



RUUK

for humanization of technology

NETWORK OF ART
AND CULTURAL
RESEARCH CENTERS

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RUK

NETWORK OF ART
AND CULTURAL
RESEARCH CENTERS



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REPUBLIC OF SLOVENIA
MINISTRY OF CULTURE

RUK is a network of research centers of art and culture at the intersection of contemporary technologies, science, and the economy. In this interdisciplinary hub, innovative products and services for the soft and humane technology of the future are being developed. The project is co-financed by the Republic of Slovenia and the European Union from the European Regional Development Fund.

RUK's goal is the integration of art and culture in scientific and technological research, development and innovation, digitalization, entrepreneurship, training, and education with an emphasis on humanities and social sciences, ecology, circular economy, and sustainable development. RUK is a part of decentralized Slovenia and contributes to even regional development and supports the three fundamental pillars of the S4 development strategy: digital development, the circular economy, and Industry 4.0.

The network of **RUK** centers consists modularly of three locally-regionally-nationally-internationally located platforms **DDT**, **PiNA**, and **KIBLA**, which capillary connect operators from their environments, platforms, and networks. Partnerships include scientific organizations and institutions, companies, universities, and other educational institutions. Connecting domestic stakeholders and their capacities, promoting the development of breakthrough and integrated new products and services, enable their involvement in the preparation and implementation of more demanding development projects in the post-corona period.

RUK laboratories provide appropriate technological equipment for the design and implementation of creative solutions and training and the transfer of innovative thinking to companies. They include the concepts of artistic creation and design to humanize services and products, and open space for the integration of these solutions to promote sustainability, use circular models and social innovation. Along with the transfer of innovative applications to the market, the goal is to strengthen innovative small and medium-sized enterprises by maximizing the coverage of young people's knowledge and potential.

Creative laboratories are the generators of future knowledge, as they create the base of required knowledge and competencies for the professions of the future. Thus they create the necessary conditions to meet new needs in the economy that will arise in the upcoming years, both in terms of introducing new technologies and employment that will be created as a result of digital transformation and new technologies in companies. The laboratories are a hub of innovative responses to the challenges of modern times.



Weronika Lewandowska and Sandra Frydrysiak, *Nightsss*, 2021.
Installation view, KIBLIX 2020-2021: Virtual Worlds Now, KIBLA PORTAL, Maribor.

DDTlab

<https://dd-trbovlje.si/>

DDTlab is a research lab operating in the fields of cybernetics, virtualization, BCI systems, and robotics. **DDTlab** enables regional, national, and international connectivity. As part of social innovation for smart factories, demands for the humanization of technology are being placed through robotization. Robotization is one of the key directions of progress at the onset of the 21st century. Advancements in this field are moving towards increasing autonomy, flexibility, and sustainability. Thus, a modern-day »machine« is not merely intended for a mechanic performance of a single function, but is becoming an increasingly independent agent, designed to solve complex problems faced by the individual, the economy, the society, and mankind. The development of robotics thus actually refers to advancements in human-robot interfaces, i.e., artificial intelligence. **DDTlab** is a platform that focuses on creating research and education projects that combine science, art, technology and business.

DDTlab has three laboratories, which interact in a productive and harmonious way.

Head of the laboratory: Dr. Maša Jazbec





VR AND AR LAB

Trainings with the goal of democratizing scientific achievements, arts and technology, will also take place as part of our production. VR (virtual reality) and AR (augmented reality) can lead to new and exciting discoveries in areas that affect our daily lives. Whenever it is too dangerous, expensive or impractical for humans to do something in the real world, virtual or augmented reality is the answer or the solution. From training pilots and surgeons to historical architectural applications operated by scientists, VR and AR allow us to take virtual risks to gain real-world experience.

- VR experience production (Nube 360°, Vertigo Bird 2020, Mining Stories, NeuroFly).
- AR project production (AR Laibach, LesARIus, AR 4.Dritl).
- Workshops to learn about VR technologies and workshops to create VR worlds.
- Workshops to learn about AR technologies and workshops to create AR applications.



CREATIVE ROBOTICS LAB

Under the premise of »creative robotics«, we present new innovative fields of interaction between humans and robots. We provide introduction to NAO robots and the Yaskawa robotic arm, present the operation and software of the robots and work with the Yaskawa robotic arm controller.

The training is not only technical oriented, but also humanistic and artistic. The aim of this type of education is to encourage young people to think outside the box when it comes to using robots in our society.

The **Yaski Creative Robotics** project is a collaboration between DDTlab and Yaskawa, an industrial robotics company. The project is a unique transfer of technology from the industrial to the social sphere that brings the virtue of humanity to a repetitive robotic arm. The user has the opportunity to learn about industrial robotics through creative, artistic and innovative applications that demonstrate the wider applicability of industrial robotics (»out of the box« principles). Robots are becoming increasingly present in our daily lives, but young people and the general public do not have the opportunity to learn about the advancements in robotics. This is why we want to spread this knowledge by demonstrating innovative approaches to industrial robotics. We also work with young people at school, giving them the opportunity to develop and explore robotics with us and to learn hands-on in our laboratory.

Social robotics

At DDTlab, we are intensively working on humanising technologies, introducing and developing new applications for robotics. We have developed a character and an identity for the NAO robot, which has been given the personalised name Eva. The Eva robot represents an innovative and creative approach to presenting and learning about robotics. She regularly posts her adventures on her Facebook profile and YouTube channel.



BCI LAB

BCI – Brain-Computer Interface – is a computer system that captures brain signals, analyses them and converts them into the appropriate commands to execute output applications. BCI systems were initially developed for biomedical applications, enabling the regaining of mobility for the physically handicapped and replacing motor functionality. In addition to biomedical applications, efficient BCI systems are now also used in many other areas. Thus, the research into the applications of BCI systems has expanded beyond medicine to areas such as smart environments, art, education, games, advertising, etc. At DDTlab, we are developing new applications for brain-computer interfaces.

Neuro robotics projects are a unique transfer of technology from the domin of robotics to the social domain, bringing the virtue of humanity to robots. The user controls the movements of industrial and humanoid robots through a brain-computer interface. This allows direct communication between the brain and the device that we want to control and operate with the help of the brain. In the case of Neuro Robotics, this is the possibility of controlling robots using brain signals.

In BCI workshops, participants learn about the human brain, this amazing organ made up of billions of tiny cells. The mentor introduces BCI – the interface between the brain and the machine – the computer – in an interesting and interactive way. Participants have the opportunity to create with brain signals: paint on a digital canvas, write, control a robotic ball, write with a industrial robotic arm and control the movements of the humanoid robot Eva.

Pilot Projects

NEUROFLY

DDTlab, dr. Uroš Ocepek and AFormX (Ines Repnik, Nika Mlinarič)

The **NeuroFly** simulator is a pilot project of the DDTlab and the AFormX aviation company. The project aims to combine the VR flight simulator with a brain-computer interface, which allows the user to communicate directly between the brain and the simulator and thus direct the aircraft in the simulation.

The user operates the **NeuroFly** aircraft via a brain-computer interface. The Brain-Computer Interface (BCI) is a powerful computer system that enables direct communication between the brain and the device that we want to control and manage with the brain's help. The goal of the BCI system is to allow users to control the device



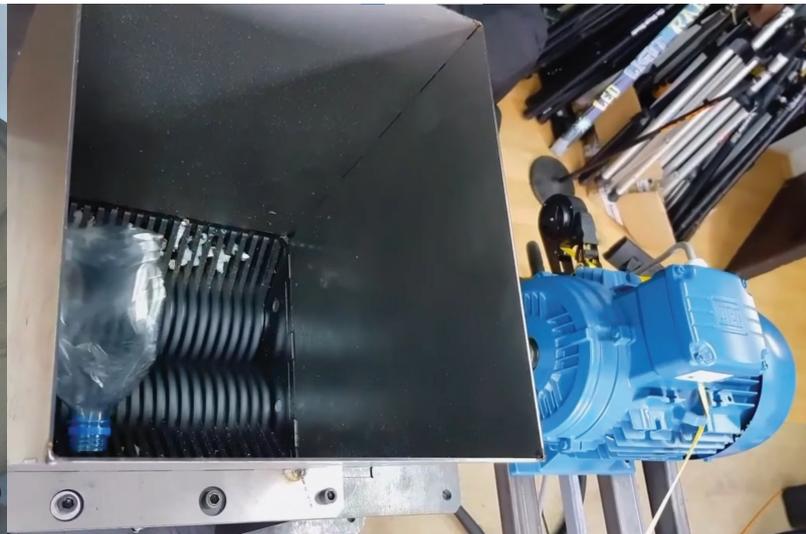
only through brain activity. The operation of BCI devices is based on the interaction between two adaptive controllers: the user, who must know how to intentionally elicit the correct brain signals that will trigger the command, and the BCI system, which has to translate these signals into commands and execute them. Therefore, operating with brain interfaces is a skill that both the user and the system must learn by continuously adapting to each other.



PLASTIC RECYCLING - 3D PRINTER USING BLOCKCHAIN TECHNOLOGY

DDTlab and GNS PLUS, d.o.o. (Goran Vučilovski, Matic Plevčak)

The study and pilot implementation of the prototype recycling machine is based on blockchain technology and the entire chain from plastic waste to various reusability options through the principle of 3D printing. Plastic has become a global problem over the years. The recycling machine's purpose would be to make products or a product that would be reused instead of being disposed, and best of all, everything we no longer need can be recycled. The primary purpose of the study and implementation of the prototype machine is to reduce this type of waste and turn it into something useful. For this purpose, a prototype machine will be constructed, which will turn plastic waste into filamet (filler) for 3D printers, which have become increasingly popular in recent years.

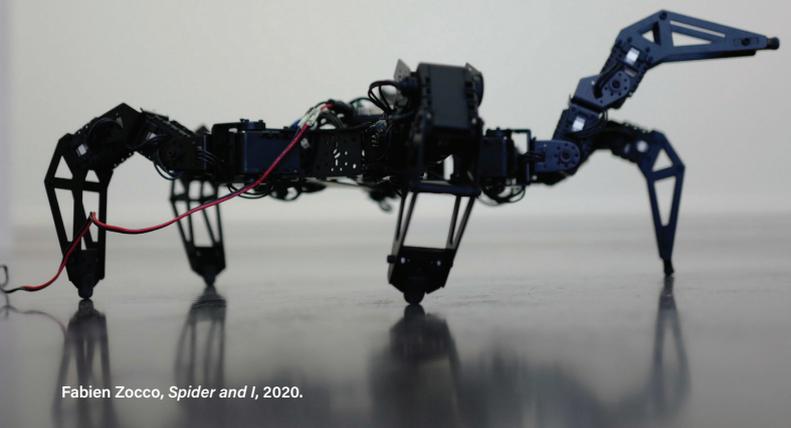


Recycled plastic can be used for various purposes as a basic building block (the material representing the basic element for 3D printing) throughout the design process. As a basic building block, it is intended as a building element in new constructions. It is a potential element in spatial layouts, such as arbors, canopies, pavilions, etc. Through a creative process based on computer applications, it also represents the basis for 3D printing of souvenirs, small plastics, public sculptures, and, of course, countless useful objects.





Edward Ihnatowicz, *Senster*, cca. 1970 / RE:Senster, 2017.



Fabien Zocco, *Spider and I*, 2020.



Vanessa Vozzo, *Photosynthetic Me*, 2020.



Qian Xu, *Private Garden*, 2021.

SPECULUM ARTIUM Festival

<http://speculumartium.si/>

Trbovlje is not only known as a town with a rich mining past and a high level of technical culture but also as a place where the artistic avant-garde was born. It was pioneered with Ludvik Mrzel and Tone Seliškar, later Laibach, and more recently by Iztok Kovač with the EN-KNap collective and several young new media artists. On this basis, more than ten years ago, the festival of new media culture **Speculum Artium** began its journey. After its first performance in 2008 in Ljubljana, the festival was relocated to Trbovlje where it found its true home. Throughout the decade of implementation, the festival has successfully presented projects created at the intersection of art, science and technology, and taken care of promoting and popularizing contemporary art in the general public. Hosting world-renowned names in the field of culture, science and technology, such as Stelarc, Hiroshi Ishiguro, Honda Robotics, Yaskawa, Laibach, Victoria Vesna, or Patrick Tresset, established **Speculum Artium** as one of the most significant events in contemporary art in Slovenia and Europe. The festival pays special attention to young audiences, so it cooperates intensively with schools and faculties. Special visiting programs are prepared, including creative workshops, where young people test themselves as creators of innovative products.

This year's festival performance, which took place between **23 and 25 September 2021**, also opened an insight into the beginnings of new media art, with the first guest appearance of the interactive sculpture **Senster** in Slovenia, created by the Polish artist **Edward Ihnatowicz**. *Senster*, created in 1970, is considered to be the first interactive artwork operated by artificial intelligence. It represented the object around which all other layouts revolved. With this, the festival drew attention to the fact that new media art is not just something that happens here and now, but has its starting points, path, and objects that marked it and still serve as a starting point for younger generation artists for new projects.

Visitors also had the opportunity to see works by artists **Barbara Jazbec** and **Kristina Tica**, **Fabien Zocco**, the **KairUs** collective and the **Varvara&Mar** artistic duo, as well as student projects by artists **Collin Kluchman**, **Grigory Kirgizov**, **Jo Caimo**, **Nadezhda Bei**, **Qian Xu**, **Vasily Kuzmich**, **Veronika Prizova**, **Maria Moschenskaia**, **Galina Alferova**, **Evgeni Khlopotov** and **Siraj Farhan**.

International Residencies

DR. TIAGO MARTINS

in cooperation with Chipolo

Dr. Tiago Martins, an artist and technologist, together with his mentor Jure Zdovc, who is a co-founder and technical director of Chipolo, created playful and useful concepts for Chipolo products during the time of his residency stay. Chipolo products basically perform the task of smart object tracing; they trace objects we might have lost (e.g. phones, wallets, keys). The added value of Dr. Martins' work is the process of gamification, which introduces principles of play into the idea of lost object tracking. This means that he added content to the object's traceability, and developed possible usage concepts, which rely on elements of play. His first conceptions under the working title *Come out and play*, contained three concepts: the *Chipper* mobile game, which draws on *Pokémon Go* and deals with virtual domestic pets and role-playing. *Eight days* is a promotional game, the goal of which is to activate an existing community of users, reach new users, and generate an awareness about Chipolo in a fun and playful way. The third concept is called the *Untitled location game*, and was dubbed the »bonus round« concept by Dr. Martins. It deals with the re-contextualization of playing in the sense of developing a playful attitude, and also with the possibility of users creating their own games. The ultimate objective of the residency program which Dr. Martins, together with Chipolo, is going to realize in the future, is a product called the *Chipolo Family Play Kit*.

MATIC BERNOT

in cooperation with the collective Laibach

During his residency **Matic Bernot** developed the AR Laibach app in collaboration with the collective Laibach. It is based on displaying additional augmented content on a selection of existing iconic Laibach posters and allows you to experience these posters in a new, innovative way using your smartphone or tablet. The AR Laibach also represents an alternative form of delivering new content, as it was created in response to the Covid-19 situation. All the user needs are the poster images and the free app. The augmented reality (AR) ameliorates the traditional use of smart devices by adding a new layer of virtuality to reality. In 2020, Laibach celebrated its 40th anniversary. To mark the occasion, Zaslavski muzej Trbovlje created an exhibition entitled *Laibach 4 Decades*. The museum used the app as an integral part of the exhibition. It is one of the breakthrough innovations, as it builds on existing AR technology, while its application in the field of art and culture adds value to existing exhibits. Laibach has thus made a significant shift towards the use of modern information technology approaches with this new medium.





VARVARA GULJAJEVA IN MAR CANET
in cooperation with Yaskawa

The artistic duo **Varvara & Mar**, whose artistic research practice is based on connections, interdependencies and frictions between social change and technological progress, has developed projects in the field of robotics as part of the international residency program at DDTlab. The artists presented themselves at the Speculum Artium 2021 festival of new media art with two projects developed in collaboration with the DDTlab team (Žan Rajšek):

- Advanced drawing with the robotic hand Yaski is a robotic art installation entitled **Drawing Automata**. Yaski is commonly used in industry to perform routine work. With this project, the artists want to free Yaski's robotic arm and add artistic value to its work. This means that Yaski is performing the work of an artist, i.e. sketching portraits. The installation turns a photo of the person being portrayed, created with a webcam, into a drawing drawn by Yaski. The installation uses the Python Linedraw Library so that the photo can be transformed into a sketch. Although all the processes in the **Drawing Automata** project are algorithmic, the final sketch of the person portrayed is drawn as if it were created by a human hand.
- **I, Human and EVA** is a computer-art installation that involves the interaction between the audience, the Yaski robotic arm, and the NAO robot Eve, as well as the principles of artificial intelligence (AI). The end result is the production of a comic strip. During the participant's conversation with Eve and creating photos with her, Yaski draws a comic strip on paper. The challenge of the project is the final product, which is designed in a comic book format while simultaneously managing two robots; Eve as an interlocutor and Yaski as a story writer. In the interaction between the participant and Eve, the participant first writes a text to start a conversation with the robot. The participant can then create visual images for their comic strip and also hear robot Eve's response to their written text; lastly, a photo is created. When the humorous comic is finally created, Yaski begins to create a story: he first draws boxes containing text, and finally adds a sketch. The following participant can continue the story or create a new one.



HEKA is a laboratory at the intersection of science, art and the economy based on the concept of the so-called »citizen science«. It is a platform of networking and cooperation between different stakeholders, establishing a dialogue between society and science using art and artistic thinking. The primary starting point of **HEKA** is the introduction of empathic curiosity and compassion, which is characteristic of art, into scientific methods of research. The guiding principle is the awareness that technology, art and the economy always impact an individual and society. Therefore, we want to bring these areas closer to individuals in harmony.

It is the first space of its kind in Istria. It operates in the following thematic areas:

- Researching the human impacts on the marine ecosystem.
- Researching spatial sound reproduction.
- Researching biomaterials.
- Cooperation with the Central Technical School in Koper in implementing the training program of mechatronic techniques laboratory work.

The red thread that subtly links the thematic areas deals with the climate crisis and its consequences. The thematic scope will be prepared by external collaborators. Currently, the laboratory houses intermedia artist and researcher Robertina Šebjanič and sound researcher, composer, media systems designer, and curator in the field of musical art Mauricio Valdés San Emeterio.

HEKA aims to become a space of integration for all who recognize the value of activating potentials, education, transformation, and humanization through the empathic merging of science, art, and the economy. The laboratory will be open to the public through workshops, major events, and open days, where visitors will be able to attend a guided demonstration of the operation of **HEKA**.

Head of the laboratory: Marko Vivoda

HEKA

<https://www.pina.si/>



Pilot Projects

DANTE COPIOSUS
HEKA and Stran22

The spatial installation in the Besenghi degli Ughi Palace commemorates two preserved codexes of the *Divine Comedy* with commentary, written at the end of the 14th century in Izola by Pietro Campenni. The negative connotation that copy and copying usually take on in relation to the original turns out to be wrong when following the semantic development, since copia – and the resulting adjective copiosus (also verbal, eloquent, imaginative) – in Latin, which was still lingua franca in Dante's time, denoted abundance and wealth.

The numerous copies of the *Divine Comedy* is a testament to the passion of the readers and researchers who have become involved with this text and due to which it has been preserved in the first place.



However, in the absence of any autograph by Dante, this is both a fortunate circumstance and a curse for philologists. *Dante Copiosus*, with two exceptions, does not quote verses from the *Divine Comedy*, but rather places the visitor at the center to confuse him/her amongst this abundance of among key information, sensory stimuli, and numerous reflections.

The pilot project was developed in cooperation with the Municipality of Izola, JZP Izola, the Italian self-governing national community of Izola, the Music School Koper, the Izola Tourism Board, ZRS Koper, the IRRIS Institute and the Izola Principal Library.



EXPLORERS - TAKE A WALK ON THE INVISIBLE SIDE

As part of the pilot project **Explorers – Take a Walk on the Invisible Side**, we are developing a tourism product for exploring the Alpine world, natural and cultural heritage and their multi-sensory content (both digital and analogue). The project proposes an alternative form of storytelling in which the users play an active role in the exploration of the site, by stimulating their curiosity, observation and research. This resulted in a new approach of discovering the landscape at different levels (historical, natural, cultural) through an intimate, subjective and adaptive experience using augmented reality.

The pilot project is being developed in cooperation with Cooperativa Puntozero from Udine, VRTeam from Slovenia and the Slovenian Alpine Museum Mojstrana.





CREATIVE LABORATORY CRATER

HEKA and Trajna Association

The **Creative Laboratory Crater** is a temporary production space that opens up opportunities for sustainable ways of creating in the vastness of post-industrial ecosystems. It is part of the long-term design and research project Simbiocen, as a response of a group of interdisciplinary artists to life in the so-called Capitalocene, an era in which we are witnessing the mass extinction of species, climate change and growing social imbalances as a result of extractive economic policies. The project explores ways to create symbiotic ecosystems in which the human creator becomes an actor, actively co-creating a balance within a damaged nature.



During the project, a degraded area in Ljubljana was revitalized and a unique urban ecosystem, overgrown with invasive and other wild plants, developed. For more than two decades, an abandoned construction pit, known as the Bežigrad Crater, has been transformed into a laboratory for processing invasive plants and other organic waste. Rather than uprooting the plants, the project seeks ways to mobilize creative skills to design sustainable ways of living that can be evoked by the use of their biomass. In the carpentry workshop, the mushroom cultivation laboratory and the handmade paper workshop, they are testing the plant biomass as a building block for the design of new materials, products and alliances.



The knowledge they gain through practical research is shared with the local community and interested designers and architects in workshops, meetings and lectures organized by the creators on site. The Crater is also open, by arrangement, to the activities of all those working in urban ecology, organic farming and to those who are changing the relationship between humans and nature through their artistic and activist practices. In its first year of operation, new collectives and individuals have joined the Crater: Shelter for Discarded Plants Association, designer Rok Oblak and permaculturist John Buscarino.

The pilot project was developed in cooperation with prostoRož and Permaculture Association of Slovenia.







Marko Vivoda and Rok Pahor
for the production *Interweaving
the SubAqueous – AquA(I)formings*, 2021.



Marco Barotti, *Clams*, 2019.



Sofia Crespo, Feileacan McCormick, Robertina Šebjanič,
Interweaving the SubAqueous – AquA(I)formings, 2021.

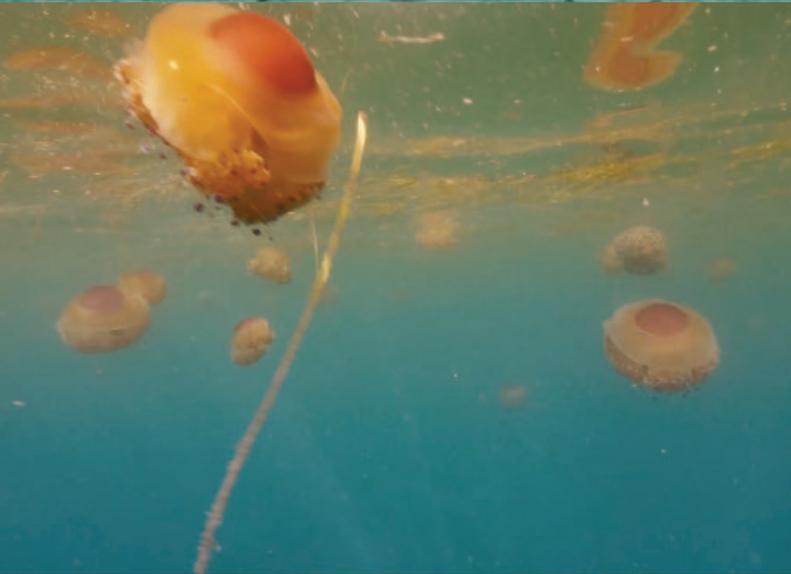
IZIS Festival

<https://festival-izis.org/>

IZIS is an annual event and an exhibition showcasing the innovative, internationally renowned audio-visual and new media arts. The festival dates back to 2013, when an initiative of artists, cultural producers and poets working in Istria came together. Over the years, it has expanded to cinemas, galleries, public spaces and industrial buildings. In its aim of integrating intermedia art into the programmes of local venues, the festival has successfully navigated on the one hand between hesitation and rebellion and institutionalisation and guerrilla on the other hand. Through the lens of cutting-edge artworks, **IZIS** explores the impact of technology on culture, society and nature. At the same time, it broadens horizons and brings together artists, thinkers and the curious masses through the prism of experience and complex questions about the impact of technology on the future, audiovisual techniques, robotics, hybrid materials and kinetic sculptures. The festival regularly presents works produced by PiNA in Koper and offers a space for intermedia artworks by other leading Slovenian intermedia producers. The seventh edition of the festival attracted more than 2,500 visitors from Slovenia and abroad, while some of the works in the exhibition *Fuck off Illusion* received attention from media giants such as *The New York Times*, *The Guardian* and *CNN*.

This year's 9th edition of the festival, held from **24 September to 15 October, 2200 UND3R**, addressed the climate crisis. More specifically, the impact that is already manifesting itself in coastal cities through the rising of the Mediterranean Sea, with more frequent flooding. Throughout the exhibition, visitors were able to sensorize themselves to the connection between new-media visual art, sensibility and environmental sustainability. This year's programme featured twelve intermedia installations, four workshops (two open to the public and two aimed at secondary schools) and one performance.

The newly showcased works included: a new production – an installation by **Sofia Crespo, Feileacan McCormick and Robertina Šebjanič** *Interweaving the SubAqueous – AquA(I)formings*, an updated version of *Mr. Processor, do you understand life?* by **Boštjan Čadež – Fšk**, who updated it during his residency at HEKA and six short films by the French surrealist **Jean Painlevé**, *Science is fiction*. Visitors also had the opportunity to see works by artists **Sigur Rós & Magic Leap, Name; Marco Barotti, Verena Bachl, Robertina Šebjanič, Kat Austen**, the collective **Stran 22, Nejc Trampuž, Srđan Prodanović, Tim Kropivšek** and **Lovro Ivančić**.



International Residencies

BRAD DOWNEY

During his artist residency, **Brad Downey** collaborated with CO Nanocentre, Name:, Mark Vivoda, Rok Pahor and others and created works that were on display as part of the IZIS Festival retrospective exhibition *Fuck off Illusion*.

One of the results of the collaboration with the CO Nanocentre is the work *Sky Clock*. The idea was to carve on the smallest unit that was still suitable to process, which was a grain of sand from Santa Barbara, California. In collaboration with Bojan Ambrožič from the CO Nanocentre, they used a focused ion beam to »sculpt« an image from a Sumerian stone tablet onto a grain of sand.



The second part of the collaboration is the reveal of Banksy's works from 2003, which the artist cut out of the wall, reconstructed and secretly kept ever since. This was a result of an intervention on the last night of their joint exhibition at Berlin's Kunstraum Kreuzberg Bethanien. In collaboration with the Jožef Štefan Institute and the Ljubljana Restoration Centre, he was able to use hyperspectral photography to uncover the works and exhibit them at the festival.





PRODUCTION SOFIA CRESPO, ROBERTINA ŠEBJANIČ AND FEILEACAN MCCORMICK

The project, *Interweaving the Subaqueous – AquA(l)formings* follows the thread of a more-than-human inhabitant of the Adriatic sea, who records, or encodes a form of oceanic »memory« as a byproduct of its existence.

Through a conceptual braiding of the fields of art, marine biology, artificial intelligence, and poetic sound reflection upon the Pinna Nobilis – the noble pen shell, and meadows of sea grass as part of a continuous cycle of presence. This looping act, enacted over time, is at once an encoding and decoding of lived experience, one that connects it to a geological scale.

Through attempting to unveil this hidden storytelling, a space is woven that aims to nurture the potential for empathic interspecies development of our relationships with the more-than-human, in ever-changing present that can be woven into many potential futures.



BOŠTJAN ČADEŽ – FŠK

As part of the residency, the intermedia artist **Boštjan Čadež – Fšk** worked on upgrading his project *Mr. Processor, Do You Understand Life?*, a self-aware AGI, where the robot presents a sci-fi scenario in which the artist plays with people's fears and ignorance of the current state of artificial intelligence, which can learn only from input data sets.

Mr. Processor is a two-wheeled robot, about one meter tall and randomly moving around the gallery. It uses its sensors and camera to detect obstacles and people in the room. The work itself offers a surprising, ironic look at what it would mean to transfer humanity into a machine – and is, ultimately, more a mirror to us than the so-called »intelligences« born of our Promethean dreams.

Production: Aksioma – Institute for Contemporary Art, Ljubljana, 2019
Post-production: PiNA, 2021



Design+Science Summer School

The first **Design+Science** summer school, organized by the University of Ljubljana and PiNA, took place in Ljubljana and Koper and opened up crucial social issues about the accelerated development of laboratory food and the future of biotechnology. The summer school brought together design and science, and participants from different countries raised questions about the environment and the presence of synthetic food.

Between **5 and 9 July 2021**, over **23 young people** from Slovenia, Canada, India, Germany, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Austria, and Hong Kong together with their mentors questioned whether humanity was ready to understand that we would need to change our eating habits and what are the mechanisms that address this kind of transformation?

The workshops were led by established leading visual communication designers – **Sara Lunder** (Google), **Nejc Prah** (Ansambel/Ensemble), and **Emil Kozole** (Ljudje/People).

Their views on the importance and future of food, which served as excellent starting points for the participants in the development of their project, shared with the participants: master chef **Jorg Zupan** (Breg, Atelje), world-famous writer and culinary critic **Andrea Petrini**, director of the Chair of Fermentation Engineering at the University of Bielefeld **Karl Friehs**, designer and connoisseur of permaculture **Aleš Pustovrh**, director of the various European Capitals of Culture **Chris Baldwin**, freelance food designer and researcher **Giulia Soldati**, creative industry developer **Sholeh Johnston**, researcher and assistant professor at the Faculty of Chemistry and Chemical Technology, University of Ljubljana **Dr. Marina Klemenčič** and many others.

The summer school ended with presentations by the participants, who were divided into three groups. In addition, a panel of experts (professors of visual communications from European universities) and individuals who encounter the creative industries daily also attended the final presentation.

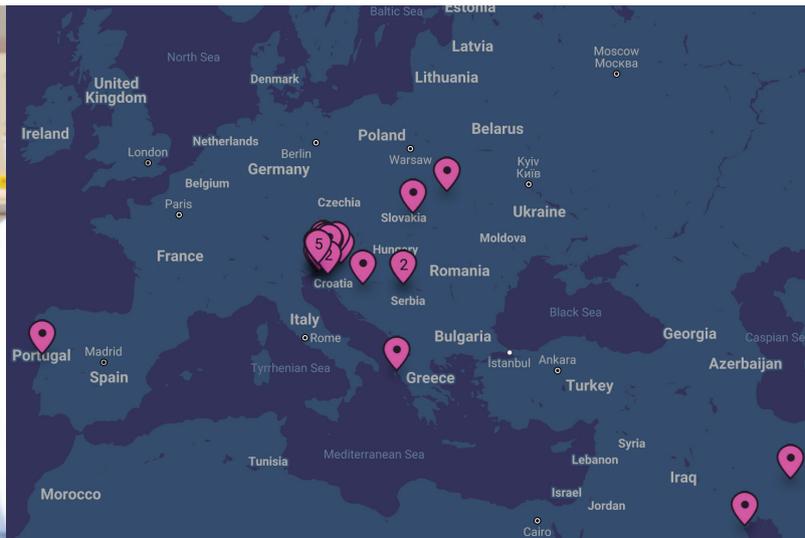
Cultural Management Training Cycle

Between **March and June 2021**, the PiNA team, together with external collaborators, conducted **13 cultural management trainings** involving all career centres of the University of Maribor, University of Ljubljana, University of Primorska and University of Nova Gorica, as well as with JSKDs (Republic of Slovenia Public Fund for Cultural Activities) from all over Slovenia.

They brought together **over 300 participants**, who, during the through series, learned how to plan cultural projects, what legal entities exist to carry out projects, how to find funding to carry out projects, how to communicate projects and how to plan the financial structure of a project.

Some of the projects have already been launched, and the participants have networked and started to work together to plan the future of cultural projects in their local areas, which was the main purpose of the training series.

The participants described the training in the following words: *»an interesting experience of teamwork«, »I was surprised by the group work, getting to know each other, the variety of fields of action«, »I am positively surprised because it is not only about listening to information, but also about active participation«.*



Creatorship

Creatorship is a new creative program designed by PiNA to empower innovative, authentic, collaborative and resilient individuals in leadership positions.

»Creativity is one of the essential executive skills for 2020 and beyond.« – World Economic Forum

In conjunction with the principles of the **HEKA Lab**, **Creatorship** offers a **100-hour training experience** that combines the science of leadership with the power of artistic ingenuity to empower leaders with skills and insights to lead collaborative teams, solve challenges and navigate the uncertainty and rapid change of the 21st Century effectively.

»Creativity is a practice of freedom. It allows you to imagine different or unimaginable situations and stimulate out of the box thinking that can be applied also in collaboration with others.« – Gaja Mežnarič Osole, Trajna

Why Creativity?

The nature of how we work is changing, and so is the context in which we're doing it. From COVID-19 to climate change, businesses are handling greater complexity and facing new challenges, decisions and opportunities on a daily basis. Creatorship helps individuals and businesses to adapt and thrive in this uncertain environment by building creative confidence.

Whether it's expressed through art, science or daily problem solving, creativity is a natural state that we all have the potential to experience, but for most people it is inhibited and discouraged in the spaces where we live and work. Unblocking creativity, and developing the capacities to lead creative teams, is a process of personal growth

and collaborative experimentation, which opens the possibility for workplace cultures that inspire new business innovation, high team performance and collective fulfillment.

Who is it for?

Creatorship is for established and emerging leaders, including institutional managers and freelance business owners and creative practitioners, in any industry.

»Experience the feeling of the magic that happens in between spaces, translations, fields of experience.« – Summer School Participant

It supports leaders to develop creative confidence, identify and improve their unique leadership skills and capacities, lead a process of a change in the workplace, break through organizational systems and structures holding back new ideas, adapt to new market conditions, improve team morale, idea generation and effectiveness, collaborate more effectively with teams, partners and experts and address sustainable development creatively.

The format of the training includes live and online **expert workshops**, group and individual **coaching**, implementation **support** for participants to put learning into action during the 2-month timeline of the course, and the opportunity to become part of a peer-to-peer creativity support network from across different sectors and industries.

For more information, course dates and news visit:

www.mcruk.si/en/creatorship



KIBLA2LAB

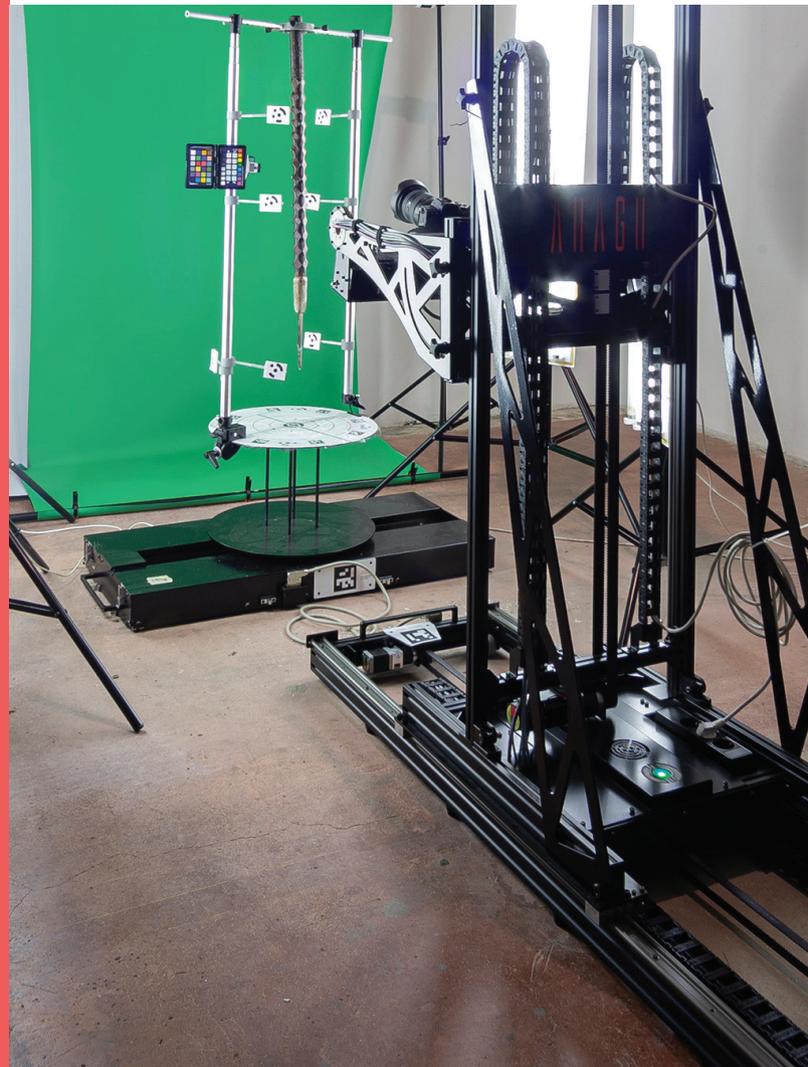
<http://www.kibla.org/>

KIBLA2LAB is an intersection of research, production, design, and art activities. The research media and interdisciplinary lab is equipped with state-of-the-art 3D scanning technology, photogrammetry, XR equipment for virtual, augmented, mixed, and extended reality visualizations, interactive installations, and volumetric film. It offers knowledge of specific and integrated designs. It develops from ideas and design to modeling, prototyping, and optimization in the virtual and material environment.

Lab tasks:

- Development and optimization of new visual and interactive communication techniques.
- Integration of techniques into a comprehensive service.
- Education.
- Communication between the creative sector and market demand.
- Digitization of natural, artistic, cultural, and industrial heritage.
- Concepts and design of digital stories.

Mentor of the laboratory: Mag. Zoran Poznič



Pilot Projects

INTERMEDIA EXHIBITION VRTN!CA* KIBLA2LAB

11 June 2021–15 January 2022

In the premises of the Arboretum, which houses one of the most representative rosaries in the world, roses were placed in a different way: they were relocated from their natural environment to literary, sound and visual illustration and intermedia installation. The intention was to show part of their existence and beauty and connection with humans. Thus, a new perspective was offered with an upgraded experience of extended reality that simultaneously evokes a special experience in the real environment of the botanical park and in the metaphysical world of art.



In a spatial audiovisual installation, visitors can experience four stories of selected roses: Damask, as well as the varieties Trubar, Peace and Prešeren.

The pilot project was created in cooperation with Pattern City Velenje, Kristijan Korat, ROSA Production and Delavski dom Trbovlje.

***ROSE**



INVISIBLE MARIBOR
KIBLA2LAB

A social community like the city of Maribor must establish a constructive relationship with its past, even the past that has somehow slipped through our fingers, that is fading and disappearing in our collective memory. The new self-confidence, also through the new-media project **Invisible Maribor**, addresses precisely these fundamental points, not only of the historical memory of a city with such a rich tradition as Maribor, but also through new-media technologies (VR, 360° video, time-lapse, photogrammetry, 3D scans...) that speak to the new generations through stories of boldness, innovation, creation, technical curiosity, which are very necessary and challenging for all of us nowadays.



IVAN KRAMBERGER
KIBLA2LAB

The story of the people's tribune, full of fundamental values that are still cherished and, at least some of them, respected by the social community at the beginning of the 21st century, called for a deeper, artistic approach to the character of Ivan Kramberger himself. The new-media technology of the hologram makes it possible to present not only the image, but also the content that the tribune of the people so vehemently disseminated among the masses. It is thus a 21st century technology in correlation with the form of the popular tribune (established in the Greek polis), which, raised above the masses, embodies their desires, aspirations and prospects for the future.





Pete Jiadong Qiang, *HyperBody Portal: Stratholme.GoStop*, 2021.

KIBLIX[™] Festival

<https://kiblix.org>

KIBLIX is an open-code festival connecting art, technology and science. Since its first edition in 2002, **KIBLIX** has been primarily addressing two issues: the impact of science and technology on the social life of the individual, and an in-depth research into the secrets of science, which holds the key to our future. Both topics are attempting to provide solutions for bridging the powerlessness of the individual in contemporary society. **KIBLIX** addresses a wide set of target audiences: elementary school, high school and university students, researchers, all those working in culture and the arts, IT and computer science experts and enthusiasts, pensioners and active citizens. The list of artists who have participated in one of the **KIBLIX** festival editions points to centers of power in interdisciplinarity and connectivity at the European and global level; it also proves that the scientific and artistic production in Slovenia is catching up to the European.

With the international group exhibition the festival **KIBLIX 2020–2021** concluded its programs that took place in a hybrid form. In addition to artistic research projects, the festival program also included online events. From December 2020 until December 2021, **over 60 online events** have been held, ranging from thematically focused conversations with international guests, AV performances, art presentations, webinars and workshops to the all-Slovenian GameJam. The exhibition centred around the human experience of virtual reality – with all the material limitations and socio-political conditions that determine the body – while comprehending the virtual environments as spaces for speculative realities, variable identities, and ever more acute social transformations. The festival's central question, posed by the curatorial team was: which and what are the virtual worlds now?

The exhibition, which was on view **from 7 July until 18 December 2021** at **KIBLA PORTAL**, the largest independent exhibition centre in Slovenia, provided a critical overview of contemporary virtual spaces through a series of innovative art research projects in the field of the latest virtual (VR), augmented (AR) and mixed reality (MR) technologies.

Visitors of the exhibition could experience: a computer-generated video by **Lu Yang**, a virtual reality and a video installation by **Jakob Kudsk Steensen**, the digital-only fashion collection by **Amber Jae Slooten** and **The Fabricant**, the artificially intelligent robot with a sculptural installation by **Marco Donnarumma**; a mixed-reality installation by **Pete Jiadong Qiang**, a short animated film by the **Total Refusal** collective, a virtual reality world on the Sansar platform by **Tanja Vujinović**, a participatory project in augmented reality by the art-design studio **Untold Garden** and **Sebastian Dahlqvist**, a spatial installation by **Emir Šehanović**, a video-performance by **Daniel Hanzlík**, an interactive intermedia installation by the **Compiler** collective, a virtual reality and first-person point of view 360° videos by **Mark Farid**, a generative audio-visual painting by **Tadej Droljč**, an online performance by the **ATOM-r** tandem in collaboration with **Abraham Avnisan**, a virtual reality by **Weronika M. Lewandowska** and **Sandra Frydrysiak**, a video game by **Dorijan Šiško** and **Sara Bezovšek**, a virtual reality by **Tony Oursler** and the intermedia installation by **Nika Erjavec**.



Marco Donnarumma, *Amygdala*, 2015–2018



Nika Erjavec, *Third Landscape*, 2021.



Lu Yang, *Delusional Mandala*, 2015.

International Residencies

WERONIKA M. LEWANDOWSKA

Weronika M. Lewandowska is a Polish poetess, director, writer, and executive producer of the VR *Nightsss*. She has a PhD in cultural studies. She is a researcher of new media and immersion experiences, a lecturer of creative writing and transmedia art at the University SWPS and design trends at School of Forms in Warsaw and a VR Creative Consultant for BioMinds Healthcare XR system, which explore new ways for neurological rehabilitation. In her artistic practice, she is currently focused on new media tools and immersive ways of expression that interfere with corporeality, embody presence, and have the potential to create non-binary digital stories. She is interested in perception, avatars creation, human voice and movement in virtual environments, the future of real-time live performances and neural input and haptic innovations for VR/AR/XR experiences.

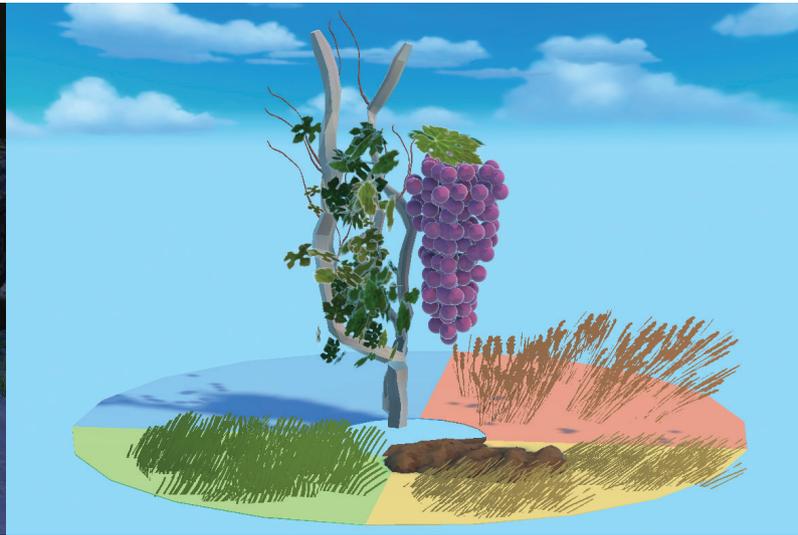


During her artist residency at KIBLA2LAB she focused on conceptualisation, structuring and storytelling in virtual and augmented reality media. She held a workshop in which she and her KIBLA2LAB collaborators developed a script for a VR experience and used Depthkit to volumetrically capture and prepare different VR scenes. As part of the presentation, she presented her immersive VR experience *Nightsss* to the participants.



VOJTĚCH RADA

Vojtěch Rada is a Czech artist and architect, who examines simulations and world-building. He often expresses his thoughts by using game engines, 3D rendering software, but also by writing novels, gamebooks (interactive fiction or visual novels), or simple hand drawings and physical installations. Instead of creating physical architecture, he is more fond of using his architectural skills to make interactive environments, videos, or computer games to address topics like simulation, copying, distance, and overcoming it by using technology. He is interested in creating and placing a VR experience in space as an installation that connects real environment with the virtual one, thus using VR environment to upgrade the real. He is also interested in developing a brief VR experience with interactive objects that users can grasp and explore.



In his work, he is currently working with a sound designer for sound effects in VR, thus emphasizing the importance of sound in the VR experience.

As part of his artist residency, Vojtěch and the KIBLA2LAB team visited the Meranova residency in the wine-growing region of Maribor to gather ideas for developing the VR experience. In the program Unity, he therefore developed a VR experience of wine-growing tasks for Meranova and created wine-growing tasks in different seasons that users have to perform in the VR experience.





Alice Daeun Kim, *Minorities*, 2021.

ALICE DAEUN KIM

Alice Daeun Kim is an artist who focuses on digital media content, space and the design of moving images. She explores ways in which stories and ideas could be told by using virtual and augmented reality. The artist is interested in space, moving images and storytelling in VR. She focuses on how to present them to the audiences in an interactive way and through immersion. Due to this she adheres to using technologies such as augmented reality, virtual reality and projection techniques used to transform objects, often irregular shapes, into visuals. Her work was exhibited in London, Lisbon and in Seoul in South Korea.

During her residency at KIBLA2LAB she participated in the RUK pilot project *Invisible Maribor*, where she designed content for AR and VR experiences.



RUK Network of art and cultural research centers

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ACE PiNA, Koper
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Designers: Sabina Vukalić, Sabina Trop

Publisher: ACE KIBLA, Maribor, Slovenija
Represented by: Aleksandra Kostič, president ACE KIBLA

Front Cover: Klemen Skočir
Print: Demago, d.o.o.

Print run: 150 copies

Printed in Slovenia 2021

Photographs © DDT archive, Klemen Skočir for ACE PiNA and
Damjan Švarc for ACE KIBLA

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