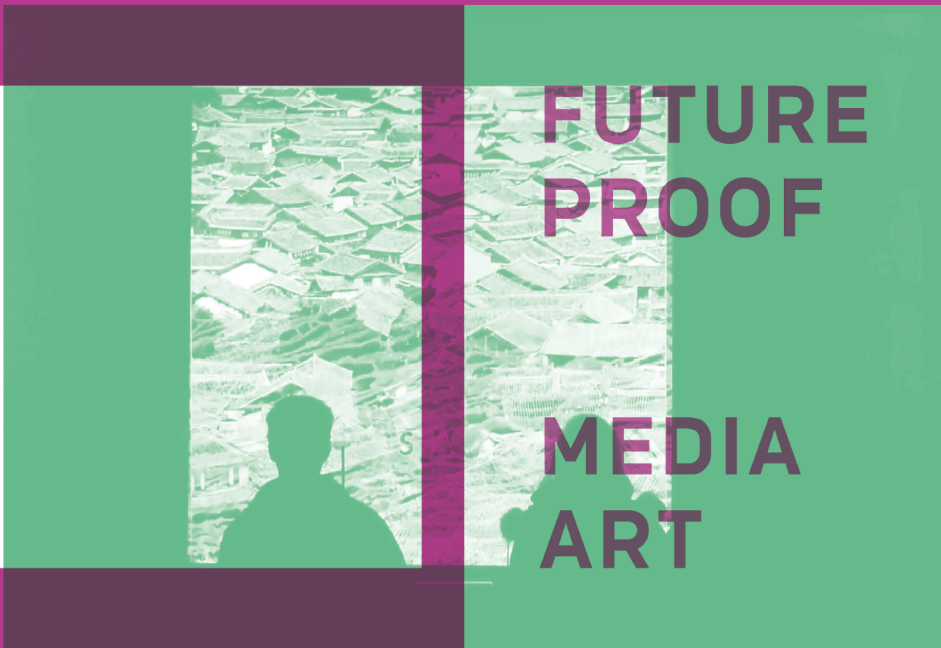


FUTURE PROOF | END REPORTING | LIMA

RESEARCH & RESULTS

For the FUTURE PROOF MEDIA ART project, LIMA's research team of art conservation, documentation,



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FUTURE PROOF | END REPORTING | LIMA

RESEARCH & RESULTS

For the FUTURE PROOF MEDIA ART project, LIMA's research team of art conservation, documentation, technology, digital engineering, and sound and video production experts have worked in collaboration with Dutch media artist Geert Mul to conduct a large-scale investigation into documentation and preservation approaches of complex software-based and interactive media artworks in order to define an artwork script to guide future presentations of such artworks. The concrete aims of this project are two fold:

- 1) To conserve 10 Geert Mul artworks as case studies.
- 2) To map the possibilities and consequences of technical and aesthetic changes in forms of digital art and develop a method and script for how to present them in the future.

The research conducted focuses on all relevant issues concerning technical innovation, sustainability, presentation and the substantiation of necessary preservation measures. Multiple installations of Geert Mul are used as case studies to explore these issues and through which a number of guidelines, methods and approaches have been developed that are relevant and useful to a wider community of media artists. The outcome of the research has included:

- Method for presenting these artworks in the future
- Script guiding future presentations of the work
- Overview and description of 'technical' data
- Overview and description of 'soft' data
- Conserved and stored content for all artwork case studies

As the basis of this research, LIMA conducted case studies using 10 works by artist Geert Mul who has been making media artworks for over 25 years, and whose significant retrospective exhibition at Stedelijk Museum Schiedam in November 2016 was the perfect opportunity to re-stage and refurbish a large body of work dating back to 1990. Furthermore, the exhibition acted as fertile ground upon which to use these 10 artworks as case stud-

ies to explore and develop an "artwork script" for the documentation and preservation of complex born-digital (interactive) installations.

The 10 artworks selected resulted in 7 case studies with 7 conserved artworks: *Toen en Nu* (1990), *This Land is Man-Made* (2000), *The Library of Babel* (2003), *God's Browser* (2010) and *Match of the Day* (2004-2008) resulted in individual case studies; *Data Architecture* (2003), *The Order of Things* (2005) and *Random Access Memories* (2008-present) are discussed in a combined case study as they share the same software and interface for configuring the specific set-up of each work and resulted in the conservation of *Random Access Memories* as it was presented in Schiedam ; and the artworks *Horizons* (2008) and *Shan Shui* (2013) which share the same software but different image database were investigated by PhD candidate of the University of Amsterdam Claudia Roeck as part of her dissertation, resulting in the conservation of *Shan Shui* as this work was selected for presentation in Schiedam.

The conserved and stored content for all of the artwork case studies is stored on LIMA's digital art repository. Detailed reports have been developed for each Geert Mul case study available **online here:** <http://www.li-ma.nl/site/article/future-proof-media-art-case-studies-artist-geert-mul>

One of the main objectives of the project was to develop a **documentation model and script** for the reinstallation of this large and diverse range of complex software-based (interactive) installations by Geert Mul. LIMA developed a model called the "artwork documentation package" that is used to create an "artwork script" for the preservation and reinstallation of individual artworks that is curtailed to its specific and unique contexts and needs. The documentation model and script developed is not only applicable to Geert Mul's artworks but can be taken and applied to the artwork documentation and future presentations of born-digital installations by other artists.

The "**artwork documentation package**" model includes a series of activities and their resulting materials that together form a complete "artwork script". This enables the artist to manage their artwork over time; create a consolidated body of information that can be shared with museums, galleries and collectors to aid them in collecting or presenting the work; and gives the artist or someone else direction to re-install the artwork.

The actions and activities that make up the artwork script include:

- doing a complete system backup of the computer the artwork is housed on;
- source code and programme backups;
- detailing required software specifications;
- detailing required hardware specifications
- creating wiring diagrams;
- developing installation instructions and on/off protocol for the artwork;
- developing an interactivity script
- conducting in-depth artist interviews;
- creating a video registration;
- researching and collecting previously documented and produced materials on the artist and artwork (text, video, audio).

CASE STUDY RESEARCH

Below are summaries of the 7 artwork case studies, each employing the “artwork documentation package” approach described above to produce an individual artwork script for future presentations.

The case study research was divided into 3 groups to ask more specific questions related to nuances of these sets of works.

Below details the three different groups, with a summary of each case study conducted illustrating how the research has answered each question. Case studies on request available at LIMA.

GROUP 1.

Toen en Nu (1990)

RESEARCH QUESTIONS

- Can this work be installed continuously?
- If it cannot be implemented using current technology, how do we keep the content in balance with the old technology so that the newer technologies does not dominate? And how do we exhibit 25 year-old hardware and software?
- Under what circumstances is it no longer possible to exhibit the artwork?
- How do we inform the exhibition staff (starting an Amiga-based artwork using floppy disks?) And the public? How do we document the work for future presentation?

Toen en Nu (1990)

Toen en Nu is a born-digital, live-generated installation programmed in AmigaBASIC created in 1990, the last year of Mul’s studies and three years before the introduction of the internet. Based around the words “toen” (“then” in English) and “nu” (“now”), the artwork plays with the concept of time, alluding to the idea that the “now moment” is ever-evasive. The artwork consists of a 1990s Amiga computer and monitor. On the monitor screen the word “nu” flashes quickly, but quickly with a randomly selected time interval, flashes into the word “toen”. This repeats continuously, with the word “nu” flashing on the screen and quickly changing to “nu”, endlessly printing more a more words to the screen.

To be able to present *Toen en Nu* in 2017 it was refurbished, with Mul replacing the hard disk of the Amiga 1200 with an emulator compact flash (CF) card to make the work less susceptible to breaking since this removed the computer’s moving, mechanical parts. This was done to ensure the artwork can still run on a 1990s Amiga computer and monitor, enabling it to be installed continuously and presented in the same conceptual fashion as in 1990 with the same aesthetic. While Mul didn’t consider the hardware used as significant to the concept of the work at the time of its creation in 1990, upon reflection through the artist interview realised that the aesthetic quality of the computer and monitor from the 90s as well as the visual quality of the “toen” and “nu” displayed on the screen suggests to the audience the historical context of the work. Furthermore, showing both the monitor and the computer helps people create a link between the computer and what they see, enabling them to understand that it runs in real-time. This live-generated, time-based aspect is the crux of the artwork’s concept: the real-time “now” moment that the flashing of the words “nu” into “toen” on the screen evokes is the subject of the artwork itself, and as such it must run as live-generated. Consequently, a preservation strategy could not include presenting the display of the words “nu” and then “toen” on the screen from pre-recorded media, fixed in time.

In terms of preservation, the scarcity of working Amiga computers and Amiga CRT monitors from the 1990s is a real concern, as is the need for a younger generation to have the knowledge to understand what these computers are and be familiar with them if they see the installation. As such,

the ideal scenario for the artwork is that the AmigaBASIC programme runs off of an Amiga computer (including models 1200, 500, 2000, 3000, 4000) with a compatible Amiga CRT monitor. To ensure the longevity of these computers, it is now favourable for Mul to remove the Amiga hard drive and replace it with the CF-card as a hard disk as the artwork still runs through the Amiga and presents the work as a live-generated piece with the AmigaBASIC programme running. This reduces the likelihood of mechanical failure as the mechanical parts of the computer have been removed. This also makes the daily start-up process of the artwork significantly easier for museum staff as all they are required to do is turn on a power bar that the computer and monitor are connected to which automatically boots up and runs the artwork. In fact, on the basis of the research done on the artwork Toen en Nu we developed a set of installation instructions. These for example were used to re-install the artwork at the subsequent solo exhibition of Geert Mul's in Dortmund, and can be used for following presentations in the coming years.

To safeguard the artwork a backup is being stored in LIMA's digital art repository, and a written copy of the code is stored with the case study at LIMA.

GROUP 2.

Horizons (2009), *Shan Shui* (2013), *Random Access Memories* (2009) and *DATA ARCHITECTURE* (2005) / *The Order of Things* (2003)

RESEARCH QUESTIONS

- Can these works be installed in 2016 and then again using current technology? What parameters are required for the necessary migration?
- Can these parameters also be used with a subsequent migration?
- Can the artist and the experts jointly record these parameters?
- Can the artist and the experts jointly create a script for reinstallation?

Horizons (2008) & *Shan Shui* (2013)

Geert Mul originally created *Horizons* (2008) as an intervention at the Museum Boijmans van Beuningen where it was on show for more than half a year. With *Horizons*, Mul presents landscape paintings from the museum's collection as an interactive installation. The horizons of these digitised paintings are aligned to the same height. The

computer-generated image is projected on the wall, using the entire wall width, with the image filling the space from left to right. Through the use of sensors, visitors walking around the space cause the image to be activated, splitting the image of the painting on the surface and revealing a new painting from behind. In this way, the visitor does not just explore one work, but rather, a whole collection. *Horizons* was acquired by the Boijmans van Beuningen museum as a spatial installation through which visitors can explore paintings through an alternative "databased" structure.

Shan Shui (2013) was created as a response to a call for artworks for the China Expo at Raw Art Rotterdam in 2013. Like *Horizon*, a sensor is used to enable visitors to command the paintings and peel back layers of digitised paintings to reveal new ones beneath. It presents Chinese landscape paintings with elements typical of the genre such as rocks, water, air and clouds. Where these different elements touch in the paintings, the dynamics become apparent. While the western depiction of the landscape focuses on the spatial aspect of the landscape (folded around the spectator who form the invisible centre of the landscape), the eastern depiction of landscape focuses on the dynamic and autonomous aspects of "the elements" that construct "nature". Mul wants the visitor to experience this dynamic, and so through using a sensor, enables the visitor to manipulate the projected paintings, inviting them to become part of the landscape through interacting and experiencing how the painting responds to them. Through the video registration, one can understand the reaction and timing of the artwork the each visitor's position and movement within the room of the artwork.

Horizons and *Shan Shui* both manipulate and display images from an image database. They are both based on the same, custom-built software, are installed in the same way and are both interactive in the sense that the projected video and sound react to visitors' movement in the space. Although the viewer triggers new images, he or she never has full control over them as the software chooses them at random. This unpredictable flux of images enriches the visitor's explorations. The immersive experience of these works is another significant property. The main difference between *Horizons* and *Shan Shui* is the image collections that are displayed and the aspect ratio of the projection: *Horizons* uses an aspect ratio of 12:3, corresponding to three times 4:3, while *Shan Shui*

has an aspect ratio of 8:3, corresponding to twice 4:3. This is related to the aspect ratio of landscape paintings in the western tradition (mainly horizontal) opposed to the eastern tradition (mainly vertical). To project at a large size, the video projections are split up across three projectors for *Horizons* and across two projectors for *Shan Shui*.

The preconditions for the long-term preservation of *Horizons* and *Shan Shui* are good: the computer hardware is more or less standard, the programmer used a non-proprietary operating system and programming languages and the source code is accessible.

From the hardware point of view the tracking sensor is a dependency. However, this sensor is very robust (made for industrial use) and new sensors still have the same connectors. Whether the data protocols of new sensors are the same, has to be checked. The replacement of the sensor by a different technology would mean that certain programs would have to be re-programmed and re-compiled. Another dependency is the serial-USB-adaptor whose driver has to be installed on the computer. Nvidia, the brand of video card is hard-coded into the software, as Nvidia is the best video card for fast graphics rendering compatible with Linux. It is intended to eliminate this dependency by auto-detecting the video card. Whether the results are sufficient will have to be investigated. Last but not least, it could prove difficult in the future to find projectors with the right aspect ratio and resolution. However, the software allows a certain flexibility of the output resolution, so that it could be adapted to new devices. As the aspect ratio of the whole video image is a significant property of these artworks, this flexibility should be taken advantage of only to a small extent.

Through collaborating with Mul over these two artworks and through enacting the various tasks and activities developed by LIMA within the designed "artist documentation package" a script for the re-installation of these artworks has been developed.

Random Access Memories (2008-present), *Data Architecture* (2003) & *The Order of Things* (2005)

Random Access Memories is a live-generated installation that seeks to question the line between personal, individual and collective memory. The artwork is composed of a 5 x 5 grid of square images projected on the wall. Drawing from a database of approximately 4,322 personal photographs taken by Mul, image analysis software selects images in real-time that are alike based on a series of 18 parameters, and projects these one after another as a set onto the 5 x 5 grid.

Random Access Memories in tandem with the works *Data Architecture* & *The Order of Things* illustrate a key feature of Mul's practice whereby he develops a new software tool, and out of this creates a number of different artworks. The first artwork created out of this software was the real-time generative, site-specific installation *Data Architecture*, which was exhibited only once, at Ron Mandos gallery, Rotterdam in 2003. This artwork takes a collection of 100,000 images, the same as in *The Library of Babel* and continuously and slowly transitions and restructures them through projecting them onto a window within the room, giving the impression of stained glass. Following this was *The Order of Things*, also real-time generative, site-specific and only presented once, at the Royal Netherlands Embassy in New Delhi, India in 2005. The image set for this work draws from a database of photos of monuments listed on the Unesco World Heritage list for India. Four identical projections are presented on the ceiling of the Dutch Embassy, overlapping in the centre of the ceiling, forming a kind of symmetrical ornament of information.

While all three artworks are covered in the case study, *Random Access Memories* is the focus as it is the most recent artwork output using the software, is iterative in that Mul continues to add new images to the image set, is not site-specific allowing it to be shown in various venues, and was installed as part of his 2016-2017 retrospective at Stedelijk Museum Schiedam.

Random Access Memories is of particular interest as it's the only artwork by Mul that uses image analysis software with a database of images that he continues to add to. For this work, Mul believes that since it is meant to be a kind of representation of his memories, and since he is still creating new memories, the images should be reflective of this and continues to add images to the artwork. As such the artwork grows and changes in terms of what images might be projected together with each instance of Mul adding photographs to the database. Through the artist interview it was discovered that Mul understands that he is the only person who can add images to the work and also adjust the presets on the 18 image criteria parameters to make different and interesting image combinations. Should Geert pass away, he would consider that the artwork at that point is "finished" or "completed".

Random Access Memories features an interface to be able to add these new images to the database and to create new image sequences for displaying the images by setting different parameters. A description of, and manual for this interface has been made and preserved with the work. These documents in combination with the case report, technical specifications and diagrams, and video registration constitutes a script that can be used to reinstall the artwork.

In terms of the preservation of the artwork for 5 or 15 years, there are no real concerns currently. Of course, computers are always a challenge, but if Mul stores at least 2 backup Linux computers this should not be a problem. The artwork itself runs on Linux and Linux will run on stock PCs, so if required emulation can be used. The main concern then is preserving the software that runs the artwork, which also includes the currently 4000+ image database. As such, full system backup, the source code, software and image database is being stored with LIMA's digital art repository service that will ensure that safety of these digital materials.

GROUP 3.

God's Browser (2013), *Match of the Day* (2004-2008), *This Land is Man-Made* (2000) and *The Library of Babel* (2003)

RESEARCH QUESTIONS

- Can these works be installed in 2016 and then again using current technology? What parameters are required for the necessary migration?
- Can these parameters also be used with a subsequent migration?
- Can the artist and the experts jointly record these parameters?
- Can the artist and the experts jointly create a script for reinstallation?

God's Browser (2010)

God's Browser is a born-digital interactive installation that invites the viewer into the informational space of the internet. Through the use of a theremin, an electronic instrument that requires no direct contact, the viewer becomes the conductor of a stop-motion-like film generated from 1.5 million images sourced from the internet between 2008 and 2010 and that now reside on a database from where the installation draws them.

The theremin is used as an interface through which the work is activated, and as such, the theremin's response is key to the work behaving correctly. The distance at which the theremin is activated is pretty much fixed to the properties of the theremin itself. The theremin is a capacitive sensor and responds to mass, not necessarily people and for this reason is very sensitive to everything, including humidity in the air. For example, if the installation is presented in another space, it might react a bit differently in terms of the distance at which the viewer's hand needs to be to activate it. This also means the theremin is not stable and during the artwork's exhibition, the settings will sometimes need to be tweaked to fine-tune the instrument's response to close proximity if it begins to behave strangely. The video registration of the *God's Browser* keenly illustrates the proper behaviour of the artwork, and captures Mul showing and describing how the artwork should respond, giving insight into its proper functioning should the settings need to be adjusted before or during presentation.

In terms of preservation, the software of *God's Browser* is one of the most complex of all of Mul's works as it employs a database of 1.5 million images that makes comparisons between each image and every other image held (meaning it requires a total of two hundred and twenty-five trillion comparisons). The key to the preservation of the work is ensuring the software is still able to run, which will require compatible video card, motherboard and operating systems. As Mul has stated: "In terms of preservation you don't actually change the software. But you make sure it's safe and then make sure that there is an available compatible system with which to play the work." As such, safe storage of the complete system backup and copies of the source code and related database of images with LIMA's digital art repository is key to ensuring future presentations.

The theremin is also a key component of the artwork, specifically, a theremin with a voltage out is necessary. Will this still be available in the future? As the theremin has survived as an obscure instrument since 1928, with more models made by more manufacturers, it's likely that the availability of an analogue pitch out theremin will not be hindered in the next 15 years.

Match of the Day (2004-2008)

Match of the Day is a hybrid artwork started by Geert Mul in 2004 and which ran until 2008. The basis of the artwork, or tool as it is often described, is an image analysis software that has been programmed to extract still images from video clips pulled from about 30 international television sites via satellite daily, then compares the stills and brings together like pairs. Mul then selects pairs of images out of the thousands of matches made, which he saves as Jpegs in a folder of his favourites. These image pair favourites have been translated into and exhibited as a book, prints, video and installation. Through the in-depth artist interviews, it was teased out that it is this output that Mul considers the artwork. For Mul, the artwork is "both everything I've selected as matches to be shared, and nothing before that", as well as all of the manifestations in which the matches have been shown. The artist interviews also help illuminate that Mul thinks of himself as the director of the project, and as such he is the only one who decides which matches are made public and in what format.

Overall he thinks of the image analysis software and the tangible output together as a project.

The image pairs generated as well as the book, prints, video and installation, act as documents that represent a certain time as it was represented through the mass medium of television, which is then represented through the various forms the artwork takes.

The software programme used to generate the matches between 2004 and 2008 is currently broken, and is no longer able to pull clips via satellite television and analyse the still images to create matched pairs. The software itself requires significant attention to get it up and running, including thorough assessment of compatibility with today's satellite television. This does not stop the artwork from being exhibited, because for Mul, the artwork has always been the various output formats his favourite image pairs have been translated into—namely the book, video, prints and installation—which regardless of whether the image analysis software is working, can still be exhibited.

While the original software programme used as a tool to generate the matched pairs is not working, this is not a concern for the future presentation of the work because the work is presented as the book, video, prints etc. At current, the most important part to maintain access to is the folder of

5000-6000 saved image pair Jpegs. Mul currently has this folder saved on his personal computer, and also in a backup disk image of the computer, but requires more protection and thus has been shared with LIMA's digital art repository to safeguard the artwork.

This Land is Man-Made (2000)

This Land is Man-Made is an interactive installation that explores the relationship between a personal narrative of loss, mourning, and nostalgia and the Dutch polder landscape. The artwork is composed of two parts: a television monitor mounted on the wall displaying a video of a static shot of Dutch polder landscape while a poem text scrolls across it, and a video projection cast across the entirety of the wall the monitor is mounted to that presents a looping video backdrop of a scene of a harbour focused on a moving image of churning water. The projection plays constantly but is activated by a sensor when someone walks towards the monitor, showing the projected video zooming further and further into the swirling water as the person moves closer to read the text of the poem on the monitor.

The re-staging of the work at Stedelijk Museum Schiedam made it clear that the shape and size of the exhibition space of the artwork is critical for its proper functioning and its ability to engage the audience in the intended way. At Schiedam, the exhibition space was not long enough, and as such, the spectator could already read the text on the monitor when entering the room, and thus was not as enticed to walk towards the monitor and activate the sensor for the video projection. As such, following the instructions listed in the artwork report of the required size and shape of the exhibition space is crucial to the work. Sound is also a key aspect of the experience of the work. The interactivity script describes how the sound behaves in relationship to where the viewer is positioned and the installation instructions developed articulate how to set these correctly. At Stedelijk Museum Schiedam the sound levels were not set ideally, and as such, the viewer could already hear the sound from the monitor on the video before they were right in front of it. In this instance of exhibiting the work, it was virtually impossible to set the sound settings as desired due to the sounds of the other sound-producing artworks in the same exhibition space. For future presentations, reading the interactivity script and following the installation instructions will help ensure the sound levels are set at the ideal levels where possible (given the

exhibition design), offering the viewer the intended set-up of the artwork.

The technical preservation of the artwork in the next 15 years does not currently hold many concerns. In order for the work to be presented at Stedelijk Museum Schiedam the technology was updated, migrating from the original C-code (by programming collaborator Carlo Prelz) under a Linux OS to run in MaxMSP (by Erik Overmeire) under an OSX operating system. In addition, the original sensor, a SICK LMS200, has been replaced with a newer and smaller SICK LMS 100. These updates simplify the artwork's technology and do not augment its function or behaviour, and can be considered the current ideal technology to use for the installation.

The algorithm of the artwork is quite simple to describe: the video projection movie is divided into a series of video clips that are looped, and played at different intervals as the viewer moves towards the monitor, which is documented and described by Geert in the artwork's video registration. What is key to the artwork is maintaining the accessibility of both the looping video clip files and the video that plays on the monitor, which are now both being stored with LIMA. If some sort of further upgrading would be required for the work to be functional in 15 years, migration, as opposed to emulation which would be more complicated and unnecessary, could be used again.

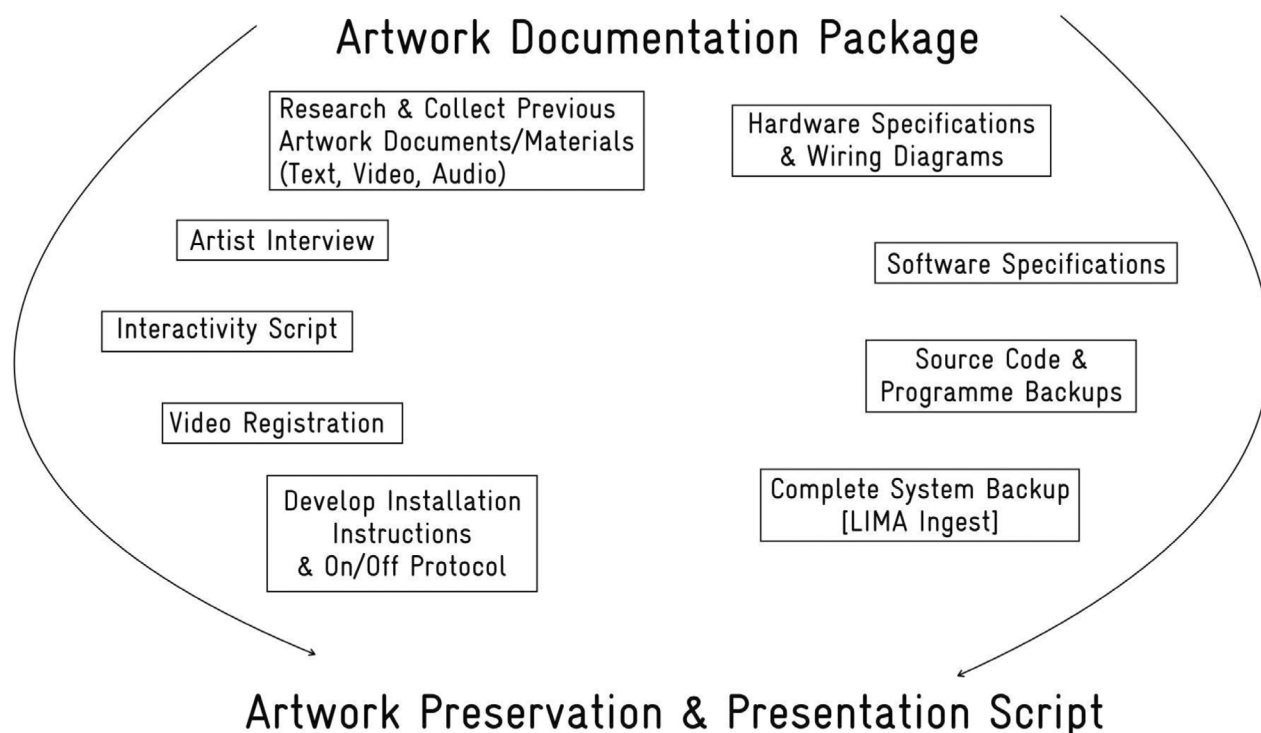
The Library of Babel (2003)

The Library of Babel is a born-digital generative interactive installation that invites the viewer into the visual space of the internet. Drawing from a database of 100,000 images taken from the internet around 2003, the artwork is activated by a viewer stepping on 1 of 9 floor plates laid out in a 3 x 3 grid. When a floor plate is activated, this prompts the software to select a pool of like images using 18 image criteria parameters, that are then projected onto the floor tile from above the spectator, but appear as if they're coming from below their feet, as if a well of images were bubbling up.

Through presenting the artwork at the Stedelijk Museum Schiedam retrospective, it was discovered that the artwork was restored and refurbished in this context using a different version than intended, which was not discovered until the work was installed. Through retracing the history

of the artwork by conducting an in-depth artist interview and by reviewing earlier video and photos of the artwork, it was discovered that the software used to set-up this new presentation of the work was the oldest version and likely taken from the code repository of Mul's programming collaborator Carlo Prelz, as opposed to from the original computers the artwork had been shown on, and that were likely tweaked and updated on site to create a different version during the work's original presentation. As such, the pools of images that are revealed when the work is activated only slightly bleed outside the frame of the tile stood on to activate it, as opposed to spreading out further past the bounds of the activated tile. For Mul, the ideal version has the images spread out quite significantly across the other tiles, because, when two people are activating the artwork by standing on different tiles, it creates a stronger visual power-play between the two spectators as the two tiles activated seem to be challenging against each other for more space than the other. The interactivity script developed acts as a record of the intended function and behaviour of the artwork, documenting the current version installed as well as the ideal version. In addition, the interactivity script details the behaviour of the artwork and how it responds to 1, 2, 3 and more participants standing on the floor panels. Such documentation helps understand in what version the artwork is and whether it is functioning as intended.

The key to the preservation of *The Library of Babel* is maintaining the ability of the software to run, which requires compatible video card, motherboards and operating systems. For Mul, one wouldn't change the software, but rather make sure there continues to be a compatible computer system available to play the work. Furthermore, the safety of the database is key as the specific image pool is integral to the work because it reflects a specific moment in the history and culture of the internet. Both the artwork itself and the images it presents are from 2003, and as Mul says "as the work gets older, it will likely become more and more visible that the images are old and important to the work". Thus, safe storage and backups of the software and related database is key to ensuring future presentations, as well as securing the availability of compatible technology to run this. These are currently being stored in LIMA's digital art repository for preservation.



FROM ARTWORK DOCUMENTATION PACKAGE TO ARTWORK SCRIPT: FUTURE PROOF DELIVERABLES

Through working closely with the complex born-digital installation case studies of Geert Mul, LIMA developed a documentation method and presentation script model that not only applies to the works of Geert Mul but to other artists looking to preserve and re-present their digital artworks in the future.

Working from the components of the **Artwork Documentation Package** developed the following details the steps required to create and **Artwork Script**.

STEP 1: BACKUP

The first activity to create an artwork script that ensures the possibility of future presentations is to do a **complete system backup**, including a disk image and backing up all digital components found on the computer the artwork is housed on. In addition, **source code and programme backups** are also required. These backup activities are completed first in order to ensure the safety of the artwork. In the case of Geert Mul's work, all digital backup components are ingested into LIMA's secure digital art repository securing future access to the software material of the artwork. Other

artists executing this step can either work with a service such as LIMA's to manage backups of their artworks or work with their own personal backup systems, making sure that they have at least 3 redundant backups in different physical locations.

STEP 2: COLLECT & ORGANISE PREVIOUS ARTWORK DOCUMENTS/MATERIALS

The artwork script should also contain **all available documents and material previously created about the artwork**. This for example includes everything from technical drawings and working notes the artist has created, to exhibition flyers, press clippings, and photos. These items can be both analogue or digital and aim to contribute to the artwork script in that they speak to the history of the work and can offer all kinds of clues into technical decisions made, the exhibition history of the work, and its look and feel through images and videos. This kind of document collection acts as an artwork archive that can be added to over time. The contents of this part of the artwork script also helps the artist start to lay the groundwork for other historical, technical, conceptual and aesthetic questions they'll explore through other parts of the artwork script.

Based on interviews with Geert Mul exploring his artwork archives, LIMA has developed a series of guidelines for artists to organise their digital artwork materials.

Attachment 1

STEP 3: ARTIST INTERVIEW

Like exploring previous artwork documents and materials, an artist interview offers significant insight into many aspects of an artwork. In particular, the questions are seek to understand the artwork's history, its relationship to the artist's overall practice, its concept, context, functioning and behaviour, as well as gain and confirm technical information regarding hardware and software specifications such as the minimum or ideal requirements to run the artwork, hardware wiring, installation instructions and preservation concerns.

These questions aim to gather information about the artwork from its authenticity and technical specificities to its concept, historicity and experience as described by the artist.

In order to have a consistent interview process with Geert Mul, LIMA developed a set of standard interview questions and then posed more specific questions related to the individual artworks.

An artist who is interested in developing a script for their artwork can use the list of questions developed by LIMA as guidelines for the kinds of issues, ideas and information they should be seeking to answer. The artist can either answer the questions on paper, or have a friend/colleague engage in a conversation with them using these questions as a guide. The answers, documented as text or audio should be stored with the information gathered in Step 2 and become part of the documentation that informs the future presentations of the artwork.

Attachment 2

STEP 3: DOCUMENT THE ARTWORK'S PHYSICAL COMPONENTS - HARDWARE SPECIFICATIONS & WIRING DIAGRAM

The script must include detailed notes on the physical components of the artwork. Information about the artwork's **hardware specifications** and a **wiring diagram** are key to being able to present the artwork in the future. This list of hardware and playback equipment operates as the "must haves" to install and run the artwork properly. Specifications for each physical component of the installation should include the piece of equipment, its brand, model, specific parameter details and ideally should also list its particular function within the artwork. The wiring diagram for the installation

illustrates how the different hardware and playback equipment components are wired together for the installation to run. These components offer the artist, and others installing the artwork, a roadmap for the required technical infrastructure and how it needs to be installed. Ideally each physical component is photographed and the artwork as wired and installed in the space is also photographed.

The detailed hardware/playback equipment list and the wiring diagram also serve to document the authenticity of the artwork. These documents contribute greatly to the artwork script for future presentations and its authenticity by laying out not only what is necessary for the artwork to run properly, but because these items also have a physical presence, speaks to the aesthetic authenticity of future presentations.

STEP 4: DOCUMENT THE ARTWORK'S SOFTWARE

Software specifications are similar to hardware specifications in that it seeks to document the technical necessities of the artwork - what source code and software programs are required to make the installation run correctly. The software details are key to having a robust and thorough script for future presentations of the artwork.

Software specificities include not only discussing the source code of the artwork, but all other programmes required to make it run, and what their function is in the running of the artwork. This, for example also includes detailing what kinds of databases and their contents are employed, or what kinds of software dependencies exist. This component of the artwork script can be assembled as a list and stored with the hardware specifications and wiring diagram above.

Having detailed software specifications helps ensure the proper functioning of the artwork in the future ensuring the intended experience of the artwork and its authenticity remains intact.

STEP 4: INSTALLATION INSTRUCTIONS & ON/OFF PROTOCOL

Installation instructions and **on/off protocol** are also crucial to the artwork script. This document should be written out as a step-by-step guide and ideally includes photographs to accompany the different stages. The text of this document includes not only setting up the physical technology and wiring, but also initialising programmes, the order of turning different components on, and

whatever software or parameter tweaks might be necessary to run the work. This also includes making sure the artwork is oriented correctly in any space and also details establishing correct sound volumes. This document serves to remind the artist of the specificities of their particular installation as well as serves as guidelines for exhibition venues who might need to install the artwork. The installation instructions are critical in maintaining the authenticity of the presentation of the artwork to the artist's specifications and also ensure the correct look and feel of the installation as installed in the exhibition space.

The **on/off protocol** is used to detail how an artwork should be turned on and off daily once installed. This is largely used as guidelines for museum or gallery staff who will be in charge of this task.

STEP 5: INTERACTIVITY SCRIPT & ARTWORK EXPERIENCE

For interactive artworks, an **interactivity script** details what happens at each stage of an artwork's engagement. The outline of the interactivity script used for the Future Proof research was largely developed by Claudia Roeck as part of her research into Geert Mul's artworks Horizon and Shan Shui but was also used across Mul's other interactive works.

The interactivity script offers an outline for describing the behavior and timing of interactive works, including the options for the ways the work is interacted with, the interface used to interact with, the kinds of options available to the user, and how the behaviour of the artwork changes depending on the number of people involved. On an even greater detail, the interactivity script also looks to outline what happens in the software when the artwork is engaged with. The interactivity script as part of the overall artwork script for future presentations can be read as guidelines for making sure the work is running correctly after it is installed. The interactivity script speaks specifically to the experience of the artwork and exists as one tool in the artwork script to ensure the artwork's authenticity.

Attachment 3

STEP 6: VIDEO REGISTRATION

Another key piece of the artwork script is the creation of a **video registration**.

This audiovisual document only offers an impression of the artwork, in particular including showing its functioning, behaviour and timing. In particular, video is used to be able to clearly show the look and feel of the artwork. As reference for future presentations, the artist is ideally featured in each video speaking to and showing these different aspects of the artwork.

Through developing video registrations of Geert Mul's installations, LIMA developed a script for artists on how to create video registrations of complex, software-based installations.

Attachment 4

This full constellation of actions, activities and resulting materials is required to make a complete script for each individual artwork, offering a thorough understanding of the artwork in terms of its historical and conceptual context as well as specifications around software, technology, exhibition space and installation in order to understand its needs for preservation and future presentations.

In the context of Geert Mul's case studies, this script is represented in the source code and programme backups as well as the complete system backup stored and safeguarded in LIMA's digital art repository; the case study report that chronicles all contextual, conceptual, historical, technical and instructional information; as well as the video registrations showing the artwork in real-time as it's supposed to behave. The report and video registration components as well as any other historical archival material (e.g. documents and images), are stored alongside each other and connected to the system and software backups stored in LIMA's digital art repository, creating a packaged artwork script that can be used to both preserve and re-present that artwork.

The developed artwork scripts for the preservation and future re-installation of each artwork case study enable Geert Mul to have better control of the preservation and future presentations of his works as well as enables galleries, museums and collectors who might be interested in exhibiting or acquiring his work. Furthermore, the artwork documentation package and artwork script model and its related tools developed out of this research provide other artists with the resources to create artworks scripts for their artworks.

RESEARCH METHODOLOGY

The approach taken by LIMA to enact this research follows the proposed methodology outlined in the project proposal.

1) Document the physical components (materiality / authenticity):

The physical components of the artworks were explored researching previously published materials, through the artist interview, and through developing the hardware specifications and wiring diagrams. All of these approaches took into account the specific materiality of the physical component and their functional purpose and conceptual meaning within artwork.

2) Document the work functioning on / in the original environment (look & feel):

Documentation of the work functioning in terms of its look and feel was accomplished through developing video documentations. These documentations illustrate how each work functions, behaves, its timing and the experience of the work, featuring the artist in the video discussing and demonstrating these points.

3) Document the technical specifications and generate metadata and checksums (hard facts):

Hardware and software specifications were fully documented. For hardware this includes detailing all technical components, types and specifications. For software, this includes doing detailing software specifications, doing source code and programme backups, as well as doing complete system backups, of which metadata was generated and checksums have been instituted to evaluate the software material.

In addition and in order to assess the deliverables of this research, LIMA used the opportunity of Geert Mul's subsequent solo exhibition in Dortmund to test the ideas of the artwork script and adjust where necessary. Each artwork case study was re-implemented in Dortmund based on the various methods stated above and tested to see where the artwork script contributed to an authentic presentation. The experience of this exercise suggests that the components of the artwork script do allow for successful and authentic future presentations of the artworks.

RAISING AWARENESS, SHARING KNOWLEDGE & USE

SYMPOSIUM

In the context of the Future Proof Media Art project, on February 8 & 9, 2017 LIMA presented the symposium FUTURE PROOF!?! Transformation Digital Art 2017 hosted at the Stedelijk Museum Schiedam in which LIMA and fellow experts presented new insights and next steps in their current research practice. The symposium served as an opportunity to introduce the then in-progress Future Proof research to a diverse audience, provided a setting in which experts in the field could experience the retrospective exhibition of Geert Mul, offered a space to engage attendees in a range of workshops related to the preservation of complex digital art, and provided a stage to experts to share their current and upcoming case studies and research practices with an engaged and active audience.

LIMA's Future Proof research exploring documentation strategies for software and interactivity were presented, as well as developments into archiving strategies for media artists. International state-of-the-art methodologies, technologies and case studies by a variety of experts representing museums, preservation organisations, artists and collections were presented and discussed during the symposium in a programme of keynotes, workshops and panel discussions.

Symposium contributors included artists, conservators, researchers and curators such as: Geert Mul (artist) Jon Ippolito (Professor of New Media, University of Maine), Jochem Van Der Spek (artist), Sabine Himmelsbach (HeK, Basel), Rachel Somers Miles (LIMA), Julia Noordegraaf (University of Amsterdam), Claudia Röck (NACCA), Tjarda de Haan (Amsterdam Museum), Tom Ensom (King's College, London), Klaus Rechert (University of Freiburg), Patrícia Falcão (UK, Tate Modern), Florian Cramer (NL, Rotterdam University of Applied Sciences), Annet Dekker (University of Amsterdam), Eef Masson (University of Amsterdam), Marcel Ras (NCDD), Ward Janssen (MOTI), Lara Garcia Diaz (LIMA), Gaby Wijers (LIMA), Josef (Seppo) Gründler (FH Joanneum, Graz), Sandra Fauconnier (Art Historian and Active Wikipedian), and Nina van Doren, (Researcher LIMA).

Day 1 of the symposium featured sessions on “Sustainable Digital Art”, “Research and Development”, a panel discussion on “Education and Cooperation: How to become and stay a professional in digital art conservation?” and what is “Future Proof!?” presented by Rachel Somers Miles LIMA researcher. The day also featured a series of tours to symposium attendees of Geert Mul’s exhibition guided by the artist himself.

Day 2 of the symposium offered a “Presentation and Discussion on NACCA PhD Research on the Preservation of Software-Based Art” by Claudia Roeck presenting on the *Shan Shui* and *Horizons* case study that is part of this Future Proof research. The day also featured a round of short presentations on documentation.

The second half of day 2 was occupied by workshops presented by LIMA researchers. Workshop I “Documentation for Artists: The What, When, Where and Why of Caring for the Future of Your Own Artwork” was presented by LIMA researcher Rachel Somers Miles. Based on insights gained from the development of the “artwork documentation model” developed as part of the Future Proof case study research, this workshop explored a series of guidelines to help artists document their own complex, software-based artworks.

Workshop II was presented by LIMA research Nina van Doren and discussed best practices, methods and models of digital art documentation for museum and collection professionals. Day II also featured guided tours by Geert Mul of his retrospective exhibition.

Over the course of two days 80 delegates representing 6 countries (Netherlands, Germany, United Kingdom, Switzerland, Denmark, USA) and 39 different organisations attended the symposium. In total 12 presentations and 2 panel discussions with 23 presenters was presented as well as 2 workshops with delegates. Geert Mul also offered 2 private tours of his exhibition speaking directly to the 80 delegates about his work and the Future Proof research.

ONLINE MATERIAL

To create awareness about the Future Proof Media Art project and its results to LIMA’s community of artists, labs, museums, galleries, heritage organisations and art preservation experts, the LIMA website has been used to share this knowledge. In particular, the website holds a dedicated Future

Proof Media Art section (<http://li-ma.nl/site/article/future-proof-media-art>) in which updates on the project research and results have been shared.

For example updates on the first phase of the project (<http://www.li-ma.nl/site/article/future-proof-media-art-first-phase>) and case studies and video registrations (<http://www.li-ma.nl/site/article/future-proof-media-art-conclusions>).

The website has also been used to promote the Future Proof Media Art Symposium (<http://www.li-ma.nl/site/news/future-proof-transformation-digital-art-2017>) as well as the availability of workshops (<http://www.li-ma.nl/site/article/workshop-documentation>).

In addition, LIMA releases regular newsletters offering summaries of such information and directly people to these places of further information on the website.

WORKSHOPS

As part of the Future Proof research, LIMA offered 2 workshops to media artists to share knowledge and explore their needs for documenting and preserving their own works. The workshop series is called “The What, When, Where and Why of Caring for the Future of Your Own Digital Artwork” with the first workshop of about 13 participants held during the Future Proof Symposium on February 9, 2017 and the second held at LIMA with 10 participants on May 18, 2017.

These two workshops aimed to explore the ways in which the Artwork Documentation Package developed by LIMA could be downsized to fit the needs of artists working by themselves to document and preserve their own artworks. Based on these meetings and input from the artists, LIMA developed the artwork script, fine-tuning the parameters and nuances of what its content should contain, and offered further insight into how to offer such guidance to artists. Such a process is typical of LIMA’s working ethos, whereby we work directly with key stakeholders in order to gain information to inform models, tools and services we develop in order to offer these as support to a larger community of practitioners.

During the project period Gaby Wijers (Director, LIMA) presented the DIY approach in artist documentation by LIMA on various seminars and lectures in the Netherlands, Hungary, Germany and Austria.

GENERAL PUBLIC

Through Geert's retrospective solo exhibition *Match Maker 27 Jaar Media Kunst* at the Stedelijk Museum was attended by many people in the general public. The exhibition inside the museum building was visited by 10.000 patrons, while installations in public outdoor space were twice this number. In addition, 770 students participated in the education programme of the museum around Mul's work.

As part of the Future Proof Media Art research we worked to raise awareness with a more general audience specifically about the need for media art preservation and what such preservation entails. In particular, we did this through a series of tours led by Geert Mul of the exhibition, which were attended by 300 visitors. However the people who attended the tours from this more general audience did not engage with any preservation issues presented and did not ask any preservation questions.

To grow this awareness wider and specifically focus on the issues of media art preservation, Geert Mul, LIMA and their Future Proof Media Art research was featured on the popular Dutch television show *Kennis van Nu*. You can watch Geert and the LIMA team in action on the episode via the show's website here: <https://www.dekennisvanu.nl/site/special/De-houdbaarheid-van-hedendaagse-kunst/89>

This episode of *Kennis van Nu* was watched by 280.000 households with more than 1 person in many households, and is also available online via the programme's website and YouTube.

USE OF METHODS & TOOLS DEVELOPED

ARTWORK DOCUMENTATION TOOL FOR ARTISTS
Based on the feedback and input offered by artists at the two "The What, When, Where and Why of Caring for the Future of Your Own Digital Artwork" workshops given by LIMA mentioned above, LIMA has taken this Future Proof Media Art knowledge and translated it into an online tool to offer guidance and assistance to artists to document their own artworks and thus create building blocks for their own artwork scripts.

The Artwork Documentation Tool - as it's called - that's been developed for artists (and in consultation with artists) has been created to empower them to be more in control of documenting and

archiving their own complex, software-based installations. LIMA has done this by taking the more complex Artwork Documentation Package that was developed as part of Future Proof and scaled it down creating a series of steps, guidelines and tasks that are offered through an online environment where artists have their own secure login to a personal portal to manage the different artwork documentations they've started. With this, LIMA offers artists a place to store contextual and technical information about their works, while being able to share this with interested galleries, museums, collectors, preservation organisations and as a record for themselves.

As a method for testing and improving the tool, and to act as a personal tool or method for Geert to store information from his art practice, the data produced from the artwork case study research has been inputted into LIMA's Artwork Documentation Tool.

After creating an account and entering their online portal, artists can start different documentation "packages" for their different artworks. For each artwork, the artist fills out basic information about the work, and can then move through a series of 8 steps each with a different focus:

- Save Sketches & Working Notes
- Make Backups & Store Appropriately
- Document Software
- Document Hardware & Playback Equipment
- Create Wiring Diagrams & Document Installation Build-Up
- Document Key Information About the Artwork
- Make a Video Registration of the Artwork
- Gather & Store All Additional Available Material

These steps and their related information and tasks give artists a stronger grasp on the needs of their works over time so that they will be able to continue presenting them.

The Artwork Documentation Tool is geared towards artists with artworks in progress, for artists going back and documenting older works, and for artists to document works that are being updated, which speaks to artists of many generations. The tool is suitable for all artists working in the realm of born-digital art, in particular those building complex, software-based installations. The tool itself has been developed in the context of LIMA's ArtHost project and is the first tool of the project which is freely accessible through the LIMA website. Visit the tool here: <http://li-ma.nl/adt>

The tool has been successfully launched online and has been shared marketed to 600+ artists and all of the art labs in the Netherlands with much excited response.

In addition LIMA is working with a number of art academies including the KABK, interaction design at ArtEZ & the Gerrit Rietveld Academie (Unstable Media Department) to explore and use the tool. Specifically, in the 2017/2018 academic year, LIMA has planned to work with students in interaction design of these academies to redesign the tool for functionality. The aim is to raise awareness with these artist students who we'd like to use the tool, and also offers a chance for LIMA and the students to collaborate on the tool's final design.

INTERNATIONAL INTEREST

Geert Mul's retrospective exhibition at the Stedelijk Museum Schiedam and the Future Proof Media Art documentation and preservation research around it has generated international interest on many levels.

Directly after the Stedelijk Museum exhibition Geert presented a new solo exhibition in Dortmund called "Match Maker" that re-installed all of the artwork case studies that are part of the Future Proof research. The interest by Dortmund U in presenting this exhibition speaks to the importance of the artist's historical body of the work and presented an excellent opportunity upon which LIMA could test the artwork scripts developed as part of the Future Proof research project.

In addition to the Dortmund solo exhibition, there has also be interest from Belgium, China ('Himalaya' exhibition space Shanghai and Art University of Nanjing) and wider Germany. For the Art University of Nanjing in particular the interest focuses on the research approach of Future Proof in which these parties want to write about and present on the research on a local level, in particular the development of an artwork script and the Artwork Documentation Tool. 'Himalaya' exhibition space Shanghai which will showcase a number of the artworks that are part of the Future Proof case studies, and will in edition speak to the preservation of these works.

NEXT STEPS

In addition to continuing to share the research and models developed during the Future Proof Research project such as the artwork script with local and international audiences, and in addition to the development of the Artwork Documentation Tool, there are more next steps and further extensions the research can make.

For example, LIMA plans to continue to take the artwork scripts developed and test and use these for subsequent presentations of Geert Mul's artwork. Furthermore, the goal of the research was to make a script for future presentations of Mul's artwork. This was accomplished, but an extension or next step from this point is to explore the permanent and continued display of such artworks which wasn't part of the remit of this research. In particular there is talk of the case study artwork *Shan Shui* being acquired into the permanent collection of a prestigious Dutch art museum with the intent of permanent display. Permanent display of media artworks offers new and different challenges that need to be further investigated as a spin off of this research.

In addition, LIMA will continue supporting the DIY approach of artists as found in Future Proof by continuing work on their ArtHost project. In line with LIMA's mandate, ArtHost seeks to empower artists to take ownership of the way their work will be preserved and presented in the future.



ATTACHMENT 1

DIGITAL ARCHIVING: TIPS & TRICKS

INTRODUCTION

At LIMA we support artists in documenting, archiving and preserving their work. This document offers you advice to help you structure digital archive. This will help you avoid losing material and enable you to better find your files and the information they contain. The examples given below are offered as an illustration and intended to be adaptable to your own working process. So take a look through and see what applies to you and how you might need to adjust these guidelines to your own organisation mind and methods.

To be guided through a more involved documentation process of your artworks that covers a variety of information see the Artwork Documentation Tool created by LIMA. To support you in the documentation process of your born-digital art, this tool is free to use and provides a structure and guidance for collecting and storing all the technical, conceptual and contextual information of your born-digital works. See <https://www.li-ma.nl/adt/>

DIGITAL FOLDER STRUCTURE

The first thing to consider when organising your digital archive is the kind of 'index' to apply. The index operates as the main or head level of organisation under which all of your material will be structured. Choose an index that corresponds to your personal working process.

Consistently using the same organising structure for your index is actually more important than the organising structure you use. Being consistent helps you become familiar with your structure and how it's handled throughout your digital archive, while navigating and find your data becomes more easy.

To illustrate, here are a few examples of possible indexes to use:

Chronologically

Create folders per year (or, for a broader scope, a folder per decade).

Subdivide these chronological folders by creating a maximum of 8 subfolders.

Subfolders could, for example, look like:

- Projects
- Contracts
- Exhibitions
- Technique
- Reference
- Finance
- Publicity
- Correspondence

Per Production/Project

Since some projects may be developed over years, an index based on 'productions' could be more suitable for an artist's archive. In this case, the foundation consists of project titles. These, again, can be subdivided into various categories (max. 8) for instance research, realisation, acquisition etc.

A 'project' folder may consist of the actual work, meaning all of the digital elements needed for the work to function.

Medium-based

An index based on the applied technique: video, software-based, photography, mixed-media, etc.

- Video
- Photography
- Software
- Text
- Mixed media
- Etc.

FILE NAMING

Generally you can use the following signs:

- Letters a to z and A to Z
- Numbers 0 to 9
- Underscore _
(use_underscores_to_separate_words)
- and hyphen -
(use-hyphens-to-separate-categories)

However, never use:

- Spaces. Some software cannot recognise spaces. In addition to underscores (e.g. file_name.xxx) you can either use no separation (e.g. filename.xxx) or CamelCase, where the first letter of each section of text is capitalised (e.g. FileName.xxx)
- Punctuation marks !:(?);;...
- Diacritics èéàùç
- Special characters #|\$\$ /*%@

A meaningful filename consists essentially of the subject and the file extension (for example .doc, .jpg, etc.). This would look like: filename.xxx

Other than these two elements, you can include a variety of other information that describe the content of the file. Here are some suggestions:

Date: If you archive files and you want them to list chronologically when sorted alphabetically, use the YYYYMMDD format. This way the files will sort by year, month, and then day). Insert the date either at the beginning or the end of the filename. For example: 20170914_ArtistArchive.docx

Document type: You can list the document type in the filename as an abbreviation. Contract (CON), Invoice (INV), Instructions (INS) etc, or whatever abbreviations make sense to the materials you have.

Author: If necessary you can insert the name of the author or contact in the filename, or somewhere else (for example the file properties section). For correspondence, you can name the addressee or sender by their surname or initials. Example: ArtistArchive_MvdW.docx

Version: To differentiate between versions of a file you can apply numbering. Start with 01, 02, 03 etc. for concept versions. For final versions, you can continue with 10. If you decide to continue to work on a final version, you can number 11, 12, 13 etc. Example: ArtistArchive_v01.docx

Extension: Save in a sustainable file format. See list below.

Note: Use up to a maximum of 31 characters in your filename. Filenames/paths of excessive length cause problems for some software (for example, copying files may become impossible)

BACKUP

Keeping at least 2 copies of your files is recommended – more copies is of course better. Preferably store your backups in different geographical locations, so in case of a fire or a computer crash you don't lose all your work.

A solid backup system might look like: one onsite backup (stored at home), one remote backup (for instance at the studio), an online backup (cloud-based backup). Keep in mind that carriers such as USB sticks, hard drives and SD cards are not ideal for long-term storage as they are vulnerable to

spontaneous crashes. "It's not if a hard drive will fail, it's when".

Aside from making backups, it's important that they are periodically checked. Files can be altered, corrupted or changed without being noticed, for instance because of file migration. To avoid loss of data, check your files for instance every first day of the month.

You can monitor if a file has changed by applying checksums or hashes: this is the digital fingerprint of a file in the form of a set of numbers. Checksums are used to ensure the integrity of a file. For instance, after moving a file from one location to another, the checksum should be unchanged. If this is not the case, it means the file has changed. There are various programs for file verification available. For an overview see https://en.wikipedia.org/wiki/Comparison_of_file_verification_software. Furthermore, see <https://blogs.loc.gov/thesignal/files/2014/02/NDSA-Checking-your-digital-content-Draft-2-5-14.pdf> for more detailed information on how to check files.

SUSTAINABLE FILE FORMATS

While open-source or proprietary software hardly differ in quality, using open-source software has the benefit of not being reliant on commercially-driven industries – which theoretically makes it more stable for a longer term. Conversely, proprietary software can be more user-friendly and more widespread - but the interest for software companies to maintain their technologies is limited to commercial demand. All in all, the choice for a particular software is always personal, and may of course be motivated by other reasons than (only) sustainability. However, as this document serves as a help for organizing your data for the long term, below is a general list of current sustainable formats:

- Text: PDF/A, DOCX
- Video: AVI, MPEG-4,
- Audio: WAVE, MP3_FF
- Image: TIFF, SVG_1_1,

The Library of Congress did some excellent work on this topic and they provide a useful web page that allows you to browse through descriptions of the various formats here:

<https://www.loc.gov/preservation/digital/formats/fdd/descriptions.shtml>

ATTACHMENT 2

GENERAL QUESTIONS

Concept/Idea

1) Briefly describe the original concept/idea of the artwork:

- Concept of the artwork
- How it works (very generally)

Significance of Artwork & Why Created

2) Briefly describe the significance of the artwork in the context of the history of your practice?

- Where does the concept and original idea originate from? (e.g. a specific historical event, development, project, exhibition, discussion?)
- Why was work created?
- Why you had the urge to make this at the time?
- Why the particular technology used?
- On what occasion was the work created
- How do you see this work as fitting within your practice? Your trajectory, it's relationship to other work you've made?

Perception of Work at the Time?

3) Since the artwork used innovative and "new" technology at the time it was made, how was this received by people then?

What is the Work?

4) What do you consider the aspects of the work and how do they relate to its concept?

- Physical presentation? Aesthetics?
- Software & technology to run it?
- Experience & interaction with the audience?
With specific timing?

Variable & Versions?

5) Is the work variable? Are there other versions? Has it or does it change every time it is exhibited? To what extent?

- Is there a definitive version of the work?

Exhibition Ideals

6) For you which were the most interesting or significant moments of the works exhibition & where/when was this?

7) At which exhibition or moment do you think the work was presented in the most ideal way?

- Why?
- Would that be the ideal exhibition set-up?

8) The least ideal set-up of the work, and why?

Exhibition Space

9) Would you consider the work site-specific?

10) What kind of space is required to exhibit the work?

- What are the requirements of the physical space in which the work is presented?
- What is the ideal setup?
- What is minimally required?
- Is it possible to set parameters for the presentation space?

Preservation & Re-Presentation Challenges

11) What do you see as the most apparent challenge in maintaining the possibility to continue to re-install the artwork?

- Technology obsolescence?
- Platform obsolescence?
- Knowledge missing?
- Personal interest?

12) In terms of the presentation of the artwork (e.g. what is seen & how user interacts or views work), what would be acceptable in terms of changes?

• What is the scale or range of acceptability for the changes?

13) In terms of the technology of the artwork (e.g. how it functions, components etc), what would be acceptable in terms of changes?

• What is the scale or range of acceptability for the changes?

Death of Artwork / Artwork vs Documentation?

14) At what point would you consider letting the work be ended, and no longer present it?

- What changes in the artwork's physical hardware/playback equipment, change in function, change in aesthetic would make you consider that the artwork can no longer be presented?
- At what point for you is the artwork no longer the artwork and just documentation?

TOEN EN NU (1990)

Concept/Idea

1) Briefly describe the original concept/idea of the artwork.

- Concept of the artwork
- How it works (very generally)

Significance of Artwork & Why Created

2) Briefly describe the significance of the artwork in the context of the history of your practice.

- Where does the concept and original idea originate from? (eg. a specific historical event, development, project, exhibition, discussion?)
- Why was work created?
- Why you had the urge to make this at the time?
- What is the significance of the words "Toen" & "Nu" for you at that time? Why the specific font? Why the colours? Why the timing?
- Why the particular technology used?
- Why at that time did you choose for it to be live generated? What is significance? And significance in that moment in time?
- Why did you use the Amiga? And how did this function at the time?
- How much time did it take to programme? Challenge of the time?
- Did someone help you programme it? Co-production?
- On what occasion was the work created
- How do you see this work as fitting within your practice? Your trajectory, It's relationship to other work you've made?

Perception of Work at the Time?

3) Since the artwork innovative and "new" technology at the time it was made, how was this received by people then?

What is the Work?

4) What do you consider the work here?

- Physical presentation?
- Software & technology to run it?
- Experience & interaction with the audience? With specific timing?

Variable & Versions?

5) Is the work variable? Are there other versions? Has it or does it change every time it is exhibited? To what extent?

- Is there a definitive version of the work?

Exhibition Ideals

6) For you which were the most interesting or significant moments of the works exhibition & where/when was this?

7) At which exhibition or moment do you think the work was presented in the most ideal way – and why?

- Would that be the ideal exhibition set-up?

8) The least ideal set-up of the work, and why?

Space

9) Would you consider the work site-specific?

10) What kind of space is required to exhibit the work?

- What are the requirements of the physical space in which the work is presented?
- What is the ideal setup?
- What is minimally required?
- Is it possible to set parameters for the presentation space?

Tech Questions

- Where is the sound generated from?
- Where is it currently playing from? And SD card?
- Can the work be on display for months & months? Or will it hurt the technology?
- How long can be left on playing during the day?

Preservation & Re-Presentation Challenges

11) What do you see as the most apparent challenge in maintaining the possibility to continue to re-install the artwork?

- Technology obsolete?
- Platforms obsolete?
- Knowledge missing?
- Geert's Interest?
- Currently it's playing off an SD card correct? Since the audience isn't aware playing off SD card is this ok?

- The work is live-generated – for the sake of continuing to present it would you be open to having the text movement video recorded and played through Amiga monitor?
- If we went this route – how would we inform the public?
- Same with SD card vs. Floppy – should audience be aware of change?

12) In terms of the presentation of the artwork (eg. what is seen & how user interacts or views work), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

13) In terms of the technology of the artwork (eg. how it functions, components etc), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

Death of Artwork / Artwork vs Documentation?

14) At what point would you consider letting the work be ended?

- With what changes would the artwork be ended? In relation to changes for preservation
- When is the artwork no longer the artwork and just documentation?

This Land is Man-Made (2000)

Concept/Idea

1) Briefly describe the original concept/idea of the artwork:

- Concept of the artwork
- How it works (very generally)

• Is the work playing correctly?

Significance of Artwork & Why Created

2) Briefly describe the significance of the artwork in the context of the history of your practice?

- Where does the concept and original idea originate from? (eg. a specific historical event, development, project, exhibition, discussion?)
- Why was work created?
- Why you had the urge to make this at the time?

- Why the particular technology used?
- On what occasion was the work created
- How do you see this work as fitting within your practice? Your trajectory, it's relationship to other work you've made?

Perception of Work at the Time?

3) Since the artwork innovative and "new" technology at the time it was made, how was this received by people then?

What is the Work?

4) What do you consider the work here?

- Physical presentation?
- Software & technology to run it?
- Experience & interaction with the audience? With specific timing?

Variable & Versions?

5) Is the work variable? Are there other versions? Has it or does it change every time it is exhibited? To what extent?

- Is there a definitive version of the work?

Looping:

Changes between different water images of the video projection seem to be transitioning differently than in the video registration on Geert's website: Video projection of installation in neutral state loops by playing forward & then reverse. On registration from website it plays as more of a quick jump when looping.

- Why was this change made? On purpose? etc.

Exhibition Ideals

6) For you which were the most interesting or significant moments of the works exhibition & where/when was this?

7) At which exhibition or moment do you think the work was presented in the most ideal way – and why?

- Would that be the ideal exhibition set-up?

8) The least ideal set-up of the work, and why?

Space

9) Would you consider the work site-specific?

10) What kind of space is required to exhibit the work?

- What are the requirements of the physical space in which the work is presented?
- What is the ideal setup?
- What is minimally required?
- Is it possible to set parameters for the presentation space?

Tech Questions

- Is monitor poem is playing on synced with video projection in any way?

Sound:

Sound is playing from the small monitor of the landscape w/ poem. Video project appeared to be silent when we visited it last time. What is sound supposed to be like?

How is video projection sound linked to image? Based on what particular image of water is playing?

What should sound levels be like when installation is not being interacted with?
What should sound levels be like when installation IS being interacted with - eg. when you're right in front of monitor.

Preservation & Re-Presentation Challenges

11) What do you see as the most apparent challenge in maintaining the possibility to continue to re-install the artwork?

- Technology obsolete?
- Platforms obsolete?
- Knowledge missing?
- Geert's Interest?

12) In terms of the presentation of the artwork (eg. what is seen & how user interacts or views work), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

13) In terms of the technology of the artwork (eg. how it functions, components etc), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

Death of Artwork / Artwork vs Documentation?

14) At what point would you consider letting the work be ended?

- With what changes would the artwork be ended? In relation to changes for preservation
- When is the artwork no longer the artwork and just documentation?

Library of Babel (2003)

Concept/Idea

1) Briefly describe the original concept/idea of the artwork:

- Concept of the artwork
- How it works (very generally)

Significance of Artwork & Why Created

2) Briefly describe the significance of the artwork in the context of the history of your practice?

- Where does the concept and original idea originate from? (eg. a specific historical event, development, project, exhibition, discussion?)
- Why was work created?
- Why you had the urge to make this at the time?
- Why the particular technology used?
- On what occasion was the work created
- How do you see this work as fitting within your practice? Your trajectory, it's relationship to other work you've made?

Perception of Work at the Time?

3) Since the artwork innovative and "new" technology at the time it was made, how was this received by people then?

What is the Work?

4) What do you consider the work here?

- Physical presentation?
- Software & technology to run it?
- Experience & interaction with the audience? With specific timing?

Variable & Versions?

5) Is the work variable? Are there other versions? Has it or does it change every time it is exhibited? To what extent?

- Is there a definitive version of the work?

Exhibition Ideals

6) For you which were the most interesting or significant moments of the works exhibition & where/when was this?

7) At which exhibition or moment do you think the work was presented in the most ideal way – and why?

- Would that be the ideal exhibition set-up?

8) The least ideal set-up of the work, and why?

Space

9) Would you consider the work site-specific?

10) What kind of space is required to exhibit the work?

- What are the requirements of the physical space in which the work is presented?
- What is the ideal setup?
- What is minimally required?
- Is it possible to set parameters for the presentation space?

Tech Questions

- You mentioned that the image database made up of 80,000 images from internet selected at random. How was this done?
- What happens w/ more than 1 person across the different tiles? How do different projections respond to each other?
- When the work is activated, at what point do new images stop showing up on the tile?
- At what point do the underlying colours of each tile get small again?
- When we stepped on these colour blobs were small - but when finished they were huge. Do they ever decrease in size? Reset?
- You say that the second tile activated is defined by the space that is being shaped by the first one - how does this work? In what way?

Sound:

- You mentioned in your summer interview that the sound needed to be restored. That it hadn't. Did you end up doing this in a way you like for the exhibition? Ideal?
- How is sound activated?
- There is an ambient sound playing. when step on switch a glitchy/static sounds is emitted - same sound for each tile + bloopy sound.
- You've said no samples have been used for sound, that sounds are created with waveforms.

- Is this live generated? Or recorded & played when tiles activated?
- "Bloop" sounds stop when you step off the tile, but static sounds continue afterwards
- for how long?

Preservation & Re-Presentation Challenges

11) What do you see as the most apparent challenge in maintaining the possibility to continue to re-install the artwork?

- Technology obsolete?
- Platforms obsolete?
- Knowledge missing?
- Geert's Interest?

12) In terms of the presentation of the artwork (eg. what is seen & how user interacts or views work), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

13) In terms of the technology of the artwork (eg. how it functions, components etc), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

Death of Artwork / Artwork vs Documentation?

14) At what point would you consider letting the work be ended?

- With what changes would the artwork be ended? In relation to changes for preservation
- When is the artwork no longer the artwork and just documentation?

Random Access Memories (2008)

Concept/Idea

1) Briefly describe the original concept/idea of the artwork:

- Concept of the artwork
- How it works (very generally)

Significance of Artwork & Why Created

2) Briefly describe the significance of the artwork in the context of the history of your practice?

- Where does the concept and original idea originate from? (eg. a specific historical event, development, project, exhibition, discussion?)
- Why was work created?

• **Why did you decide to make this “version” of the work- using own images? V personal.**

- Why you had the urge to make this at the time?
- Why the particular technology used?
- On what occasion was the work created
- How do you see this work as fitting within your practice? Your trajectory, it’s relationship to other work you’ve made?

Perception of Work at the Time?

3) Since the artwork innovative and “new” technology at the time it was made, how was this received by people then?

What is the Work?

4) What do you consider the work here?

- Physical presentation?
- Software & technology to run it?
- Experience & interaction with the audience?
With specific timing?

Variable & Versions?

5) Is the work variable? Are there other versions? Has it or does it change every time it is exhibited? To what extent?

- Is there a definitive version of the work?

Exhibition Ideals

- Where was the work exhibited?

6) For you which were the most interesting or significant moments of the works exhibition & where/ when was this?

7) At which exhibition or moment do you think the work was presented in the most ideal way – and why?

- Would that be the ideal exhibition set-up?

8) The least ideal set-up of the work, and why?

Space

9) Would you consider the work site-specific?

10) What kind of space is required to exhibit the work?

- What are the requirements of the physical space in which the work is presented?
- What is the ideal setup?
- What is minimally required?
- Is it possible to set parameters for the presentation space?

Tech Questions

- What & where does the pool of images come from? Personal Images but how are these selected?
- How big is the database of these images currently?
- You mentioned you’d be fine with adding more images to this pool b/c it represents your life in a way.
- Are you currently actively adding images to it?
- Would there be a limit to this?
- What sets the timing of the images changing? What sets order & configuration in which new images appear.
- Is there a standard set of parameters for image analysis? How many different images are shown at once? How does this work?
- Does the work always have to be 5 x 5?
- Any reason for this configuration?
- Do you make the wooden blocks? Remade each time? Or Stored?
- Where is the sound generated from? Is it synced to image changes?

Preservation & Re-Presentation Challenges

11) What do you see as the most apparent challenge in maintaining the possibility to continue to re-install the artwork?

- Technology obsolete?
- Platforms obsolete?
- Knowledge missing?
- Geert’s Interest?

12) In terms of the presentation of the artwork (eg. what is seen & how user interacts or views work), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

13) In terms of the technology of the artwork (eg. how it functions, components etc), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?
- Would you consider the work to be complete once you stop adding images to the database?

Death of Artwork / Artwork vs Documentation?

14) At what point would you consider letting the work be ended?

- With what changes would the artwork be ended? In relation to changes for preservation
- When is the artwork no longer the artwork and just documentation?

Relationship to DATA ARCHITECTURE / The Order of Things

- All 3 works are technically the same – you mentioned this is the most complex – how so?
- Other 2 works not exhibited in Schiedam – Do you have an idea about how you'd be interested in documenting & preserving these?
- Focus on the technology with Wiel & Document the conceptual & historical significance of Data Architecture & The Order of Things?
- Other than some parameters in the code, data sets, projection surface & mapping set-up (eg. presentation set-up)
- What about finding the missing configuration interfaces for "data arch" and "the order of things"?
- What about defining the specific image pools for these 2 different works - as they're work-defining.

Data Architecture

- What are the images & where did they come from? How were they selected to build the database? Geert thinks the 2003 space of the internet is integral to the work.
- Is it site specific or what kind of mapping program is used so that specifically aligns with windows in the room?
- How is the projector adapted to the window?
- If it's real-time generative - where is there a database of 2003 images to pull from?
- Is there sound?

- Is the method in which the images reveal themselves on the screen programmed? Or does this happen differently all the time (eg. comes in as horizontal stripes, left to right, top to bottom, then next set from bottom right corner diagonally left to right as fills in from that corner up to top left corner)
- Algorithm? What are the parameters? Ranges?
- Images appear & disappear at different speeds at different times
- Sometimes displayed as large, sometimes small. How is this decided? Algorithm?
- Is there a set list of parameters for pulling in images & also the ways in which they are displayed?
- What sets the timing of the images changing? What sets order & configuration in which new images appear. Could the live-generated work be recorded & displayed?

The Order of Things

- Where did the images of the monuments come from? How were these specific images of the monuments selected to build the database?
- Could more of these images be added?
- Is the site specificity of the embassy and shape of the ceiling integral to the work?
- Looks like a domed ceiling? Or this could be an optical illusion?
- Is the method in which the images reveal themselves on the screen programmed? Or does this happen differently all the time?
- Algorithm? What are the parameters? Ranges?
- Images appear & disappear at different speeds at different times
- Sometimes images seem to appear as large, sometimes small. How is this decided? Algorithm?
- Is there a set list of parameters for pulling in images & also the ways in which they are displayed?
- What sets the timing of the images changing? What sets order & configuration in which new images appear.

Could the live-generated work be recorded & displayed?

God's Browser (2010)

Concept/Idea

1) Briefly describe the original concept/idea of the artwork:

- Concept of the artwork
- How it works (very generally)

Significance of Artwork & Why Created

2) Briefly describe the significance of the artwork in the context of the history of your practice?

- **What year was the work made in – 2010?**
- **Where was it exhibited?**

- Where does the concept and original idea originate from? (eg. a specific historical event, development, project, exhibition, discussion?)
- Why was work created?
- Why you had the urge to make this at the time?
- Why the particular technology used?
- On what occasion was the work created
- How do you see this work as fitting within your practice? Your trajectory, it's relationship to other work you've made?

Perception of Work at the Time?

3) Since the artwork innovative and "new" technology at the time it was made, how was this received by people then?

What is the Work?

4) What do you consider the work here?

- Physical presentation?
- Software & technology to run it?
- Experience & interaction with the audience? With specific timing?

Variable & Versions?

5) Is the work variable? Are there other versions? Has it or does it change every time it is exhibited? To what extent?

- Is there a definitive version of the work?
- On your website it mentions that "God's Browser 01" was developed at Baltan. Is there an "02" or other versions?

Exhibition Ideals

6) For you which were the most interesting or significant moments of the works exhibition & where/when was this?

7) At which exhibition or moment do you think the work was presented in the most ideal way – and why?

- Would that be the ideal exhibition set-up?

8) The least ideal set-up of the work, and why?

Space

9) Would you consider the work site-specific?

10) What kind of space is required to exhibit the work?

- What are the requirements of the physical space in which the work is presented?
 - What is the ideal setup?
 - What is minimally required?
 - Is it possible to set parameters for the presentation space?
- You mention therein should be about 3m from screen - is this dependent on size of space? Current install is quite small space compared to church install.

Tech Questions

Database of Images: You say images are not completely random as generally address and are related to: animals, nature, cosmos, earth, universe. But how were these initially selected? Did you handpick from internet? Or did some image analysis software pull images from online ?

- I understand image groupings are done in batches and then displayed – so not live- how does that work?
- What kind of calibration needed to make function properly?
- Can we designate actual settings to use as instructions for re-installation?
- Eg. the distance from theramin to enact certain reactions of projection.
- Are there presets for the distance at which the image changes start to speed-up? Meaning at 30-40cm close to theremin gets faster.

Sound:

You say the midi just responds to whenever the video jumps to a different category of images when software has no more like images to match it with. And then it chooses another Midi note

- Chooses the new Midi note at random?

Preservation & Re-Presentation Challenges

11) What do you see as the most apparent challenge in maintaining the possibility to continue to re-install the artwork?

- Technology obsolete?
- Platforms obsolete?
- Knowledge missing?
- Geert's Interest?

12) In terms of the presentation of the artwork (eg. what is seen & how user interacts or views work), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

13) In terms of the technology of the artwork (eg. how it functions, components etc), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

Death of Artwork / Artwork vs Documentation?

14) At what point would you consider letting the work be ended?

- With what changes would the artwork be ended? In relation to changes for preservation
- When is the artwork no longer the artwork and just documentation?

Match of The Day (2004-2008)

Concept/Idea

1) Briefly describe the original concept/idea of the artwork:

- Concept of the artwork
- How it works (very generally)

Year work created?

Do you consider what is on display as documentation? As I believe you consider the programmed to be the artwork

Significance of Artwork & Why Created

2) Briefly describe the significance of the artwork in the context of the history of your practice?

- Where does the concept and original idea originate from? (eg. a specific historical event, development, project, exhibition, discussion?)
- Why was work created?
- Why you had the urge to make this at the time?
- Why the particular technology used?
- On what occasion was the work created
- How do you see this work as fitting within your practice? Your trajectory, it's relationship to other work you've made?
- How would you describe or detail its exhibition history?
Book? Videos? Prints etc?

Perception of Work at the Time?

3) Since the artwork innovative and "new" technology at the time it was made, how was this received by people then?

What is the Work?

4) What do you consider the work here?

- Physical presentation?
- Software & technology to run it?
- Experience & interaction with the audience?
With specific timing?

Variable & Versions?

5) Is the work variable? Are there other versions? Has it or does it change every time it is exhibited? To what extent?

- Is there a definitive version of the work?

Exhibition Ideals

6) For you which were the most interesting or significant moments of the works exhibition & where/when was this?

7) At which exhibition or moment do you think the work was presented in the most ideal way – and why?

- Would that be the ideal exhibition set-up?

8) The least ideal set-up of the work, and why?

Space

9) Would you consider the work site-specific?

10) What kind of space is required to exhibit the work?

- What are the requirements of the physical space in which the work is presented?
- What is the ideal setup?
- What is minimally required?
- Is it possible to set parameters for the presentation space?

Preservation & Re-Presentation Challenges

11) What do you see as the most apparent challenge in maintaining the possibility to continue to re-install the artwork?

- Technology obsolete?
- Platforms obsolete?
- Knowledge missing?
- Geert's Interest?

12) In terms of the presentation of the artwork (eg. what is seen & how user interacts or views work), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

13) In terms of the technology of the artwork (eg. how it functions, components etc), what would be acceptable in terms of changes?

- What is the scale or range of acceptability for the changes?

Death of Artwork / Artwork vs Documentation?

14) At what point would you consider letting the work be ended?

- With what changes would the artwork be ended? In relation to changes for preservation
- When is the artwork no longer the artwork and just documentation?

Chooses channels based on what images are – not on context.

- Geert needs to define what is "interesting" to him.
- Said important that works are chosen from TV b/c specific aesthetic - what is this aesthetic? grainy & scan lines etc?.
- how do you select the images?
- Could ask Geert if he passes, could the work become static and no new versions made?
- Preserve programmed work so that it's still available for him to use.
- No new output after Geert passes? What does he think?

- What's preserved? Software & output

Programme Is an output of experiments with automatic editing. Outcome of it was not interesting for him, but he came to idea to come to this work.

Programme runs constantly? Is it running all the time.

- Does Geert still use it to make matches?
- Apparently it deletes old matches when hard disk is full. How big is hard
- 30 channels a day, few fragments per channel, = 40,000 fragments total.
- Does it delete fragments when reaches 40,000?

What are the parameters of the work? When does work end/die and the rest becomes documentation?

What is state of the computer programmed right now?

ATTACHMENT 3

DOCUMENTATION OF INTERACTIVITY (BASIS FOR DISCUSSION FOR THE COP MEETING)

- There can be several motivations to describe interactivity: a) detailed description when transferring the work to newer equipment. b) to test an installation c) to add to the general description of the artwork (i.e. for public access) d) other
- The spreadsheet below gives an idea how to document the interactivity for a) and b) mentioned above.
- For a general description of the artwork in a database (c), Tiziana Caianiello's form seems to be too extensive. However, some features could be used and be combined with Katja Kwastek's ontology of interactivity (s. publication list at the end).

Case study: Shan Shui (2013) Geert Mul
<http://geertmul.nl/projects/shan-shui/>
(s. separate documentation)

Extreme and typical situations	Visitor input	Description of output (sound, image, ...)	Computer action	Source code
no visitors		Still image (each time the program is started a different image ?) Sound:	randomly (?) pick an image from image database	
1 visitor				
	visitor enters room	The image splits at the horizontal position where the visitor entered the range of the sensor and a new image starts to overlay the previous image from the centre of the split. Sound:		line no... to line no ...
	visitor moves horizontally	The image split follows the visitor horizontally leaving behind a blurred track. Sound:		
	visitor moves toward screen	The vertical dimension of the image becomes smaller and smaller the closer the visitor moves to the screen. The minimal vertical size of the image is about one quarter of the projection size. The is centred in the middle. Sound:		
	visitor moves away from screen	The vertical dimension of the image becomes larger and larger the further away the visitor moves from the screen. The maximal vertical size of the image is (almost?) the full height of the projection. It is centred in the middle. Sound:		
Several visitors				
many visitors		The image is split up at several horizontal positions at the same time (the positions of the visitors). The single images are therefore not recognisable anymore, as they are constantly overlaid by new images. Sound:		
optimal number: 1 to 2 visitors?		Sound:		

QUESTIONS

- Should the spreadsheet above also contain a column for the equipment / hardware?
- Would it help document the levels of interactivity as for instance suggested by Herbert 2013?

(Herbert 2013, pp. 212–214):

1 Static

The art object does not change and is viewed by a person. There is no interaction between the two

2 Dynamic-Passive

The art object has an internal mechanism that enables it to change or it may be modified by an environmental factor such as temperature, sound or light. The internal mechanism is specified by the artist and any changes that take place are entirely predictable. (...) The viewer is a passive observer of this activity performed by the artwork in response to the physical environment.

3 Dynamic-Interactive

All of the conditions of the dynamic passive category apply with the added factor that the human 'viewer' has an active role in influencing the changes in the art object. (...) The work 'performs' differently according to what the person does or says. There may be more than one participant and more than one art object...

4 Dynamic Interactive (Varying)

The conditions for both 2 and 3 above apply, with the addition of a modifying agent that changes the original specification of the art object. The agent could be a human or it could be a software program. Because of this, the process that takes place, or rather, the performance of the art system cannot be predictable. It will depend on the history of interactions with the work.

- Has anybody used a formal model to map the physical activation to the logical response of a device as suggested in Dix et al. 2009, chapter 4.2?
- How to document the evolvement of an artwork (performativity / processuality) which is based on interactivity? Is this also part of interactivity?

LITERATURE

interactivity

(Lurk, Enge; Rinehart; Stern 2016)(Herbert 2013; Kwastek, Spörl 2009; LIMA, SBMK 2015; Lopes

2001)(Dix et al. 2009; Giebeler; Graham 1997) (Caianiello; Campbell 2000)

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Stern, Nathaniel (2016): Interactive Art. Interventions in/to Process. In Christiane Paul (Ed.): A Companion to Digital Art. Hoboken, NJ: John Wiley & Sons, Inc.

ATTACHMENT 4

GUIDELINES FOR MAKING VIDEO REGISTRATION (FROM ARTWORK DOCUMENTATION TOOL):

When the artwork is installed it's important to make a video registration. The purpose of this registration is to: give an impression of the functionality and key parameters of the artwork; document how it is installed in an exhibition space; capture the proper functioning of the artwork such as how it is activated, its response behaviour and timing when interacted with; and audience behaviour. The intent of the video is to create a document that can assist in installing, running, or recreating the work for future presentations. The video should be 10-15 mins maximum.

Ideally the video will capture you, the artist, answering the following points in front of the artwork as it is running and, if interactive, while interacting with it. It's helpful to have someone film and ask you the questions.

1. State your name, the title of the artwork, the date it was created and a version number if required, the location of the video documentation and the date of recording. This information can also be captured by writing it down on a piece of paper and shooting it as a kind of title card.
2. Briefly describe the concept of the artwork and shoot the artwork as installed in the space.
3. Describe & show step-by-step how the artwork functions & how it's activated.
4. Describe & show how the artwork should behave when interacted with. How does this change with the addition or removal of people?
5. Share something you find significant about the preservation or presentation of the artwork. Perhaps it requires a certain sized space, or there's a special physical component of the installation, there's an irreplaceable part, etc. If the artwork is not installed in ideal conditions in the registration, here is a good place to explain in what way the exhibition space would ideally be different.

Use whatever technology and resources you are able to make available to create the video registration.

VIDEO-REGISTRATIE

GEERT MUL @SM SCHIEDAM

template

written by José Biscaya

Video registration length ideally between 5 – 10 minutes. Language: English

Focus on conservation topics, has to give a good impression for conservators and researchers.

- Documenting how the artwork exists within the space, show how to be re-installed later on
- Intent to show interaction, timing, experience of the art-work (show how to interact with the art-work, show how the art-work behaves when it interacted with, show the experience of interacting with the artwork)

EMPHASIS ON IMPRESSION

[opening credits] ±10sec

*Geert Mul, [WERK], [JAAR], [COLLECTIE]
[SPECS WERK]*

Registration by LIMA [DATUM] [ETC..]

[INTRODUCTION] ±1min

*Video installation will be introduced to the viewer.
Only actual sounds, no commentary sound (no VO)*

- *establishing shot: wide angle, front view*
- *medium-shot: details installation (optional)*

[DEVELOPMENT] ±5min

*Video installation will be explained by the artist.
Actual sounds, commentary sound (VO).*

- *wide shot: action: a visitor walks into the installation and interacts*
- *medium-shot: details installation in interaction*
- *wide shot / medium shot*
- {QUESTIONS}*
- 1) *Describe the concept of the artwork (no interaction, stands beside the artwork)*
- *close-ups: details...*
- *screen-captures*
- *wide shot / medium shot*
- {QUESTIONS}*
- 2) *Describe how artwork should function (2x → with and with no interaction)*
- *POV: first person, go into installation and interact*
- *wide shot / medium shot*
- {QUESTIONS}*