D2.10 REPORT ON THE DFA METHODOLOGY AND TRAINING AND MENTORING FORMAT TRANSFER (a)

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Executive summary

Deliverable 2.10 “DFA methodology and Training and Mentoring Format transfer” is the first deliverable provided on the transfer of the Design Futures Art-Driven (DFA) method to the widening country Serbia, while the final version of the deliverable will be produced in M33. The development of the DFA method is the result of a collaborative effort involving Politecnico di Milano (POLIMI), Gluon, and the University of Barcelona (UB-Art) in the context of Horizon Europe MUSAE project, while its transfer to the widening country is the result of an effort from a new consortium member, School of Electrical Engineering (ETF) – University of Belgrade.

The report is structured to outline the transferring process of the DFA methodology. It provides an overview of activities at ETF in order to uptake the DFA methodology, starting with the report from the one-week training on the DFA methodology in Milano. It further proceeds with the brief introduction of the 2 selected artists in the first MUSAE call in Serbia and their resulting scenarios. Next, the report provides a brief description of the DFA method, training and mentoring activities, followed by the summary of feedback collected from the Serbian artists and their mentors in the widening country, where both the positive and constructive comments were included. In the end of each section, the authors provide the recommendation on how to improve the DFA method, as well as training and mentoring format. Finally, the report describes the first MUSAE workshop in Belgrade.

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1. Introduction

1.1. Purpose of the document

The purpose of this Deliverable report is to describe the activities, feedback and insights collected during the first part of the journey of transferring the Design Futures Art-driven (DFA) method to one of the widening countries - Serbia. The School of Electrical Engineering (ETF), as one of the regional digital innovation hubs, has the role of facilitating its transfer to Serbia with the aim of increasing the country's innovation potential. The performed activities include the one-week training on the DFA method in September 2023, which was attended by several researchers from the School of Electrical Engineering, followed by the implementation of two art-tech experiments during the residency in Serbia from December 2023 to February 2024 whose results are outlined in Deliverable 8.1, and finishing with the organization of the in-person MUSAE workshop in Belgrade in April 2024. Most importantly, the report summarizes the feedback collected from the Serbian artists and their mentors about the First residency process for further improvement of the key elements of the MUSAE Factory Model. This deliverable is significant for the final output of the MUSAE project, which is the final Factory Model package (Deliverable 6.5) in August 2025.

The structure of the document follows the chronological process of transfer of the DFA methodology, where **Section 2** describes the week-long training in Milan, highlighting the main insights, identifying existing challenges, as well as the potential of future thinking to empower art-tech innovation. **Section 3** briefly introduces the two Serbian artists who were selected through the First Open Call, while **Section 4** briefly presents their final scenarios. The following **Section 5**, firstly provides a brief overview of the DFA method, secondly summarizes in detail the feedback about its implementation from artists and mentors, and thirdly provides a synthesis of suggested improvements to be implemented for the DFA method. In a similar manner, **Section 6** provides a brief overview of the mentoring process, and then summarizes the feedback about the mentoring process, as well as suggestions for its improvement, and **Section 7** describes briefly the training programme, and provides feedback on it and suggestions for improvement. Finally, **Section 8** describes the MUSAE workshop in Belgrade.

1.2. Terms and acronyms

Acronym	Description
Design Futures Art-driven method	DFA method
ETF	School of Electrical Engineering - University of Belgrade
POLIMI	Politecnico di Milano

2. Setting up the grounds for the DFA method

Since ETF joined MUSAE through the Hop-on facility program, the official start of the project activities occurred in August 2023. Therefore, the first activity was a week-long training week in Milan conducted by POLIMI to study the developed DFA method, test DFA Tools and Guidelines and provide early feedback.

In total, eight people from the ETF team (two lecturers, four researchers, and two persons from the administration sector who are in charge of dissemination activities and project management) joined the training week where they received training on the DFA method and got acquainted with 10 artists, previously selected at the MUSAE First open call.

During the workshop, the ETF team collected feedback which, given from a perspective of the widening country, aimed to improve the DFA method and training and mentoring formats. The feedback was communicated to the rest of the consortium during the next project meeting.

The feedback collected from ETF can be summarized as follows:

Understanding the method. The individual steps of the DFA method were introduced gradually, which allowed trainees to fully immerse themselves in the activities related to the step at hand. All technical personnel, including lecturers and researchers, found the method to be very clear and logical. They stated that it was easier for them to understand the artistic process by following the DFA method as well as to find a common language with the artists. The idea to introduce meditation before certain steps of the DFA method was at first approached skeptically, but then it turned out to be beneficial for creative thinking. However, the feedback was that the session lasted too short to be fully immersed, suggesting that one should extend the length of the meditation and also pay attention to find the right environment for doing it. Also, the users of the DFA method, be they artists or technology experts, could benefit from a dictionary of terms related to future thinking. While future thinking is a fundamental component of the DFA method, many individuals undergoing training were unfamiliar with the specific terminology, leading to confusion.

Figma and Miro board. The design of the MUSAE Platform on Figma is straightforward and provides a good frame of reference for each step. However, an additional example-based short video tutorial (up to three minutes) could help streamline the process further. Also, it would be helpful to have a subpage with Frequently Asked Questions. Moreover, the intuitiveness of the Figma website could be improved. For example, it was not clear where to click to learn more about the Trend research.

Understanding the artists. The ETF team noticed that the group made of artist+tech mentors works better when there is a good personal connection and understanding between the artist and the technology expert. For the sake of future art-tech collaborations, the suggestion is to pay attention that no stereotypes exist, either from the artists or the companies. Following the previous line of suggestions, it seemed that the group worked better when there was a facilitator, who is an expert in the DFA methodology.

Widening country perspective. From the standpoint of the widening country, the STEEP+V, one segment of the DFA method, was found to be especially important since it puts together all aspects that affect innovation in the widening country. On top of the established STEEP+V analysis, the ETF team noticed that adding the hierarchy to the STEEP, both from the artists and

the company, would be of additional value. For example, the company might put economics and technology as the most important factors.

After the workshop ended, a report for the social media was disseminated through the LinkedIn webpage of ETF Robotics, where in total more than 5000 views were reached.

3. Artists involved in the first Serbian residency

Two Serbian artists participated in the First residency programme that lasted from December 2023 until February 2024 (when the final scenarios were delivered, while artists continued to work on the artworks based on their scenarios until April 2024). The residency incorporated weekly online mentoring sessions, along with training sessions on the DFA method, technology available at the ETF Robotics Laboratory (collaborative robotics and digital biomechanics) and food topic.

Selected artists come from different backgrounds, which was an added value for the residency to observe their different ways and methods to adopt the DFA method and provide their reflections. The following is the description of the selected artists and their visions which they applied with to explore further following the DFA method during the MUSAE S+T+ARTs residency.

Artist: Irena Djukanovic
Name of the project: Poetry of Nutrition

Project Description: The project is conceived as an idea of using a soft robot to depict the humane and in-human treatments of any other form of life through the most direct approach – nutrition. Representing a humanimal kind of creature the soft robot is treated with diverse nutrition from healthy, to averagely genetically modified or even toxic nutrients. The being that the robot represents is a test organism for how (in)human we all can be even when we are aware of consequences while searching for how that can change.

Artist: Katarina Andjelkovic
Name of the Project: Healthy Food Protocols

Project Description: The current environmental, political, and economic crises added urgency to address new strategies for designing healthy and equitable communities and bringing closer the future well-being of the most vulnerable members of our society. The project has been conceived as a multifaceted program of social equity, health and well-being. It deals with operations and protocols that contribute to a sustainable, social, and united economy of food chain production. I ask how to improve the performance of the healthy food chain in big cities by adopting the scenario of a community urban farm.

4. Final scenarios of the First Serbian residency

While the scenarios were presented in greater details in Deliverable 8.1, herein we provide a brief overview of the residency outcome including the *Scenario title*, *Scenario description* and *Cover image*.

Artist: Irena Djukanovic
Scenario title: Poetry of Nutrition

What are our true priorities? Is nutrition the most extensive field of destructive consumerism or a noble means of survival? Poetry of Nutrition is a realistic dystopian industrial saga with an ptimistic and brave revolutionary twist. Let's imagine the future we really want to have in spite of everything.

The global health crisis in the near future will reach its peak by 2030. The mental and physical health of all generations rapidly deteriorated. Huge protest outbreaks and changes of governments follow all around the globe due to this immense threat that 35% of the previously employable population is unable to work and economically contribute.

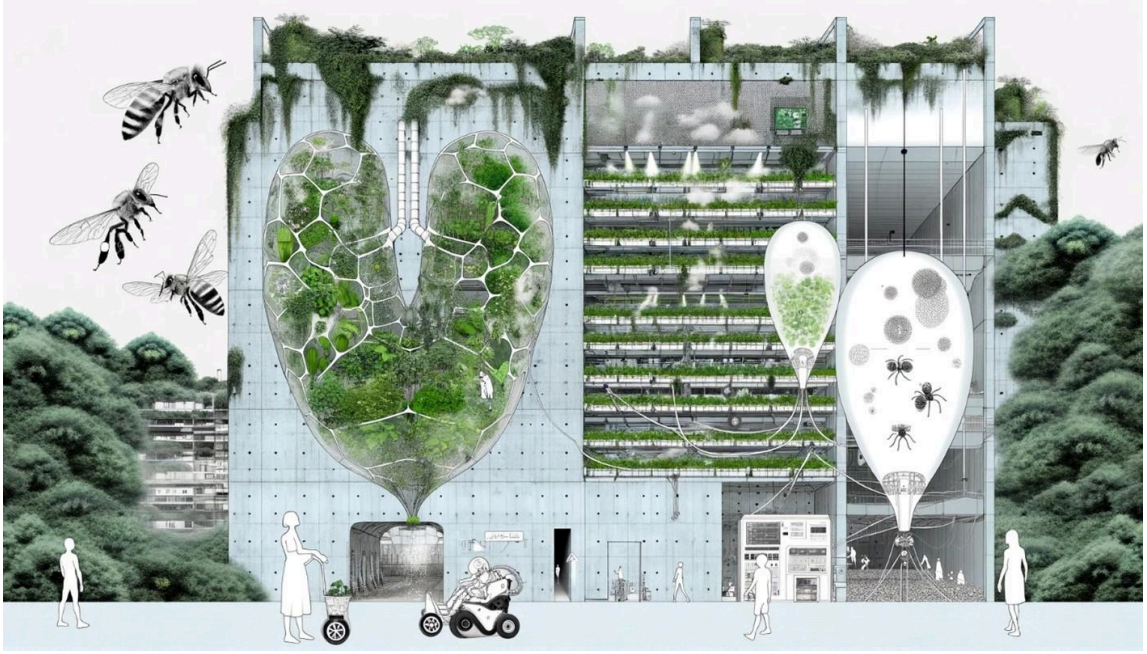
A new additional health system is established. The Nutritional Health System is merging sophisticated technology with the valuable therapeutic tradition of psychotherapy. Soft robots are used to bring people closer especially among different generations while learning how to control the food production and market. With beautiful somatosensory and visually opulent behavior the robots appeal to humans much more than the dry warnings of doctors from the past.

This empathetic appearance of robots opens people's true motivation to change and implement new habits. Art, humanities, medicine, and science completely fuse and intertwine.
Industry follows the lead and offers plenty of products that can help the general cause of the battle for collective health. Food therapy apps, pesticide monitoring drones, statistical dishes, and educational therapeutic computer games mold the new everyday experience.

Outside of the health system, the creation of communities branches out and people start to connect and nurture relations with local farmers and food producers. They switch from global brands to local small sources of food. They turn to the food that they can trust and feel as theirs truly. A communal chain of practical empathy is established. People rediscover the true meaning of community and collective health.

Scenario website:
https://musae.starts.eu/musae/2nd-open-call-scenarios-by-irena-djukanovic/

Artist: Katarina Andjelkovic
Scenario title: Healthy Food Protocols



The deep political, economic and social crisis has seen Serbia of 2034 as a country of the poor, leaving almost every seventh resident below the minimum survival income. The "Right to Food" protocol has been adopted to enable a sustainable, social and united economy of healthy food chains in big cities by operating within community urban farms.

It deals with concepts, methodologies and technologies to construct an innovative concept of community that aims to empower vulnerable populations by testing different configurations of life, work and farming. What if food can act as a catalyst for societal change and community building? The scenario introduces several community tech gadgets (brace, brick, balloon, robot bee) from the belief that they contribute to retrieving faith in the concept of community built on ecological, cultural and humanist values of communal living in this hyper-individualized tech world. The scenario envisions the capacities of the collective intelligence of all involved citizens to bring closer the future well-being of the most vulnerable members of our society while allowing them to actively participate in future changes in their local communities and food practices.

Moreover, moving from standard practices of farming to algorithmically generated farms with underlined machine learning and robotic systems, AI technologies enhance the decision-making processes to maintain food security, increase the nutritional value of food, secure the most personalized food consumption model and therefore improve our health and the overall human condition. It is a technology that not only administrates farm infrastructure and enhances the types of necessary data models in support of farm management, and types of crop production and responds to a poly-organized farm production area, but also contributes to our understanding of the reality of current food production in the city and size-optimization of the city farming.

Scenario website:
https://musae.starts.eu/musae/2nd-open-call-scenarios-by-katarina-andjelkovic/

5. DFA method feedback from the widening country

The following section provides a brief description of the DFA method and its implementation in the First Residency in Serbia (sub-sections 5.1 and 5.2), the feedback from Serbian artists and mentors on the method (sub-section 5.3), as well as synthesized insights for the improvement of the final version of the DFA method (sub-section 5.4).

5.1. The DFA method

The DFA (Design Futures Art-driven) method, central to the work of 2 artists from Serbia developing future scenarios, incorporates expertise from the MUSAE consortium. This method merges the Art Thinking approach by Gluon and UB-Art with the Design Futures method from Politecnico di Milano's IDEActivity center. Created to address challenges in art-tech collaboration, the DFA methodology fosters a structured, futures-oriented process for artists and corporate entities. It is a critical component of the MUSAE Factory Model, designed to enhance artistic collaboration within European Digital Innovation Hubs. This collaboration aims to enable companies, SMEs, and start-ups to pursue a strategic and future-focused innovation strategy. The detailed development of the DFA method is outlined in Deliverable 2.2 "DFA Tools and Guidelines (a)" and Deliverable 2.3 "DFA Tools and Guidelines (b)".

5.2. The DFA method implementation

The DFA method is structured into two distinct segments: the "Explore" segment, which includes the Immerse, Horizon Scanning, and Visioning phases resulting in a future scenario, and the "Generate" segment, comprised of the Ideating and Prototyping phases, culminating in a prototype. The implementation of the Explore segment was trialed in 2 art-tech experiments during the First Residency in Serbia. The Generate segment is slated for introduction in the Second Residency.

For execution and collaboration, the DFA method utilizes two digital platforms: Figma and Miro. Figma serves multiple functions, including the dissemination of guidelines and method overviews and the development of a prototype intended to evolve into an open-source website post-project. Miro facilitates a collaborative workspace for artists, mentors, and potentially companies, enabling progress tracking, feedback, and the collection of research outputs. Detailed descriptions of these platforms can be found in Deliverable 2.3 "DFA Tools and Guidelines (b)".

Each artist engaged with the Figma platform to access instructions and process overviews and constructed individual Miro boards to apply the DFA method. The culmination of this method during the First Serbian Residency resulted in the creation of 2 distinct scenarios. These scenarios serve as thematic tracks for the Second Residency, where the Generate segment will be implemented.

5.3. Summary of artist feedback on the DFA method

This subsection discusses the feedback received through surveys of 2 artists from Serbia and 1 art mentor about the application of the DFA method. The survey was designed by MUSAE consortium partners UB-ART, GLUON, and POLIMI, and reworked by the Serbian consortium partner ETF to accommodate the slight differences in activities between the 10 European artists

and the 2 Serbian artists which were due to the offset in open call timing between the two. The survey was administered through Google Forms in March of 2024, at the end of the Serbian artists' residencies. It aimed to gather detailed observations, comments, and reactions regarding the DFA method, with the ultimate objective of refining the process for the final MUSAE Factory Model.

The surveys about the Horizon Scanning phase and Visioning phase were conducted simultaneously, contrary to what was done for the 10 European artists and 8 art mentors, the results of which are described in Deliverable 4.3. "Art-Tech Experiment Results". The survey was administered on March 15th, 2024, immediately after the Serbian artists completed their residency. The feedback below is divided into each activity separately (Trend Research, STEEP+V analysis, Domain Building, Futures Exploration, and Scenario Building), summarizing the negative and positive points from artists and mentors. At the end, suggestions for improvements for both phases given by the participants are summarized.

5.3.1. Horizon scanning phase

The horizon scanning phase has been conducted from December 2023 to mid-January 2024, and the survey feedback about its constituent parts *i.e.* Trend Research, STEEP+V analysis, and Domain Building has been summarized below.

Activity 1: Trend research

Well-defined: According to the artists, the goal of the trend research activity was clear and the resources provided were useful.

Fueling ideas through curiosity: Trend research channeled the artists' curiosities allowing them to explore what is and what will be possible. This provided many new ideas, but also helped shape existing ones, which artists felt was defining in terms of their project.

Holistic picture: The trend research activity proved very useful for Serbian artists as it pushed them to delve deeper into all aspects of a trend *i.e.* its signals drivers and stakeholders, to get a holistic picture of the factors influencing the trend and its possible future developments.

Need for categorization: Provided the amount of data collected during this activity, the artists outline the need for the trends to be categorized according to multiple criteria.

Activity 2: STEEP+V analysis

Well-defined: According to the artists, the goal of the STEEP+V analysis was clear and the resources provided were useful.

Helped categorization: Contrary to results from the survey of European artists, Serbian artists found that the STEEP+V analysis helped them understand external factors influencing trends and allowed them to more easily categorize trends, as intended by the DFA method's creators. This may be due to the mentors being more well-versed in the application of the method by the time of the Serbian artists' residency.

Instructional aspect and societal awareness: This activity pushed the artists to think outside of the box, leading them to learn new concepts, and fostering personal growth. The artists report that the STEEP+V analysis helped them realize the diversity of stakeholders for a particular issue, and taught them to be more aware of power dynamics in society.

Well-ordered within DFA: The artists outline that they found it beneficial for the STEEP+V analysis to be early on in the application of the DFA method.

Specific mentoring: As STEEP analysis is an industry-standard, Serbian artists believe mentoring and brainstorming sessions with seasoned professionals and companies could have added much value.

Activity 3: Domain building

Ambiguity: The Serbian artists feel that the activity was not initially well-defined in terms of what a domain was, which could only be resolved by repeated and lengthy mentoring sessions.

Understanding of structural connections: The domain-building activity was useful for the Serbian artists to connect the elements and ideas expanded during the STEEP+V.

Narrowing focus: The activity helped artists organize their findings and streamline their future progress in the project.

Redrawing conclusions: The artists report that this step requires a re-evaluation of previously drawn conclusions, which may be good to emphasize.

Suggestions for improvement for the Horizon Scanning phase

Art-tech collaboration scope: The breadth and depth of the expected collaboration and combination of art and technology should be more clearly emphasized at the start of a residency. Expectations could be defined for example through case studies.

STEEP workshop: A STEEP workshop could be led by industry actors proficient in the use of this method.

Structured Trend Research: Additional tools could be introduced to have more structured trend research.

Explanations of Domain Building: The domain building part of the DFA method should have a clearer explanation on the Figma website, as it was consistently confusing for mentors and artists alike. One should strive to make the domain building part as clear as the trend research, which all parties agreed was very well explained and documented.

5.3.1. Visioning phase

The visioning phase has been conducted from mid-January 2024 to end-of-February 2024, and the survey feedback about its constituent parts *i.e.* Futures Exploration and Scenario Building, has been summarized below.

Activity 4: Futures exploration

Diverging feedback: The Serbian artists did not agree on the utility of the 'What If' phase. One artist outlines that the questions were well-formulated and helped motivate reflections about the future. The other artist believes that the approach is too general and needs to be more analytic but playful, not unlike a board game.

Time constraint: The artists felt that this activity in particular required much more time for thorough exploration.

Need for lead: The artists felt that 'futures exploration' could be a guided activity by an industry professional experienced in merging art and technology. Both of the artists believe that this activity could benefit from a 'workshop' setting, where a multidisciplinary team of actors brainstorms together, keeping the session more easily grounded in reality.

Activity 5: Scenario building

Divergent feedback: One artist felt this activity was useful, whereas the other feels like time constraints didn't leave enough space for exploration which made the activity have little use.

Builds on previous outputs: One artist felt that this step closes the loop on previous research outputs from all steps, by reusing them and the conclusions which were drawn.

Understanding future effects: One artist felt that this step helps one understand how the dynamics of the societal landscape can influence the future of the scenario.

Anticlimactic Culmination: One artist felt that the DFA method didn't lead very well into the concept of a scenario.

Suggestions for improvement for the Visioning phase

Time constraints: The time allocated for this part of the DFA method seemed particularly short, as it not only required the generation of new ideas concerning the future, but the synthesis of all outputs from previous steps of the DFA method.

Better explanation of Scenario Matrix: The scenario matrix could benefit from further documentation and explanation as it initially perplexed both mentors and artists.

Brainstorming sessions with industry: Though the goal of this part of the method was to lead artists to broaden their scope as much as possible before collapsing their ideas into a scenario, a belief held by the majority of participants is that a joined brainstorming session with industry professionals for the 'Futures Exploration' would keep the artists on-topic without actually limiting their scope.

5.3.3. Digital Platforms & Tools (Figma and Miro)

The survey also included questions about digital platforms that have been used in the process (Figma and Miro). The feedback below summarizes the main points from artists and mentors.

Figma: It was agreed upon that the Figma website is useful, particularly in the early phases of the application of the DFA method where it complements the mentors' explanations. The structure of the method is clearly outlined throughout the website.

Miro: The Miro board was thoroughly appreciated, and has been reported as a tool that will be used in the future by the participants. The participants appreciated the way the Miro board was implemented, the way it could handle various types of data, and the way they could compartmentalize and organize their findings. Some concerns were expressed about the need for the Miro board to have private sections for individual users, that would not be visible to all collaborators.

General: It was also agreed upon that the tools of the method after 'domain building' could have used more precise explanations and should have contained an obvious example of the use of the tool in question, both on the Figma website and on the Miro board. Instructional links about the tools themselves should be available both on Figma and on Miro *e.g.* sources for learning more about the STEEP+V analysis.

5.4. Insights for DFA improvement

These are the specific insights that the consortium has discussed and generated based on the feedback from artists and mentors. The insights are summarized in the categories below.

More mentors, workshops, and brainstorming sessions: An overarching theme in the feedback of the artists is the need for more interaction with multidisciplinary actors, as early as the STEEP+V phase, through the existence of a broader scope of mentors and the organization of workshops and collaborative brainstorming sessions.

Document and define everything as well as trend research: Explanations and instructive links should be as abundant for other steps of the DFA method as they are for Trend Research.

Visits to tech labs: Allowing artists to be frequent visitors to a tech lab related to their domain of choice may present opportunities for additional perspective shifts and idea generation.

Seasoned art-tech mentors: Having an experienced person in art-tech collaboration as a 'collaboration' meta-mentor may augment the experience from both points of view.

Multidisciplinary mentors: Broadening the number of mentors and augmenting the scope of available mentor expertise would certainly be advantageous.

Fostering better industry communication: Across the board, it was agreed upon that the involvement of industry stakeholders should be present from the start of the residency.

Timeframe: An extensive introduction and scenario development should last at least 6 months.

Though the extensive feedback gathered suggested a lot of room for improvement, it was a consensus that the DFA method has a huge potential in systematizing art-tech collaborations.

6. Mentoring feedback from the widening country

6.1 Mentoring programme description

During the residency program, two Serbian artists received mentoring from ETF and POLIMI to support the development of their scenarios by leveraging the DFA method. Both artists had the same core team of mentors, composed of one technology mentor from ETF and one art mentor. It is worth noting that both tech and art mentors received training on the DFA method in Milano, and they were also involved in mentoring European MUSAE artists. Every week there was at least one meeting dedicated to the core team mentoring sessions, involving both artists and art and tech mentors, where mentors were explaining the following steps of the DFA method. The length of the meeting was depending on the questions and needs of the artists. Every month, there was a plenary session including the DFA method expert from POLIMI. During these meetings, 2 Serbian artists were sharing the progress and receiving feedback on the DFA method implementation. One meeting was organized with nutrition experts from UCD, who provided mentoring support to the artists regarding the food topic.

6.2 Summary of the feedback

Mentoring of the research area. The overall assessment of the mentors was positive. One of the artists experienced the need for more than two mentors, due to the impression that the residency is a huge load for 2 mentors only. According to the artist, in an ideal case, the additional mentor should act not only as a mentor, but also as an artist's collaborator.

Technical and art mentorship. The artists found that both tech and art mentors were helpful, highly available and diligent. Tech mentors helped in understanding technologies, while the nutrition experts from UCD provided access to the AirTable. It was of crucial significance for one artist to have an overview of the state-of-the-art technical solutions.

DFA mentoring. One artist stated that 'Trend research' and 'STEEP+V' analysis were mentored the best, while 'What-If' was fast-paced due to the lack of time. Both the artist and the art mentor agree that the 'Domain building' could have been explained better, which is also due to the fuzzy explanation of this segment on the Figma website.

Training frequency. Both artists find the training frequency to be sufficient and necessary in order to finish residency in 2.5 months. However, from the artistic viewpoint, having sessions once per week was too often and didn't leave much space for the artists to reflect and evolve the tasks. In an ideal case, the residency should last 6 months.

Connection to the other experts. The artists wished that the workshops also included other artists and mediators who have experience with connecting artists and industry. The additional mentor/collaborator should be acquainted with biomedia art and also have previous experience with connecting artists and industry.

Mentoring format. Physical meetings would be a preferable option. Also, the presence of companies' representatives during the workshops would help artists learn about their perspectives.

6.3 Insights for the mentoring process improvement

Both tech and art mentors in Serbia have previously received training on the DFA method and they were also included in mentoring 10 MUSAE European artists. Therefore, the mentors aimed at avoiding the previously-experienced stumbling blocks, while running the residency in Serbia. For instance, the mentors clearly stated the expected results of each segment of the DFA method by providing examples from the original first MUSAE residency. Also, Serbian artists used PowerPoint presentations instead of Miro board to present their outcomes.

Mentoring organization. Compared to the original MUSAE residency, Serbian artists didn't have the chance to visit Barcelona, Milano and Dublin, and establish personal contacts with tech partners. This was mirrored in the artists' desire for more variety in mentors' expertise. According to the received feedback, the artists would definitely benefit from a larger pool of mentors and available experts, including companies' representatives. One possibility would be to have an 'artistic national contact point', i.e. a person with significant experience in connecting artists and industry that would connect Serbian artists not only to local industries but also to the rest of the European art and tech ecosystem.

Mentoring format. For an artist who is for the first time introduced to the DFA method, 2.5 months is few to develop a whole scenario. Perhaps, for the artists who didn't have previous experience with the DFA method, residency should last longer, while the industry can expect the experienced artists to finish the scenario in a shorter time. It would be useful to offer the artists the DFA-method learning opportunities, such as webinars and online courses. There is also a difference in the maturity of the artists. For a novice artist, it would be useful to take part in a residency that hosts numerous artists in order to indirectly receive guidance and mentoring from the other artists as well.

7. Training feedback from the widening country

Training activities during the First residency in Serbia comprised the following: 1) training on the DFA method, 2) training on the food topics, and 3) training on technologies. Below is a brief description of the trainings and a summary of feedback collected from the artists.

7.1 Training on the DFA method

Throughout the first residency, artists received ongoing training on the DFA method. It began with an introduction to the overall approach during the kick-off residency meeting, followed by detailed explanations of each DFA segment delivered by the ETF core team during weekly sessions. This structure allowed artists one to two weeks to immerse themselves in each segment after it was introduced.

At the introductory training, artists were welcomed by both ETF and POLIMI, and they were introduced to the objectives of the MUSAE project. During this session, the ETF core team presented a one-hour overview of the first diamond of the DFA method, offering insights into the residency content. POLIMI played a supervisory role during the training, ensuring effective delivery by ETF. Thus, the training process involved two layers: ETF training artists on the DFA method, and POLIMI providing guidance to the ETF on its delivery.

During the weekly meetings, the ETF team utilized the Figma website along with examples from 10 European MUSAE artists to clarify each segment of the DFA method. POLIMI provided supervisory support after the steps 'Domain building' and 'Scenario Matrix', offering feedback to the artists on their progress.

7.1.1 Training feedback

Tools for using the DFA method. The artists didn't have any previous experience with the Miro board, or with the Figma website. However, their experience is quite positive. They found the explanation of the DFA method on the Figma website simple and clear, while the Miro board was comfortable for developing ideas. This facilitated their adoption of the DFA method. There is a suggestion to increase the length of meditations to 10 minutes and provide some additional content on the Figma website regarding the 'What-If' and 'Scenario building' segments, with the aim to reach an interesting, productive and creative work atmosphere.

The scope of possibilities. The artists appreciated learning about the wide range of possibilities and tools that can be helpful for the artistic process. The encouragement to use Chat-GPT was especially appreciated. The STEEP+V analysis was marked by one artist as being particularly useful.

Actors involved in training. There was a suggestion to include additional trainers with experience in financial consulting, economy and trainers who have previously led collaborative projects between artists and companies.

Examples. There is an opinion that training would be better if it contained successful examples of artists-companies collaboration.

7.1.2 Training insights

Enrichment of the Figma website. The Figma website should have additional content, especially in the second part of the first diamond. Providing a sort of video game inspired by board games would increase the playfulness and creativity of the artists.

Additional examples. It is worth considering the creation of a database of all successful artist-company collaborations, including both the results of European projects and worldwide initiatives. Moreover, now that the original MUSAE residency and MUSAE residency in Serbia are finished, the Figma website can be enriched with examples of the works of 12 artists.

Additional trainers. Including trainers who have a great overview of the market needs would positively contribute to the overall artists' training.

7.2 Training on the topic (Food as medicine)

The two Serbian artists received brief training on the topic through an online meeting with the team from UCD. The meeting was attended by the ETF core team, two artists and two experts from UCD. The training included an explanatory session to introduce the topic and current food and nutrition challenges, an informative session to introduce the UCD AirTable research environment related to 'Food as Medicine', and an interactive conversation between artists and experts, who were providing feedback and guidelines.

7.2.1. Training feedback

Overall impression. The artists stated that this meeting gave them a completely different perspective, which was helpful in defining the details of their scenarios. The UCD AirTable was particularly helpful for getting an overview of the research-level technologies. There was positive feedback on the approachability of the experts from UCD.

Training timing. The Serbian artists expressed the wish to have a full workshop instead of only an online meeting.

Training format. The workshop should be in person and not online. Additionally, it should involve brainstorming sessions where artists and experts can together discuss different ideas. Also, the residency would in general benefit from more frequent encounters with experts from various fields.

7.2.2. Training insights

Timing. Considering feedback from the original MUSAE first residency to schedule a meeting with UCD in the later phase of the residency, this training was done after the Serbian artists finished the domain building. However, according to their feedback, it might be the best option to have two or more training sessions by food experts that would be delivered in different stages of scenario development.

Format. Given that the food experts are from Dublin, Ireland, and that Serbian artists didn't have a budget for traveling, it was not possible to organize the in-person training. However, the future

residencies might be more oriented towards including local food experts. Also, the training sessions should be such that the artists and experts from different fields have more frequent meetings where they can discuss the scenarios.

7.3 Training on technology

Two Serbian artists received training in digital biomechanics and collaborative robotics, which are part of the expertise of the ETF Laboratory for Robotics. Both artists were trained in collaborative robotics twice - once in the beginning and once after the half residency passed, i.e. after the 'Domain building' phase. Precisely, they got acquainted with the technology first through the presentations by the ETF researchers, and then got the chance to visit the Laboratory for Robotics. Moreover, after the artists finished the 'Domain building' segment of the DFA method, they had a chance to present their research to the representative of the local Digital Innovation Hub and receive feedback about the feasibility of their work.

7.3.1 Training feedback

Overall impression. The artists found this training to be quite useful, since it covered the aspects that were new to them and that gave them insightful perspective.

Timing. The artists wished there was more time to dive deeply into the technology of the ETF Robotics Lab and to better understand the point of view. Also, they wished to learn about the technologies earlier in the process.

Content. The connection with future manufacturing could have been more elaborated and the existing examples should have been explained in greater detail.

7.3.2 Training insight

Format. Compared to the original MUSAE residency, Serbian artists only had access to the expertise of the ETF Laboratory for Robotics. Definitely, for future residencies, one should consider involving several tech partners, unless there is a clear idea of which company and which technology an artist should consider. It is worth remarking that one artist was not physically in Serbia and could not visit the laboratory, which contributed to the impression that the technology was not explained in more detail. The inclusion of the 'virtual laboratory' experience could be a way to overcome traveling constraints. Moreover, the impression of the art mentor is that, since the ETF was a residency host, artists were more inclined to focus on robotics and AI technology.

8. The first MUSAE workshop in Belgrade, Serbia

The one-day workshop was organized on the 19th of April at the Chamber of Commerce and Industry of Serbia in Belgrade. We have decided to host a workshop in this space in order to attract the attention of Serbia companies.

We have reached out to the participants in numerous ways. Using the repository of contacts collected during the first residency, we sent an email with the information about the 2nd Open Call and workshop venue to nine faculties in the field of art in Serbia and to ten Serbian artists. To reach out to the artists, the information about the workshop was shared on the website artandscience.rs. Then, to reach out to the companies, the information was shared by sending an email to the mailing list of the Serbian Chamber of Commerce and Industry and by reaching out to more than 15 companies through personal contacts. To reach out to both groups as well as the general public, social media was used. Precisely, we published the post with the information about the workshop on the LinkedIn page of ETF Robotics, and on the Instagram and Facebook pages of ETF.

As a result, we received 37 applications, of which 15 representatives of the companies, 16 artists and 6 that do not belong to either group. The workshop was attended by more than 40 people.

The workshop program was divided into three parts in order to best suit the needs of the artists and the companies. The first part of the workshop, between 10.00 and 11.30, was focused on the artists, then between 12.00 and 13.00 the main attention was brought to companies, followed by the networking event between 13.00 and 15.00.

The first part of the workshop had the objective to introduce artists to the DFA method and to motivate them to apply for the 2nd Open Call. The program started with a welcome speech by the team from the coordinating institution POLIMI, who joined the workshop through the Zoom platform and introduced the Belgrade audience to the MUSAE project objectives and the DFA methodology. Their talk was followed by the panel discussion where Serbian artists Katarina Andjelkovic, Sanja Sikoparija and Irena Djukanovic, who took part in the first MUSAE residency, shared with the workshop participants their experience and impressions about the DFA methodology and the first residency. Next, a mini-workshop was organized, where the 'Alternative Futures' part of the DFA method was exercised, involving all participants. The mini-workshop started with guided meditation and then proceeded with answering the 'What-If' questions. Finally, the director of the Art+Science program, Dobrivoje Lale Eric, shared insights about the ongoing activities and various opportunities for artists in Serbia.

The second part of the workshop started with the insightful in-person presentation of Dr. Uwe Haass, an advisory board member of MUSAE, who vividly explained how much art is valuable for the innovation process. The presentation was followed by the talk given by the ETF team, who presented the MUSAE objectives, and the DFA method, and provided a thorough explanation about the 2nd Open Call, focusing on the eligibility criteria and how to fill out the application, as well as highlighting the success story of the art-companies collaborations that were facilitated within the HEU project Better Factory. The workshop ended with a networking session, where artists and companies got the chance to create teams in order to apply for the MUSAE 2nd Open Call.

The agenda of the workshop is in the annex of this document.

The feedback from the audience was positive, particularly praising the great organization and timely evolution of the workshop. Even though the program was divided, most of the companies were interested in following the first, artist-centric part of the workshop. Noteworthy, the companies' representatives were eager to discuss the project applications with the present artists.

To conclude, the workshop successfully bridged the gap between the art and industry sectors, fostering dialogue, collaboration, and innovation. It served as a catalyst for future partnerships, laying the groundwork for continued exploration and advancement at the intersection of art and technology in Serbia.

9. Conclusions

The MUSAE project team from the School of Electrical Engineering has successfully received training on the DFA method, implemented it during the first MUSAE residency in Serbia, and disseminated it during the well-attended workshop at the Serbian Chamber for Commerce and Industry.

Both Serbian artists have followed the First Residency program, which included the implementation of the DFA method, training and mentoring activities in order to deliver their final scenarios of the figure. The artists' scenarios have been fully developed according to the expectations of the MUSAE coordinators from POLIMI. The scenarios enlighten two different yet crucial topics in the sector of Food as Medicine, covering a range of technology that can be applied in order to address a number of discovered challenges. This is particularly important since these two scenarios are the starting point for the second residency program.

Both artists and mentors have provided very detailed feedback on the residency program and its components, including constructive and useful inputs that will help not only to tailor the method to the needs of the widening countries, but also to improve the final MUSAE Factory Model. The collected feedback will be used in order to improve the final delivery of (1) the DFA method, its tools and guidelines, (2) the Training format, and (3) the Mentoring format.

The general feedback was to include more experts in the residency program, such as those with expertise in finance, and to have more encounters with them, preferably in person. Serbian artists also shared the insight that the longer residency would be more appreciated.

10. Appendix

1. Survey for the art mentor
2. Survey for the artists
3. Agenda for the workshop in Belgrade

MUSAE

https://musae.starts.eu

MUSAE First Residency. Survey for art mentors

This survey aims to collect feedback from the art mentors of the MUSAE first residency about the process of mentoring artists through the DFA method. Its objective is to document observations, comments, and feelings from each mentor to improve the process.

Questions are divided into two parts – (1) about the Mentoring and Training activities, and (2) about the DFA method.

Your answers will remain anonymous and will be used for research purposes in full respect of the participants' positions and declarations.

1. **Can you recall a particular moment or situation during mentoring when explaining the DFA method was especially challenging? What made it difficult, and how did you navigate through it?**

2. **From your experience, what specific skills or competencies do you believe are crucial for a mentor guiding artists through the DFA method? How do these differ from traditional mentoring approaches?**

3. **What would be the best way for mentors to be trained on the DFA method? What resources or training do you think mentors need to have to perform their role?**

4. **Can you provide specific examples of strategies you employed that helped artists progress through the DFA method? (i.e. asking for the Miro board in advance, using Figma, organizing sessions, etc...)**

5. **Was working with technical partners or experts useful for the artists? Which specific aspects did you find most helpful?**

6. **What improvements would you suggest in working with experts and technical partners?**

7. **Could you pinpoint specific elements or stages within the mentorship process that caused significant frustration or confusion for you or the artists?**

8. **Reflecting on your experience, do you believe the frequency of individual mentoring sessions was optimal? If not, what frequency would you recommend based on your experience?**

9. **Were there any specific aspects of the DFA method that you would change or improve? For instance, changing the sequence of activities or introducing new activities or tools, etc.)**

10. **Did Figma effectively provide clear and comprehensive guidance to artists throughout the DFA process? If not, what improvements or additional features would you suggest?**

11. **Reflecting on your experience, could you detail the strengths and weaknesses of the Miro platform for artists? Were there any aspects that particularly hindered or enhanced the (mentorship) process?**

12. **Considering your experience, where within the DFA method do you see potential benefits in integrating alternative artistic approaches? Please provide specific details on how and where these could be incorporated for enhancement.**

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MUSAE First Art Residency in Serbia: Artists' Feedback Survey

This survey aims to collect feedback from the artists of the MUSAE first residency in Serbia regarding the DFA process. Its objective is to document observations, comments, and feelings from each artist to improve the process. Thank you for participating in this survey. Your answers will remain anonymous and will be used for research purposes in full respect of the participants' positions and declarations.

1. Meeting introduction to DFA (first online meeting in December 2023)

1. 1.1 Can you explain how you experienced the introduction of the DFA method, and how the presentation of the DFA method via Figma website and Miro board contributed to introduce and engage you in this methodology?

2. 1.2 Did this training substantially help you in executing the experiment and understanding the DFA method? Can you highlight 1-2 topics that you believe that the training provided the best support? In contrast, can you provide 1-2 topics that the training did not provide the support you were expecting?

2. Topic immersion (online meeting with UCD)

3. 2.1 Please explain how this presentation was essential, important, or unnecessary for your project.

4. 2.2 Which aspects of the presentation helped you learn DFA/Food as Medicine/Tech?

5. 2.3 What type of support, information, or format would you add to the training (presentation) that would help you?

6. 2.4 Did this training substantially help you in executing the experiment and understanding the thematic tracks? Can you highlight 1-2 topics that you believe that the training provided the best support? In contrast, can you provide 1-2 topics that the training did not provide the support you were expecting?

3. Technological Training Technologies (meetings with Kosta, Filip and Maja)

7. 3.1 Please explain how this training activity was essential, important, or unnecessary for your project?

8. 3.2 Did the mentors substantially help you in executing the experiment and understanding the technologies? Can you highlight 1-2 topics that you believe that the mentors provided the best support? In contrast, can you provide 1-2 topics that the mentors did not provide the support you were expecting?

DFA methodology

4. Trend research

9. 4.1 Was the Trend Research useful to identify and understand the direction and impact of trends to inform future decision-making and strategic planning? In what specific ways has Trend Research contributed to your understanding of trends and their impact on future decisions? Or what was missing for it to have been useful for your project definition process?

10. 4.2 Did the training help you support the experiment to its full potential?

11. 4.3 Did the mentors substantially help you in executing the experiment and understanding the technologies? Can you highlight 1-2 topics that you believe that the mentors provided the best support? In contrast, can you provide 1-2 topics that the mentors did not provide the support you were expecting?

5. STEEP+V Analysis

12. 5.1 Was the STEEP+V Analysis effective to identify external factors influencing a future landscape? How did the STEEP+V Analysis enhance your awareness of external factors and their potential impact? If not, why not?

6. Domain map

13. 6.1 Was the Domain Map effective in identifying and understanding the interconnections within your chosen topic?

14. 6.2 Share any specific insights or observations gained through the Domain Map process. If not, what needs to be addressed in this process?

7. What-If workshop

15. 7.1 Please explain how the workshop was essential, important, or unnecessary for your project.

8. Scenario building

16. 8.1 Please explain how this activity was essential, important, or unnecessary for your project.

9. Scenario

17. 9.1 Do you think the definition of Scenario was clear enough compering to the results expected? If not, how would you improve it?

10. Overall Assessment

18. 10.1 Were Figma and Miro useful for you? In what way? What would you change or add?

19. 10.2 What other tools/methods did you use (or would like to use) instead of the ones provided in DFA?

20. 10.3 Was the sequence of all activities logical to you and helpful in your working process? If not, what would you change?

21. 10.4 If and how did you use AI? What kind of prompts did you use?

22. 10.5 Provide any additional comments or suggestions for improving the DFA method in the future.

23. 10.6 What challenges did you face while performing these activities?

11. Methodology

24. 11.1 Are the mentoring supporting what you expected from the beginning?

25. 11.2 In which activities and moments of the DFA did they mostly need help and guidance, and from whom?

26. 11.3 Did the tech mentors substantially help you in executing the experiment and understanding the technologies? Can you highlight 1-2 topics that you believe that the mentors provided the best support? In contrast, can you provide 1-2 topics that the mentors did not provide the support you were expecting?

27. 11.4 Did the art mentors substantially help you in executing the experiment and understanding the DFA method? Can you highlight 1-2 topics that you believe that the mentors provided the best support? In contrast, can you provide 1-2 topics that the mentors did not provide the support you were expecting?

28. 11.5 Were the number of mentoring sessions sufficient for you? And ideally, how often would you need mentoring?

29. 11.6 What suggestions would you give to improve the mentoring?

30. 11.7 Can you explain if this proposed methodology is useful for your process or if it complements other methods, you usually use?

12. Overall

31. 12.1 What tools were useless for you? What was not as you expected to be? Would you wish other tools were present?

12.2 Please answer rating from 1 to 5 the next questions:

32. 1. I would like to use the DFA method for future collaborations.

Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

33. 2. I found the DFA easy and useful to define future scenarios.

Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

34. 3. I found the DFA method unnecessarily complex.

Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

35. 4. I imagine that most artists would learn to use DFA method when they know it.

Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

36. 5. I felt confident using DFA method after I learned its process.

Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

Thank you for taking the time to complete this survey. Your input is crucial for enhancing the MUSAE First Residency DFA process.

AGENDA

10.00-11.30 ARTISTS

10.00-10.05 – Welcome and introduction
10.05-10.25 – DFA method (POLIMI – Tatiana Efremenko, Maria Rita Canina)
10.25-11.00 – Panel with the Serbian artists
11.00-11.20 - Workshop "Alternative Futures "
11.20-11.30 - Art+Science program of CPN (Dobrivoje Lale Erić)

11.30-12.00 BREAK

12.00-13.00 COMPANIES AND ARTISTS

12.00-12.10 – MUSAE project and the DFA method (Kosta Jovanović, Maja Trumić)
12.10-12.20 – The importance of the S+T+ARTS initiative (Uwe Haass)
12.20-12.50 – The second MUSAE Open Call (Maja Trumić)
12.50-13.00 – Other funding opportunities (Kosta Jovanović)

13.00-15.00 LUNCH: Q&A и *matchmaking*