

S + T + ARTS

REPAIRING the PRESENT



European
Commission



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S+T+ARTS



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STATEMENT

The present E-publication is the collective effort of the Regional S+T+ARTS Centers involved in Repairing the Present, a project funded through the S+T+ARTS initiative of the European Commission.

With this publication, we want to share our methodology and processes, our learnings and conclusions to serve future Regional S+T+ARTS Centers, as well as inspire policymakers in designing more initiatives that support science, technology and the arts in working together towards the future we want.



SNOWBALL



Art Hub

STATE

ONASSIS
STEGI

In4Art
guiding curiosity...

MEET DIGITAL
CULTURE
CENTER | Fondazione
CARIPLQ

CCCB Centre de Cultura
Contemporània
de Barcelona

ARS ELECTRONICA
Art, Technology & Society

Sony CSL

kersnikov

CYENS

INTRODUCTION

The discussion about the relationship between art and science has its beginnings in ancient times. As long as humanity exists, humans will adapt their image to understand natural phenomena. The rupestrian paintings are a perfect example of this. As the philosopher Edmund Husserl pointed out, during the early nineteenth century, the relationship between art and science was in a deep crisis. Scientists had forgotten the subjective nature of their work and had lost their connection with the real world and its phenomena. Since then, the scientific community has sought to solve this crisis by interpreting the world and reaching out to experts from other fields, including artists. In our time, the Art\Science relationship has become more solid than ever, and it's crucial for it to remain this way. Contemporary problems need interdisciplinary dialogue, methods and points of view.

This introduction is inspired by the Symposium "The New Atlas of Digital Art" organized by MEET | Digital Culture Center, as part of the S+T+ARTS Academy events of Repairing the Present. During the symposium, the debate around the relationship between art and science emerged as crucial. In the theater, one could almost hear Diderot and D'Alambert's warning:

«On a commencé par faire des observations sur la nature, le service, l'emploi, les qualités des êtres & de leurs symboles ; puis on a donné le nom de science ou d'art ou de discipline en général, au centre ou point de réunion auquel on a rapporté les observations qu'on avoit faites, pour en former un système ou de règles ou d'instruments, & de règles tendant à un même but ; car voilà ce que c'est que discipline en général» ¹

In addition to the project partners, major European, Canadian and Swiss digital art centers, were invited to take part in the event and contribute to the working tables, including perhaps one of the most fruitful ones – the Art/Science/Technology Table.

The Symposium encouraged an extensive reflection on and investigation of the articulate scene of digital art in Europe, highlighting the potential of artistic "digital native" experimentation as a driver for social innovation. Through a series of speakers, the event offered an overview of the developments of European digital art, fluctuating between past and present, to explore the different trajectories of contemporaneity as a way of interpreting the future. The meeting aimed to assemble an Atlas of Digital Art - starting from its history – to activate an interpretation of the present as a lens for the future, opening scenarios of cultural, economic and social transformation. Through research and creativity, the artists who experiment with technology often become pioneers and bearers of social and economic innovation. The European scene's rich creative realities and its institutions and cultural centers that have been active for more than fifty years in the field of digital art represented the reference horizon of this analysis, reflecting and presenting different creative experiences. The European Union, in fact, has highlighted digital art as a source of social innovation, as well as cultural and economic transformation, as an inspiration for young people to acquire new perspectives and visions highlighted by technological experimentation. The Table on intersections between Art/Science and Technology aimed to shed light on the main trends and experiences of collaboration between artists, researchers and companies geared towards societal innovation and reflection on global challenges. Going beyond the issue of scientific dissemination, the interventions investigated the Art/Science relationship of mutual contamination and inspiration and how this brings forward the joint reflection on the challenges of our time. The role of artistic research in businesses and the various cross-fertilization models for sustainable innovation were just one of the topics discussed.

The presentation of the coordinator of the working table, Fiorenza Lipparini - Managing Partner Plus Value Milano is available at <https://youtu.be/VD0sf6L00ds>.

¹ Text established by D'Alembert, Diderot, 1751 (Tome 1, p. 713-719)

01



Building Local Ecosystems

S + T + ARTS

SCIENCE + TECHNOLOGY + ARTS





01 BUILDING LOCAL ECOSYSTEMS

Repairing the Present envisages the activation of collaborative and interdisciplinary processes in which art and artists are the center of a co-creation of ideas and prototypes supported by research, industry and politics. In order to face urgent social, environmental and economic challenges, art and science need new paths towards innovation and alternative solutions.

The activation of a favorable ecosystem to accommodate complex and interdisciplinary innovation processes was the

first project action. All partners designated an Innovation Catalyst that then proceeded to map and intercept local stakeholders to activate collaborative cross-fertilisation between different areas and find the scientific and technological resources to support the prototyping process.

The impact can be illustrated through the experiences of the partners and how each managed to activate scientific institutions and industry to co-host and support the interdisciplinary prototyping process.



Expert discussion between artists residencies at In4Art and YES!Delft
Courtesy In4Art

ARS ELECTRONICA

Ars Electronica's local ecosystem was made up of a variety of social actors. This involved policymakers (Innovationshauptplatz Linz), academia (Johannes Kepler University Linz) and the private sector (Greiner Innoventures GmbH), all with relevant expertise to the topic of the S+T+ARTS residency.

Kathrin Obernhumer, Head of Innovationshauptplatz Linz, linked artists Kat Austen and Fara Peluso to the local makerspace Grand Garage, opening up the possibility for the artists to use the facilities and equipment. Furthermore, she introduced the artists to Professor Dr. Martin Kaltenbrunner, Head of the Department and Dr. Enrique Tomás, Senior Lecturer at Tangible Music Lab, University of Art and Design Linz, who shared their knowledge on vinyl production and sound engineering. She also facilitated the conversation with Professor Dr. Christiane Luible-Bär, Co-director of the Fashion & Technology Department of the University of Art & Design Linz to provide insight into the algae research done by the students. One of the most important outcomes of this residency is Fara Peluso's future residency at the Department of Fashion & Robotics of the University of Art & Design Linz. At Johannes Kepler University in Linz, Kat Austen and Fara Peluso worked closely with Kerstin Pell, Jörg Fischer, and PhD candidate Moritz Mager. The artists spent time in Linz and used the university's facilities on a regular basis. They hugely benefited from the support in researching the material and using the university's labs and equipment. Lastly, through regular meetings, Ars Electronica ensured that any questions or issues the artists had throughout their residency were addressed in a timely manner so that their focus could be on the research. The local ecosystem was vital for the transfer of knowledge and expertise and for making modern facilities available to the artists, without which experimentation with new materials would not have been possible.

ART HUB COPENHAGEN

Art Hub Copenhagen's local ecosystem was composed of members from the Local Experts Group (LEG) and the residency partners.

Art Hub Copenhagen selected the members of the LEG whose professions were directly connected to the topic explored by the artists in residence and arranged individual meetings between the latter and the LEG members. These meetings had a triple function: providing feedback on the artists' projects, extending their reflection about their projects and expanding the artists' local networks by connecting them to relevant stakeholders. Some of these meetings were aimed at the artists gaining additional knowledge for their research, whereas other encounters were aimed at familiarizing the artists with new disciplines they wished to explore.

This local ecosystem also enabled the artists in residence to present several times their practice and work in progress to local audiences in order for them to gain visibility in Denmark through small events with curated audiences, such as Wassim Z. Alsindi's talk about his practice at Art Hub Copenhagen titled "The Art of Indifference" and Adriana Knouf's talk about the work she produced during the S+T+ARTS residency at Click Festival titled "Amateur Lithopanspermia". There were also larger public presentations aimed at general audiences such as Wassim Z. Alsindi's public rehearsal of The Black Hole of Money play he created during his S+T+ARTS residency at Click Festival and Adriana Knouf's presentation about her practice at the Planetarium titled Queering Space Exploration.

CCCB

CCCB residencies' main topics were inspired by the urgent problems faced by the city of Barcelona. During the creation of our challenges, we highlighted and connected interesting partners from the urban net, which could help our artists improve and succeed in their proposals. In order to face the cities' pollution, we created a local ecosystem made up of a variety of social actors. Geo-Llum by the artist Samira Benini Allaouat is the result of shared knowledge and expertise. The artist was allowed to activate a rich net from CLOT neighborhood. She worked with a wide group of professionals from civil society organizations and universities, all of them focused on promoting a new path towards a sustainable future. For example, Bioe Lab supported the artist in her research, allowing her to experiment in their lab for the creation of a bio battery, which not only produces free energy but at the same time decontaminates the soil. This research and her sculpture prototype wouldn't be possible without the local ecosystem approach. Samira had the opportunity to connect with AKASHA Hub and Greencitylab, both philanthropic organizations working on the recovery of green areas of the city. In particular, AKASHA Hub provided the workshop spaces for all the prototyping processes. On the other hand, we explored the importance of sound with Lugh O'Neill's project. The sound artist investigated the key importance of sound both for understanding and improving urban dynamics and environments through a deep collaboration with Sónar festival and the City hall Department of Ecology, Urbanism and Mobility.

CYENS

Throughout the prototyping process realized during the SustainingScapes artist residency, the artist Joseph Hovadik interacted, collaborated and was supported on different levels by local stakeholders and experts. The stakeholders were approached and activated mainly through the Local Expert Group composed of the CYENS Regional S+T+ARTS Center (RSC), as well as from a dedicated networking event, "Science, Technology and Creative Practices towards Sustainability", that allowed the artist to meet an extended pool of local stakeholders.

All involved experts and stakeholders had discussions, exchanged ideas and shared insights with the artist about local realities and perspectives relevant to the subject of tourism sustainability in Cyprus, commenting also on his project's development and contributing their expert knowledge and viewpoint to assist him in his next steps. The CYENS RSC, and specifically ITICA research group and Thinker Maker Space, heavily contributed throughout the prototyping process, providing all necessary technological infrastructure and expert support to the artist to facilitate data analysis, visual graphics development, as well as digital fabrication, rapid prototyping and visual media development. The roles of the Innovation Catalysts were undertaken by two people from ITICA and Thinker Maker Space, which had everyday communication and intensive collaboration with the artist, having indeed catalyzed the entire prototyping process.

IN4ART

As residency host, the engineering company Witteveen+Bos partnered up with us with in-kind and financial support. They assigned two project managers to support the internal selection and afterwards support the artists and work along with them in the research and experiments. They also involved their network by linking the residency to the Municipality of The Hague environmental Vision 2050. To drive urban and regional development, the local stakeholders and Local Expert Group (LEG) were invited to support in formulating the challenge, selecting the artist and providing the artist with knowledge, insight and network access. The Regional S+T+ARTS Center In4Art informed the artists on the developments in the domains of data storage, urban planning and bio-receptive materials. We have seen successful cross-pollination between the LEG members, experts and artists, notably follow-up initiatives, programs, or direct collaborations between members. Next to that, some supported by giving access to materials or facilities, like the Media Solution Center/ HRLS, Respyre or the Botanical Garden at TuDelft. The municipality of The Hague actively worked with the artist to identify local places and get in contact with the citizens. Lastly, special sessions were organized to reflect on the prototypes and experiment with different directions for the artists to consider.

MEET

As pointed out by Antonio Calabrò, vice-president of Assolombarda and creator of Hangar Bicocca, during the S+T+ARTS 2020 Symposium organized by MEET, to respond to complex challenges, we need complex ecosystems, which can unleash their cooperative advantage that enhances the Italian experience of Humanism, in which the Humanism classification that separated art and science painting and mathematics, was inapplicable.

In this direction, MEET has developed the methodology of cross-fertilisation, a process aimed at bringing innovation and visions into industries through the work of young digital creatives.

The idea is that creativity, culture and multidisciplinary are today key elements of economic and social growth and that creating contamination between the worlds of culture and industries is the way forward for a more sustainable and inclusive future.

Over the years, MEET has also activated numerous collaborations and networking with Universities, Research Centres, Cultural Institutions, Industries and Industrial Associations. Therefore, it was natural to create the Local Expert Group that helped us in defining local challenges and in activating scientific and technological synergies to support artistic prototyping processes. In addition, the Local Experts often made themselves available individually to answer specific questions and address key needs that emerged from our artists-in-residence.

KERSNIKOVA

The use of artificial intelligence to interact with plants and cells for informal peer-to-peer learning and to enable collaborative work for innovators were the topics of the residencies hosted at Kersnikova.

In his work, Gregor Krpič applies a functional connection between animals, plants, and robots.

The project has two conceptual extremes, the first tied to a better understanding of animals and plants in the ecosystem. On the other hand, the project can develop in the direction of precision farming, where personalization and optimization of food production are possible.

Matjaž Požlep investigates how to engage kids and young adults in attractive, playful, creative and innovative learning with the help of artificial intelligence in order to achieve critical thinking and intellectual emancipation.

Together with the company Sovesall, he has developed a web application and a digital personal assistant powered by an artificial intelligence algorithm. Marko Damiš is interested in creating a user interface for creative people, scientists, researchers, engineers, entrepreneurs, and the like, intended to enable communication between people who use different professional „languages“.

ONASSIS STEGI

Onassis Stegi set up a local ecosystem by bringing together an interdisciplinary group of experts, holding multiple roles and with significant expertise who could embed the New Green Deal objectives into the local challenges.

The Onassis Local Experts Group involved ten experts who hold different professional roles from several fields such as art & culture, research & science, business, (open) technologies, education and advocacy, including finance & innovation, environment, food, agriculture and circular economy experts.

The main criteria to form the Onassis Local Experts Group was to create synergies between art, science, technology and business as well as the field of interest and expertise of each member for the design of the two local challenges (smart agriculture and circularity & education).

On the local challenge “Smart Agriculture”, the artists collaborated with AGENSO as the scientific partner of the project Peanut Pod & the Film Seed Festival. AGENSO provided the artistic collective Hypercomf with technical and scientific support throughout the project. Moreover, the transesterification process, by which the vegetable oil is turned into biodiesel, could be realized in collaboration with a university lab or environmental engineer to yield optimal results. For that reason, the artist collaborated with Act4Energy, a Democritus University of Thrace Spin-off company, to produce the biodiesel required to power the screenings of the festival.

On the local challenge “Virtuous Circles: Schools as Catalysts for Sustainable Neighborhoods”, Unit Lab aimed to give solutions on how they might engage school communities with the practices of a circular economy both locally and globally by encouraging innovative design thinking through the use of advanced technologies, participatory creative research, storytelling, and contemporary artistic media. The artists were supported by being offered connections to the local ecosystem, including teachers, experts on sustainability and artists.

SNOWBALL & GLUON

The local ecosystem supporting the residency program was composed of a diverse set of stakeholders from the public and private domains. From the very beginning of the project, the intermunicipal organization Leiedal came on board as a partner from the region. The partnership formed an ideal mix between Snowball, Gluon and Leiedal. Snowball represented the technological and entrepreneurial side; Gluon provided the artistic interpretation and artistic reflections, Leiedal contributed with its policy expertise and strengthened the regional anchoring. Together they selected academia, entrepreneurs, policy-makers with relevant expertise to the topics addressed by the artists selected for the residencies. Throughout the complete process, the selected experts supported the artists with expertise, knowledge and network. At the end of the residency, the co-hosts, Snowball and Gluon organized several local events (exhibitions, AR demo-sessions, etc.) showcasing the results of the residencies.

SONY CSL / MAXXI

The projects focus on one of the most central themes of modern life: citizen satisfaction in terms of the liveability of a city, urban planning, emotional and aesthetic needs. The nature of the Cities Live Like Trees installation by Olga Kisseleva is deeply linked to the knowledge of the world of trees and their beneficial interaction with humans. For this reason, the Botanic Garden of Sapienza University of Rome welcomed Olga Kisseleva's project with great interest, providing conceptual support and experts in the botany of Rome's trees.

Susi Gutsche has tackled an issue of enormous importance for the city of Rome and, more generally, for all urban centers worldwide: the issue of displacement, recycling, and disposal of waste. The idea of evaluating the mobility of waste both in the metropolitan area and national level has aroused great interest in municipal bodies that deal with the environment and garbage, such as the Municipality of Rome and the Municipal Environment Agency (AMA). These bodies have provided great technical and experiential support to the artist, allowing her to build an

actual installation to raise awareness of citizenship in urban waste. The local system has been fundamental for the research of both artists, in order to face such complex challenges as exploring the impact of new technologies in modern urban environments.

STATE

As part of S+T+ARTS Residencies, STATE collaborated with the RISE Cities Program of the BMW Foundation Herbert Quandt to design the local expert program that aims to address local challenges in terms of the European Green Deal and the Sustainable Development Goals. Building on the RIDE futures thinking model, STATE created a framework to specify and frame the definition of the local challenges that are addressed in the S+T+ARTS Residencies. The challenges that STATE took on for Repairing the Present move within the industrial and environmental sectors of the Berlin capital area. They aimed to inspire new ideas for mobility and rethink sustainable solutions for Berlin's water management. As a residency partner, the BMW Foundation supported STATE in assembling a diverse group of experts and provided curatorial support at all stages. When setting up the Local Expert Group, it was important that it covered as many sectors as possible (involving government, industry, civil society, academia, and culture representatives) and that the members contributed relevant know-how to the subject of the residency. The intersectoral local expert group was involved in defining the residency challenges and in the selection of the artists. The experts continued to open up access to their research and labs to the artists, provided them with tools, and invited the artists to meetings and events that integrated other relevant stakeholders to expand the local network.

In both S+T+ARTS Residencies Flow of Berlin and New Modes of Mobility, expert knowledge has been incorporated as a central point in the artworks. A follow-up project was also created between the artists-in-residence Studio Lapatsch | Unger and Johanna Schmeer and the local expert Irina Engelhardt, Head of Hydrogeology Department at Technical University of Berlin.

The local ecosystem approach and the methodology of cross-fertilisation are today key elements of economic and social growth. All the works of the artists show how contamination between the worlds of culture and industries is the way forward for a more sustainable and inclusive future. In order to achieve our goal to re-think the present, it's urgent to create a network in which knowledge and expertise can be shared. When culture, art and industries look in the same direction, with similar intentions, the results can be outstanding.

Repairing the Present is the perfect case study in this sense. The collaboration between artists, academia and industries was the main winning point for all the partners involved, as the following statements show:

ARS ELECTRONICA

Ars Electronica involved Johannes Kepler University in Linz as their main research partner. The University offered the support of two of their staff members and a PhD candidate to the artists, Kat Austen e Fara Peluso, through constant knowledge exchange and experimentation. Beyond their expertise, their facilities made artistic research possible on a practical level.

ART HUB COPENHAGEN

Art Hub Copenhagen created a strong network with the European Blockchain Center, for Wassim Z. Alsindi's residency. Meanwhile, to support Adriana Knouf's work, Art Hub Copenhagen put her in connection with the Planetarium of Copenhagen. Additionally, Click Festival became a partner for both residencies.

The head of the European Blockchain Center supported Wassim Z. Alsindi's project through a stimulating exchange about blockchain technology. Meanwhile, the Head of Outreach of the Planetarium helped Adriana Knouf by offering her a platform for publicly disseminating her ideas and by connecting her to the Sabaah Union for minority ethnic LGBT+ people.

Finally, the program manager of Click Festival provided a rehearsal space for Wassim Z. Alsindi's play and a production space that could accommodate Adriana Knouf's large-scale installation set-up. Additionally, he arranged public presentations during the festival for both of them and provided feedback.

CCCB

CCCB has made possible the development of Samira Benini Allaouat's artwork in Barcelona thanks to the support of Akasha Hub in collaboration with Green City Lab, at the moment acting as mediators and strategic planning organizers, and the light industry Actilum. The artwork of Lugh O'Neill's, instead, was made together with experts from the Polytechnic University of Catalunya and the City Hall Department of ecology, urbanism & mobility. The curatorial and production support was provided by the Sónar Festival.

CYENS

CYENS' industry partner, PwC Cyprus, had extensive involvement and contribution throughout the residency of Joseph Hovadik. CYENS provided several focused meetings between the artist and PwC experts. PwC also made available the space of the PwC Experience Centre, thus greatly supporting, informing and giving direction to artistic research and development.

IN4ART

In4Art has collaborated with Witteveen+Bos as the co-host of Penelope Cain, Cyrus Clarke and Monika Seyfried's residencies. Two lead contacts were appointed, one from an ecological point of view, and the other from urban planning. They had the support of the board and assured that the artist could collaborate and find knowledge within the company.

Over twenty employees were involved as experts to share knowledge or collaborate. The co-host also gave access to data, software to make simulations, support in data analysis and creating visualizations. Jointly with the artist, the co-host and the Regional S+T+ARTS Center In4Art prepared a pitch for the Nature of Cities of Festival, which was selected in the Top 15 candidates for the Nature-Based Solution Pitch Fest. From the communication department, press releases and newsletters were shared both with internal and external stakeholders, to give a voice to the project.

MEET

MEET has involved two prominent Research Centers as co-hosting institutions: Area Science Park Trieste and Human Technopole Milan. Both have fully embraced the creative process giving the artists all the necessary scientific support, access to laboratories and technologies, hosting the prototype and organizing presentation events of the works to the reference communities.

AREA co-hosted the artist Sissel Marie Tonn providing access to technologies – such as a next-generation microscope – and a continuous interaction (for 10 days at AREA labs and online) with scientists which has led to the integration of the Kuramoto model as a driver for the simulation of the Sentinel Immune Force.

Meanwhile, Human Technopole Milano co-hosted the artist Markus Jeschaunig providing access to the Structural Biology labs and technologies, allowing a continued interaction with the scientists and supporting the installation of Markus' artwork at the HT center in Milan.

KERSNIKOVA

For Gregor Krpič's project, the Department of Neuromechanics and Biorobotics at the Jožef Stefan Institute provided the support of Faculty Members and PhD students and a range of materials to prototype the spider-bot, including some off-the-shelf components, such as dynamixel motors and 3D printing.

The engineering prototyping and development process saw several different iterations on finding mechanism research. For Sigma_league, artist Matjaž Požlep and his design team Art Rebel 9 teamed up with Sovesall d.o.o., a company that develops solutions in the field of artificial intelligence. Marko Damiš was supported by Foreach Labs, a software company whose main focus is AI and other machine learning Technologies.

ONASSIS STEGI

On the local challenge "Smart Agriculture", the artists collaborated with AGENSO as the scientific partner of the project Peanut Pod & the Film Seed Festival' who provided the artistic collective Hypercomf with technical and scientific support throughout the project. Moreover, the transesterification process, by which the vegetable oil is turned into biodiesel, could be realized in collaboration with a university lab or environmental engineer to yield optimal results. For that reason, the artist collaborated with Act4Energy, a Democritus University of Thrace Spin-off company, to produce the biodiesel required to power the screenings of the festival.

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SNOWBALL & GLUON

Snowball & Gluon have partnered with Leiedal as co-host for the residencies of Studio Above & Below and Filip Van Dingenen & David Shongo. Their co-host Leiedal specializes in the conversion of industrial heritage, public buildings and nature reserves by giving them a sustainable and active role in the present. Leiedal gave access to more than 20 conversion projects in the region from which the artists could choose to further develop their individual projects. Studio Above & Below teamed up with different employees of Leiedal, such as environmental experts, landscape experts and soil experts. For the development of the digital sculpture, they received support from the gaming experts of HOWEST university college. Artists Filip Van Dingenen & David Shongo worked together with sound engineers of the HOWEST university college. Both artists also met with academia in the field of biodiversity and local representatives of the regional civil society organization Natuurpunt.

SONY CSL / MAXXI

SONY CSL / MAXXI connected the artists to a local ecosystem related to the themes of their respective research. Olga Kisseleva was put in contact with the Botanical Garden of Rome where she was able to learn about the city's hundred-year-old trees. Susi Gutsche, on the other hand, was connected to the ecosystem of the City Care Civic Movements and was able to participate in one of their assemblies. The City of Rome enabled Susi to learn about the existing tracking mechanisms with respect to the city's waste management. Both artists met with the business community through a day of meetings at the ZERO incubator run by LVenture for CDP; in particular, they attended the presentation of 3 start-ups in the field of clean-tech and had the chance to present their research.

STATE

All members of the Local Expert Group contributed with their expertise and access to their facilities. The following LEG members of research/industrial organizations have supported artistic research as follows:

S+T+ARTS Residency Flow of Berlin –

Studio Lapatsch | Unger & Johanna Schmeer:

Irina Engelhardt, Head of Hydrogeology Department at Technical University of Berlin (TU Berlin), contributed with her expertise in field investigations (quantitative, chemical components, etc.), provided tools to survey and analyze water bodies (Troll600 multiparameter sonde with interchangeable sensors and a smartphone interface that measures water temperature, pressure, conductivity, pH, oxygen, turbidity, chlorophyll, and nitrate) and gave access to the laboratory of TU Berlin. Prof. Engelhardt furthermore connected the artists with Geoforschungszentrum Potsdam.

Stephanie Spahr, Research Group Leader, Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB) shared her valuable expertise in water quality testing (organic pollutants) and provided access to IGB laboratories and tools.

S+T+ARTS Residency New Modes of Mobility –

Felix Gaedtke

Parichehr Scharifi, Traffic Psychologist and Psychotherapist, Technical University of Berlin, shared models and approaches from traffic psychology as well as usability and user experience research. Furthermore, she offered the

artist access to her study group at TU Berlin.

Daniel Krajzewicz, Head of Department, Institute of Transport Research at the German Aerospace Center (DLR) and his colleague Julia Schuppan gave the artist insights into traffic flow simulations, traffic models, tools for characteristic values for empirical data collection and processing as well as access to laboratories at DLR.

Ines Kawgan-Kagan, Managing director, AEM Institute, helped us to make sure that the project is as inclusive as possible in the storytelling, as well as in the way of how the installation might be experienced by audiences.

KEY TAKE-AWAYS

Build a way of seeing: Involving the experts in formulating the challenge and presenting them with a shortlist of projects to select from has meant that they were involved and became interested from the start. They also got a broader perspective on the potential of S+T+ARTS collaborations, and it made it easier to make connections.

MEET organized the 'Ways of Seeing' workshop to translate the insights from the artistic residencies and analyze the different value drivers embedded in the projects and how they could empower society and innovation spill-overs. Moreover, the residency experiences have taught us valuable lessons about the translation and dialogue between disciplines, and we can now highlight both problems and opportunities.

When we designed the local expert group (LEG) – a wide and diverse group of professional profiles and ecosystems – we set a frame for the artist-expert collaborations during the research and prototyping phases. Nevertheless, after the selection of the winners, it was fundamental to work directly with the artists, analyzing carefully these profiles, and selecting those that could advise, support and improve their proposals. Thus, we were constantly open to new alliances that could fit the project, considering its particularity in terms of theoretical statement and technical execution. This was „an extra“ from the original agenda, which generated a delay in finding those „perfect matches“. Once we had the winners, it was much easier to activate the local ecosystem. It is fundamental to hold public presentations in an open-door environment to allow for knowledge. For example, the company which supported the light investigation of the residency Microorganism Cities was casually introduced to the project during the first public presentation and became a key partner in the end.

A recommended strategy to activate local ecosystems is to include a selected number of actors from highly relevant fields of research or activity from the beginning to create engagement. These experts can then interact directly with the selected artists and introduce them to their extended local ecosystem. As the local ecosystem is stimulated by the people already in it, this process seems to function quite well.

Facilitating the relationship with activist and citizen movements in the local area opens up new perspectives on research. Similarly, organizing visits to incubators in the local area allows artists to connect with existing research on the same issues.

With the activation of the local ecosystems, we wanted to create a framework that would allow the collaboration to continue beyond the project's timeframe and could be used in future similar projects.

We believe that for an ecosystem to form through the mediation of a project/an institution, like in our cases, the mediator must consider all the factors that would contribute to that ecosystem developing organically if it is to be activated and sustain itself in the long run. This is why, beyond the practical considerations, such as topic relevance and scope of activity, we ensure that the partners we call for to join our ecosystem share similar values and goals, are genuinely open to collaboration and prepared to be challenged and go through uncomfortable conversations. These issues can be addressed through careful mediation. However, as we have learnt, not all problems can be solved at this level. Issues of IP need to be addressed at a higher level, and general frameworks must be defined for the specific case of research-based, collaborative residencies so that we, as mediators, can start building trust between the different actors we try to involve, whether artists, policy-makers, academia or industry.

The prototyping process and the involvement of the local ecosystem is still a novel and complex experience in many regions. In the case of Regional S+T+ARTS Center CYENS, for example, given that the broader Cypriot art & technology ecosystem is in its early stages, this was a great opportunity to place the foundations and communicate the potential of such synergies to the local stakeholders. The general response was positive, with all involved parties being truly interested and curious about the S+T+ARTS initiative and the Regional S+T+ARTS Centre concepts. All experts happily contributed their time and expert insights and have since been following all relevant activities. What has become apparent is that the networking activities were truly effective and the use of the public engagement tool suggested by STATE allowed the development of a tailor-made methodology to approach the local pool of stakeholders, achieving great results during the meetings and establishing in-depth communication and contributions between stakeholders and artist.

As concluding observations regarding the local ecosystem activation, we can note the three following points:

- The Innovation Catalyst is essential not only in supporting the artist residency, but also in identifying and curating the interactions, activations and collaborations with the Local Expert Group.
- The successful collaborations with industry partners have highlighted the importance of their presence in such projects; additionally, the potential of multiple industry partners for each residency, made possible by early-stage expert involvement, was also affirmed.
- The networking and workshop events hosted by Regional S+T+ARTS Centres were pivotal in the artist residency. The more fluid and open their structure was, the more reciprocal and unexpected the interactions.



02

LOCAL EXPERT GROUPS

S + T + ARTS

SCIENCE + TECHNOLOGY + ARTS



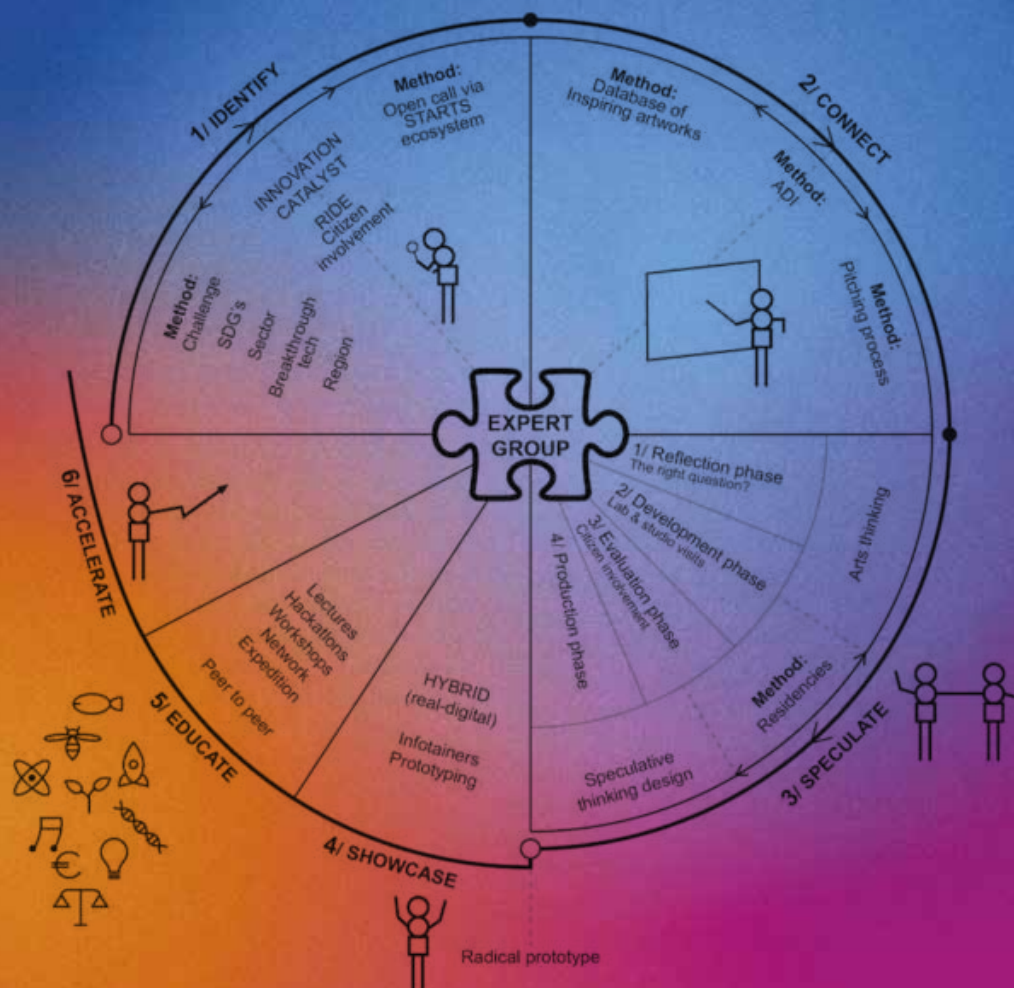


02 LOCAL EXPERT GROUPS

MOTIVATION

In order to expand the opportunities for collaborative action on regional, national, and global levels, the Regional S+T+ARTS Centers created meaningful sounding boards working towards a more inclusive and sustainable future. These sounding boards were the Local Expert Groups. The role of the Local Expert Group started with defining the

challenge topics for the open call for artists of the S+T+ARTS Residencies. Subsequently, the Local Expert Group was involved in selecting the artists. Finally, the Local Expert Group supported the artists during their co-creational stages. In general, the Local Expert Groups granted relevant expert know-how to the residency programs.





LEG Workshop – Flow of Berlin, © Victoria Domke

IMPACT

Wicked problems require innovative solutions and creativity is known to be much higher in diverse teams. The expert network should be highly diverse in origin, profession, and background to be open towards new ideas, approaches and visionary experimentation. In the set-up of the Local Expert Group, it is key to push for diversity to allow a healthy variety in categories such as age, gender and socio-economic background.

Each Regional S+T+ARTS Center was meant to choose 10-15 stakeholders from the public and private sector and members of civil society, including technical experts and affected communities. The impact of such a constellation of both creators and creative consultants is particularly valuable. By bringing in strong potential to inspire others, to lead by example and to drive change, the Local Expert Group provides interdisciplinary working structures and fosters co-creational innovation processes for truly sustainable solutions to green challenges.



LEG Workshop – Flow of Berlin, © Victoria Domke
Courtesy STATE

KEY TAKE-AWAYS

Develop your network: to transform a vague idea for a topic into a concretely defined local challenge for the open call and the residency requires a co-creative effort involving the expert network. For the identification of the Green Deal challenges anchored in the regional context as well as breakthrough technologies and tools, Regional S+T+ARTS Center STATE proposes the implementation of the RIDE method² in an introductory workshop. The RIDE thinking model has been developed by Dr. Christian Rauch and is a process to help practice holistic thinking in the context of future uncertainties born from transformational developments in science and technology. It trains and combines scientific-rational thinking, artistic-creative imagination, multi-perspective discussions and entrepreneurial planning. The workshop consists of 4+1 modules. The following guide is intended to provide a possible framework to run the Local Expert Program for the residency phase:

1. Group introduction and framing

The first module intends to provide a space for the experts to get to know each other by approaching their intentions and motivations. After a round of brief introductions, the experts are given relevant contextual information about the project, followed by a short input by a selected participant to give a relatable start to the theme based on first-hand experience. To promote self-reflection and the exchange of perspectives, the experts are guided through the structure of spiral journaling. In subsequent outdoor dialogue walks in small groups, they are engaged in listening, inquiry and generative conversation to allow personal encounters. In a brief share-back discussion, the workshop facilitator collects some first plenary reflections and insights.

² <https://ride-futures.com>

2. Future Visioning: from present challenges to desirable futures

The second module aims to acquire a common knowledge base, collect main challenges of the topic and think about how they might impact future developments. Desirable futures are explored through reframing, and motivations for action are derived.



LEG Workshop – Flow of Berlin, © Victoria Domke
Courtesy STATE



LEG Workshop – New Modes of Mobility, © Victoria Domke
Courtesy STATE

2.1 Present challenges and anticipated future

The first phase of the workshop focuses on creating a common knowledge base and collecting facts about the current state of the topic and its impact on three key areas for sustainable development: people, planet and prosperity. These are 3 of the 5 Ps of the sustainable development goals. Guided by questions about the current situation of the topic, the experts are now asked to give input. In a silent brainstorm, they note their ideas on post-its which are supposed to be shared, clustered and discussed within the next step.

2.2 What does a desirable future look like?

This second phase of the session desires to create room for collective dreaming. For this, the participants have to be encouraged to leave the space of rational thinking and deliberately enter their dreaming mode. Presenting, for example, relevant artistic works on the topic is always inspirational! Now it is all about the most utopian and desirable scenarios they can imagine. As in the first phase, the experts get a time frame to write down their ideas, again using the 3 SDG perspectives. Guided by the moderator, all participants can share their post-its on the whiteboard in the respective area of the 3 buckets afterwards. Here, clustering helps to look for commonalities. The following discussion should focus on differences and patterns between the collected „Challenges“ and „Desirable Futures“.

Optional: Collective Dreaming

This module can be used before module 2. It is powerful as a tool to explore together from a high-level point of view the possible areas and challenges for the residency to focus on. Also, it will help to get participants in the right mindset and prepare them for the more concrete tasks of module 2. In order to use the module, get AKAW card decks from STATE. Functioning as a booster for imagination and adaptation of new perspectives, the creative game inspires participants to explore future possibilities, to connect and apply important future trends and emerging technologies and to learn to think with the Sustainable Development Goals.



LEG Workshop – Flow of Berlin, © Victoria Domke
Courtesy STATE



LEG Workshop – New Modes of Mobility, © Victoria Domke
Courtesy STATE



LEG Workshop – New Modes of Mobility, © Victoria Domke
Courtesy STATE

3 Diving into the project

The third module of the workshop aspires to narrow down the collected ideas and to formulate a proposal for a concrete and attractive residency project for potential artists to apply. In addition to the collection of potentially available resources by the expert group and the identification of relevant use cases in the area, it is now crucial to identify concrete networks and technologies. To find interesting entry points in order to create a meaningful residency process, it is important to discuss opportunities, key technologies and tools, find out which stakeholders

should be included and what the requirements for the artist are. Finally, it is time to wrap up all the insights of the workshop. The formulation of a question that inspires us to speculate is recommendable. Beginning the question with „How might we...?“ acts as a manifestation of the starting point for the launch of the international open call and the immersion in the subject for the following residency.

4 Social part

Last but not least, the experts should receive gratitude and reward for their accomplished effort. Bringing people together for lunch or dinner is always a good investment into relationships. A nice and warm created atmosphere inspires participants to relax and engage in personal conversations for a harmonic future collaboration.

SUMMARY

By anchoring technological innovations in their wider social context and co-creating inspiring new ideas and processes that make the regions more sustainable, the Regional S+T+ARTS Centers and the Local Expert Group thus collectively created a solid set-up for the residency program to explore the potential of art in combination with breakthrough technologies and to foster innovation towards a desirable tomorrow.



Courtesy MEET

LINKS:

- Regional S+T+ARTS Center STATE: <https://state-studio.com>
- BMW Foundation Herbert Quandt: <https://www.bmw-foundation.org/en/>
<https://bmw-foundation.org/en/our-work/sustainable-cities/>
- Videos: Statements Local Expert Group
S+T+ARTS Residency "Flow of Berlin": <https://www.youtube.com/watch?v=1oQBem3R4Pc>
S+T+ARTS Residency "New Modes of Mobility": https://www.youtube.com/watch?v=Lhu_KERuKn4



03

Open Call & Selection Process

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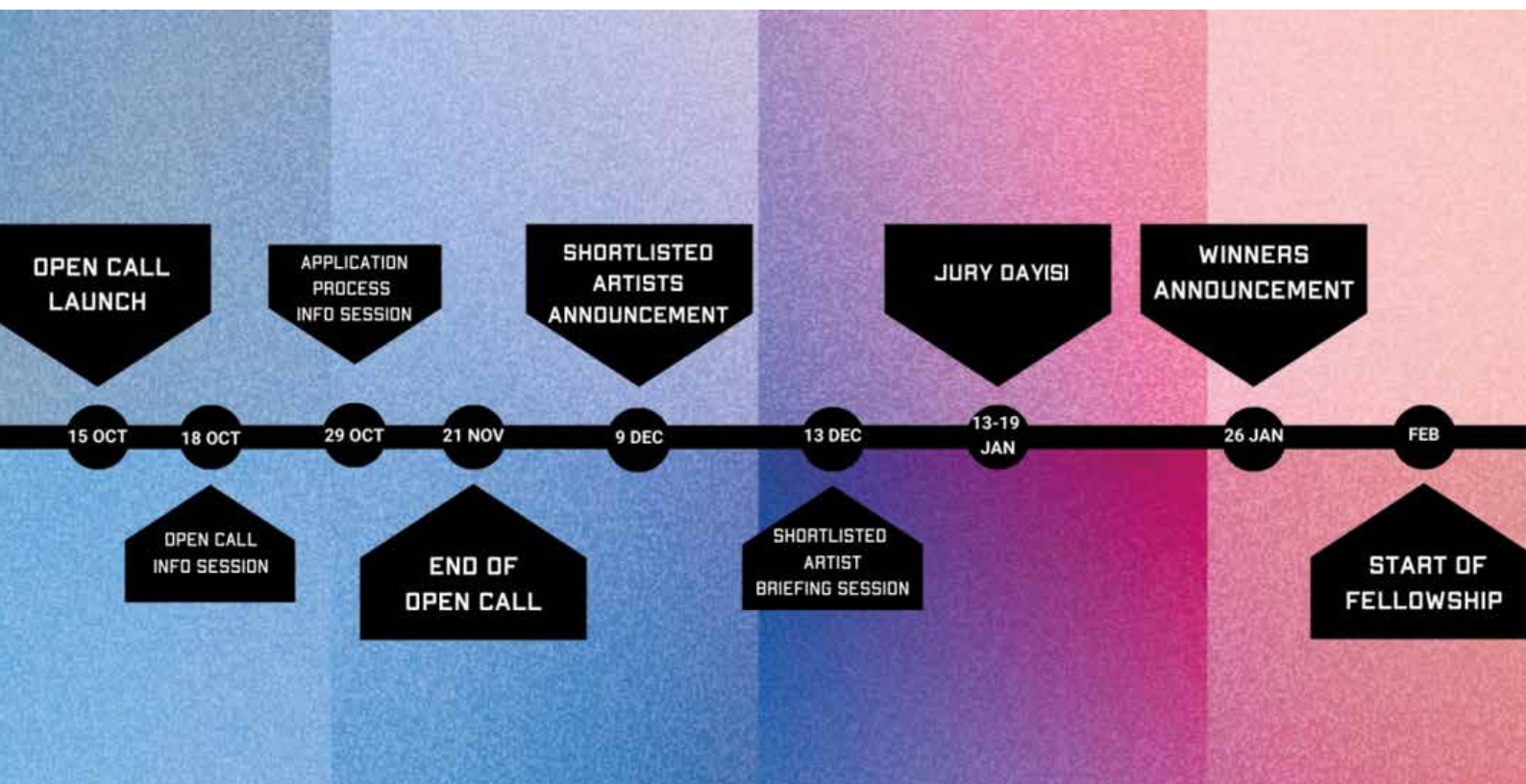


03 OPEN CALL & SELECTION PROCESS

MOTIVATION

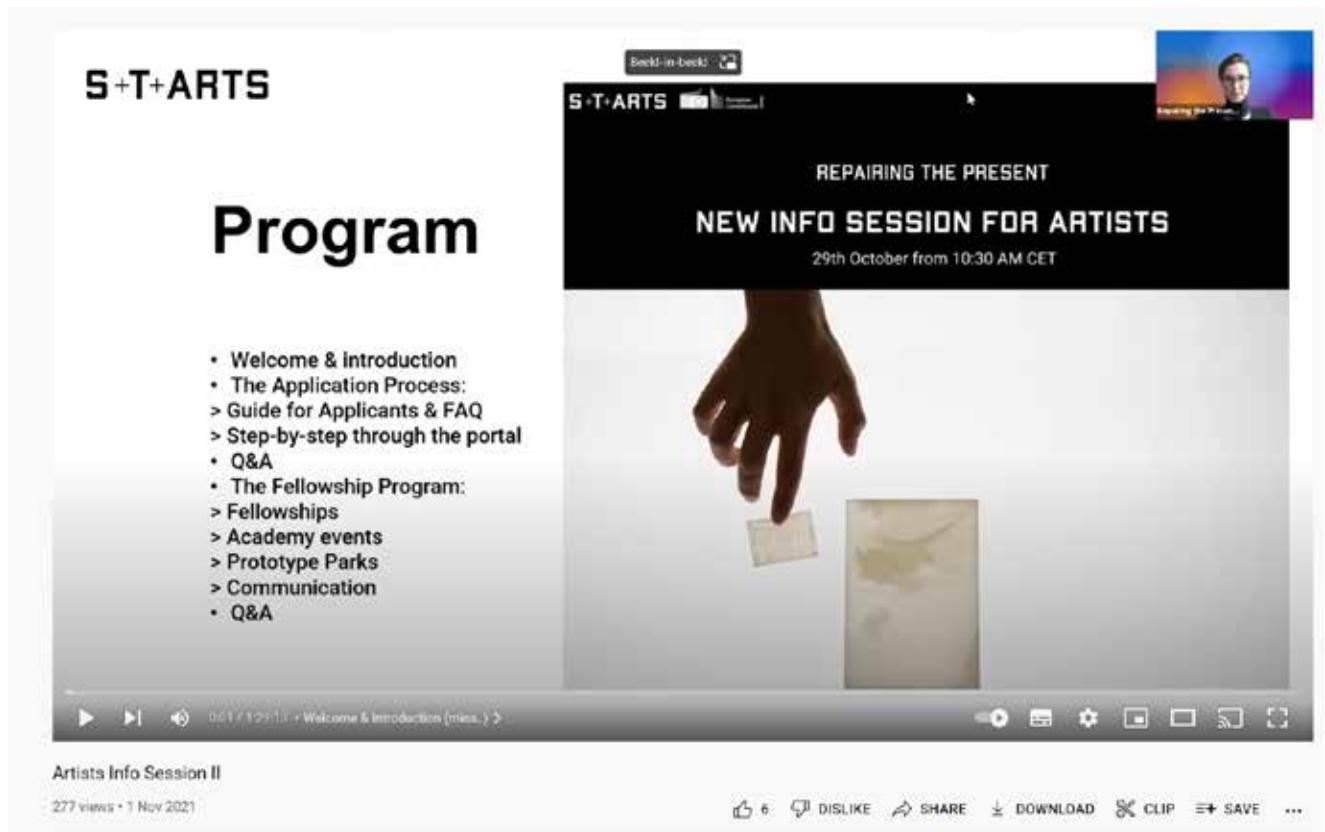
To organize a complex and challenge-driven open call for multiple different residency positions, a clear and transparent process is essential. In Repairing the Present, we had 21 positions for artists interested in experimenting and collaborating with local regions to future prototype, construct and reflect on realizing the goals of the Green Deal and the New European Bauhaus. Therefore, the following steps have been conducted a) to design the open call application process in line with its aim, b) to create suitable application templates and formats reflecting the challenges, c) to create and facilitate the application process and

d) to organize and execute the three-stage selection and evaluation process to foster regional embedment, all the while assuring a fair and transparent selection, including personal feedback to all applicants. Additionally, throughout the process, there was a continuous alignment in communication both before the announcement and during the open call (webinars/mailbox management). In such a process, each regional center's ownership of the challenge and its presentation in a personal, engaging manner to start the relationships building already within the open call and selection phase is essential.





In-presence info sessions
Courtesy MEET



Screenshot Webinar Artist Info Session II

IMPACT

The Open Call and Selection process lasted for 6 months. We have created an ambitious open call trajectory, which worked out well and resulted in applications from all over the world (45 countries of origin). The consortium made a huge effort which paid off in the positive feedback and the amount and quality of the applications received.

The Repairing the Present Open Call and Selection process was a true consortium effort, starting with formulating the challenges and finding the common grounds to present them to the artists in a unified format. In the application form, we worked with a new approach towards the portfolio and previous experience of artists. Instead of uploading a general portfolio, the artists were asked to submit a minimum of 2 and a maximum of 4 works that represented their endeavors on artistic experimentation, and answer specific questions about them. The artists had to analyze their own work, according to pre-set questions, against the background of the Art-Driven Innovation method, with an eye towards the impact and meaning of the artwork for society and innovation spill-overs.

The selection process had three stages: an internal evaluation by the Regional S+T+ARTS Centres to decide the top 10 candidates per challenge, followed by a local embedment selection through the Local Expert Group, bringing the number down to the top 3. The top 3 candidates got the opportunity to elaborate their idea and present it in front of the jury. Each Regional S+T+ARTS Center has managed to bring together a high-level group of experts for both their Local Expert Groups as well as for their Juries, including many participants from industry, research and (semi)public organizations. This resulted in a network of over 200 people involved in the evaluation of the proposals for Repairing the Present.



Smart Spaces Workshop II organised by Gluon in collaboration with Snowball. Courtesy Gluon



Film Seed Festival, © hypercomf, Courtesy Onassis Stegi

REGIONAL S+T+ARTS CENTERS

REPAIRING THE PRESENT

OPEN CALL APPLICATION FORM

S+T+ARTS

European Commission

Welcome to the Open Call for Artists for S+T+ARTS Regional Centers 'Repairing the Present'!

The deadline for submitting your application to this open call is **Sunday 21 November 2021 at 13:00 (CET)**.

All applications must be submitted in English.

We strongly recommend you carefully read the Guide for Applicant and FAQs sections, before completing the form.

Your draft application will be saved automatically after the completion of each section. Once submitted, your application is final and cannot be changed.

All information will be verified during the review phase. Should false information be detected, your application will be invalid.

Questions marked with (*) are mandatory.

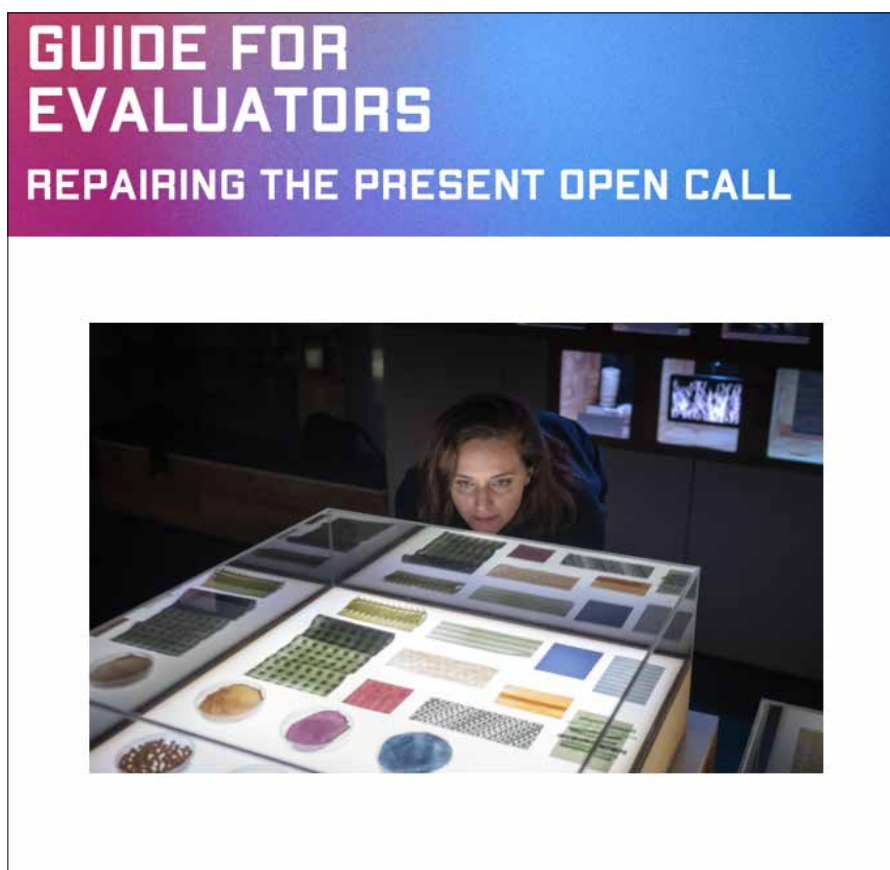
Fill in all the required form sections to submit your application.

Status: Draft

Started 11 minutes ago by @ljs

Show history

1	Artist Profile*	FB
2	Portfolio submission (1st project)*	FB
3	Portfolio submission (2nd project)*	FB
4	Portfolio submission (3rd project)	FB
5	Portfolio submission (4th project)	FB





Courtesy MEET

ACTIVITIES OVERVIEW

August/September: all Regional S+T+ARTS Centres had to define their challenges and share them according to the Challenge Template to ensure that the open call and the communication were aligned. This was then matched with the application form and the Guide for Applicants.

October: the open call application environment was tested and went live. The call was launched, and two support webinar sessions were organized to support applicants and inform them of the procedure.

November: the communication on the open call started and the interaction with the applicants was channelled through a unified mailbox. The briefing and alignment of the evaluation started, and all internal evaluators received a Guide for Evaluators and a Code of Conflict to ensure a transparent and fair process. All internal evaluations received a digital briefing. In the period from Nov. 22nd – Nov 25th, all internal evaluators processed their evaluations. From Nov 26th – Dec. 2nd the LEG expert meetings took place.

December: the shortlisted artists received a training on Dec. 13th on what to expect from the Jury Days. Next to that, they received the Jury Member booklets. Each Regional S+T+ARTS Centre had talks with the artists to give feedback on their proposal and support them in preparing for the final round. The Jury received the Guide for Jury Evaluators, Assessment template and Code of Conduct. The non-selected artists were given the opportunity to ask for personal feedback. They were provided with in-depth feedback on their application from the evaluators. This was much appreciated.

January: All artists handed in their abstracts and jury information by Jan. 6th, 2022. In the period of Jan. 13th –

Jan 19th Jury Days took place. Each Regional S+T+ARTS Centre wrote a jury report which was used to provide feedback to the selected and non-selected shortlisted artists and included in the communication on the winners. On January 26th, the winners were announced and the Open Call & Evaluation process was completed.

SELECTION INSIGHTS

Repairing the Present made use of a three-stage selection process, leading to three rounds of evaluators:

First round:

Internal evaluators: members from the Regional S+T+ARTS Centres (& residency partner & expert)

A minimum of three individual evaluators per proposal

Outcome: top 10 candidates per challenge to be presented to the Local Expert Groups

Second round:

Local Expert Group round. The top 10 candidates per challenge were presented to the Local Expert Groups.

Each Local Expert Group consists of 5-10 members from different backgrounds and disciplines.

Outcome: top 3 candidates per challenge to be presented to the Jury

Final Round | Jury Round

The jury was established with taking the following into consideration

- a minimum of 5 independent, non-consortium related members.
- interdisciplinary, high-profile experts, with representatives from the Regional S+T+ARTS Center (Innovation Catalyst), Residency host, professional artist/ art sector, sector/digital/ regional hubs and networks, science/ technology expert.

KEY TAKE-AWAYS

Organize the work: Repairing the Present launched an open call with 21 challenges. This has meant a tremendous communication effort, as well as an effort from the side of the artists and the Local Expert Group members who had to process the applications and support the Regional S+T+ARTS Centres. To a certain extent, the different challenges were in competition with each other. This meant that we received more proposals than applicants because the artists could apply to max. three challenges.

Time is crucial: The two-stage pre-selection phase, which involved both the internal evaluators and the Local Expert Group, resulted in a broader sharing of the concepts and more in-depth discussion on what direction to take. It was considered an interesting way to evaluate. For most, it was a new addition to the selection process, and it turned out to give more regional context and feeling to the open call from the start. It also helped in getting the stakeholders involved in defining the challenges so that they could actually experience the suggested proposals. With regard to the timing, the open call process was very tight. More time between the internal evaluation and the Local Expert Group selection would allow for more preparation and follow-up to take place. It would be advisable to take a broader timeframe to give artists more time to create mature proposals and the evaluators of round one more time to do their work and prepare for the Local Expert Group meeting, and also to be able to give additional documentation upfront. Our suggestion for future open calls would be to have at least two weeks between the two pre-selection rounds.

SUMMARY

Despite the ambition (21 artist residencies to fill), the short timeframe (we started the project in June and the call opened in October) and the enormous amount of parties involved (minimum three internal evaluators from each Regional S+T+ARTS Centre, Local Expert Group members at each center, 11 juries all including a minimum of 5 members from outside the Regional S+T+ARTS Centre), organizing such a complex selection process is nonetheless achievable if a clear process with upfront milestones and dates is set up from the start, and the parties involved show a willingness to collaborate and deliver results.

Some of the lessons learnt are that the open call and selection process could benefit from giving the evaluators more time. The more challenges (i.e. residencies), the more effort and time are required from all involved parties, including the artists, who have to inform themselves and react with a proper proposal. A multi-stage selection process gives artists the opportunity to sharpen their proposal — tweaking and improving it with input from the local mentor/ innovation catalyst — and results in better-rooted proposals presented to the Jury. Additionally, the three-phase selection gives additional insights and input from the (internal) evaluators and local stakeholders on the proposal, including where they see the value of creating space for experiments and artistic research at the intersection of science, technology and arts.

We hosted two informative sessions; herewith the links:

(32) Artist Info Session I — YouTube

(32) Artists Info Session II — YouTube: really explaining the whole process step-by-step.

With 277 views on Youtube, for those that couldn't attend live.

Furthermore, each RSC had created a video per challenge to make the call personal and inviting:

They can all be found here: (32) S+T+ARTS EU — YouTube > <https://youtu.be/hUm2zzUCPDw>

A particularly good example: CYENS: (32) Challenge No. 18 | SustainingScapes | CYENS — YouTube

Selection method on how artists present their portfolio is based on:

www.artdriveninnovation.eu

04



Innovation Catalyst

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04 INNOVATION CATALYST

MOTIVATION

The outcome of the S+T+ARTS project *Repairing the Present* provided brilliant ideas and tools. Beginning a process of innovation has never been easy. It needs energy, creativity, time and a lot of work. Despite the little time, S+T+ARTS has succeeded in creating a new way of thinking about contemporary issues such as ecology, inclusion and progress. The cross-fertilization method and the strategy of the local ecosystem encouraged a highly innovative, interdisciplinary dialogue. It's impressive what science and art are capable of achieving when looking in the same direction. And that's the reason why we strongly believe that initiatives such as S+T+ARTS are going to play a key role in innovation.

IMPACT

As soon as the process started, we knew that we were going in the right direction. All the innovators had proficuous interactions on the different challenges. The design-thinking method used led artists, scientists and experts to create outstanding works. Following the path that begins with a vision from art, science and technology, and ends with demand, led the artists to create innovative points of view on progress. Sometimes we forget that progress is not linear, even if it is convenient to think of it that way. Just because time goes on, humanity doesn't necessarily get better. The works of the artists succeeded in showing how industries and governments should look at contemporary problems with a lens that can really see them forward.

The paradigm culture/nature inspired all the works of *Repairing the Present*. The main focus has been to examine the relation between society and nature from a non-specific point of view. Innovators like Olga Kisseleva looked at the relationship between trees and cities, focusing on the citizen's behavioral tendencies in the greener areas of the cities. The work *Cities Live Like Trees* addresses the nature-lack-disorders and solastalgia inherent in urban spaces while exploring the interconnectedness of human and vegetal realms to reimagine the cities' structures and maintain them alive. Meanwhile, Adriana Knouf's work pointed out humanity's tendency to replicate mistakes even in the outer universe and called for special attention to be paid to space exploration. The artwork of Sissel Marie Tonn investigates how to stimulate resilience and inclusive sustainability, which can lead humanity to innovative answers to questions such as how we can live together in a changing ecosystem and how we can preserve the future of our planet.

In conclusion, all works tap into the potential of artists to act as catalysts for change and actively contribute to innovation; the programs explored the possibility of *Repairing the Present* through resource, urban, ICT & art-powered transformations encouraging a critique of the present, the exploration beyond its current limitations and the reimagination of other possible futures.

KEY TAKE-AWAYS

Design your thinking: all partners and stakeholders had to face an ambitious challenge: create not only a unique and useful view of contemporary problems but also a methodology rooted in design thinking that could be adopted by all the participants in the project. To avoid the common cacophony that happens when innovators from different backgrounds talk to each other, Repairing the Present adopted a different strategy such as the local ecosystem group, the cross-fertilization method and the "Do- it- yourself" \ "Do- it- with- others" method. We were pleasantly surprised with the immediate results. The innovators efficiently communicated with each other, and there wasn't a lack of understanding. The benefits of efficient and cohesive work between different experts transformed the project into an incredible occasion to build a different perspective on the future.

Be aware of the mindset: somehow, art and science have the same methodology but, as researchers, the artist and the scientists have different mind states. If we define the mind state as a state of the nervous system that plays a

causal function in the process leading from stimulation to behavior, it's safe to affirm that the praxis of artists and scientists is the product of different behaviours towards the imaginative process. These behavioral differences come from the same idea of freedom. Science and art can overcome the limitations of substance and perception, but in order to do that, science works with a rigorous mindset, while art with a strictly creative one. This does not mean that art isn't rigorous or that science is not a creative practice. It only means that if we want art and science to collaborate, we need a method, like the Local Ecosystem Group or the cross-fertilization approach, that puts together these two mind states and creates an efficient design thinking for both.

SUMMARY

We strongly suggest adopting the cross-fertilization methods and the local ecosystem group strategy to build a dialogue between all the stakeholders. That is how Repairing the Present became a catalyst for innovation.



05

Residency Documentation

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05 RESIDENCY DOCUMENTATION

The art residencies were a key moment in Repairing the Present. The 21 artists-in-residence, supported by the various design thinking in the project, followed a common creative process. The residency period was divided into four main phases: Reflection, Development, Evaluation and Production. The motivational process was highly relevant in the first phase as the boost to start the research. From the beginning, the artists' interactions with local experts

in relevant scientific, technological and artistic areas allowed them to focus optimally on the creative process that characterized the subsequent phases of research and production.

The focus of the Evaluation phase of the residencies was to measure the impact of the creative idea, both on civil society, and on the key players in the world of science and art.



Courtesy In4Art

These activities were not only an excellent stimulus for the artists to discuss their creative ideas. They were essential in the dissemination of the most ambitious scientific aspects which were presented in the universal language

of art to the members of the general public present. In many cases, these interactions also aroused the interest of technology companies, which glimpsed valuable and exploitable potential at the conceptual-industrial level.



Courtesy CCCB, © Claudia P. Machuca Santibáñez



Green Club, Portrait © Unit Lab



Still from „The Black Hole of Money“ by Wassim Z. Alsindi and Ox Salon at Click Festival Elsinor, Denmark. © Christian Brems / Art Hub Copenhagen.



Ouroboros, Falko Siedel



Jeschaunig Milano, Photo © Michele Nastasi



suskewietvisions © vandingenenshongo

KEY TAKE-AWAY

Be creative: The experience of Repairing the Present allowed an experimental exploration of one of the human mind's most elusive and mysterious concepts: creativity. Creativity not only as an artistic process but more generally, a path that leads humans from a necessity to the realization or resolution of a concept. This aspect is common to humanity's cultural activities, from art to science and everyday life.

SUMMARY

Creative journeys in science and art have fascinated humankind since the earliest times. The experience of the art residencies of Repairing the Present reproduced, according to well-defined principles, precisely the same journey, with the advantage that scientists and artists could work side by side and create something collaboratively. Moreover, in Repairing the Present, creativity and science found new paths thanks to technology.



06

Exhibition

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06 EXHIBITION

Repairing the Present offered the opportunity to produce exhibitions in which the dialogue between science, technology, and the arts explored new scenarios for ecosystem improvement, calling for collective inspiration and joint creative effort. It has not been easy to pursue the aim of this dialogue.

After several visions and discussions about artistic prototypes vs artworks, prototyping parks vs exhibitions that preceded the work on Repairing the Present's final output, we decided to start the reflection from the two central terms of the project. The notion of "repairing the present" evokes a hands-on attitude towards the immediacy of

contemporary issues — from climate change to post-pandemic social dynamics, decolonial processes, and identity politics — and at the same time, it emphasizes the importance of the current moment to anticipate challenges and opportunities in the years, decades and centuries to come. As a corollary to the 21 international S+T+ARTS residencies hosted within the framework of the Regional S+T+ARTS Centers and their Repairing the Present project, a triptych of exhibitions was organized. Its pre-launch, during the S+T+ARTS Day at Ars Electronica Festival 2022, hosted a conversation between Mariana Pestana and exhibition curator Manuel Cirauqui.



The Repairing the Present exhibition series : REWORLD, : REWILD, : RETOOL, curated by Manuel Cirauqui, explored the productive tension between the urge of projecting and that of caring; between the presentness of the living and the futurity of technological development; between the immediacy of bricolage and the mediation of prototypes in our path to enhanced co-existence. In a time of recurring uses of the particle re- as expressions of our longing for renewal, the quasi-archaic sustainability motto of "reduce, reuse, recycle" has been replaced by a myriad of efforts to reinvent, reset, rename, restore, rethink, re-everything. The Repairing the Present exhibition series plays on this theme by means of three words that attempt to encompass the complexity and novelty of trans-disciplinary, art-driven innovation as a response to the insufficiencies of the industrialized economy and its extractive models. A central idea to the entirety of the series is that not only specific current affairs require fixing, but also our sense of presentness, our connection with and among ourselves in the present time, is asking for repair and redefinition. As we sync back with the existence and natural rhythms of our planet, : REWORLD, : REWILD, and : RETOOL appear as both operational and speculative principles to produce sustainable imaginaries of harmonious living.

Each exhibition was singular, tailored to site, and presented the residencies' outcomes and the multiple aspects of the artists' projects becoming manifest with diverse temporalities and materialities, sometimes allowing one project to present itself in multiple forms.

:: REWORLD

As the first iteration in the series, : REWORLD was presented at Milan's MEET | Digital Culture Center between the 4th-30th of October 2022. The exhibition addressed world-building or worlding as a core activity in advanced digital culture—an emerging domain of constructed reality that is starting to face its own sustainability challenges and contradictions. : REWORLD followed the investigations of artists working in domains such as immunology, biomaterials, the crypto economy, speculative design, and cultural critique with a variety of technologies and material languages. Featured artists include Wassim Alsindi and 0x Salon, Kat Austen and Fara Peluso, Samira Benini Allaouat, Felix Gaedtke, Josef Hovadik, Studio Lapatsch Unger & Johanna Schmeer, Studio Above & Below, and Sissel Marie Tonn.

ph. Francesco Prandoni
Courtesy MEET





ph. Stefan Grosjean
Courtesy MEET



ph. Francesco Prandoni
Courtesy MEET



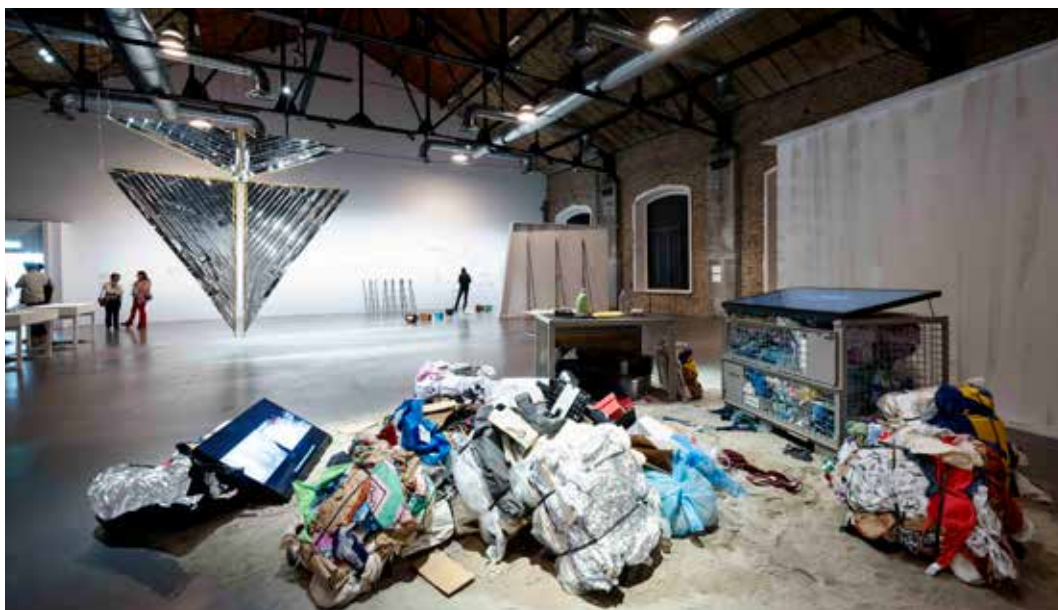
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Courtesy MEET



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courtesy Fondazione MAXXI



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courtesy Fondazione MAXXI



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courtesy Fondazione MAXXI

: REWILD

From the 14th October–13th of November 2022, MAXXI, the National Museum of 21st Century Arts in Rome showcased : REWILD focusing on the urgency to decolonize nature and future ecosystems yet in a terraforming stage. Dowsing, seeking a reconnection with the nonhuman, mapping the dynamics of lichen or the twisted paths of urban waste, artists such as Samira Benini Allaouat, Penelope Cain, Filip Van Dingenen & David Shongo, Susi Gutsche, Olga Kisseleva, Adriana Knouf, Lugh O'Neill, and Studio Lapatsch Unger & Johanna Schmeer invited to active forms of engagement with land, biotope, and outer space.

: RETOOL

: RETOOL, the last instalment of the Repairing the Present exhibition triptych, was presented at ZKM in Karlsruhe from the 18th of November through the end of 2022. This presentation demonstrated how creative agents across the board contribute to our tooling up in light of the mutating present, the painful lack of resources for unexpected forms of emergency, as more complex patterns of unpredictability infect further domains on a planetary scale. From pandemic breakouts to eco-catastrophes, we are learning to live under the pressure of future fracture, and therefore new forms of learning and tooling become essential to future survival. While instruments may be created ad hoc with the materials at hand by contemporary bricoleurs, retooling appears as both a performative creation and a

creative rehearsal of unseen functionalities.

This show includes new works by Grow Your Own Cloud, Markus Jeschaunig, Hypercomf, Lugh O'Neill, Olga Kisseleva, Studio Lapatsch Unger & Johanna Schmeer, Unit Lab, and an interactive tool developed by STATE Studio.

KEY TAKE-AWAYS

Collect feedback: Through Repairing the Present, S+T+ARTS created a unique occasion to see how the public would engage with a prototyping park/art exhibition. The feedback has been extremely positive. Science has never been more accessible to everyone, no matter what their background of expertise. In fact, through the use of new technologies, the dialogue between science and art became understandable to all visitors. All three declinations of Repairing the Present : REWORLD, : REWILD, and : RETOOL, needed support from cultural facilitators. Despite the concept being clear and contemporary, the exhibitions needed to be explained in all their aspects in order for them to be fully understood.

SUMMARY

Building a prototyping park like an art exhibition is a thrilling challenge, as well as a necessity. Repairing the Present showed us how incredibly powerful and game-changing the collaboration between technologies, art and science can be, not only for a community of experts but for everyone.



© ZKM | Center for Art and Media Karlsruhe,
photo: Felix Grünschloss.



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photo: Felix Grünschloss.



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07



Crowdsourcing Public Engagement

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CROWDSOURCING PUBLIC ENGAGEMENT with Futures Canvas – A digital tool for collective speculation and envisioning futures together

MOTIVATION

One of the intentions of WPII of Regional S+T+ARTS Center STATE, was to experiment with new modes of public- next to expert-participation in residency projects, and expand public participation through a digital layer. As an element to allow for public participation and interaction in the project, a public digital crowdsourcing campaign was initiated on the Futures Canvas platform³. Futures Canvas is a digital tool developed by AKAW⁴, the future thinking initiatives born out of STATE. It allows groups to create maps of possible futures related to a particular question and explore together our individual and shared ideas about the future. It uses gamification, crowdsourcing and futures thinking to address wicked problems through collective speculation

and open ideation. When participants share and evaluate each others' expectations, hopes, and fears, they paint a diverse and multi-faceted picture of future possibilities. In the context of Repairing the Present, Futures Canvas has been made available to all Regional S+T+ARTS Centers as a tool to explore public perceptions in the context of their residencies. From February 2022, the selected S+T+ARTS Residency artists were working on their artistic concepts and prototypes in exchange with the local experts. Part of the residency process was the collection of feedback on the artistic prototypes and concepts. During this period, access to the Futures Canvas tool was offered to all Regional S+T+ARTS Centers to expand participation digitally to the public level and invite a broader audience to speculate alongside the artists and local experts about the key ideas behind the projects. Artists and experts shared key thoughts and ideas connected to the residencies' topics and artworks to pre-seed the canvases before inviting the general public to engage with these ideas and share their own speculations.

Additionally, Futures Canvas is used in the final exhibition at ZKM to engage visitors on-site with the speculative approaches and topics raised by the exhibited artworks. At the time of writing this report, the exhibition had not started. Results from this campaign will be available digitally on the Futures Canvas website⁵.



ph. Anne Freitag

3 <https://futurescanvas.com>

4 <https://akaw.vision/>

5 <https://futurescanvas.com/de/challenges/retool>

IMPACT

9 out of 12 Regional S+T+ARTS Centers used the opportunity to create challenges on Futures Canvas. These were open for public participation on the platform from May – July 2022. In total, 14 challenges were opened – each corresponding to one of the 21 residency topics. Regional S+T+ARTS Centers were individually responsible to disseminate and market locally, e.g. by spreading it in their partner network and communication channels and social media campaigns. Some challenges were further activated through digital and physical events. Regional S+T+ARTS Center STATE used the Futures Canvas tool on-site during its academy event in Berlin with the purpose of collecting public feedback for the residency prototypes.

From 14 challenges, four were actively promoted and reached an above-average participation level online. In final numbers, the Futures Canvas campaigns collected more than 1500 public contributions. These consisted of more than 150 speculations, i.e. expectations, hopes and fears by the general public on hypothetical future developments related to the topics of the regional challenges and residency topics. The submitted speculations have been rated and publicly evaluated more than 1350 times according to two criteria: their desirability and their perceived probability that they become a future reality. The results were part of the collaborative approach of the S+T+ARTS Residencies enabling new public outreach and informing the artistic process.



Fig. 1: Futures Canvas challenges "New modes of mobility" by RSC STATE, responding to the question "How might we rethink Berlin's future of mobility?". The full map is available on the Futures Canvas website⁶.

On the Futures Canvas tool, the speculations of each challenge are positioned – according to their average rating – on a map, the actual Futures Canvas. Fig. 1 shows as an example the canvas of the challenge "New modes of mobility" of Regional S+T+ARTS Center STATE. In this challenge which responded to the question "How might we rethink Berlin's future of mobility?", 45 speculations

were collected and were rated 496 times. Topics of the speculations submitted by public participants included: accessibility, bikeable city, carpooling, diversity, travelling with pets, green city, wild animals in the city, heat, banning of private cars, freedom, politics, resilience and a walkable city. Table 1 shows selected speculations and respective ratings.

⁶ <https://futurescanvas.com/en/challenges/new-modes-of-mobility>



Ph. David Lamb

"Mobility services are barrier-free, universally accessible for everyone and do not favor anyone" (speculation rated as most desirable). "The city will drag its feet on the necessary changes because taking away space from cars is still something politicians won't touch" (least desirable). "All cars must be electric to drive in the city" (most controversial). "More bike lanes will have emerged." (least controversial).

Table 1: Selected crowdsourced speculations and respective ratings from the Futures Canvas campaign to S+T+ARTS challenge "New modes of mobility", responding to the question "How might we re-think Berlin's future of mobility?".

KEY TAKE-AWAYS

Adapt your tool: the design of Futures Canvas as an easy-to-access and low-threshold tool proved effective in reaching public participation. In order for the approach to function and be effective, the tool has to be embedded in a dedicated communication effort driven by the responsible local partner institution.

SUMMARY

The implementation of the public crowd-sourcing campaign on Futures Canvas mapping trends and speculations within Repairing the Present and with a consortium of cultural partners and multiple stakeholders spread over Europe, did not only lead to greater outreach but enabled (collective) participation for the general public. The use of Futures Canvas in the context of S+T+ARTS Residencies proved especially valuable as a novel opportunity to allow for large-scale public participation outside of physical events and connect thoughts from interested participants across Europe. Convinced by the potential of this approach, Regional S+T+ARTS Center STATE will continue to develop the Futures Canvas tool in the context of art-science residencies and cultural projects.

Cities have been widely restructured as cities with mixed urban areas and short distances to reduce transport volume and to strengthen active mobility.	1 positive expectations
Cities are able to deal with major changes (like climate adaptation, migration...) by robust and flexible public transport systems and multifunctional and green public space.	1 positive expectations
Cargo bikes, small vehicles and more intelligent logistics systems have changed the way goods are transported.	1 positive expectations
Different forms of public/sustainable transport will be seamlessly integrated.	1 positive expectations
Reducing parking spots for motor vehicles has opened up public pockets of space in the city to be transformed into green spaces.	1 positive expectations
The 15-minute-city model is now in effect, people no longer commute from Spandau to Mitte everyday for work, etc.	1 positive expectations
Berlin has a city-wide network of cycling lanes that are fully separated from other traffic.	1 positive expectations
There are more sharing projects.	1 positive expectations
Public space will be less dominated by private motor vehicles and opened up for other public use cases.	1 positive expectations
Use more public transport or bicycles for shorter distances – enable car free city districts.	1 positive expectations
More bike lanes will emerge	1 positive expectations
Rental and/or shared electric car and bike offers are more affordable and accessible to everyone.	1 positive expectations
I will not be able to enjoy the magic of a night ride through Berlin in a car, listening to music and being free.	1 positive expectations
Traveling with dogs via DB trains gets easier and cheaper with the possibility of toilets and run-breaks for the dogs when it is a long trip. Maybe with a hop on/off option without needing a new ticket.	1 positive expectations
I wish that Berlin invested more in public transportation outside of the Ring.	1 positive expectations
I wish an organization would buy up and take care of privately owned cars, pooling them for their owners and other members in a way that mitigates all downsides to carsharing.	1 positive expectations
I wish that Berlin limited traffic in zone A, not allowing private cars and creating even more green areas.	1 positive expectations
Seamless ticking for all public transport has been achieved.	1 positive expectations
Less space for stagnant cars, more space for cyclists. Bike lanes expand into areas formerly held by parking spaces. Car traffic is limited to carsharing services and delivery vehicles.	1 positive expectations
I expect that parking of private cars in public spaces is restricted to residents, for the same costs as renting a garage space, while commuters are directed to public parking garages at mobility hubs	1 positive expectations
All cars must be electric to drive in the city.	1 positive expectations
A new law prohibits empty rides of autonomous private vehicles as their introduction yields a high rise of transport trips, including going back and picking up a new person.	2 hopeful dreams
Cities remain places for everyone – with urban structures that are diverse and provide space for the unexpected.	2 hopeful dreams
Life in cities takes place mainly in the local neighborhood and using active transport modes as all places necessary to visit during a day are nearby.	2 hopeful dreams

In 2040, there are no longer private motor vehicles in the inner city.	2 hopeful dreams
In some central areas of Berlin private cars are fully banned.	2 hopeful dreams
The 15 minutes city has become a reality and citizens have access to all services they need within that range.	2 hopeful dreams
I fear the future will consist of boring and mainstreamed mobility solutions only. A future without Ferrari and McLaren.	2 hopeful dreams
There will be no cars owned by individuals anymore.	2 hopeful dreams
I expect that there will be no cars owned by individuals anymore.	2 hopeful dreams
Parking spaces for cars will be cut by 75% within the ring, and these spaces shall be concentrated around the ringbahn stations.	2 hopeful dreams
Inside the ring of Berlin was car free	2 hopeful dreams
Commuting around the city becomes energy itself.	2 hopeful dreams
Mobility services are barrier-free, universally accessible for everyone and do not prefer anyone.	2 hopeful dreams
I want Kreuzberg without individual car traffic	2 hopeful dreams
There are garages of electric cars for long-distance outside of the city, these cars are durable and last 100 years. In the city, there are wide bike lines, for bicycles of all kinds, electric and not	2 hopeful dreams
Berlin 2030: There are no more private cars in the city. There are flexible pick-up services to get you and your things from A to B.	2 hopeful dreams
Berlin will be sustainable, humane, local and green	2 hopeful dreams
Private individuals and citizens will not use private cars anymore inside the city and public space is re-used for community purposes.	2 hopeful dreams
Summers are now so hot that it is no longer safe to ride your bike during the midday heat.	3 expected challenges
The banning of private motor vehicles leads to a political and cultural backlash.	3 expected challenges
Many roads have to be restricted to one-way roads as the cars get increasingly bigger and cannot pass each other.	4 distant threats
A Black Swan incident is likely to happen within the next 20 years.	4 distant threats
the city will drag its feet on the necessary changes because taking away space from cars is still something politicians won't touch.	4 distant threats
I wish that it became possible to bring back horses to the city.	4 distant threats

Table 2: Complete list of submitted speculations in the challenge "New modes of mobility", grouped by the 4 sectors. The map can be divided into 4 sectors: positive expectations (high probability, high desirability), hopeful dreams (low probability, high desirability), expected challenges (high probability, low desirability), and distant threats (low probability, low desirability).



08

Academies

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08 ACADEMIES

MOTIVATION

The S+T+ARTS Academy serves as a vehicle to initiate young people and the general public into forward-looking technologies and new views, ideas and concerns around the opportunities, limits and potential pitfalls of digital technologies. Together with artists and scientists, youth and citizens more broadly can explore tools and applications that help make sense of the world around

us and build an active, critical and sustainable attitude towards their environment and technology. An important experience was the one organized by MEET | Digital Culture Center "The New Atlas of Digital Arts", in which all the partners and some of the major European digital art centers participated, plus centers from Canada and Switzerland.





MEE Atlas 4K, Map by Zeranta
Courtesy MEET

The meeting has been crucial to re-think together the relationship between art, science and technology and create new possible scenarios for the artistic and scientific community.

IMPACT

Through different S+T+ARTS Academy events, ranging from educational workshops, field expeditions, school visits, hackathons, conferences, forums and networking activities, we managed to successfully stimulate citizen and youth engagement and support the social development of sustainable local and European communities. The S+T+ARTS Academy program supports and promotes a Do-It-Yourself (DIY) and Do-It-With-Others (DIWO) culture, freedom of knowledge and learning, and a culture

of science. The focused, integrated educational program highlights the central role of S+T+ARTS approaches in uniting experts from the field of culture, science and technology, engaging the industry in education initiatives and accentuating the acquisition of digital skills, ultimately promoting the “learning by doing” method.

KEY TAKE-AWAYS

S+T+ARTS Academy events involve the communities in a wide range of educational activities. Within the framework of Regional S+T+ARTSCentres' project Repairing the Present, we successfully organized networking symposia, acceleration and matchmaking events with local, regional and internationally renowned and established actors. Through the S+T+ARTS Academy events, we managed to:

- **Stimulate** citizen and youth engagement and support the social development of sustainable local and European communities.
- **Ease access** to sustainable innovation and accelerate the spread and market readiness of art-inspired solutions to environment-related challenges.
- **Nurture** the urban/regional site by engaging relevant stakeholders: education, economic, natural environment, media-based and culture-based public, and politics in events that foster new exchanges towards human-centred innovation driven by the Arts.
- **Trigger** different reflections on the SDGs through hands-on learning activities (workshops in schools, non-formal educational formats and talks).



Smart Spaces Workshop II organised by Gluon in collaboration with Snowball. Courtesy Gluon



Art & Tech for a New Present/ Repairing the Present Unite!
 Courtesy CCCB, © Claudia P. Machuca Santibáñez



Data as Common Ground
 Courtesy CYENS

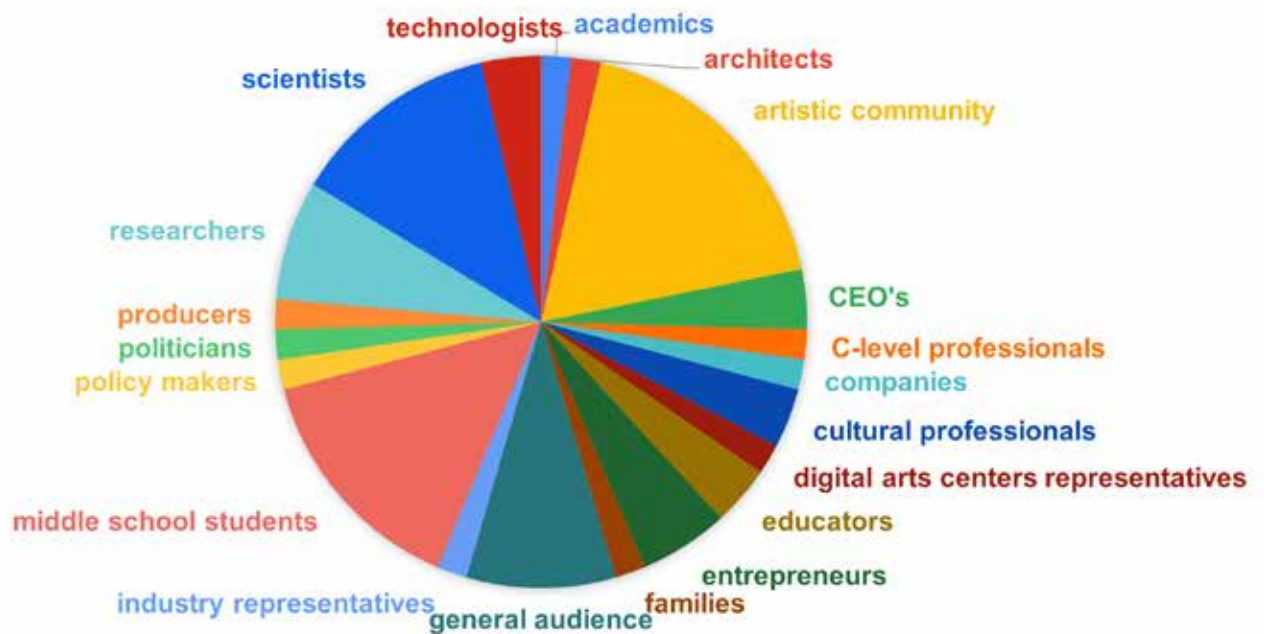
Until the beginning of November 2022, 20 Networking and Academy events were implemented in 8 European countries among the consortium, attracting more than 3.600 onsite and online visitors and participants locally and from the wider region. More specifically, the Networking and Academy events included 12 workshops or hackathons, 11 conferences, symposia or talks and four exhibitions or showcases of results. The events took place on 83 different days throughout the project.

The events were co-organized or realized in collaboration with other stakeholders and business partners from various industry backgrounds, such as universities, cultural

institutions, and independent organizations, but also the public sector, such as the Greek Ministry of Education or the Slovenian Presidency.

These activities were focused on central topics at the intersection of arts and science, including but not limited to green mobility in the city, art and artificial intelligence, augmented reality, ecology and diversity of organisms in the ecosystem, city and health, machine learning and human-robot interactions, circularity, digital art market experiments with NFT and Blockchain. Through their actions, the Regional S+T+ARTS Centers and their collaborators addressed different audiences, as illustrated below:

TARGET GROUPS AT NETWORKING AND ACADEMY EVENTS



SUMMARY

The 'wicked' problems our societies face need transdisciplinary solutions. The S+T+ARTS strategy is ideal for mainstreaming this approach in areas where the impact can be greatest, notably among youth in the formal and informal education systems and through experiential learning in various participatory formats.



Green Clubs organized from Onassis Stegi
© Unit Lab, Courtesy Onassis Stegi



Milano, Photo © Markus Jeschaunig
Courtesy MEET

CONCLUSION

When we think about how science works, we often base our ideas on the mainstream stereotype of the rigorous, severe and unapproachable scientist with a great mind but basic communication skills. When we imagine how artworks, we fall prey to the fascinating romantic archetype and imagine artists as desperate souls with tormenting lives. These images are simply not accurate nowadays if they ever were. The artist is a researcher, as is the scientist. Science and art talk to one another because they're driven by the same initial curiosity, the desire to know and investigate the world. The artist and the scientist seek to explore the unknown and develop paths of inquiry. Science unveils the mysteries and language of nature, but it is art that recognizes its beauty.

Through the interdisciplinary approach and cross-fertilization method, during the S+T+ARTS project *Repairing the Present*, we assisted a turning point for academic research and all of society.

The experience of S+T+ARTS highlights the importance of networking in the field of scientific and artistic research and the need for these two approaches to overcome the gap that still separates them. In this sense, *Repairing the Present* was a bridge connecting two fields, allowing them to meet and influence each other.

The installations are perfect examples of this connection, whether we think of Gregor Krpič's artwork *Blue-green-wall* — made possible thanks to the dialogue between the artist and a team of robotics engineers and researchers, followed by a specialized industrial process, or Studio Above & Below's *Entangled Landscape* — a work that uses augmented reality to make a data visualization and let the public see the network and exchanges of microorganisms in the subsoil in real time thanks to artificial intelligence. Kat Austen and Fara Peluso's *Circular Records* also stands as testimony to the importance of creating a bridge

between the artistic and scientific fields. Their work sought a solution to address the environmental impact of new media art, focussing on sound art, by creating a zero- or low-carbon way for listeners to acquire sound works.

The three exhibitions, **: REWORLD**, **: REWILD** and **: RETOOL**, were the moment of artistic restitution within the research projects. We were pleasantly surprised by the diversity of the audience: we saw visitors of all different ages and backgrounds. We felt like we achieved the goal of bringing them closer to specific and complicated topics from the world of science. Through these artistic and scientific projects, the audience can develop critical thinking. Indeed, the exhibitions were perceived as both artistic and educational. These immersive and interactive environments, in which sounds, projections, and technologies expand the modes of enjoyment, allowed visitors to have new emotional experiences. Most importantly, visitors not only saw the innovation but understood it.

This project has been an impressive step towards overcoming the art and science dualism.

The conjunction of art and science produced a plurality of points of light on questions like how we can re-image cities, think about space travel in a non-specist way and how deeply our body and our ecosystem are connected. To achieve this, we focused our design thinking on finding a way to combine the intellectual and sensitive faculty. Building a better future is our duty as the generation that must face the tragic consequences of climate change. To do that, «re-establishing the unity and at the same time the difference of the perceived world and the intelligible world through a redefinition of consciousness»⁷ is essential. The road to overcoming the art and science dualism is long but can be made easier if we keep this course.

Repairing the Present fulfilled its intent thanks to the incredible work of all the stakeholders.

⁷ M. Merleau-Ponty, "Le monde sensible et le monde de l'expression", Cours au Collège de France, 1953, a cura di E. de Saint Aubert et S. Kristensen, MetisPresses, Genève 2011, p. 45



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