Deliverable D10.6
Report on Cooperation Activities 3

F6S Network Limited (F6S)

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Abstract	This deliverable is the third and final report on the cooperation activities carried out within iPRODUCE between M31 (July 2022) and M42 (June 2023). It is the third report addressing cooperation-focused activities carried out in the final 12 months of the project. Following the approach established in the previous versions (D10.4 and D10.5), the cooperation activities are presented from two perspectives: (1) cooperation between iPRODUCE and other external projects, initiatives and/or activities, and (2) cooperation involving specific iPRODUCE partners and stakeholders.

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PU	Public	X
PP	Restricted to other programme participants (including the EC services)	
RE	Restricted to a group specified by the consortium (including the EC services)	
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DISCLAIMER

iPRODUCE ● Grant Agreement: 870037 ● Innovation Action ● 2020 – 2022 | Duration: 36 months

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Executive Summary

This deliverable is “D10.6 – Report on cooperation activities 3” of the iPRODUCE project, funded by the European Union’s H2020 research and innovation programme.

The objective of this deliverable is to provide a review of the cooperation activities carried out within iPRODUCE from July 2022 to June 2023. Deliverable D10.6 is the third of three reports addressing cooperation activities; it follows the already submitted D10.4 (submitted at M12) and D10.5 (submitted at M30).

Following the approach established in D10.4 and D10.5, the cooperation activities carried out during this 12-month period are addressed according to two angles: (1) cooperation between iPRODUCE and other external projects, initiatives and/or activities, and (2) cooperation involving specific iPRODUCE partners and stakeholders.

Cooperation with projects and initiatives

Over the period covered by this report, iPRODUCE has continued to engage with the research and innovation projects it first established contact with at the beginning of the project. These projects - commonly referred to as the *sister projects* - include *DIY4U*, *INEDIT*, and *OPENNEXT*.

Cooperation with iPRODUCE’s sister projects

From 20 June to 22 June 2022, iPRODUCE was present at the ICE-IAMOT 22 conference which took place in Nancy, France.

This conference was a joint event organised by the International Conference of Engineering (ICE) and the International Association for Management of Technology (IAMOT), on the topic of “Technology, Engineering, and Innovation Management Communities as Enablers for Social-Ecological Transitions”.

On 5 December 2022, iPRODUCE and its sister projects met up in Aachen (Germany) for a 1-day event with the objective of knowledge exchange, discussing future synergies, and pathways for the sustainability of the projects. This event was delivered in hybrid format. This event was hosted by the Institute for Industrial Management (FIR) at RWTH Aachen University, partner in the INEDIT project. iPRODUCE was present and represented by its coordinator and project partners physically and virtually.

Collaboration sessions

iPRODUCE has been involved in the collaboration that involves the four *sister* projects. The objective of these sessions is to discuss topics of common interest, promote opportunities for learning, and identify good practices implemented in one or more projects that could be replicated in other projects. To date, the projects have organised four sessions.

The third session was held on 20 - 22 June 2022 and addressed the theme of **Open innovation, technologies & communities as enablers of socio-economical transition**. Key discussion points on management of technology, engineering and innovation can contribute to the social-ecological transitions covering not only product and process, but also changes in user practices, markets, policy, regulations, culture, infrastructure, lifestyle, and management of firms.

The fourth collaboration session took place on 5 December 2022 and addressed the theme of **exploitation challenges and opportunities**. Key discussion points were the set of tasks, which the attended project partners have agreed to collaborate on in the upcoming months.

Cooperation and Collaboration in the open competitions with other projects with similar objectives and themes

Ahead of the delivery of the Open Competition #3 – Hackathon, iPRODUCE has maintained cooperation with three other H2020-funded projects which are TRINITY, greenSMEhub and KYKLOS 4.0. The objective was to share the opportunity of the Hackathon with stakeholders within the manufacturing industry to gain attraction and receive a good attendance.

The focus of cooperation with these projects has been related to social media, where iPRODUCE has engaged with these projects that share similar objectives and themes. The projects agreed to share the opportunity with their networks and through social media channels as this was considered an added value.

Cooperation and engagement activities within cMDF

In the final 12 months of the project, the iPRODUCE cMDFs have remained active in engaging and cooperating with different stakeholders to provide them with information about iPRODUCE and the cMDFs activities, and to mobilise them as active participants in the cMDF structure. The five cMDFs were active during this period in the organisation or participation of cooperation-focused activities.

Below are provided a list of the activities carried out by each cMDF and a brief description.

French cMDF

During the period going from June 2022 to June 2023 the French cMDF have organised and participated in several events organised with local partners to introduce the iPRODUCE project and the OpIS.

IAMOT conference Nancy (22 June 2022)

- Introduction of iPRODUCE and the French cMDF activities to IAMOT participants.

Working session on the winner's project. (6 July 2022)

- Workshop organised with the winner of iPRODUCE My Mobility challenge and the Core group in order to work on their project and find solutions to their issues.

Workshop French cMDF Business plan. (30 September 2022)

- Workshop organised with the local contributors and the core group to define a sustainable business model for the French cMDF.

Consultation workshop 2 (6 February 2023)

- Workshop organised at the FabLab Vosges to show the OpIS, the tools and have working sessions with the participants to test and use the tools as well as report issues.

Hackathon (20, 21 & 22 April 2023)

- Organised the Hackathon for the French participants as well as a training session on how to use the tools and OpIS.

German cMDF

The German cMDF has organised, co-organised and participated in a number of activities. As ZENIT is a member in the **Enterprise Europe Network**, the cMDF benefited from cross-border activities organised in the EEN framework at exhibitions:

- Industrial Trade Fair **HannoverMesse** 2022 online matchmaking (June 2022)
- **Greener Manufacturing Show,** Cologne on site exhibiting combined with matchmaking (November 2023)
- **Medica Trade Fair,** Düssseldorf on site exhibiting combined with matchmaking and webinar (November 2022)
- **Cycling World Exhibition,** Düsseldorf on site exhibiting combined with matchmaking and webinar (March 2023)
- e-world energy water, Essen only matchmaking (May 2023)

- iPRODUCE at **regional ZDI Robot Competition**

These events provided an opportunity to raise awareness about the project across Europe,´. On the one hand, iPRODUCE was visible in the online catalogue and, on the other hand, on site as well where iPRODUCE was present with a roll-up and leaflets with a staff member on-hand explaining what the project was about. The webinars demonstrated how iPRODUCE can function in a specific sector.

The EEN was furthermore used to inform about the Hackathons.

Through ZENIT, the cMDF also co-operates with the project **ZDI Zukunft durch Innovation**, that ZENIT is also involved in, encouraging young people who are motivated to engage in fab labs and MINT subjects at school and university. The following collaboration was possible:

- Participation of ZDI staff as ambassador in German cMDFs **consultation workshop** focusing on the presentation of the OpIS tools and functionalities. The ZDI colleague will be continually updated about the tools development in order to assess the usability in future.
- Exhibiting iPRODUCE at **ZDI robot competition** events for pupils /students to raise awareness among the young community and teachers (May/ June 2023).

The cooperation of the Makerspace Bonn with the **maker community** and **schools** was instrumental for the following events:

- **Hackathon** at MSB where the maker community was alerted. Participants were informed about project opportunities were highlighted, the MSB facilities explored, and the keynote appreciated (April 2023)
- iPRODUCE **Workshops at schools** (May and June 2023)

The cooperation that Fraunhofer FIT started with the company **Rossbach Wojtun, who offer serial production concepts and facilities** that enhanced the Product Forge activities as start-ups and SMEs could now be introduced to the complete process from ideation via prototyping to production:

- Two **Produktschmiede** workshops (September 2022)

Greek cMDF

The Greek cMDF organised and participated in several activities, many with a research and education value.

- **Greek cMDF Consultation Workshop with Ambassadors I (23 November 2022)**
  - Organised a training workshop with an ambassador, and co-created another design related to use case scenario UC2: Splints for Fractures.
- **Greek cMDF Consultation Workshop with Ambassadors II (03 December 2022)**
  - Organised a training workshop with an ambassador, and co-created another design related to use case scenario UC3: Splints for Pets.
- **Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario (08 February 2023)**
  - Co-organised a training workshop with all members of iPRODUCE consortium and introduced to stakeholders the main functionalities of the OpIS platform tools by co-creating a specific use case scenario UC4: Customised Face Shield.
- **Hackathon of the Greek cMDF (20-22 April 2023)**
  - Organised a training workshop and demonstrated the main functionalities of the OpIS platform tools.

Italian cMDF

During the period from June 2022 to June 2023 the Italian cMDF have organised and participated in several events organised with local stakeholders to introduce the iPRODUCE project and the OpIS platform.

- **i-NOVATION Challenge (September 2022 – March 2023)**
  - Training: specific online training about the iPRODUCE tools tuned to their solution/product.
  - Promotional video about the solution/product (link, link);
  - Guided tour to the Italian cMDF facilities, professional support by prototyping experts.
  - Use of iPRODUCE facilities: 8 hours of use of the Italian cMDFs labs.
- **Co-Creation Hackathon (29 November 2022)**
  - Presentation of the iPRODUCE project and collaboration opportunities.
  - Organised a training workshop and demonstrated the main functionalities of the OpIS platform tools.
- **Consultation workshop ambassadors (29 November 2022)**
  - Informed and created awareness about the Italian cMDFs structure and operation.
  - Gathered insights with regards to the community structures and products of iPRODUCE.
  - Collaboratively tested and trained local communities to use the iPRODUCE digital platform and collected feedback for user experience and usability aspects.
- **Arduino Day Hackathon (25 March 2023)**
  - Presentation of the iPRODUCE project and collaboration opportunities.
  - Organised a training workshop and demonstrated the main functionalities of the OpIS platform tools.
- **Consultation workshop ambassadors (25 March 2023)**
  - Informed and created awareness about the Italian cMDFs structure and operation.
  - Gathered insights with regards to the community structures and products of iPRODUCE.
  - Collaboratively tested and trained local communities to use the iPRODUCE digital platform and collect feedback for user experience and usability aspects.

- **Hackathon of the Italian cMDF (20-21 April 2023)**
  - Organised a project presentation including the available tools on the OpIS platform and supporting members of the team to get more knowledge on better using the tools.
- **WIRED NEXT FESTIVAL of the Italian cMDF (6-7 May 2023)**
  - Event dedicated to innovation and the impact of digital technologies where the Italian cMDF were present with a booth explaining to the participants the technologies for prototyping also with the opportunities also of co-creation methodology with the tools developed in iPRODUCE.

Spanish cMDF

During the period from June 2022 to June 2023, the Spanish cMDF organised and participated in several events at AIDIMME facilities, universities, and public schools. The cMDF met with local partners, students, and people working in different fields, but who shared a common interest in co-creation. The objective was to detect bugs, receive valuable feedback, and improve all the OpIS tools to make them easier to use.

- **Workshop of the Spanish cMDF (1 June 2022)**
  - Presentation of user journey plan.
  - iPRODUCE tools discussion and proposes for better user experience.
  - Preparation of next AIDIMME´s booth in September planning training activities in the booth

- **Workshop of the Spanish cMDF (second round) (22 June 2022)**
  - Discussions on different possibilities for warm-up events and training activities in the Valencian Community

- **Training to product designers in EASD (15 December 2022)**
  - Presentation and practical usage of all the iPRODUCE tools.
  - Open discussion and feedback from the students and teachers.

- **Habitat Fair - Workshop with visitants to the fair and AIDIMME´s booth (20-23 September 2022)**
  - The aim was to showcase the iPRODUCE tools to furniture manufacturers and product designers in a face-to-face setting.
  - AIDIMME presented a speech to more than 100 people, mainly product designers and students, inviting them to see AIDIMME's prototypes and some training with the iPRODUCE tools.

- **Eurobrico Fair. Attending visitors to AIDIMME´s booth (4-6 October 2022)**
  - AIDIMME presented two co-designed products (prototypes): smart headboard and 3D printed components for creating structures
  - iPRODUCE tools and the OpIS platform were presented to the visitors.

- **Consultation Workshop Spanish cMDF+Ambassadors+Core Group (21 March 2023)**
  - Presentation of the iPRODUCE project and the concept of Social and collaborative Manufacturing.
  - Practical usage (training session) of all the tools in groups of 2-3 users.

- **Consultation Workshop Spanish cMDF+Ambassadors (14 March 2023)**

  - Discussion about organising a hackathon and how to conduct the training to external users
  - Review of the KPIs for the Spanish use cases.

- **Hackathon in a Vocational Training Centre (CIPFP) (20-21 April 2023)**
  - iPRODUCE project and tool presentations.
  - iPRODUCE tools usage during the competition.
  - Creation of 3D files and training in the iPRODUCE tools usage with them.
  - Creation of the physical product using specific materials and machinery.
  - Bug reporting from participants.

iPRODUCE Ambassador programme

In the context of engagement with local communities, iPRODUCE developed an Ambassador Programme as a way to actively involve maker and consumer champions in the collaborative manufacturing processes of the cMDFs. The programme defines the objectives of this activity, outlines a set of criteria for the identification of ambassadors, and provides different incentives for their involvement in the project activities. During the project lifetime, each cMDF has identified 3-7 Ambassadors, who have then been invited to participate in several project activities to collect their feedback and experience in the iPRODUCE concepts, processes, and tools.

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1. Introduction

This deliverable is D10.6 – Report on cooperation activities 3 of the iPRODUCE project, funded by the European Union's Horizon 2020 programme.

The objective of this deliverable is to provide a review of the different cooperation activities carried out within iPRODUCE and by its partners from July 2022 (31) to June 2023 (M42). A first report - *deliverable D10.4* - was submitted at M12 and covered the period of January 2020 (M1) to December 2020 (M12). A second report - *deliverable D10.5* - covering January 2021 (M13) to June 2022 (M30) was submitted at M30. Deliverable D10.6 is the third and final report that details engagement and cooperation activities covering the final year of the project which was submitted at (M36).

This is the third report which F6S has developed in the framework of Task 10.3 - Clustering and cooperation with relevant initiatives. The objective of this task is to identify and establish synergies with similar and/or complementary projects as well as the engagement and attraction that the project has reached. The report also covers any joint activities with makers' communities, consumer product companies and experts on co-creation and particularly user driven innovation.

Likewise, given the social nature of the project and related objectives, establishing synergies and cooperation with the project's target stakeholder groups is also important to promote the adoption of the iPRODUCE results.

Therefore, and within the framework of this deliverable, the cooperation activities carried out will be addressed from two perspectives: (1) cooperation between iPRODUCE and other external projects, initiatives and/or activities, and (2) cooperation involving specific iPRODUCE partners and stakeholders (mainly within the framework of the cMDF).

Within this deliverable, it covers the number and relevance of the collaboration and cooperation activities for the final year of the project. The iPRODUCE project has successfully continued its achievements in working with its sister projects - OPENNEXT, DIY4U and INEDIT as mentioned in section 2.1. The cMDFs are well established and have been conducting and involved in activities that deliver continued engagement, and cooperation.

This deliverable is structured into the following sections:

1. **Introduction**: the present section.
2. **Cooperation with projects and initiatives** reviews the engagement and cooperation activities carried out with several H2020 projects that are funded under the same topic as iPRODUCE or share similar themes/ concepts in the last year.
3. **Cooperation and engagement activities within iPRODUCE cMDFs**: presents a current overview of the cooperation and engagement activities carried out by the project's cMDFs in the last year.
4. **Final considerations**: presents a final reflection on the information presented in this deliverable.

2. Cooperation with projects and initiatives

Over the period covered by this report, iPRODUCE has continued to engage with the research and innovation projects it first established contact with at the beginning of the project. These are projects that share common objectives, topics, or target audiences.

Specifically, it has carried out several cooperation activities with its *sister* projects - the projects funded under the H2020 topic 'DT-FOF-05-2019 - Open Innovation for collaborative production engineering', as well as two other projects with which it shares common themes.

The objective and relevance of these inter-project cooperation activities is primarily two-fold: (1) to establish activities that can generate results of value and with an impact for one or more of the projects; and (2) to create awareness by leveraging the project's established networks of contacts, whether they be makers' communities, manufacturing companies and professionals in the co-creation domain, start-ups and SMEs, research organisations, or the public.

From this perspective, cooperation activities are intended to include, for example, the organisation of joint dissemination events and other exploitation opportunities with these projects in view of promoting iPRODUCE beyond the scope of the project.

Recalling, the sister projects of iPRODUCE are:

- ***DIY4U***: Open Innovation Digital Platform and Fablabs for Collaborative Design and Production of personalised/customised FMCG (Coordinator: SINTEF)
- ***INEDIT***: open INnovation Ecosystems for Do It Together process (Coordinator: ENSAM)
- ***OPENNEXT***: Company-Community Collaboration for Open-Source Development of products and services (Coordinator: TU Berlin)

Furthermore, iPRODUCE has also continued to engage with two other H2020 projects - *Pop-Machina* and *Reflow* - that are of particular relevance because of several partners that are common to iPRODUCE and these projects.

2.1. Cooperation with iPRODUCE's sister projects

The iPRODUCE project was also present at the ICE-IAMOT 22 conference which took place in Nancy, France from 20 June to 22 June.

IAMOT is a non-profit organization that brings together experts in the field of management of technology, innovation, and entrepreneurship to share their knowledge and experiences. The conference serves as a platform for presenting and discussing the latest research and developments in these areas.

This joint event was organised by the International Conference of Engineering (ICE) and the International Association for Management of Technology (IAMOT), on the topic of "Technology, Engineering, and Innovation Management Communities as Enablers for Social-Ecological Transitions".

iPRODUCE, together with the INEDIT, OPEN-NEXT, DIY4U, DIGIERRIN projects, organised a full day workshop on "*Open innovation, technologies & communities as enablers of socio-economical transition*", which was attended by approximately 250 participants.

Figure 1. Photo taken at ICE-IAMOT 22 conference (1)

Figure 2. Presentation at ICE-IAMOT 22 conference (2)

Throughout the first part of the workshop, the projects presented their approaches and achievements to date, whilst during the second part, the focus was on how the practices and actions put in place by the projects could transform industry and territories, starting with the development of new Manufacturing Demonstration Facilities (MDFs).

Manuel Sánchez from AIDIMME and Jérémy Keller from MATERALIA presented the cMDF approach from the iPRODUCE project. In the afternoon session at the Octroi space, Elie Abou Assis from Fablab VOSGES, demonstrated some of the outcomes of the initial operation of the French cMDF, showcasing the iPRODUCE *video* and networking with the more than 30 organisations illustrating their open innovation ventures.

The French cMDF showed the realisation of a wooden bike made within the framework of the project. The presentation showcased the innovative approach of the project, which focuses on developing new methods of production that are more sustainable and co-created.

Figure 3. iPRODUCE project presented at the ICE-IAMOT 22 conference (1)

Figure 4. iPRODUCE project presented at the ICE-IAMOT 22 conference (2)

During the 3 days, the main focal point of the event was on how management of technology, engineering and innovation can contribute to the social-ecological transitions covering not only product and process, but also changes in user practices, markets, policy, regulations, culture, infrastructure, lifestyle, and management of firms.

This conference was hosted by Université de Lorraine and organised by the ENSGSI (Engineering School on Innovation Systems) and the ERPI (Research Group on Innovative processes). It was a successful event, attracting more than 3,500 attendants.

Overall, the participation in the IAMOT conference was a great success. It provided an opportunity to showcase the innovative work being done by the team and to exchange ideas with other experts in the field.

On 5 December 2022, iPRODUCE and its sister projects – INEDIT, OPEN!NEXT, and DIY4U – met up in Aachen (Germany) for a 1-day event with the objective of knowledge exchange, discussing future synergies, and pathways for the sustainability of the projects. This event was delivered in hybrid format.

This event was hosted by the Institute for Industrial Management (FIR) at RWTH Aachen University, a partner in the INEDIT project. iPRODUCE was present and represented by its coordinator Manuel Sánchez and project partners Isabel Froes from Copenhagen Business School and Charalampos Tsotakis from Center for Research and Technology Hellas (CERTH) physically and virtually.

The morning session included an open panel discussion involving all four projects that each presented a brief summary of their project objectives and results to date. With all four projects in the final stages of their workplans, this event was a useful opportunity to discuss the outcomes achieved and how the results can be widely used by the different stakeholder groups.

Laszlo Hetey from the European Commission who is the Project Officer of the sister projects, deliver a presentation focusing on project exploitation (and sustainability) pathways that each project individually or jointly could follow. Lastly, there was also a presentation by the local NCP that presented some relevant upcoming opportunities of interest to all projects.

In the afternoon, the four projects discussed key topics related to exploitation challenges and opportunities post project completion. The active discussion led to a set of tasks, which the attended project partners have agreed to collaborate on in the upcoming months. It was summarised that, in addition to making the results more visible, the tasks' outcomes should also help increase the visibility of the platforms and other projects' results.

In conclusion, open innovation practices will continue to gain traction and thrive in today's competitive market where multiple actors operate in various consumer goods sectors. A key determinant of success, among other factors, is the ability of these actors to effectively meet the ever-evolving needs of consumers. This can be achieved through various means, including pre- and post-manufacturing approaches such as focus groups, tests, and surveys. However, there is also a growing opportunity for increased open innovation by actively involving users and consumers throughout the manufacturing value chain.

Looking ahead, collaborative manufacturing design facilities (cMDFs) are envisioned as key players in consolidating communities of open innovation manufacturing. These facilities will provide co-design and co-creation services to both end-users and manufacturers seeking to bring products and services to market that are better aligned with user requirements.

Figure 5. Participant (physical) attendance at the Aachen meeting

Figure 6. iPRODUCE project presented at the Aachen meeting

2.2. Cooperation and collaboration in the open competitions with other projects with similar objectives and themes

As part of WP6 – “Social Media-Enriched Engagement Strategies for Makers and Consumer Communities” and Task 6.4 – “Open Competitions on Consumer Products Innovation Challenges”, the iPRODUCE project delivered its Open Competition #3, which was the iPRODUCE Hackathon.

The iPRODUCE Hackathon was an intensive 3-day hybrid event held locally at each cMDF location as well as fully online. Participants were able to join individually or in teams of up to 3 people to explore the iPRODUCE OpIS platform to unleash their creative potential to develop a product idea. One individual or team was awarded at each cMDF location (5) as well as a team participating online, with a total of 6 winners at the end of the Hackathon.

iPRODUCE has forged ongoing partnerships with three other esteemed H2020-funded projects - TRINITY, greenSMEhub, and KYKLOS 4.0 - in anticipation of the highly anticipated Open Competition #3 - Hackathon. Through extensive collaboration with key stakeholders in the manufacturing industry, we have generated significant buzz and achieved a remarkable turnout. This has been further amplified by our joint promotion of the event across various EU projects, with F6S serving as a delivery partner that shares our collective goals. As evidenced by the screenshots below, our shared efforts have resulted in a highly successful and productive event.

Figure 7. Screenshot of iPRODUCE Hackathon promotional posts by projects (1)

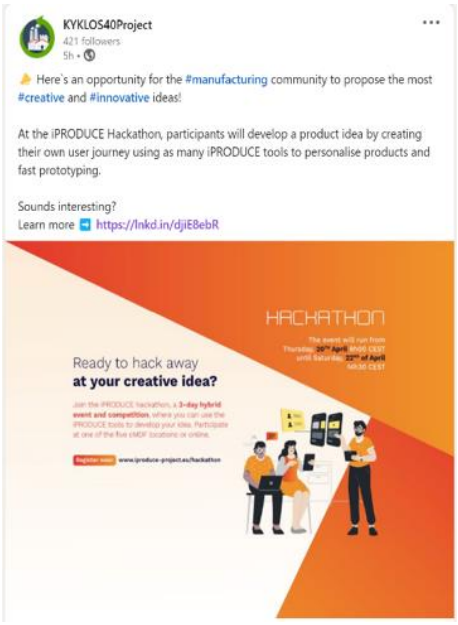

Figure 8. Screenshot of iPRODUCE Hackathon promotional posts by projects (2)

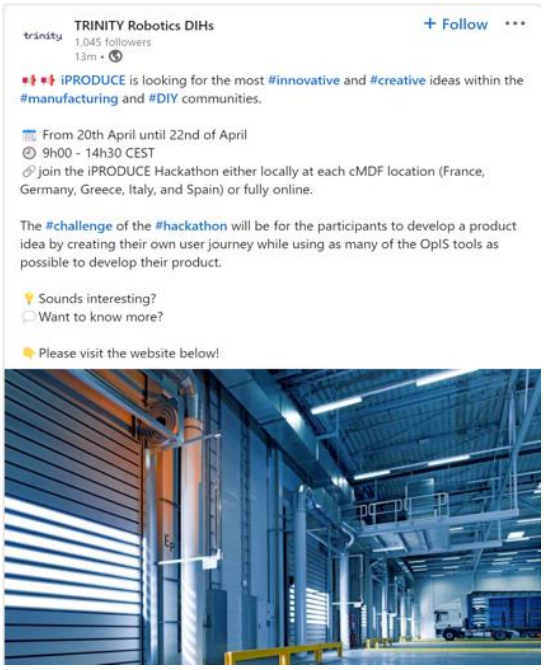

Figure 9. Screenshot of iPRODUCE Hackathon promotional posts by projects (3)

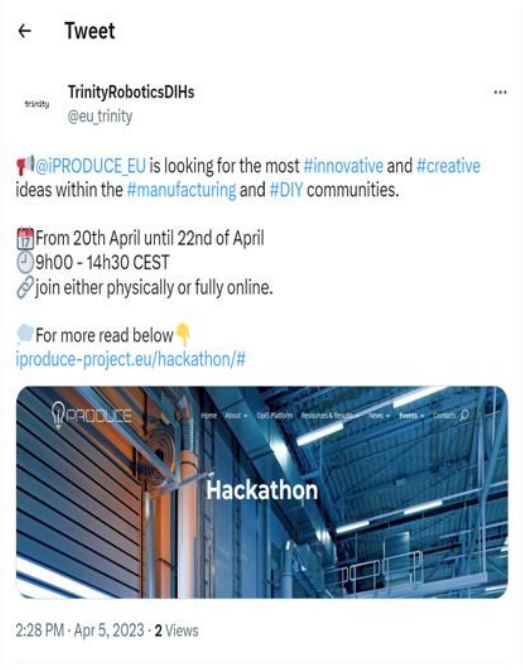

Figure 10. Screenshot of iPRODUCE Hackathon promotional posts by projects (4)

3. Cooperation and engagement activities within iPRODUCE cMDFs

As mentioned in the first two deliverables, cooperation and engagement is also addressed from the perspective of the activities that are carried out by the cMDFs and their respective partners. From July 2022 to June 2023, the cMDFs have remained diligent in engaging with different stakeholders to provide information about the iPRODUCE project, and to mobilise them as active participants in the cMDF structure and activities.

In the months covered by this report, it can be seen from each cMDF that activities have continued face-to-face with cMDF members and potential partners with a significant interest in opportunities for cooperation.

The sections below highlight the cooperation and engagement activities within the five iPRODUCE cMDFs.

3.1. France cMDF

Throughout the period covered by this report, the French cMDF organised several activities with local stakeholders, as summarised in Table 1.

Table 1. List of the France cMDF cooperation activities

Date	Topic	
06 July 2022	Working session on the winner's project	
30 September 2022	Workshop French cMDF Business plan	
06 February 2023	Consultation workshop	
20-22 April 2023	Hackathon	

3.1.1. Working session on the winner's project

During this activity, the members of the French Core Group accompanied the three winners of the "iPRODUCE My mobility" contest. The session began with a presentation of each Core Group member and their respective skills. Following that, the winners introduced themselves and presented their projects, as well as their expectations regarding the iPRODUCE project and the partners present.

Discussions then took place between the winners and the Core Group members, and an action plan was created to support and guide the winners throughout the project. In addition, a channel was created to facilitate communication and exchanges between the members.

The activity allowed the Core Group members to provide valuable support and guidance to the winners, and to establish a strong collaboration between all parties involved. The channel served and is still serving as a useful tool for ongoing communication and collaboration throughout the project.

3.1.2. Workshop French cMDF Business Plan

During this activity, the members of the Core Group met to discuss a possible business model for the French cMDF following the completion of the iPRODUCE project. All Core Group members were present, and several solutions were discussed, including self-financing by the Core Group, a subscription-based model, and paid services.

It was decided that it would be wise to consider a funding model that combines both public financing for certain activities and revenue generated by services provided by the cMDF. The person responsible for maintaining the platform and overseeing the activity of the French cMDF will be compensated for their efforts by the other partners.

The activity allowed the Core Group members to explore different business models and come to a decision that best suits the needs and goals of the cMDF. The proposed funding model will allow the cMDF to continue to provide valuable services to its clients while also remaining financially sustainable in the long term.

3.1.3. Consultation workshop

This activity was designed to showcase the OpIS platform and its collaborative tools. The event was organized by Materalia, ExcelCar, and The FabLabVosges. The FabLab hosted a group of students who were introduced to the iPRODUCE project, its concepts, partners, and ideas. After the general introduction, all the tools were explained and presented to the students.

A project was then assigned to the students to work on while using the OpIS platform to help them co-create. The activity was interesting because it was the first time that people from outside the project were able to use and evaluate a selection of tools. The students mainly used the marketplace to share their projects and communicate with each other.

The activity allowed the students to experience and test the OpIS platform and collaborative tools. The feedback received from the students was valuable to further improve the platform and fix any remaining bugs. The event also served as an opportunity to showcase the iPRODUCE project and its goals to a wider audience, and to highlight the importance of collaborative innovation in the mobility sector.

3.1.4. Hackathon

In the iPRODUCE hackathon, the French cMDF hosted two teams (La GreenTeam and FabLabTeam) within the FabLab Vosges. Before starting to build their projects on the OpIS platform, the teams were given an explanation of the platform and its tools and the project. During this session, all the tools were updated and working, so the teams could fully utilize them.

Both teams came up with projects related to mobility, with the winning team designing a trailer for bikes. Both teams also reported the bugs they found on the OpIS platform. Overall, it was interesting to have the two teams work for two days on the platform and use all the OpIS tools to build their projects.

The hackathon was considered a success as it allowed the teams to experience and test the OpIS platform and tools while building their mobility projects. The feedback received from the teams will be

used to improve the platform and to further enhance the collaborative innovation process in the mobility sector.

3.2. German cMDF

Throughout the period covered by this report, the German cMDF organised several activities with local stakeholders, as summarised in Table 3.

Table 2. List of the German cMDF cooperation activities

Date	Topic	
12 September 2022	Produktschmiede Workshop with Lisios	
25 September 2022	Produktschmiede Workshop with Vintus	
08 November 2022	Webinar MEDICA	
09-10 November 2022	Greener Manufacturing Show	
20 March 2023	Webinar Cycling Europe	
16 May 2023	iPRODUCE at regional ZDI Robot Competition	

3.2.1. Produktschmiede Workshop with Lisios

Lisios is a start-up, which plans to enter the market with a device that detects leakages in water pipes of buildings. The device shall be easily installable at a central position. It measures water flow and uses AI to detect pipe breaks and micro leaks. They performed the Produktschmiede Workshop with the cMDF to prototype more details about the construction of the device prototype.

The two Lisios founders visited Makerspace Bonn. The day started with a guided tour through Makerspace Bonn. During this session, Lisios and the Produktschmiede partners explored which production machinery would work for the Lisios prototype. After that, the prototyping began. A prototype was iteratively produced in a combination of 3D printing and discussions. At the end of the day, the partners agreed that Makerspace Bonn will produce a final prototype in the aftermath of the workshop.

3.2.2. Produktschmiede Workshop with Vintus

Vintus is a start-up company that is planning to introduce an intelligent desk chair into the market. The desk chair has movable parts, such as the seat or the armrests, which can be moved to trigger movements of the person sitting on it. The chair's goal is to initiate more movements for people who sit a lot during their workday, for a better health setting. Vintus wanted to use the Produktschmiede service for exploring with the cMDF how a lower-priced solution for the same goal of healthier conditions at desks could look like.

Two persons from FIT and one person from Makerspace Bonn went to the Vintus office to deliver the workshop with the two Vintus founders. The Makerspace Bonn acted as participant in all sessions, providing an unbiased outside point of view on the domain. At the same time, this participation helped him better prepare the planned second day of the Produktschmiede service. The two FIT representatives shared their job to act as moderator and additional participant.

Figure 11. Produktschmiede Workshop with Vintus, German cMDF

3.2.3. Webinar MEDICA

Prior to the Medica Healthcare exhibition, a series of webinars and events was organised. iPRODUCE staged a matchmaking with the Enterprise Europe Network and also exhibited the project. A webinar completed the appearance, which featured the following sessions:

- The Greek's cMDF products presented by AIDPLEX
- The Product Forge success story presented by FIT
- Information and outlook provided by CBST
- The session was organised and moderated by ZENIT.

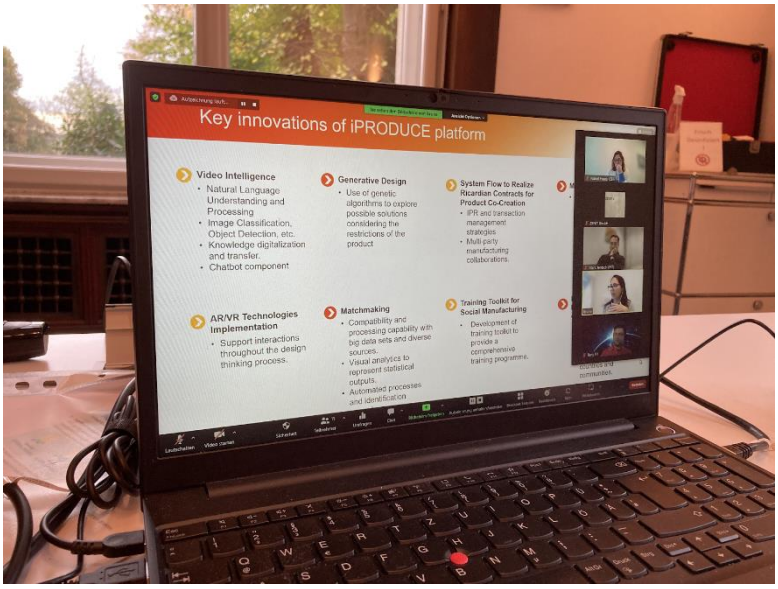

Figure 12. Photo of webinar organised and moderated by ZENIT (1)

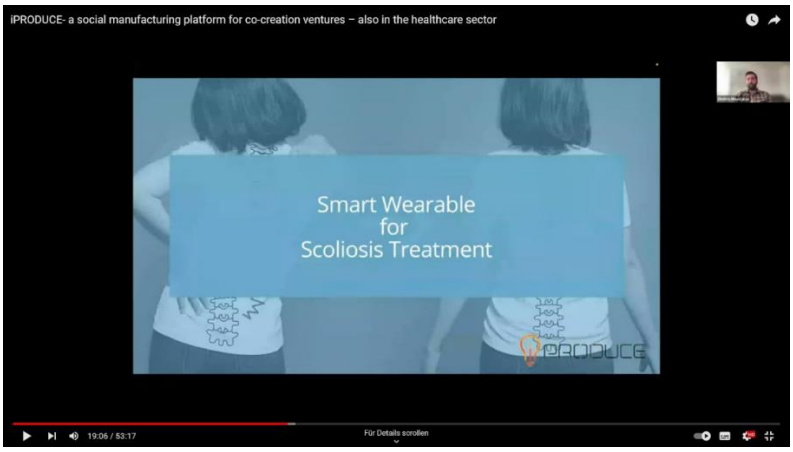

Figure 13. Photo of session organised and moderated by ZENIT (2)

Figure 14. Photo of Greek cMDF products presented by AIDPLEX

3.2.4. Greener Manufacturing Show

The cMDF through partner ZENIT exhibited iPRODUCE together with the Enterprise Europe Network at the Greener Manufacturing show in Cologne during their matchmaking session. Companies participated to source the latest technologies and solutions and find new partners to help achieve their sustainability targets. 179 participants from 29 countries signed up for the matchmaking session. ZENIT made use of the synergies and exhibited the iPRODUCE project in this context to inform start-ups and SMEs about the opportunities offered by iPRODUCE on a local but also cross-border level to realise their product ideas.

Figure 15. ZENIT present with a matchmaking stand of the Enterprise Europe Network (1)

Figure 16. ZENIT present with a matchmaking stand of the Enterprise Europe Network (2)

3.2.5. Webinar Cycling Europe

In scope of the Cycling Europe trade fair, matchmaking event were organised, in which participants had the opportunity to meet their future business and project partners in pre-scheduled b2b meetings. The German cMDF organised a slot to present iPRODUCE results, featuring:

- The Wood Bike Project presented by VOSGES
- The Product Forge success story presented by FIT
- Information and outlook provided by CBS

The session was organised and moderated by ZENIT.

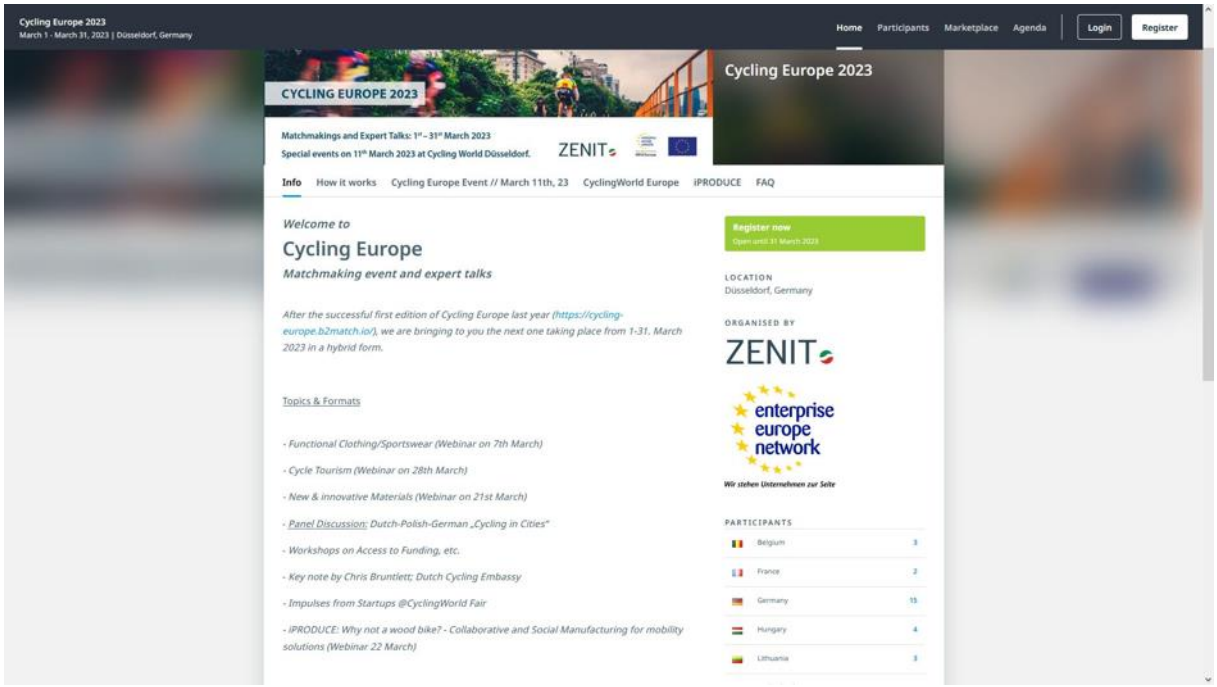

Figure 17. Promotion of the Webinar Cycling Europe event

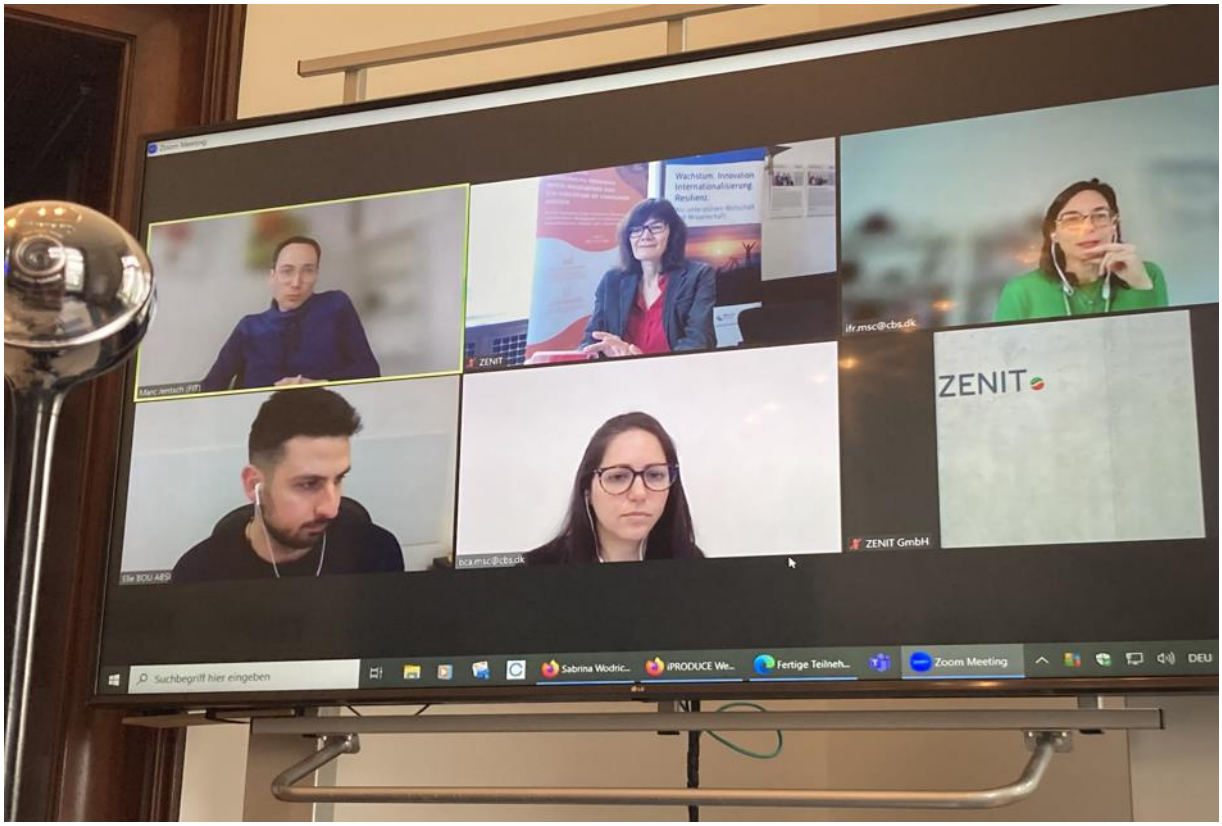

Figure 18. ZENIT presenting iPRODUCE results at the Cycling Europe webinar

3.2.6. iPRODUCE at regional ZDI Robot Competition

The project was exhibited at the regional competition of the ZDI (Future through Innovation) robot competition in the category robot game in Neuss, Germany on 16 May 2023. The participating teams were from schools in the region. Partners were the regional ZDI Centre and the vocational college foe technology and informatics in Neuss as well as an industry partner. Synergies with the event were used to raise awareness for the opportunities developed in iPRODUCE among young people.

Figure 19. Raising awareness for iPRODUCE among students at robotic competition in Neuss, Germany

3.3. Greece cMDF

Throughout the period covered by this report, the Greek cMDF organised several activities with local stakeholders, as summarised in Table 4.

Table 3. List of the Greece cMDF cooperation activities

Date	Topic
23 November 2022	Greek cMDF Consultation Workshop with Ambassadors I, training workshop
03 December 2022	Greek cMDF Consultation Workshop with Ambassadors II, training workshop
08 February 2023	Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario, training workshop
20-22 April 2023	Hackathon of the Greek cMDF, training workshop

3.3.1. Greek cMDF Consultation Workshop with Ambassadors I, training workshop

On 23 November 2022, the Greek cMDF co-organised a consultation workshop with an ambassador. The primary goal of the workshop was to foster co-design and co-creation activities by leveraging a range of innovative technologies, while reinforcing the ambassador's understanding of the local cMDFs structure and operation.

The ambassador's engagement commenced with a tour of Aidplex's state-of-the-art facilities. This experience allowed her to explore the cutting-edge infrastructure dedicated to advanced manufacturing and IoT applications. Subsequently, she actively participated in a comprehensive training workshop that provided a step-by-step demonstration of the entire manufacturing process for a splint designed to aid in fracture recovery. The workshop covered every aspect, including 3D design, 3D printing and post-processing procedures, enabling the ambassador to gain practical insights and knowledge in utilising these technologies for medical purposes, by integrating the available tools of the OpIS platform.

As a result of the workshop, several significant benefits and outcomes emerged. First, the ambassador gained valuable experience in utilising digital tools and technologies, expanding her skill set and staying at the forefront of innovative practices within the medical field. Secondly, the workshop provided an opportunity to collect feedback on the user experience and usability aspects of the iPRODUCE OpIS platform. Lastly, the workshop facilitated insights into the community structures and products of iPRODUCE, fostering stronger connection and collaboration between the ambassador and the local community.

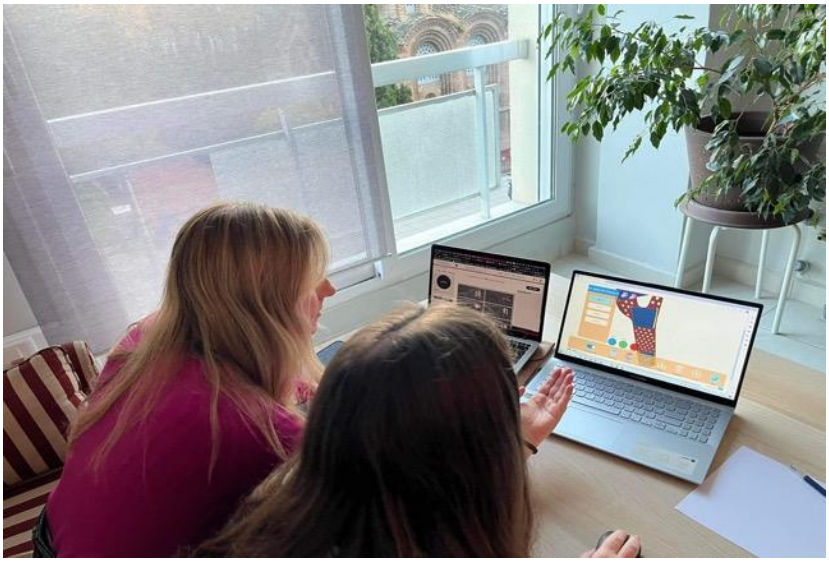

Figure 20. Greek cMDF Consultation Workshop with Ambassadors I, training workshop of Greek cMDF, Demonstration of OpIS platform and of AR/VR Toolkit

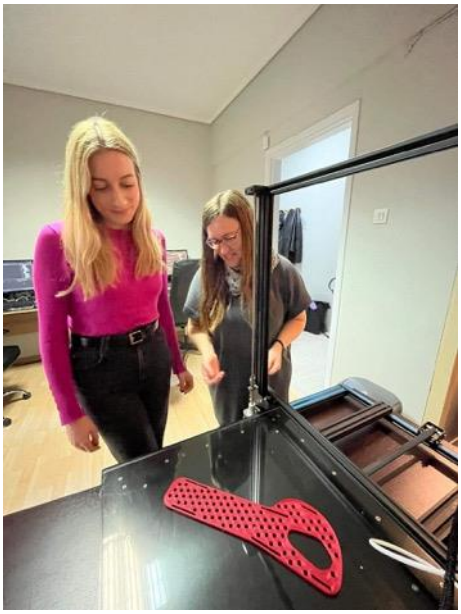

Figure 21. Greek cMDF Consultation Workshop with Ambassadors I, training workshop of Greek cMDF, Demonstration of 3D Printing Process of UC2: Splint for Fractures (1)

Figure 22. Greek cMDF Consultation Workshop with Ambassadors I, training workshop of Greek cMDF, Demonstration of 3D Printing Process of UC2: Splint for Fractures (2)

Figure 23. Greek cMDF Consultation Workshop with Ambassadors I, training workshop of Greek cMDF, Demonstration of 3D Printing Process of UC2: Splint for Fractures (3)

3.3.2. Greek cMDF Consultation Workshop with Ambassadors II, training workshop

On 3 December 2022, the Greek cMDF organised a virtual consultation workshop specifically designed for a veterinarian ambassador, who specialises in treating small pets. The objective of the workshop was to showcase the vast capabilities of digital technologies in promoting co-design and co-creation activities, while simultaneously familiarising the ambassador with the Greek cMDF structure and operation.

Despite the virtual format, the workshop seamlessly provided the ambassador with a stimulating experience. Through a meticulously designed virtual tour, the ambassador had the opportunity to explore the facilities of Aidplex and CERTH. The virtual journey provided the ambassador with a deep understanding of the cutting-edge infrastructure dedicated to 3D printing and its potential application in the medical field for pets. During the workshop, the ambassador actively participated in a training session that demonstrated the manufacturing process of custom splint tailored for pets.

A pivotal component of the workshop was the introduction of the iPRODUCE OpIS platform to the ambassador, which he used to co-create a splint for pets with the available tools. This virtual engagement highlighted the potential of digital technologies to revolutionise medical practices in the context of veterinary care for pets.

Overall, the virtual consultation workshop provided a unique and engaging opportunity to test and train local communities on the use of digital tools. The workshop facilitated the gathering of valuable feedback on usability aspects of the iPRODUCE OpIS platform, ensuring its continuous improvement and optimization.

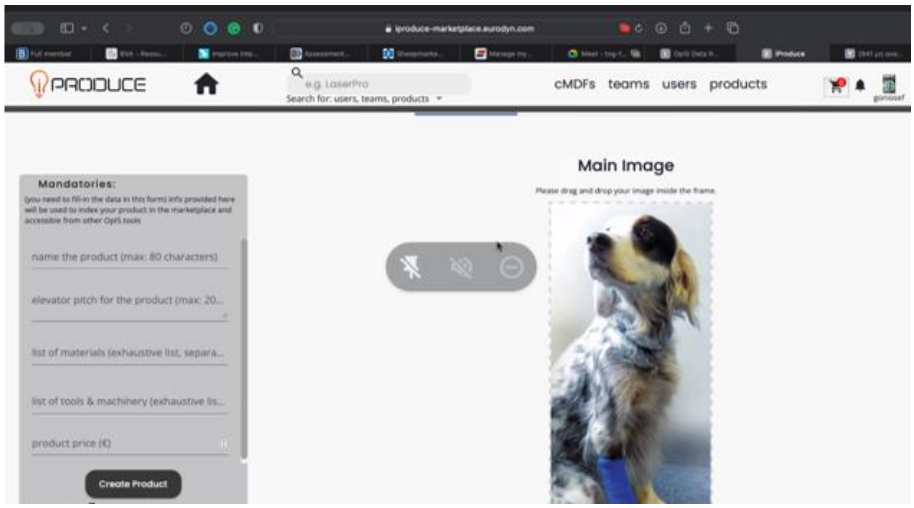

Figure 24. Greek cMDF Consultation Workshop with Ambassadors II, training workshop of Greek cMDF, Demonstration of OpIS platform and of Marketplace

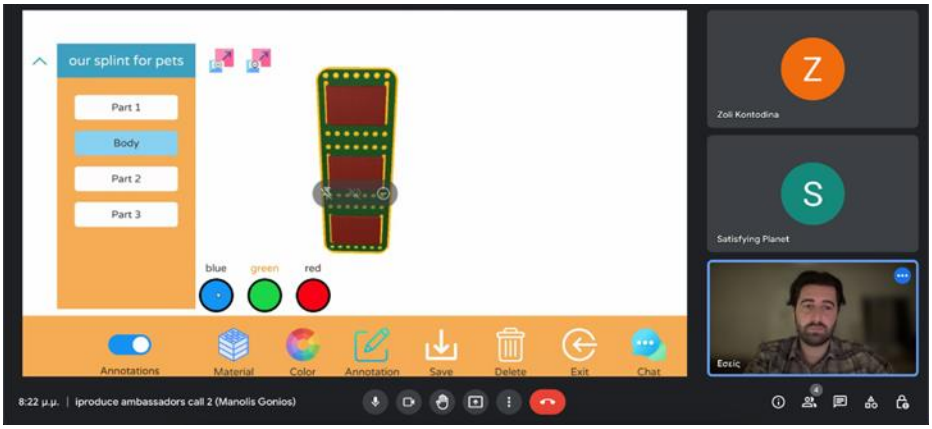

Figure 25. Greek cMDF Consultation Workshop with Ambassadors II, training workshop of Greek cMDF, Demonstration of OpIS platform and of AR/VR Toolkit

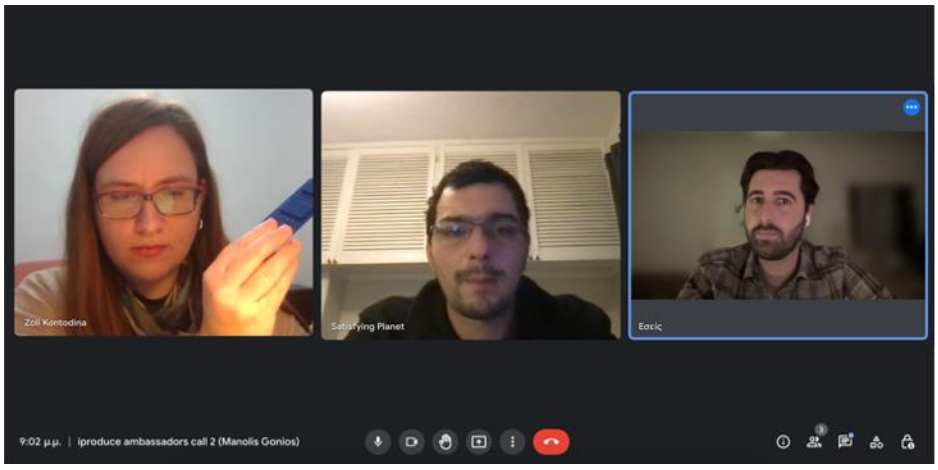

Figure 26. Greek cMDF Consultation Workshop with Ambassadors II, training workshop of Greek cMDF

3.3.3. Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario, training workshop

On 8 February 2023, the Greek cMDF, in collaboration with the members of the iPRODUCE of the iPRODUCE consortium, took the lead in co-organising a training workshop for three local stakeholders of the i4byDesign Competence Centre. The primary objective of the workshop was to demonstrate the user journey on the OpIS platform, specifically focusing on a use case scenario related to customised face shields.

During the workshop, the i4byDesign stakeholders had the opportunity to explore the OpIS platform and delve into its features and functionalities. The platform served as a collaborative space, enabling makers, manufacturers, and possible consumers to come together, share knowledge, exchange ideas, and contribute to the design and fabrication of the product.

Overall, the training workshop provided valuable insights into how the OpIS platform can empower the users to drive the digital transformation of manufacturing companies. It demonstrated the collaborative potential of the platform and its role in fostering innovation, efficiency, and sustainability within the manufacturing ecosystem to boost co-design and co-creation activities. By leveraging the OpIS platform,

stakeholders can contribute to the open-source movement and promote the availability of essential equipment and products.

Figure 27. Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario, training workshop of Greek cMDF and the members of the iPRODUCE consortium

Figure 28. Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario, training workshop of Greek cMDF and the members of the iPRODUCE consortium (1)

Figure 29. Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario, training workshop of Greek cMDF and the members of the iPRODUCE consortium (2)

Figure 30. Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario, training workshop of Greek cMDF and the members of the iPRODUCE consortium (3)

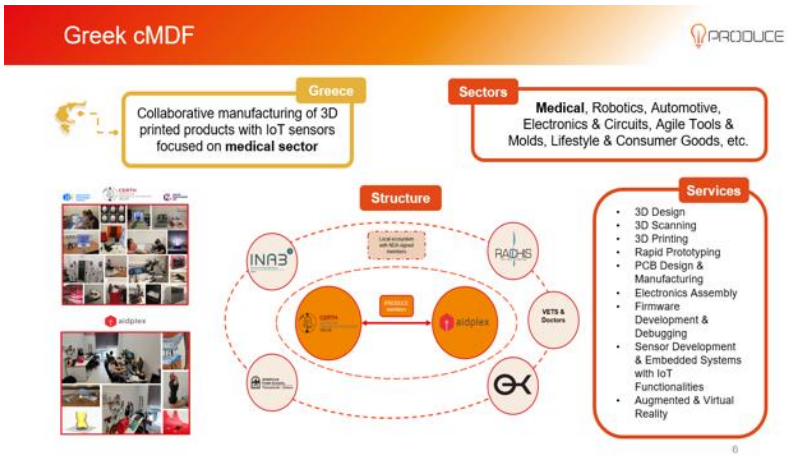

Figure 31. Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario, Greek cMDF structure presentation

Figure 32. Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario, UC4: Customised Face Shields

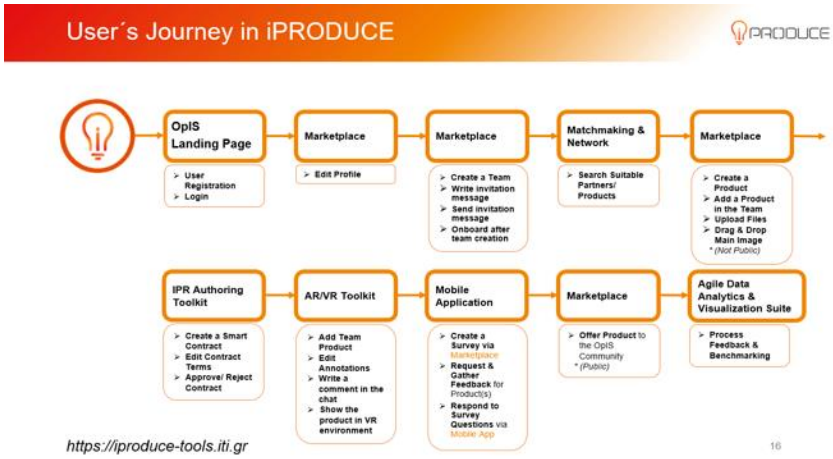

Figure 33. Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario, User Journey

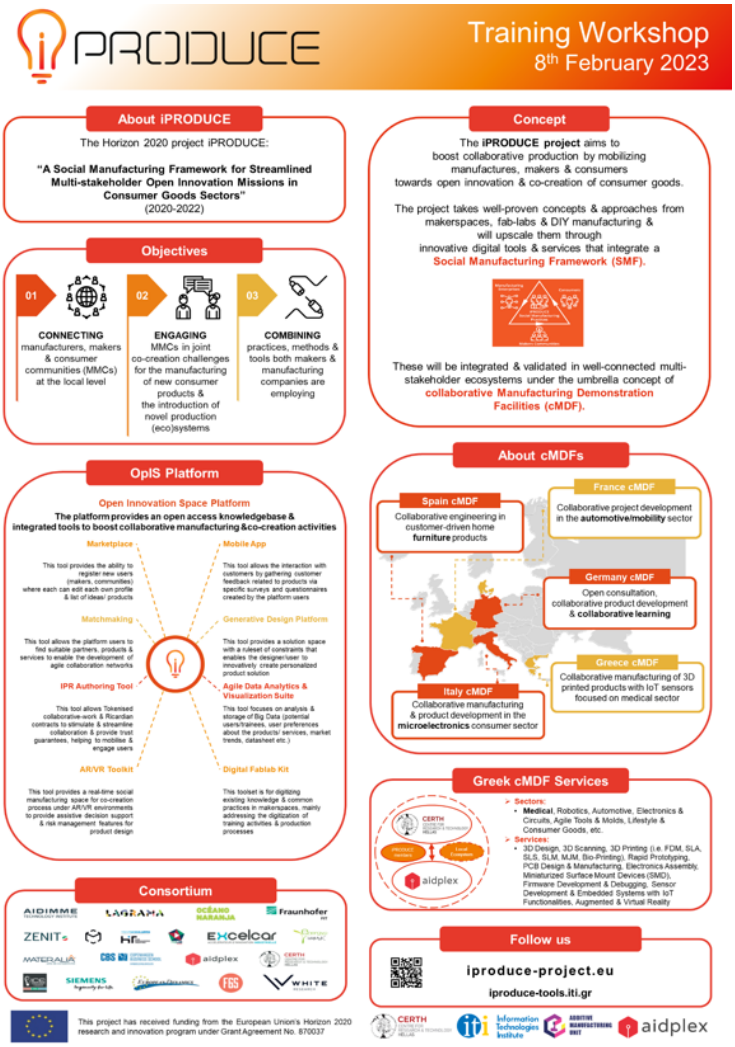

Figure 34. Flyer of the training workshop "Walkthrough of the iPRODUCE Platform & Integrated Tools through a Use Case Scenario"

3.3.4. Hackathon of the Greek cMDF, training workshop

The Greek cMDF hackathon activities took place at OK!Thess premises on 21-22 April 2023. Five teams participated in the event and showcased their innovative ideas utilising the tools available on the OpIS platform. The teams presented a range of creative projects, including a water bottle bike holder, a 3D printed smart luminous artifact, an innovative moss pole for supporting plants, a standing desk accessory, and an easily 3D printed bird feeder.

Each team used various features of the OpIS platform, such as the Marketplace. Matchmaking, IPR Authoring Tool, AR/VR Toolkit, Agile Data Analytics & Visualization Suite, and the Mobile App. They leveraged these tools to develop, refine, and test their ideas, collaborating with other users and finding suitable teammates. The participants also reported bugs and suggested improvements to enhance the platform's functionalities.

The hackathon demonstrated the power of the OpIS platform facilitating collaboration, idea generation, and product development. It provided an opportunity for participants to showcase their creativity,

problem-solving skills, and utilisation of digital tools. The event highlighted the potential of social manufacturing and the role of the OpIS platform in driving innovation, fostering collaboration, and empowering makers, manufacturers, and consumers to bring their ideas to life.

Figure 35. Hackathon of the Greek cMDF, training workshop (1)


Figure 36. Hackathon of the Greek cMDF, training workshop (2)


Figure 37. Hackathon of the Greek cMDF, training workshop (3)


Figure 38. Hackathon of the Greek cMDF, training workshop (4)


Figure 39. Hackathon of the Greek cMDF, training workshop (5)


Figure 40. Hackathon of the Greek cMDF, training workshop (6)


Figure 41. Hackathon of the Greek cMDF, training workshop (5)


Figure 42. Hackathon of the Greek cMDF, training workshop (6)

3.4. Italian cMDF

Throughout the period covered by this report, the Italian cMDF organised several activities with local stakeholders, as summarised in Table 5.

Table 4. List of the Italian cMDF cooperation activities

Date	Topic	
September 2022 – March 2023	i-NOVATION Challenge	
29 November 2022	Co-Creation Hackathon	
29 November 2022	Consultation workshop ambassadors' workshop I	
25 March 2023	Arduino Day Hackathon	
25 March 2023	Consultation workshop ambassadors' workshop II	
27 April 2023	iPRODUCE Hackathon	
6-7 May 2023	Wired Next Festival	

3.4.1. i-NOVATION Challenge

The Italian cMDF held a competition called i-NOVATION, inviting participants to submit a project idea related to mechanics, mechatronics, electronics, consumer products, or design. There were eight submissions from a research centre, an SME, and groups of individuals totalling 19 people. The competition awarded three winners: EEGMate, ONEBra, and Myamo. The winning teams received a prize that included online training, a promotional video, a guided tour of the facilities, support by prototyping experts, use of the cMDF labs, and coaching on the entrepreneurial idea.

Figure 43. Open Competition flyer of the Italian cMDF (1)

Figure 44. Open Competition flyer of the Italian cMDF (2)

3.4.2. Co-Creation Hackathon

The Co-Creation Hackathon had the following objectives: to present the iPRODUCE project; to develop Hardware and Software solutions for servo-assisted cradle control (use-case # 1); to expand the Italian co-creation community; to engage industries potentially interested to be part of the community; to train the group with the OpIS tools; to test the OPIS platform and to disseminate iPRODUCE project results.

The event was organized by Trentino Sviluppo, Hub Innovazione Trentino and Fablab - Università di Trento.

The venue was selected for the large spaces that is suitable for this type of event, including the possibility of making presentations and for the presence of a private office where the jury could meet to select the winning team.

The target groups were selected with the help of the Fablab of the University of Trento. With the planned objectives, it targeted people skilled in electronic and mechanical areas. Moreover, Trentino Sviluppo and Hub Innovation Trentino targeted industry that were potentially interested to be part of the cMDF Italy and that could be interested to industrialise use case # 1.

The main outcome was several gathered ideas of the servo-assisted cradle control and “smart” cradle functionalities developed by the teams.

The involved stakeholders were mainly interested in the co-creation approach. For the industries, the main interest was the methodology adopted for the creation of new ideas and for the wood carpentry, the results achieved by the teams together with the possibility offered by developing boards, both mechanical and electrical, to give added value to their products.

There was relevant feedback from the target groups involved: the students feeling was very positive with the initiative, nevertheless the experience with the OpIS tools was challenging mainly due to the user experience and the fact that many tools were not fully working at the time of the demonstration. The industry had the opportunity to get in contact with students that have interesting competence in product development and to get know how on latest tools for idea creation and co-development.

Figure 45. Co-Creation Hackathon of the Italian cMDF (1)

Figure 46. Co-Creation Hackathon of the Italian cMDF (2)

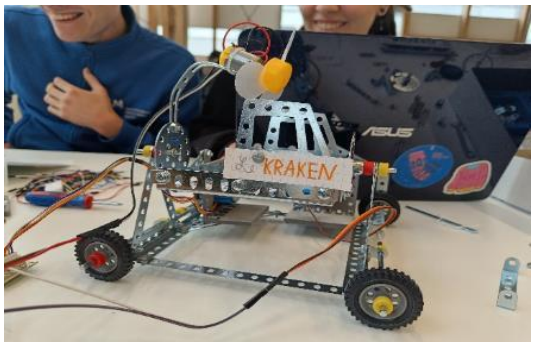

Figure 47. Co-Creation Hackathon of the Italian cMDF (3)

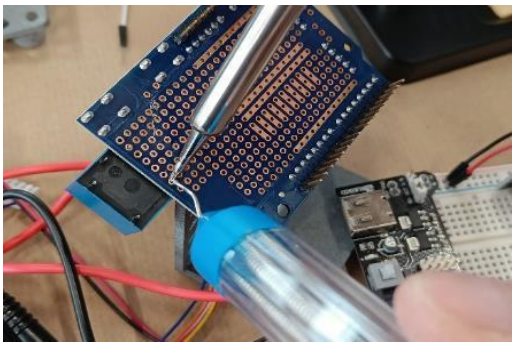

Figure 48. Co-Creation Hackathon of the Italian cMDF (4)

Figure 49. Co-Creation Hackathon of the Italian cMDF (5)

Figure 50. Co-Creation Hackathon of the Italian cMDF (6)

Figure 51. Co-Creation Hackathon of the Italian cMDF (7)

Figure 52. Co-Creation Hackathon of the Italian cMDF (8)

A post event *video* was released. Communication activities were coordinated by the organiser and used several media channels such as a *Press Release*, and *News piece*:

Figure 53. Co-creation Hackathon flyer of the Italian cMDF

3.4.3. Consultation workshop ambassadors workshop I

The consultation workshop had the following objectives: inform and create awareness about the Italian cMDFs structure and operation; accelerate the development of iPRODUCE collaborative manufacturing processes and gather insights with regards to the community structures and iPRODUCE OpIS tools.

The event was organised by Trentino Sviluppo, Hub Innovazione Trentino. The targets group were selected on the basis of their potential to be part of the cMDF Italy and that could be interested in industrialising the use cases.

The structure adopted for the workshop was: presentation of the iPRODUCE project, the Italian cMDF and the result so far achieved; presentation of OpIS tools with live demo and gathering opinions and suggestions.

The involved stakeholders were mainly interested in the cMDF network in the facilities and equipment available for product development. The fablab was interested to join the Italian cMDF, to be updated on the project outcomes, of future events and of new co-creation opportunities. The industries were interested mainly in networking in the terms to understand better “who does what”, in order to be ready in new product development. Secondly, they had the opportunity to have a live demo of the OpIS tools.

The suggestions collected were the following: to be updated with a newsletter about all cMDF results, activities, events, and opportunities; to deploy a more user friendly OpIS platform, with specific video tutorial of the entire process flow and for each tool; to have the possibility to buy/sell products on the marketplace and to add co-creation funding opportunities such as call for proposals.

The results achieved from activity were successful and helped gather many suggestions. The main challenge was to engage the industries and explain the added value of the iPRODUCE project results.

Figure 54. Consultation workshop of the Italian cMDF (1)

Figure 55. Consultation workshop of the Italian cMDF (2)

3.4.4. Arduino Day Hackathon

The Arduino Hackathon had the following objectives: to present iPRODUCE project; to develop Hardware and Software solutions for a watering system control (use-case # 2) with Arduino platforms and a series of sensors, actuators and piping systems; to expand the Italian co-creation community; to engage industries potentially interested to be part of the community; to train the group with the OpIS tools; to test the OpIS platform and to disseminate iPRODUCE project results.

Figure 56. Arduino Day Hackathon flyer of the Italian cMDF

The event was organised by Trentino Sviluppo and Hub Innovazione Trentino with the support of Fablab - Università di Trento and MUSE.

The target group was selected with the help of MUSE and the Fablab of the University of Trento. With the planned objectives, it was decided not to target a person with specific skills. Hub Innovation Trentino targeted industry that were potentially are interested to be part of the cMDF Italy and that could be interested to industrialize use case # 2.

A warmup event was planned during the event with the aim to inform, increase the awareness and familiarize with iPRODUCE. Different audiences were present. It was promoted via the channel listed above. The structure adopted followed this sequence, mainly due to the participation audience and type of event: presentation of the iPRODUCE project, the consortium, the objectives, the Italian cMDF and the result so far achieved.

The main outcome was several gathered ideas of the “smart” watering systems developed by the teams, starting from basic functionalities to next steps in the area of AI technologies. The involved stakeholders were mainly interested in the co-creation approach. For the industries, the main interest was the methodology adopted for the creation of new ideas and the application in their operational fields. The results achieved by the teams together with the possibility offered by developing boards, both mechanical and electrical, software and future strategies have a real potential to provide added value to their products.

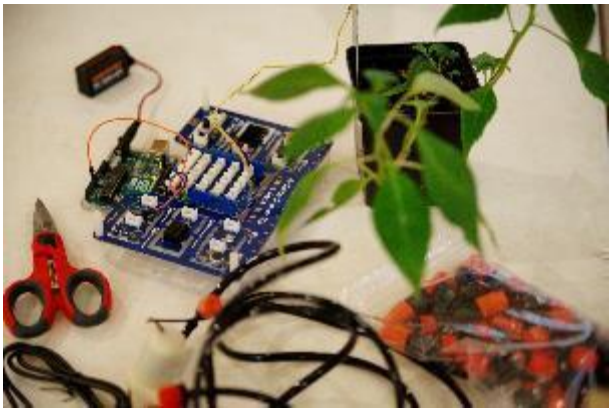

Figure 57. Image of Arduino Day Hackathon (1)

Figure 58. Image of Arduino Day Hackathon (2)

Figure 59. Image of Arduino Day Hackathon (3)

Figure 60. Image of Arduino Day Hackathon (4)

Figure 61. Image of Arduino Day Hackathon (5)

Figure 62. Image of Arduino Day Hackathon (6)

Figure 63. Image of Arduino Day Hackathon (7)

Figure 64. Image of Arduino Day Hackathon (8)

Figure 65. Image of Arduino Day Hackathon (9)

Figure 66. Image of Arduino Day Hackathon (10)

3.4.5. Consultation workshop ambassadors' workshop II

The consultation workshop event was planned during the Co-Creation Hackathon event with the aim to inform and create awareness about the Italian cMDFs, to accelerate the development of iPRODUCE collaborative manufacturing processes and finally to gather insights with regards to the community structures and iPRODUCE OpIS tools. The structure adopted followed this sequence: presentation of the iPRODUCE project, the Italian cMDF and the result so far achieved; presentation of OpIS tools with live demo and gathering opinions and suggestions.

The involved stakeholders were mainly interested in the cMDF network, particularly the facilities and equipment available for product development. The fablab was interested in joining the Italian cMDF, to be updated on the project outcomes, future events and of new co-creation opportunities. The industries were primarily interested in networking to gain a better understanding of "who does what," with the goal of being prepared for new opportunities. The suggestions collect are the following: to be updated with a newsletter about all cMDF results, activities, events, and opportunities; to deploy a more user friendly OpIS platform, with specific video tutorial of the entire process flow and for each tool; to have the possibility to buy/sell products on the marketplace and to add co-creation funding opportunities such as call for proposals.

The results achieved from the activity is successful and helped gather many suggestions.

The main challenge was to engage the industries and explain the added value of the iPRODUCE project results.

Figure 67. Consultation workshop of the Italian cMDF

3.4.6. iPRODUCE Hackathon

The Italian cMDF organised the hackathon in 3 different locations, FabLab UniTN (Trento - TN), Energy @ Work (Monopoli - BA) and ProM Facility (Rovereto - TN).

A total of 11 groups registered to participate but only four teams completed the two days' experience and decided to pitch their ideas. However, it was a fruitful experience from the feature request, general improvements, and bug reporting points of view.

Participants didn't show up with a specific product or idea in mind prepared before the hackathon, so the cMDF proposed to work on some ideas, in particular a smart irrigation system for household flowerpots, that was used as a use-case in previous cMDFs events.

The four groups pitching were: Tremendous team, Reshma Penjerla, RioProM and Crop Coders.

The first two participated at the Energy @ Work location individually, but in the development of their design ideas and testing of the platform decided to create a group using the marketplace, sign an IPR contract and to develop the "IoT irrigation system" jointly. They were able to use all the tools that were put at disposal but the AR/VR one, since they didn't have 3D design skills. In the end, they pitched separately, each one focusing on a specific topic to differentiate their presentation.

Figure 68. iPRODUCE platform, product created by the Reshma Penjerla

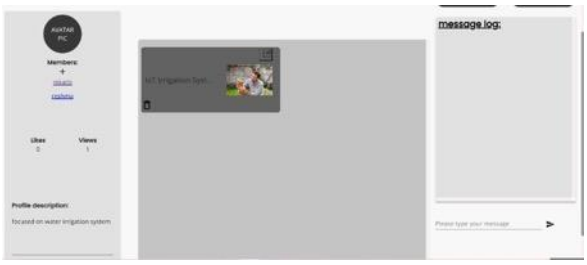

Figure 69. iPRODUCE platform, group created by Tremendous Team and Reshma Penjerla

The RioProM group participated at ProM Facility venue, they designed a floating barge for a water pump, intended to prevent failures with small DIY electronics equipment usually used by makers. They were able to use marketplace, matchmaking and IPR.

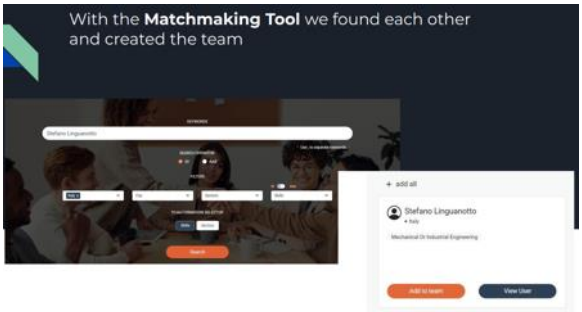

Figure 70. Presentation of RioProM group showing iPRODUCE tools used (1)

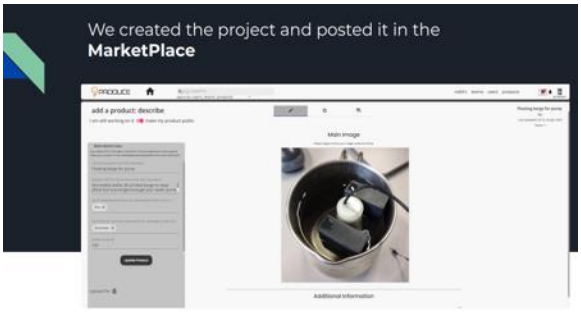

Figure 71. Presentation of RioProM group showing iPRODUCE tools used (2)

The CropCoders group participated at Fablab UniTN. They designed and developed a live demo of an IoT enabled watering system for flowerpots called "CropAssistant". The first day of the challenge the team designed and realised the live demo using a ESP32 microcontroller, sensors and actuators, and a couple of computers to implement the IoT infrastructure. By means of Tasmota and Home Assistant Software toolkits they were able to stream online sensors' data and automate the process of watering the flowerpots when soil's humidity level was lower than a threshold. On the second day of the hackathon, they focused on the utilisation of the iPRODUCE tools reporting bugs and problems.

Figure 72. Presentation of the CropCoders team showing product and iPRODUCE platform usage (1)

Figure 73. Presentation of the CropCoders team showing product and iPRODUCE platform usage (2)

Figure 74. Presentation of the CropCoders team showing product and iPRODUCE platform usage (3)

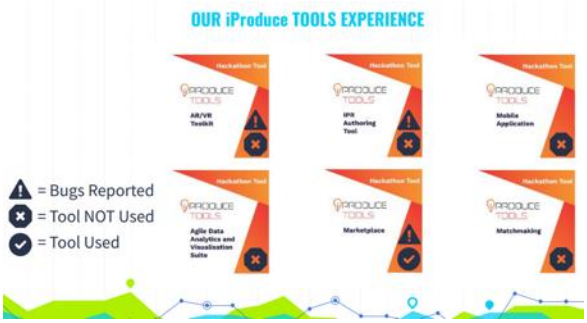

Figure 75. Presentation of the CropCoders team showing product and iPRODUCE platform usage (4)

Given the physical distribution of the hackathon's premises the Italian cMDF decided to have only one jury to evaluate the products by means of a local (Italian) video call to virtually connect the three events running in parallel. Each group in turn presented their ideas and finally the winning team was awarded virtually.

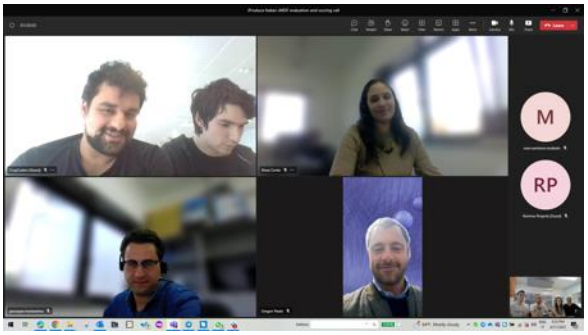

Figure 76. Italian cMDF video call shots during groups' pitching (1)

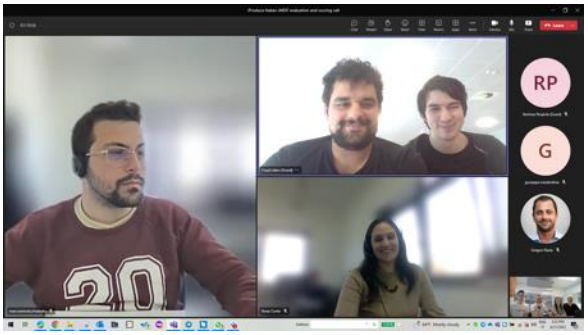

Figure 77. Italian cMDF video call shots during groups' pitching (2)

Figure 78. iPRODUCE Hackathon of the Italian cMDF (1)

Figure 79. iPRODUCE Hackathon of the Italian cMDF (2)

Figure 80. iPRODUCE Hackathon of the Italian cMDF (3)

Figure 81. iPRODUCE Hackathon of the Italian cMDF (4)

Figure 82. iPRODUCE Hackathon of the Italian cMDF (5)

3.4.7. Wired Next FestDival

Wired Next Fest is an annual event organised by Wired magazine that brings together innovators, entrepreneurs, and thought leaders from various fields to discuss and showcase the latest advancements in technology, science, and culture. The event was held in Rovereto between 6-7 May 2023 with an intensive program comprising of features talks, panel discussions, workshops, and exhibits that explore the impact of technology on society and the future of innovation which attracted a diverse audience of professionals, students, and technology enthusiasts. The event provided a platform for networking, learning, and inspiration, and it is considered one of the premier events in the technology industry. More than 10,000 people participated in the festival.

The Italian cMDF was present with a booth explaining to the participants the technologies for prototyping and the opportunities of co-creation methodology with the tools developed in iPRODUCE.

Figure 83. Italian cMDF @ the WIRED NEXT FEST in Rovereto (1)

Figure 84. Italian cMDF @ the WIRED NEXT FEST in Rovereto (2)

3.5. Spanish cMDF

Throughout the period covered by this report, the Spanish cMDF organised several activities with local stakeholders, as summarised in Table 6.

Table 5. List of the Spanish cMDF cooperation activities

Date	Topic
01 June 2022	Workshop of the Spanish cMDF
22 June 2022	Workshop of the Spanish cMDF (second round)
20-23 September 2022	Habitat Fair - Workshop with visitants to the fair and AIDIMME´s booth
04-06 June 2022	Eurobrico Fair - Attending visitors to AIDIMME´s booth
15 December 2022	Training to product designers in EASD
21 February 2023	Consultation Workshop Spanish cMDF+Ambassadors+Core Group
14 March 2023	Consultation Workshop Spanish cMDF+Ambassadors
20-21 April 2023	Hackathon in a Vocational Training Centre (CIPFP)

3.5.1. Workshop of the Spanish cMDF

During the meeting at AIDIMME, the Spanish cMDF delivered a training session of the iPRODUCE tools through a user journey. The training covered the need to upload several files in the Marketplace, not just FBX. Smart contracts were discussed, with issues raised about links to IPR, formatting, security, and transaction display. Having a look at the Process Automation Tool raised the need to include visibility of LAGRAMA features, task creation formatting, and the ability to add comments and upload files in all specification sections. It was also requested to add tooltips to the product information section. The possibility of having a 5x5 stand at AIDIMME was discussed to show some prototypes if available.

Figure 85. Image of the Spanish cMDF training session (1)

Figure 86. Image of the Spanish cMDF training session (2)

3.5.2. Workshop of the Spanish cMDF (second round)

The workshop was a meeting held in AIDIMME to discuss different possibilities for warm-up events in the Valencian Community related to fairs and fablabs/schools. After exchanging views, four options were considered valid and feasible. These included holding a warm-up event with the students at the design school, EASD, an open competition for any student from any university in Valencia, participation in the Eurocontainer project of the School of Design, and participation in the Furniture Fair 2022 in September. The meeting consisted of participants who were encouraged by the results and believed there would be receptivity from schools and motivation from potential attendees. The different profiles of the ambassadors led to the consideration of various possibilities for future warm-up events.

Figure 87. Image of the second Spanish cMDF training session (1)

Figure 88. Image of the second Spanish cMDF training session (2)

3.5.3. Workshop with visitants to the fair and AIDIMME´s booth

https://www.feriahabitatvalencia.com

The Hábitat Trade Fair for Interior Design returned in 2022 as an international edition alongside home textiles and kitchen offerings in Valencia, which is World Design Capital for the year. AIDIMME presented two use cases for iPRODUCE at the event, including a smart headboard and 3D printed components for a domo structure. The aim was to showcase iPRODUCE tools to furniture manufacturers and product designers in a face-to-face setting. The event was an opportunity for AIDIMME to create awareness about the project and the Spanish cMDFs activities. The fair offered a

complete experience for visitors who could learn about new products and developments from furniture and lighting manufacturers. Maria José Núñez from AIDIMME presented a speech to more than 100 people, mainly product designers and students, inviting them to see AIDIMME's prototypes at their booth. The award ceremony for the winner of the open competition and finalists of the event was also held at the stand.

Figure 89. Image of visitants to the fair and AIDIMME´s booth (1)

Figure 90. Image of visitants to the fair and AIDIMME´s booth (2)

Figure 91. Image of visitants to the fair and AIDIMME´s booth (3)

Figure 92. Image of visitants to the fair and AIDIMME´s booth (4)

3.5.4. Eurobrico Fair: attending visitors to AIDIMME´s booth

https://eurobrico.feriavalencia.com/eurobrico/

The Eurobrico Fair brought together national and international agents in the DIY, hardware, garden, and decoration sectors. AIDIMME presented two co-designed products, including a smart headboard and 3D printed components for creating structures. The iPRODUCE Open Innovation Space was introduced to potential newcomers, with promotional videos shown on a large TV at the iPRODUCE booth. The fair also showcased the latest innovations in machining, design, and reform, with exhibitors from 19 countries. iPRODUCE tools and OpIS platform were presented to the audience, which included people from different industries and students. The main objective was to create awareness about the iPRODUCE project and the Spanish cMDF activities.

Figure 93. Image of visitors to AIDIMME´s booth at Eurobrico Fair (1)

Figure 94. Image of visitors to AIDIMME´s booth at Eurobrico Fair (2)

3.5.5. Training to product designers in EASD

In this event AIDIMME and VLC worked together with students from EASD and their teachers.

AIDIMME and VLC held a second warm-up event with new upper grade students in the master's degree of Creativity and Product Development in EASD. The event was aimed at presenting the advances of the iPRODUCE project, along with the tools developed to date. The students were fully engaged and participated in the event, creating a team to collaborate on a fictitious product, where they provided feedback and detected bugs. The event also provided new ideas for improving the tools and new features.

The Spanish cMDF received valuable feedback. The event's structure included presentations about the iPRODUCE project, the tools that the project provides and collaborative projects that we are working on in the Spanish cMDF and the user cases that we are working on. The users tested the tools together and provided feedback about their performance, utility, opinion, and what they would change. They also used the AR/VR toolkit, created a survey in the Marketplace, and offered the product publicly. AIDIMME got valuable feedback during the live usage of the tools, and technical developers discussed any issues, bugs, or logic of the tools.

Figure 95. Image of training given to product designers from EASD (1)

Figure 96. Image of training given to product designers from EASD (2)

3.5.6. Consultation Workshop Spanish cMDF+Ambassadors+Core Group

The event was focused on presenting the iPRODUCE project and the concept of social and collaborative manufacturing. The objective was to show how iPRODUCE can help achieve this idea with the tools provided by the project. The participants were able to work from the beginning to the end with technical guidance from the Spanish cMDF. The event was held in a training room with personal computers available for the attendees. The target groups were selected by inviting Core group members, ambassadors, AIDIMME personnel, and representatives of the federation of furniture businessmen and makers. During the event, attendees used the iPRODUCE tools to create and edit a user profile in the Marketplace, search for users with matching profiles, create a collaborative team, negotiate IPR contracts, test and display 3D files in VR and AR, and create a custom survey of the product. Finally, the Agile Data Analytics & Visualization Suite was presented to the attendees.

The project´s objectives, cMDFs and specifically the 3 Spanish Use cases were presented. Afterwards, participants tested all the tools mentioned starting with a user´s journey and forming groups of 3 people for the experimentation.

Figure 97. Image of Consultation Workshop with Spanish cMDF+Ambassadors+Core Group (1)

Figure 98. Image of Consultation Workshop with Spanish cMDF+Ambassadors+Core Group (2)

3.5.7. Consultation Workshop Spanish cMDF+Ambassadors

The meeting aimed to explore ways to organize a hackathon and review the KPIs for Spanish use cases. The discussion focused on engaging students from vocational training centres in the Valencia Region. It was concluded that the best way to engage the audience is to visit vocational training centres related to wood and furniture design to explain the possibilities of the hackathon and platform. The ambassadors will make calls to arrange visits to the vocational training centres in the coming months.

Figure 99. Image of Consultation Workshop with Spanish cMDF+Ambassadors (1)

Figure 100. Image of Consultation Workshop with Spanish cMDF+Ambassadors (2)

3.5.8. iPRODUCE Hackathon in a Vocational Training Centre (CIPFP)

AIDIMME and the teachers of CIPFP Catarroja organised a preliminary meeting to discuss the agenda for Hackathon and training provided on the OpIS platform and tools and the project. They tested the working space and hardware including connections, cables, internet, and space for participants.

On the first day of the competition, participants used different tools to co-create and co-design a product shelving. Despite some challenges with the tools, participants were able to create a profile and a team using the matchmaking tool.

Figure 101. Image of iPRODUCE Hackathon at the Vocational Training Centre (CIPFP) (1)

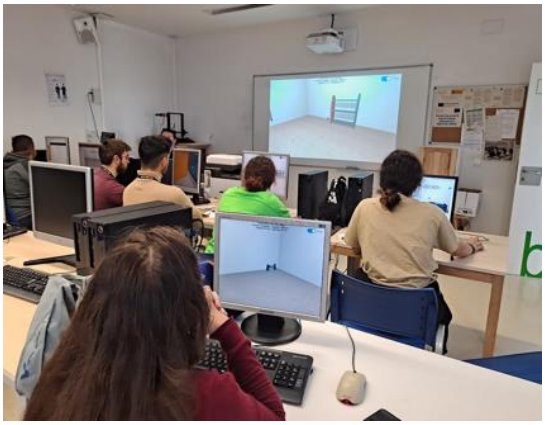

Figure 102. Image of iPRODUCE Hackathon at the Vocational Training Centre (CIPFP) (2)

On the second day of the competition, focus was given to bug reporting with questions about the tools from each team. AIDIMME answered questions and clarified doubts before the bug reporting. The teams

created prototypes using the 3D models from the previous day and had to take a video of them and make a presentation of the product. Finally, all the teams created the product profile with forms, and there was a ceremony and awards given to the participants.

Figure 103. Image of iPRODUCE Hackathon at the Vocational Training Centre (CIPFP) (3)

Figure 104. Image of iPRODUCE Hackathon at the Vocational Training Centre (CIPFP) (4)

Figure 105. Image of iPRODUCE Hackathon at the Vocational Training Centre (CIPFP) Award Ceremony

3.6. Engagement and collaboration via open competitions

The majority of registrations for the iPRODUCE Hackathon, which was part of Open Competition #3, were received for the online participation option. After evaluating the registrations, only 44 of them were considered eligible to participate and receive prizes. Interestingly, 12 registrations were received from outside eligible countries, including the USA and African countries. This highlights the broad reach and exposure of the Hackathon, which was achieved through various communication and dissemination activities. The event was delivered in a hybrid format, which allowed for higher engagement and flexibility, attracting interest from non-EU registrants. This valuable data provides insight into the project's outreach.

The hybrid format of the Hackathon allowed for greater participation and networking opportunities, even for those who were unable to attend physical locations. Participants were provided with information about the OpIS platform and the available tools, which were easily accessible with clear download links and information. The engagement level was high, with valuable feedback provided by cMDF partners and the technical team.

The engagement of external stakeholders in the three competitions organized (especially Open Competition #2 and the Hackathon) was valuable, as the project was able to solicit ideas and evaluate tools externally. The different competitions had varying structures, themes, and targeted audiences, but

they all contributed to increasing awareness of the iPRODUCE value proposition and the potential of social manufacturing and open innovation.

More than 200 individuals participated in the three iPRODUCE open competitions, and the project successfully engaged external inspiration, ideas, and problem solvers for different challenges. This has unlocked a growth potential impact, bringing new ideas into the ecosystem.

In conclusion, the competitions were considered successful in engaging external stakeholders and unlocking growth potential impact. They contributed to increasing awareness of the iPRODUCE value proposition and the potential of social manufacturing and open innovation.

3.7. Cooperation with the support of the Ambassadors

In the context of engagement with local communities, iPRODUCE developed an Ambassador Programme as a way to identify and engage early adopters and local maker and consumer champions, also called lead users, to accelerate the development of their collaborative manufacturing processes. The Programme was developed as part of Task 6.3, which started at M18 (July 2021) of the project and ran till the end of the project.

Within iPRODUCE, an Ambassador can be considered any adult person willing to mobilise and inform local communities about social manufacturing and iPRODUCE. Among the key criteria for selection have been the willingness to learn, understand and share knowledge with others, together with the familiarity with notions of manufacturing, digital fabrication, and digital collaboration. In this context, the first part of the programme was for cMDFs to identify potential candidates for Ambassadors based on a set of common criteria and provide clear incentives for their participation. The incentives range from access to the facilities and machinery of the cMDF, to invitation to the table below briefly presents the total number of Ambassadors identified by the cMDFs, along with their stakeholder group they belong to.

Table 6. Total number of Ambassadors identified by the cMDFs, and stakeholder group

cMDF	Number of Ambassadors	Stakeholder group of Ambassadors
Germany	7	Manufacturing Startups, DIY communities and maker groups, R&D units in private companies, Individuals/entrepreneurs
France	7	Engineers and Manufacturers associations, Business incubators, FabLabs, Experts and individual researchers
Italy	5	FabLabs, Experts and individual researchers, Research organisations, Consumer-goods manufacturers, Software companies
Spain	5	Research organisations, FabLabs, Equipment providers (e.g., 3D printing)
Greece	3	Consumer-goods manufacturers, Doctors, Parents Association Schools
TOTAL	**27**	

Part of the programme includes the active engagement of ambassadors through the diverse project activities, specifically the organization of consultation workshops.

The specific focus of each consultation workshop is described in the relevant section above. Supporting guidelines and material have been provided to all cMDFs by the task leader (WR), and the workshops took place between November 2022 to June 2023. These workshops were also used as a channel for communicating other project activities, including the hackathon (T6.4) and the evaluation survey (T9.6), as a way to maximize the outreach of these activities. More detailed information about the programme and the relevant activities is provided in D6.5 - Ambassador Programme for Early Adopters.

4. Final considerations

This deliverable is D10.6 – Report on cooperation activities 3 of the iPRODUCE project, funded by the European Union's Horizon 2020 programme. It is the third of three deliverables with a common objective, namely the provision of a review of the different cooperation activities carried out within iPRODUCE and by its partners from July 2022 (M31) to June 2023 (M42).

Following the approach established for the first (D10.4) and second (D10.5) report of this nature, this deliverable discusses the cooperation activities carried out from two perspectives: (1) cooperation between iPRODUCE and other external projects, initiatives and/or activities, and (2) cooperation involving specific iPRODUCE partners and stakeholders (mainly within the framework of the cMDF).

The iPRODUCE project covers a wide range of activities, and henceforth, cooperation with relevant initiatives also covers multiple pathways, namely, technical discussions/ training and collaboration and shared dissemination activities.

The report considers efforts in maximising the mutual benefits of cooperation with other projects. A key part of cooperation activities covers the collaboration with the sister projects OPENNEXT, DIY4U and INEDIT, and due to the importance of alliance with these projects, special attention has been maintained in plans for frequent and regular communication with these projects.

Indeed, iPRODUCE has been proactive in building synergies with these projects for several reasons. Firstly, to join forces in reaching out to specific target groups. Secondly, to take advantage of the capacity and outreach potential of projects and finally, to share methodologies and findings to ensure projects learn and build on each other.

In the final straw of the project, iPRODUCE has remained firm in ensuring that activities delivered by partners and cMDFs were interconnected and aligned with the OpIS platform and tools. The tools are well designed and serve a strong foundation although improvements can be made. The engagement in these activities have enabled a wider pool of stakeholders to use and adopt the iPRODUCE social manufacturing framework, committing to the project's long-term sustainability.

To summarise, iPRODUCE has had a strong involvement in several initiatives, of which we have held meetings and discussions. Further contacts and cooperation with new initiatives is being looked into on an ongoing basis. Stakeholder outreach and engagement has been a core activity of iPRODUCE. It has been pursued by all partners throughout the project. A substantial part of the outreach activity has been undertaken in cooperation with other projects as well as through the training and events organised by the cMDFs.

PRODUCE

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