

MUSAE

Human-centred factory for a future technological
sustainable development driven by arts



MUSAE



European
Commission

Agenda

15/05/23

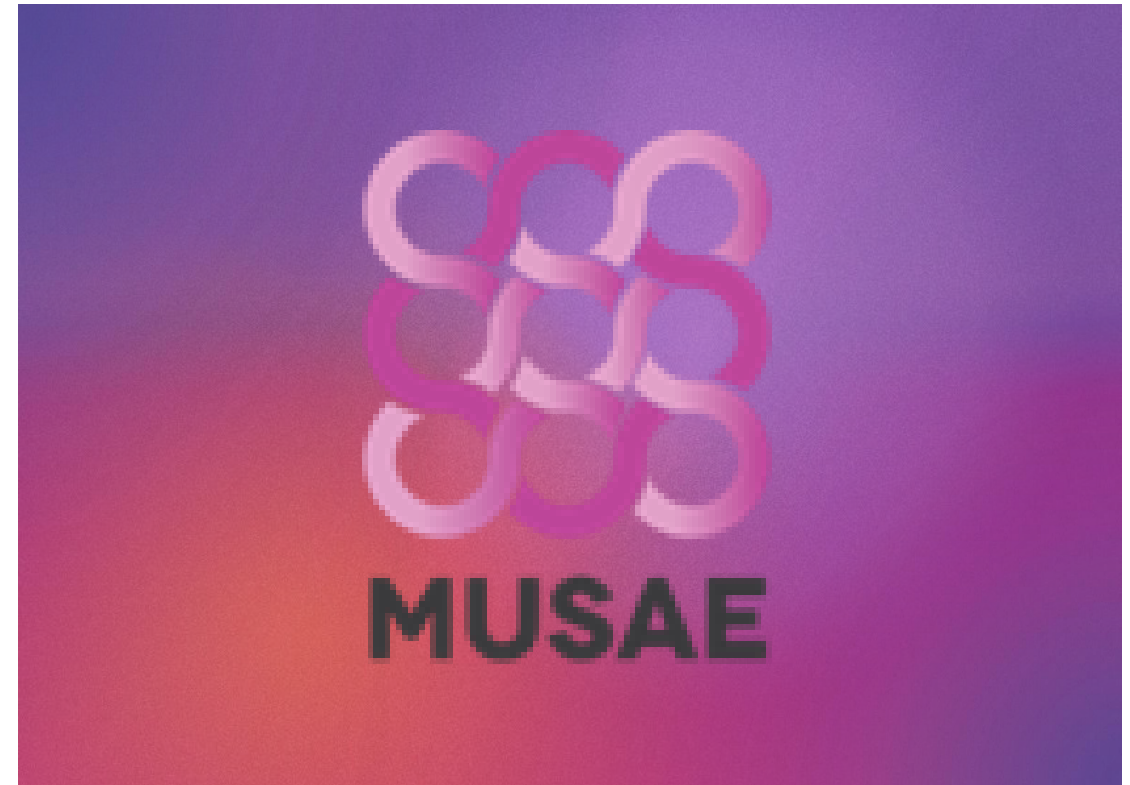
h 11.00 Welcome [Aoife O'Gorman, UCD]

h 11.05 MUSAE: a human-centred factory for a future technological sustainable development driven by arts [Tatiana Efremenko, POLIMI]

h 11.15 MUSAE: Thematics Tracks and Technologies [Lorraine Brennan UCD; Maria Bulgheroni, ABACUS]

h 11.35 MUSAE Open Call: how to submit a good proposal [Ottavia Villain, MADE]

h 11.45 Q&A

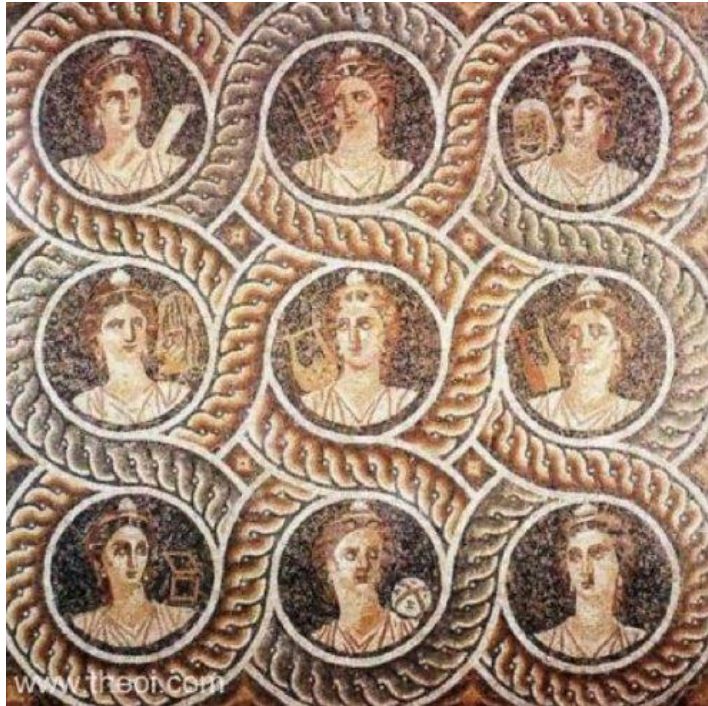


MUSAE

**MUSAE: a human-centred factory
for a future technological
sustainable development driven by
arts**



MUSAE: THE NAME AND LOGO



In ancient Greek religion and mythology, **the Muses** (in latin: Mūsae) are the inspirational goddesses of literature, science, and the arts. They were considered the source of the knowledge embodied in the poetry, lyric songs, and myths that were related orally for centuries in ancient Greek culture.

Portraits of the nine Muses, Greco-Roman mosaic from Cos, Archaeological Museum of Cos

MUSAE CONSORTIUM PARTNERS

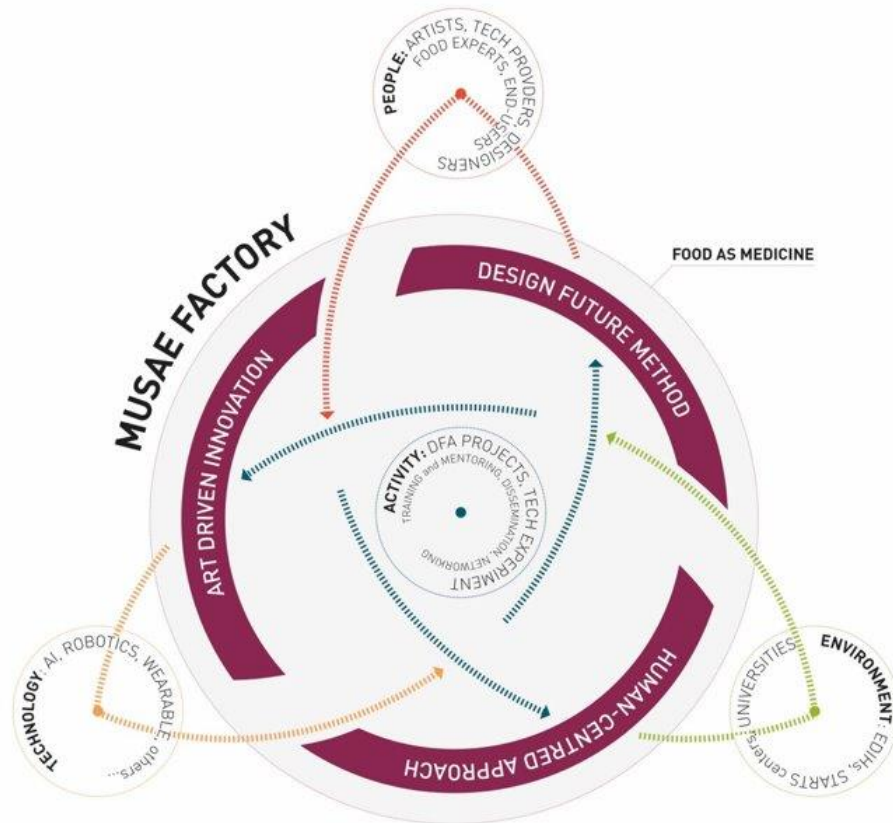


- POLIMI (Design) IT - Coordinator / Factory core methodology
- MADE (Competence Center) IT – Test before Invest – Factory exploitation
- University of Barcelona (Artificial intelligence) ES – Technology expert
- University of Barcelona (Fine Arts) ES – Expertise in art education
- PAL Robotics (Robotics) ES – Technology expert
- Ab.Acus (wearables for health & well-being) IT - Technology expert
- UCD Institute for Food and Health (Food and Nutrition) IE – Topic and trends experts
- Gluon (Art) BE – Platform for art, science and technology
- University of Belgrade - School of Electrical Engineering (Robotics) SRB - Technology expert

Associate Partner:

- The University of Manchester Machine Learning & Robotics (Robotics) UK – UX Technology provider

MUSAE FACTORY



MUSAE is an innovative **Human-Centred Factory** model to integrate artistic collaboration in the **(European) Digital Innovation Hubs (E-DIHs)** through a **Design Futures Art-driven (DFA)** methodology to help companies for a strategic approach to exponential technologies to anticipate innovative products and services for the **future of food** to improve human and planetary well-being.

Three key elements:

People

Artists, Technologists, Designers, Food Experts, End-users, Companies

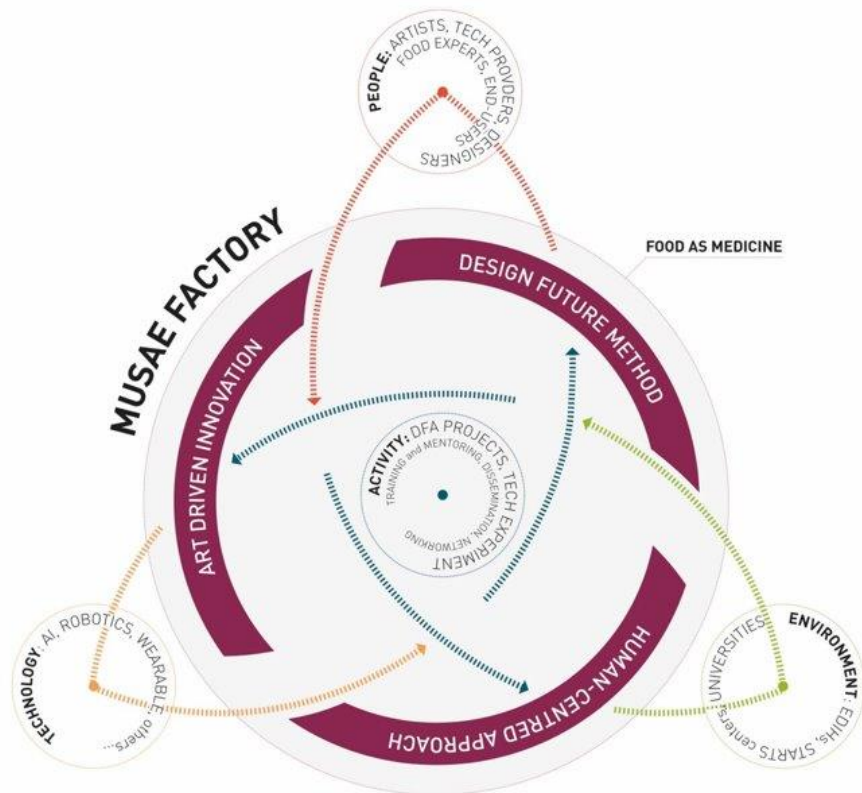
Technologies

AI, Robotics, Wearables and others tech

Environment

DIHs, STARTS, Universities

MUSAE FACTORY



MUSAE is an innovative concept of exploration lab at the interface of art, technology, industry and society, aiming at **supporting companies, SMEs and startups in envisioning future scenarios of innovation to meet the social and sustainable challenges** they must face in the coming complex era by adopting emerging digital technologies and inspiring their acceptance through a human-centred approach.

The project is supported by Horizon Europe through STARTS an initiative of the European Commission, launched under the Horizon 2020 research and innovation programme to support collaborations between artists, scientists, engineers and researchers.

MUSAE FACTORY - OBJECTIVES



Set up the **MUSAE Factory Model** in (E)DIH to foster a structured and continuous collaboration between arts and technology

Implementing and validating a **Design Futures Art-driven method** to address future challenges through digital technologies

Piloting the MUSAE model to explore future challenges of food as medicine and developing innovative solutions of products and services

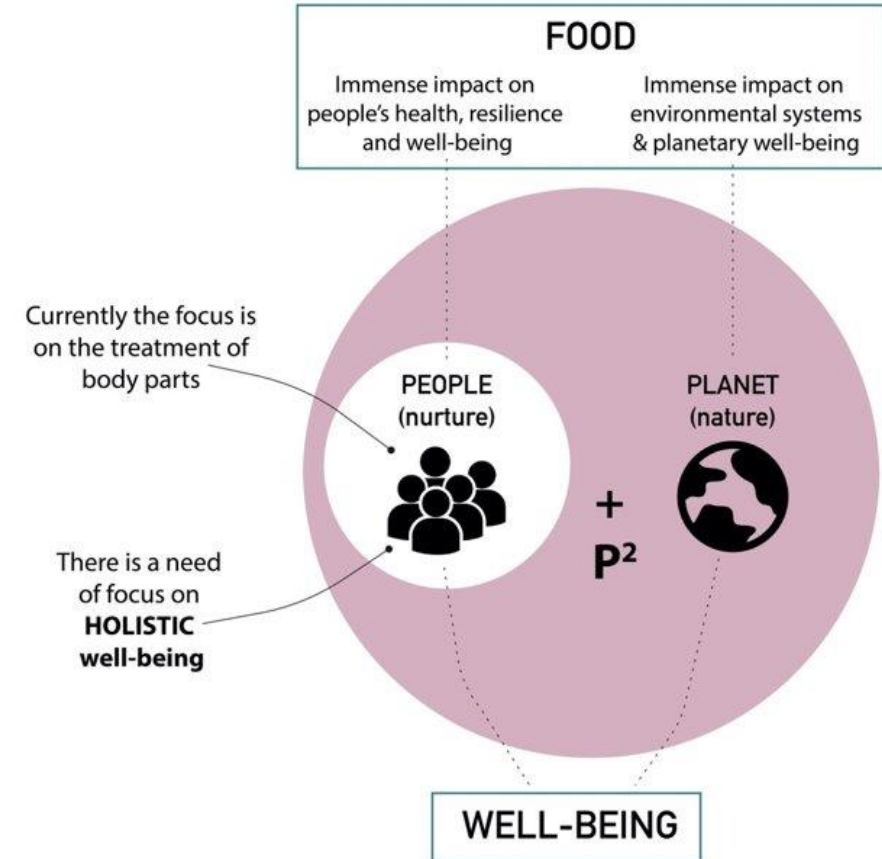
Creating **links between the MUSAE model and the STARTS** ecosystem to reinforce the model exploitation and push **its transferability in other (E)DIHs**

Disseminate the MUSAE Factory model and increase technology acceptance and awareness

THEMATIC AREA – FOOD AS MEDICINE

Health is a sum of
nature and nurture

- Human and environmental health (and how they interact)
- Well-being of the planet is a crucial part of a well-being of individuals
- Incentivizing healthy habits
- Innovation of preventive: Cultivating preventive health behaviors rooted in a sense of responsibility of oneself and one's community.



THEMATIC AREA

Food as medicine

New nutrition scenarios aimed at the individual physical, mental and planetary wellbeing

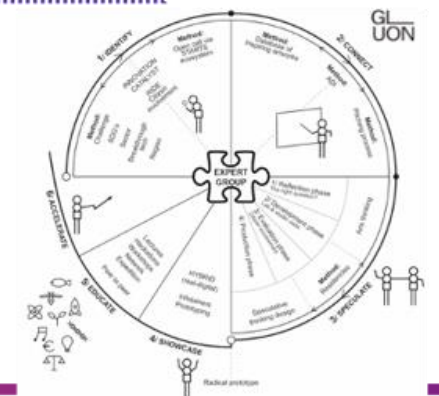
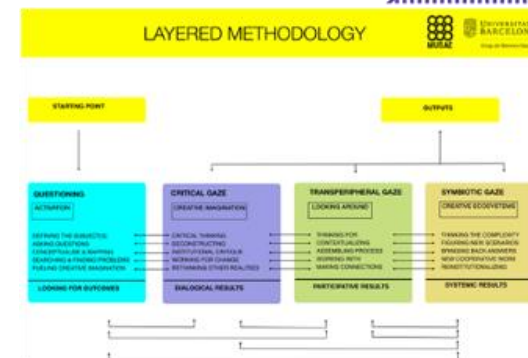
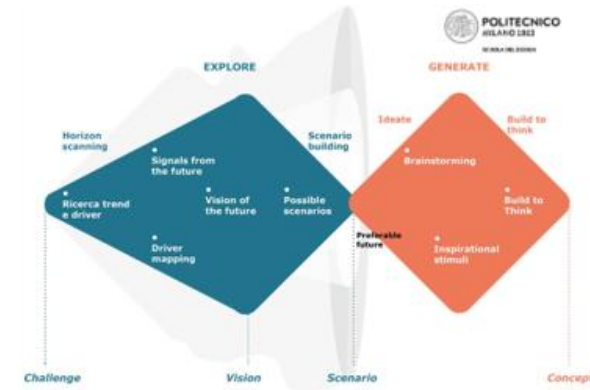


3 thematic tracks

1. *Reducing Carbon Footprint in Dietary Behavior*
2. *Role of Food in Holistic Human Well-Being*
3. *Rethinking The Food Chain in Our Environment*

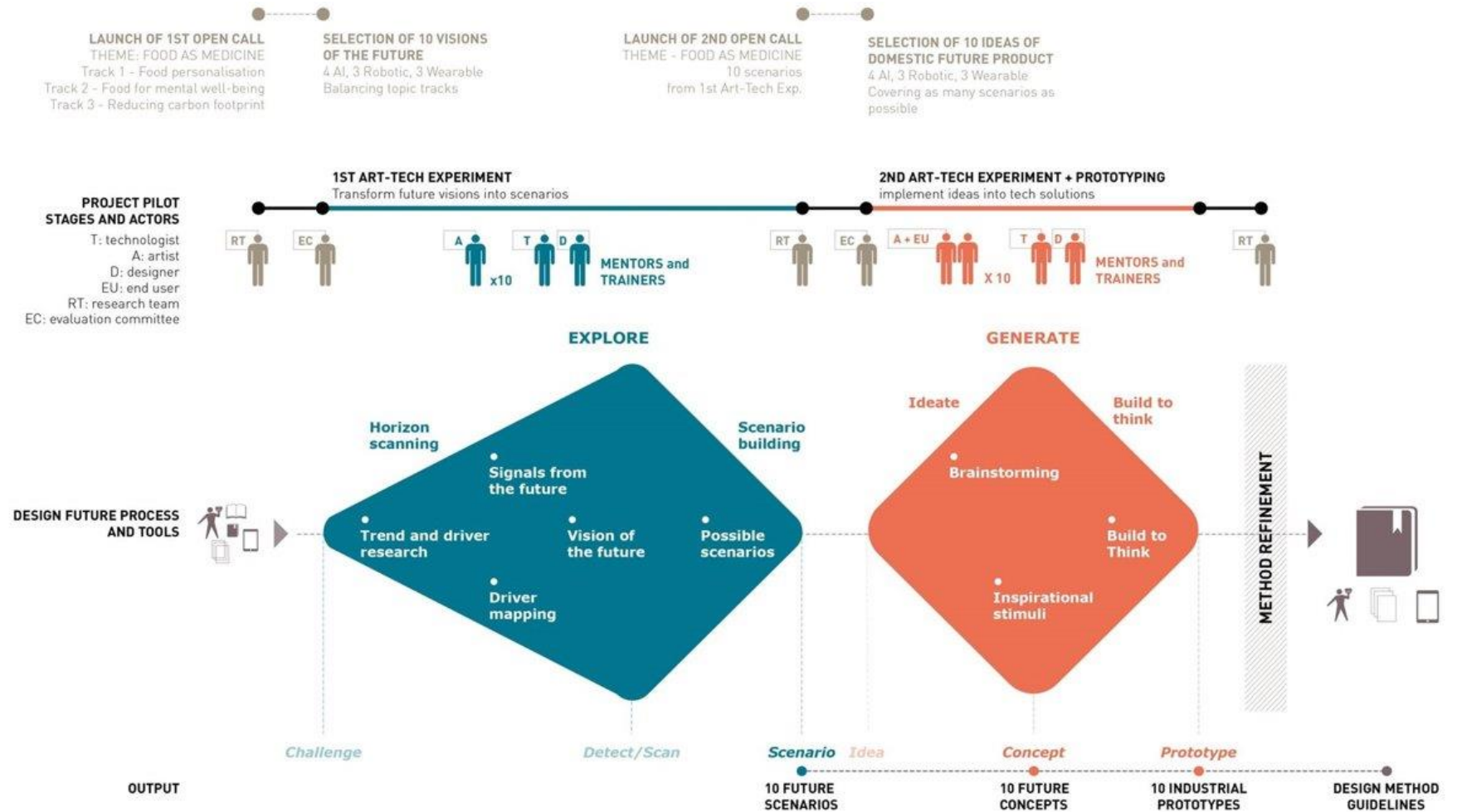
MUSAE FACTORY METHODOLOGY

The **DFA method** merges the **Design Futures method** and the **Art Thinking approach** to support and train artists to envision future scenarios (5-10 years). **The method is conceived as a strategic, structured process for artists to critically reflect on the future and collaborate with companies to develop new technological solutions that meet future humanity's needs with a human-centred approach, opening up new markets and activities.**



MUSAE FACTORY PILOTS

The pilots will shape the core methodology of the Factory and the collaborative format between artists, technologists and experts.



MUSAE FACTORY MODEL



MUSAE FACTORY MODEL



FACTORY CORE METHOD: process, tools, guidelines
Design thinking and future thinking integrated with arts



OPEN CALL AND RESIDENCY FORMAT
Track definition, call setup & dissemination, artists selection. Residency progr.



TRAINING AND MENTORING GUIDELINES
DFA and tech training and mentoring for artists



DFA PROJECTS AND USE CASES
Future digital tech scenarios; New tech concept (product, service)



INTEGRATED STAKEHOLDER NETWORK
Artists, nutritionists, tech providers.

DIGITAL INNOVATION HUB
Deliver MUSAE Factory as a service



DIH END-USERS NETWORKS

Provider of emerging tech (AI, VR, Robotics, etc...), LE / SMEs / Startups in different fields.



STARTS REGIONAL CENTER NETWORKS

Attracting artists and disseminating results to increase acceptance of technology among the general public.



ART&DESIGN UNIVERSITY NETWORKS

Training for core method application; activation of the open certified Factory Model in Digital Innovation Hubs across EU.

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MUSAE: Thematics Tracks



MUSAE Thematic Tracks

Food as Medicine

The goal of this residency programme is to **critically explore** and **create future scenarios** based on one of the three thematic tracks, which are recognized as emerging trends

- 1. Reducing carbon footprint in dietary behaviour**
- 2. Role of holistic wellbeing**
- 3. Rethinking the food chain in our environment**

1. Reducing carbon footprint in dietary behaviour



- **Challenge 1:** Environmental & health benefits may not go hand in hand
- **Challenge 2:** Certain low carbon footprint diets can have high land and water use, which increases stress on these resources contributing to land degradation
- **Challenge 3:** Shifts to more sustainable diets leads an increase in the number of meat alternative products. Health benefits of such need to be examined.

Opportunities for sustainable change to diets

- How can we switch to more sustainable diets while meeting our nutrient requirements?
- How can we produce foods with lower carbon footprints?
- Are new meat alternatives healthy?

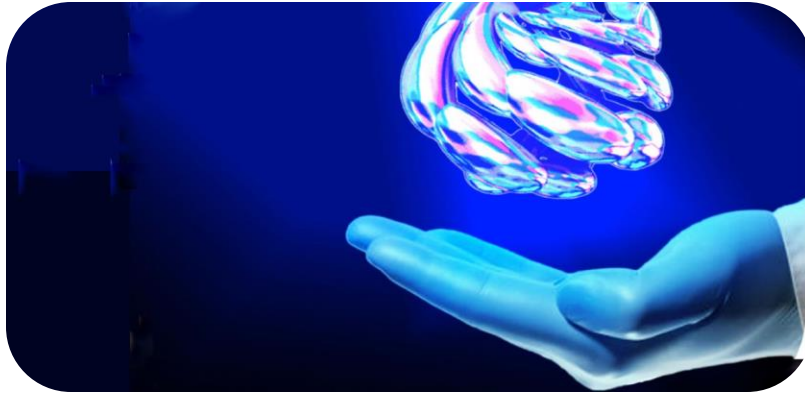


Shop local

Diversify diet

Fortify foods

2. Role of holistic wellbeing



- **Holistic health** refers to the whole person, encompassing 5 key dimensions; physical, emotional, social, mental and spiritual wellbeing
- Recent worldwide data indicates that poor diet quality has been linked to increased risk of many chronic diseases
- Poor diet quality is indicated by low intake of WGs, fruit and vegetables and high sodium intakes

Development of strategies to allow individuals to change dietary behaviour

- How can we enable people to make healthy food choices?
- Can we develop personalized approaches to enable people to make healthier choices?
- How can we develop new and innovative approaches to communicate the benefits of food?



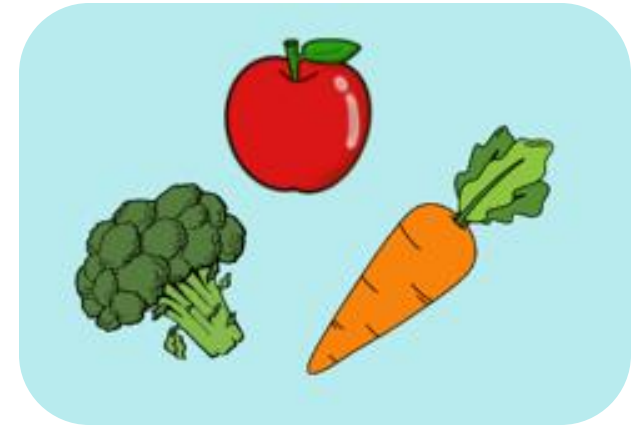
3. Rethinking the food chain in our environment



- The food chain involves stages of production, processing, packaging, distribution, retail and waste
- The global population is set to grow to approx. 9.7 billion by 2050 – food needs to meet nutritional needs!
- Challenges include; food insecurity, price increases, shorter food chains, food waste, risks....

How can we reshape the food chain?

- Can we develop new innovations to reduce food waste?
- Can short supply chains play a role?
- What innovations are needed to support food security for all?



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MUSAE: Technologies



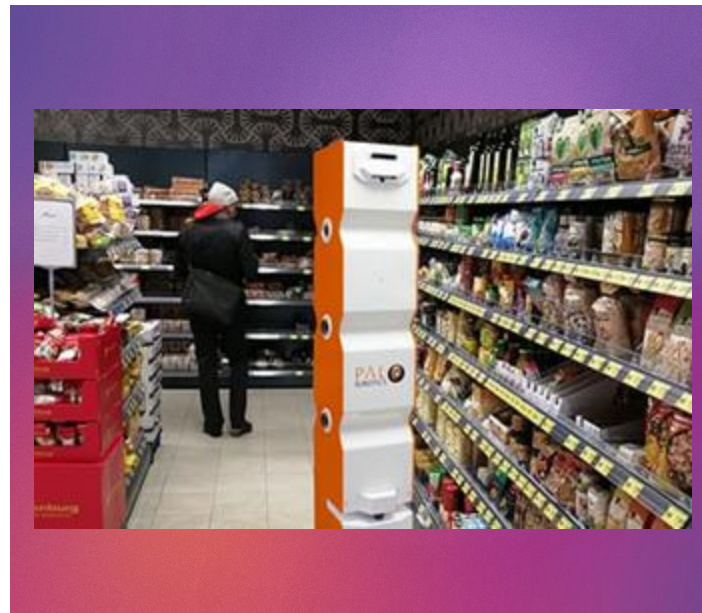
TECHNOLOGIES

Robotics: applications on the field

TIAGo Robots



STOCKBOT



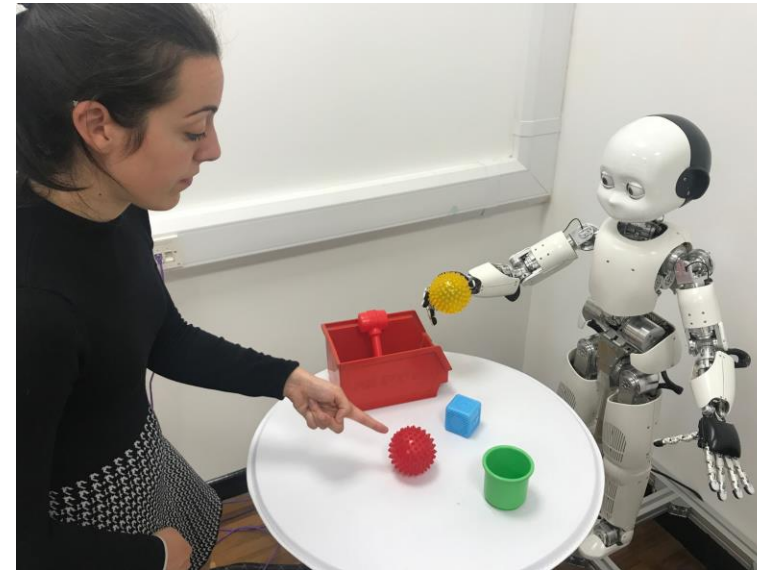
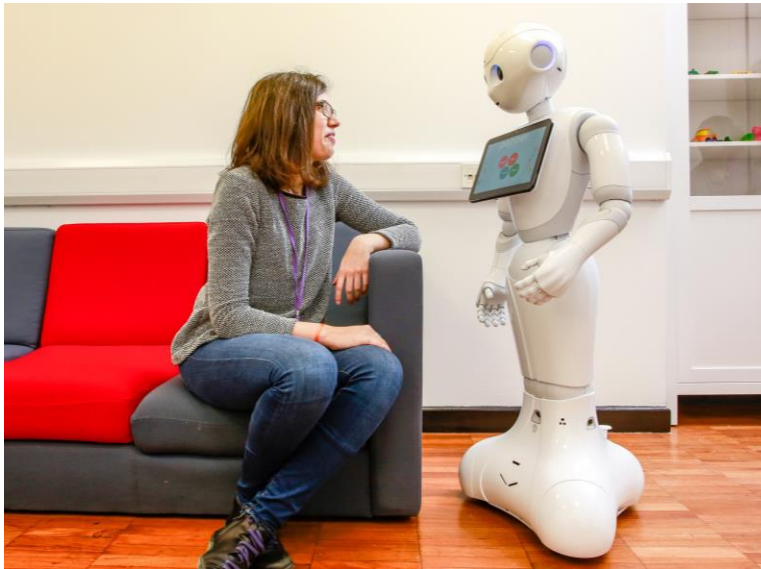
TIAGo BASE



Robots can perform tasks in various fields such as manufacturing, healthcare, agriculture and more. They work collaboratively with themselves and humans by reducing monotonous workload, allowing workers to focus on more important tasks.

TECHNOLOGIES

Robotics: cognitive and social foundations

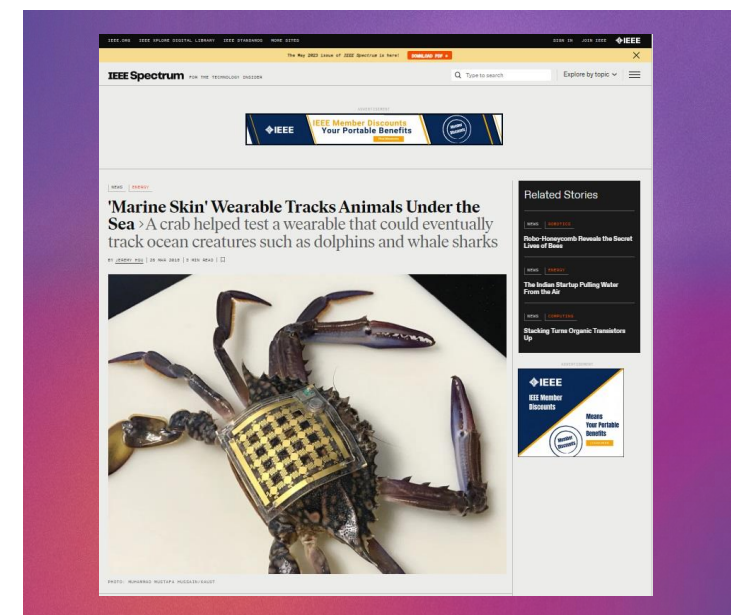
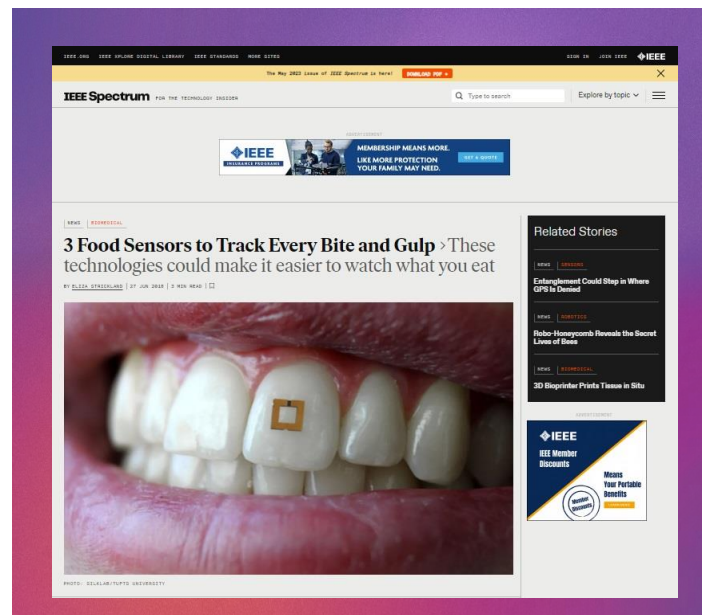
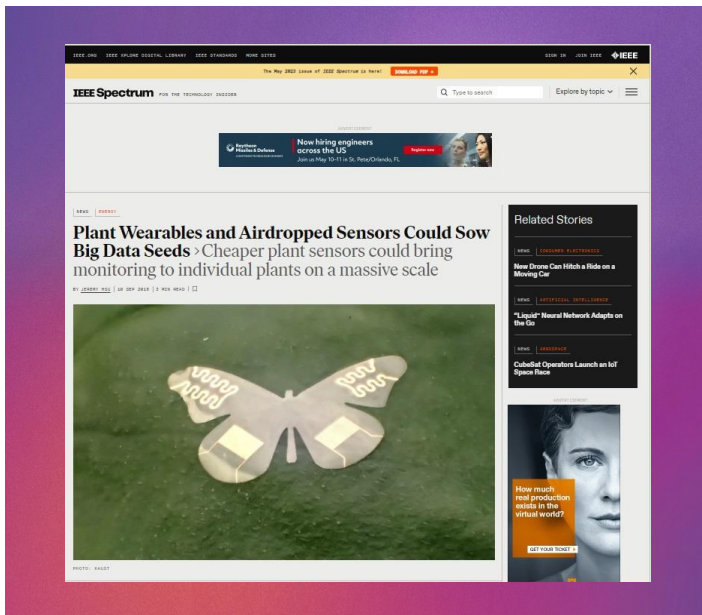


Social robots can act as companions to support people in domestic tasks, including tasks linked to food and diet. E.g. robots have been used in studies helping children with diabetes to learn to limit food rich in carbohydrate, or for older people's eating habits and reminder management. Social robots require cognitive and intelligent skills, and these can be designed combining AI methods with cognitive robotics approaches (Cangelosi & Asada, 2022)

TECHNOLOGIES

Wearable sensors

Source: <https://spectrum.ieee.org/>



Wearable sensors may collect physiological and lifestyle data from humans, animals, and plants ... Lifestyle, food intake, environmental information will be more and more easily collected in the next future.

TECHNOLOGIES

Artificial intelligence



04 Jan BINGOAL UCI ProTeam riders monitor their diets with LogMeal



29 Nov How to reduce food waste



20 Sep How to eat more vegetables



19 Jul More available dishes for food recognition

Artificial intelligence is **the simulation of human intelligence processes by machines, especially computer systems/algorithms**. Specific applications of AI include machine learning, natural language processing, speech recognition and computer vision.

Artificial intelligence algorithms can be used in multiple ways: to develop algorithms for food recognition and food intake monitoring for diabetes, obesity, or sportsmen, to avoid queues in self-catering restaurants or create nice pictures of new food.

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MUSAE Open Call: how to submit a proposal, proposal format and deadline



1st OPEN CALL - Artists

WHAT?

10 artists to participate in 7 months (Sept 2023 – Mar 2023) residency programme and to support artists in application of the Digital Future Art Thinking

10 scenarios based on one of the three thematic tracks and one or more of the three digital technologies

40.000 € (lump sum) per project

OFFICIAL DOCUMENT

MUSAE

A human-centered and ethical development of digital and industrial technologies.

OPEN NOW: MUSAE First Open Call – April 13th – June 5th, 2023

Are you interested in exploring the role of food in human and planetary well-being? MUSAE is looking for artists who can provide critical reflection, envision future potential and challenges of the topic of Food as Medicine by producing future scenarios and artworks.

Find out more information about the open call

- + [Guide of Applicant](#)
- + [MUSAE Brochure](#)
- + [Open call template](#)

For any doubts or questions, you can reach us by email at info@made-cc.eu

APPLY HERE!

<https://starts.eu/what-we-do/residences/musae/>

1st OPEN CALL - Artists

WHO CAN APPLY?

ELEGIBILITY CRITERIA - [MUSAE_Guide-of-applicants_DEF_V2.pdf](#)

Natural person

1. Self-employed individual (freelancer) that undertakes artistic activities

2. Legal person under NACE code '9003 Artistic Creation'

Established in one of the **Countries eligible for Horizon Europe funding** (see [Horizon Europe 2023/2024 - 13. General Annexes](#))

The topic of the experiment must cover **one of the thematic tracks and be based on at least one of the technologies** foreseen in the grant

Proposals must be submitted in English.

1st OPEN CALL - Artists

TOPICS

THEMATIC TRACKS

1. Reducing carbon footprint in dietary behavior

- How can we switch to more sustainable diets while meeting our nutrient requirements?
- How can we produce foods with lower carbon footprints?
- Are new meat alternatives healthy?

2. Role of food in holistic human well-being

- How can we increase wholegrains, fruits, and vegetables while decreasing salt intake?
- How can we enable people to make healthy food choices?
- Can we develop personalized approaches to enable people to make healthier choices?
- How can we develop new and innovative approaches to communicate the benefits of food?

3. Rethinking the food chain in our environment

- Can we develop new innovations to reduce food waste?
- Can short supply chains play a role?
- What innovations are needed to support food security for all?

TECHNOLOGIES

1. Artificial Intelligence (AI)

2. Robotics

3. Wearable technologies

1st OPEN CALL - Artists

EXPECTED RESULTS AND ACTIVITIES

1 Scenario [M3] - representation of the scenario: text, podcast, visual representation of the scenario, artefact, storyboard, evocative image(s), video, website, sketch

1 Artwork [M7] - describing and representing the scenario through a preferred artistic medium or format (at least one thematic track should be represented and, at least one technology should be considered)

- **Travel** to partners institutions to receive the training on DFA method and participate to final exhibition in September 2023 – April 2024
- **Provide a narrative of the scenario** as an input for the launch of the MUSAE second Open Call as one of the open call tracks which will be launched in 2024. Present the narrative of scenario as processual artwork at the exhibition in Barcelona in April 2024.
- **Follow and mentor** the team during the second residency (during the phase of Concept Development in May, June, July 2023 – one session per month).
- **Develop an artwork** which respect the conditions presented previously.

ONE THEMATIC TRACK + ONE TECHNOLOGY

1st OPEN CALL - Artists

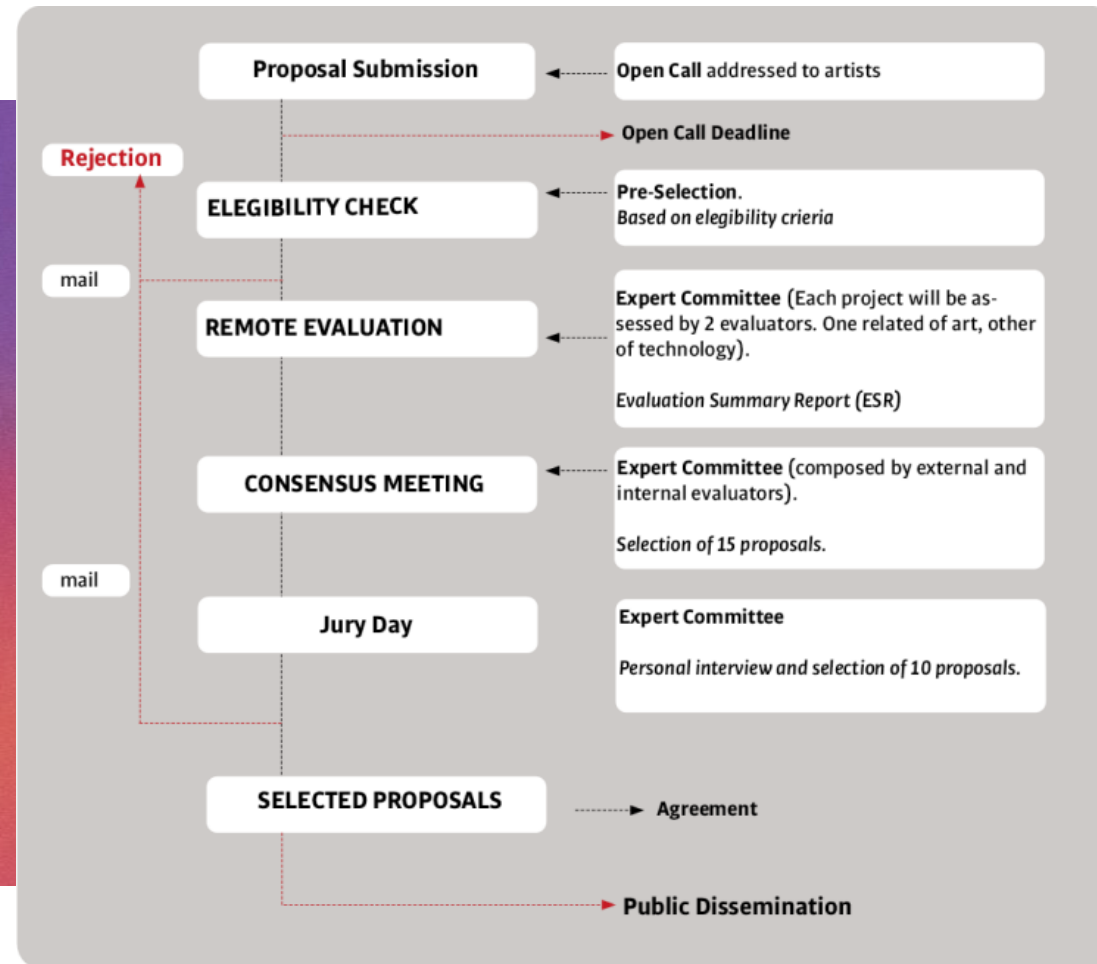
EVALUATION CRITERIA

Criteria	Minimum threshold	Priority in case of ex aequo [1 highest, 3 lowest]
<p>EXCELLENCE</p> <p>1. Innovation: Coherence and relevance with the objectives and scope, including innovative concepts, artistic approach and complementarity with the thematic tracks, digital technologies and the MUSAE domain.</p> <p>2. Fit: The Proposal demonstrates a clear understanding of the thematic lines to which it responds, and fits the vision of MUSAE</p> <p>3. Soundness: The proposal demonstrates a clear and credible critical future vision of one of the chosen topic to further deliver demonstratable scenario and one artwork by the end of the residency programme.</p>	3 out of 5	3

Criteria	Minimum threshold	Priority in case of ex aequo [1 highest, 3 lowest]
<p>IMPACT</p> <p>1. Artistic potential: The proposal demonstrates potential for artistic outcomes.</p> <p>2. Challenges: Definition of which innovative aspects the proposal contributes in relation to the challenges of contemporary ecosystems and its suitability to the defined topic.</p> <p>3. Critical and proactive sense: Balance between critical thinking and practical application of the results.</p>	3 out of 5	1
<p>IMPLEMENTATION</p> <p>1. CV/ Artistic portfolio: The capacity, expertise and experience of the artists and the ability to go from the conceptual to the development stage of the project.</p> <p>2. Artistic and technological quality: Based on previous work, the vision of the proposal, and how the synergy between art and technology are applied to address the thematic area(s) and possible scenarios.</p> <p>3. Resources: The proposal clarifies the needs and objectives of the program and is realistic in terms of achieving them within the constraints of time and budget.</p>	3 out of 5	2

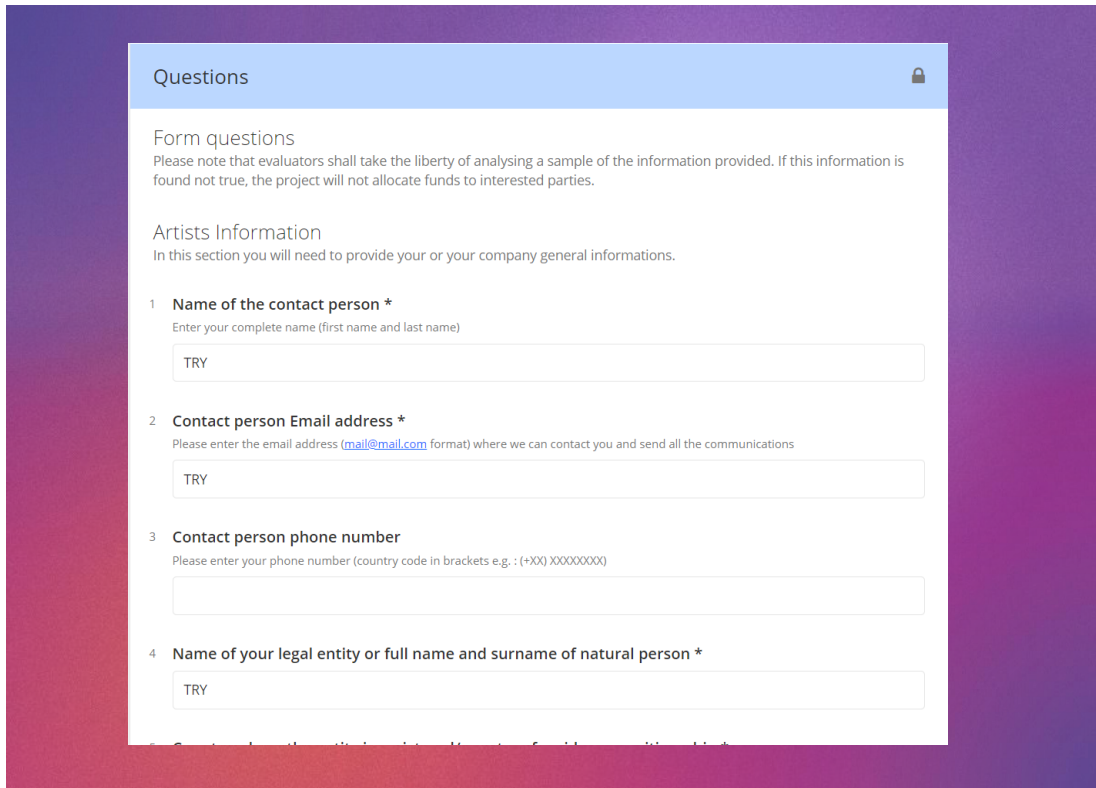
1st OPEN CALL - Artists

EVALUATION PROCESS



1st OPEN CALL - Artists

HOW TO APPLY?



The screenshot shows a web interface titled 'Questions' with a lock icon. Below the title is a section for 'Form questions' with a disclaimer: 'Please note that evaluators shall take the liberty of analysing a sample of the information provided. If this information is found not true, the project will not allocate funds to interested parties.' This is followed by 'Artists Information' instructions: 'In this section you will need to provide your or your company general informations.' There are four numbered input fields, each with a 'TRY' button:

- 1 Name of the contact person ***
Enter your complete name (first name and last name)
- 2 Contact person Email address ***
Please enter the email address (mail@mail.com format) where we can contact you and send all the communications
- 3 Contact person phone number**
Please enter your phone number (country code in brackets e.g.: (+XX) XXXXXXXXX)
- 4 Name of your legal entity or full name and surname of natural person ***

APPLY IN THE PLATFORM - <https://www.f6s.com/>

1. Inside the platform you will be asked to register your company or yourself
2. Go to the MUSAE Open Call <https://www.f6s.com/musae-starts-open-call-for-artists>
3. Apply by responding to the questions
 - I. Please remember to have a CV updated and a portfolio with projects related to your choices (technologies and thematic)
4. Wait for our reply



1st OPEN CALL - Artists

QUESTIONS AND SECTIONS



Information to check the eligibility criteria

Information about your proposal

Describe your proposal and motivation

Provide a general identification on how you are going to spend money (Personnel, other costs, travel, indirect costs)

Provide some previous work related to your proposal (MAX 2 – PDF 30MB)

1st OPEN CALL - Artists

WHEN TO APPLY?

DEADLINES

5/06/2023 h. 12.00 CET.

Any application received after the deadline or through other channels will be automatically rejected

For more information write to: info@made-cc.eu

MUSAE

Q&A



THANK YOU

