman, Juha van Ingen, Pontus Kyander, Jan Robert Leegte, Alexandre Michaan, Gaby Wijers, Kari Yli-Annala

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Inside cover: Hubble Extreme Deep Field image (full resolution). Exposure dates: July 2002 to March 2012[3], with main contributions from 2002–2003 (visible) and 2009 (infrared)[4]. Image released by NASA on September 25th, 2012. NASA (PD).

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