

Address FOR FUTURE



WP7: Additive Manufacturing Training Network

Result 6. Additive Manufacturing Training Network

Leader of WP7: CESOL (E10157368 – Spain)

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1. INTRODUCTION

Additive manufacturing (AM) has emerged as a transformative technology, offering significant potential to address modern challenges in manufacturing and production. In 2021 in the idea phase of Address for Future project, global additive manufacturing market was valued at approximately USD 12.6 billion, driven by its applications in industries like aerospace, automotive, and healthcare. Europe accounted for around 30% of the global AM market, with key sectors including automotive and aerospace making substantial contributions. By 2024, the global AM market is projected to reach approximately USD 78.93 billion, with a compound annual growth rate (CAGR) of over 20% from 2021 to 2024. The European AM market reached USD 6.27 billion in 2023 and is expected to grow at a CAGR of 23.9% until 2030. The adoption of AM technologies is expanding due to their ability to reduce waste, increase efficiency, and support customization in industries such as healthcare, automotive, and consumer electronics.

According to CEDEFOP, over 50% of AM-related companies report difficulty finding professionals skilled in using advanced AM technologies like direct metal laser sintering (DMLS) and selective laser sintering (SLS). CEDEFOP also estimates that green manufacturing skills in AM will need to increase by 35% by 2030 to align with EU's Green Deal objectives. With EU's focus on sustainability, 70% of AM companies are prioritizing training in environmentally friendly practices, such as zero-waste manufacturing according to CECIMO researches. So, there is an increasing market both in EU and all over the world on the other hand, there is a big skill deficits in the market.

ADDress for Future project identified a critical need to bridge knowledge gaps and enhance the capabilities of AM stakeholders across Europe. WP7 (work package 7) played a pivotal role in achieving these objectives by developing a digital alliance network, organizing innovative contest, and implementing targeted dissemination strategies.

WP7 capitalized on the increasing importance of digital solutions, particularly in the context of post-pandemic recovery, where distance learning and virtual collaboration gained prominence. By fostering an interconnected ecosystem, WP7 enabled participants from diverse backgrounds to access resources, engage in professional development, and contribute to AM advancements.

With all the activities for this WP, Address for Future has created a wide network of stakeholders, has raised interest in AM by organizing an AM competition and rewarding the winners, and has increased the capacity for skills in AM by making the platform free and accessible to everyone.

2. AIM

The primary aim of WP7 was to establish a robust digital ecosystem that facilitates collaboration, knowledge-sharing, and innovation in the field of additive manufacturing (AM) across Europe. This work package specifically focused on creating a unified platform to enhance accessibility, enrich training content, and promote the adoption of AM technologies in line with sustainability and the European Green Deal.

Additionally, WP7 aimed to leverage contest, networking events, and innovative outreach methods to foster community engagement, drive creativity, and achieve long-term project sustainability.

Finally, it is aimed to keep the platform constantly alive and up to date with studies such as use cases regarding the platform and some of valuable networks of over 1.000 different stakeholders that have been acquired since the beginning of the project outside the platform.

3. SCOPE

As seen in Appendix 33. Dissemination Matrix and Results' Usage Management Handbook, the dissemination strategy prepared at the beginning of the project was also used in networking activities. With the Dissemination Strategy, developing and implementing a robust dissemination plan, including defining target groups, identifying appropriate communication channels, and planning outreach activities were carried out.

Accordingly, all target groups seen below are within the scope as target groups for the platform's dissemination, contest, and members' network.

Target audiences will include; project partners, AM professionals (local / regional / national / EU level), learners (local / regional level), SME's and large industrial companies (local / regional level), academicians and technical teachers (local / regional level), engineers and engineering students (local / regional level), NEETs (local / regional level), media partners (local / regional level), European networks in the field of Training like ENE, EPALE, CNL (EU level), Associated partners (local / regional / national level), Ministries of Education (national level), Educational Agencies (regional / national level), VET associations and boards (national level), Employers' associations (regional / national level), Education Business Partnership Bodies (regional / national level), Chambers of Commerce (regional / national level), other educational providers (schools, adult, tertiary) (local / regional / national / EU level), employers and HR departments (local / regional / national level), ETF, European Commission and agencies (EU level), CEDEFOP.

4. METHODOLOGY

The methodology of WP7 includes different stages according to different activities. It is briefly expressed below based on different but complementary objectives;

4.1 Mainstreaming: The goal of mainstreaming is to extend the project's impact beyond its immediate participants, embedding its principles and innovations into standard practices across relevant sectors. Related activities are platform introduction, closing conference, competition announcements.

4.2. Multiplication: The purpose of multiplication is to amplify the project's reach and influence, ensuring its innovations and achievements benefit a wider audience and foster long-term systemic change. Related activities are strengthening the platform with blog posts, adding use case examples, announcing competition results, opening CEF facilities for competition winners to test them if they wish, and transferring AM world and project-based activities to a network of over 1000 people.

4.3. Sustainability and Transferability: The aim is to provide capability of the project to maintain its outcomes, methodologies, and impacts over time, even after the project funding or formal activities have been concluded. This involves embedding the project's tools, resources, and principles into permanent systems, such as institutional frameworks, industry practices, or policy directives, to ensure ongoing benefits for target audiences and stakeholders. The work to be done within this scope is the continuity of training, the continuation of the contest culture under different headings, and the initiation of new projects with the acquired network.

5. ACTIVITIES

WP7 encompassed the following key activities:

5.1 Disseminating The Platform Ecosystem Model Through Membership

It is the phase of development and promotion of a digital platform for AM professionals, learners, and organizations. The platform aims to be a central hub for training modules, resources, and networking, designed to facilitate interaction among AM stakeholders.

The features of platform are;

- a) E-learning modules for various skill levels. Training modules covered beginner to advanced levels, with widespread adoption in the AM community.
- b) A dedicated space for sharing projects, prototypes, and designs.
- c) Continuous updates with AM developments and best practices.

The platform was implemented entirely with the efforts of the coordinator and partners due to the lack of an additional budget. The platform was purchased free of charge from Enocta, one of Turkey's largest LMS providers. Since the platform's membership target was 350, only 400 members were initially requested from the LMS company.

However, as the number of people exceeded 400, an additional 100 members were purchased in December as a CEF in kind contribution.

Since the project has created a training curriculum beyond expectations, more effort than expected has been exerted on the mainstreaming, multiplication and integration of the platform in order to present these curricula to the maximum number of people.

5.1.1 The Platform Launch

Platform-specific visibility materials were prepared for the platform introduction. As an example is seen below, these materials were introduced via e-mail, social media, website and one-on-one visits. Detailed visibility activity information can be found in Appendix 35. Utilization of Results Report under the Training Platform heading. In addition, a mini video about the platform was introduced to the conference participants at the closing conference.



5.1.2 The Platform Success

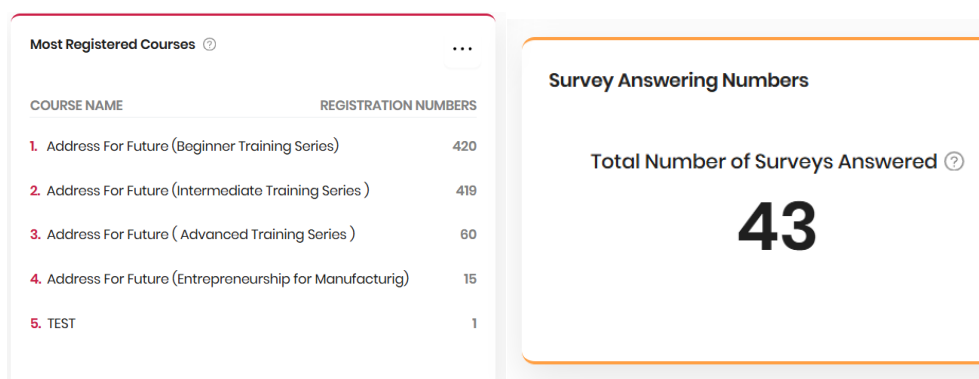
While the target number of members for the platform was 350, it exceeded 400 in a very short time. Increased interaction among participants has been also leading to knowledge exchange and skill development.

Month	Number of Registered User	Active User Rate
Apr 24	1	0%
May 24	6	33%
Jun 24	25	84%
Jul 24	40	55%
Aug 24	264	81%
Sep 24	354	32%
Oct 24	400	20%
Nov 24	400	5%
Dec 24	419	6%

Performance Indicator	Number of User	Rate
Number of Users Assigned/Registered to At Least One Course	421	265%
Active (Users who have Logged in at least Once) User Count	384	242%
Number of Users Who Experienced/Spent At Least 1 Course	214	135%
Number of Users from Abroad	65	15%

In the platform, with a total of 108 presentations, 171 videos and 71 exams are served to the members with also a blog to ask questions, to share ideas, to evaluate new AM developments.

Below, there are also some statistics taken directly from platform to show learning behaviors of members to understand their needs.



5.2 Additive for Green Contest

A key differentiator of this project is Additive for Green Contest, designed for AM professionals and student in all over the EU. This competition was not only promote the platform but also emphasize the "green deal" approach of AM, an emerging production method of the future.

5.2.1 Setting Competition Criteria and Planning Event

The part where WP7 put the most effort was the AM for Green Future Contest. Because this competition was going to be the first EU-wide competition with a direct target of the green deal on AM. Also, since it was a competition of an EU funded project, its compliance with international norms was important. For this reason, the following steps were followed;

- a) Determining Tangible Outputs: By engaging the creativity and effort of participants, contests can produce practical and actionable results that contribute to the advancement, visibility and sustainability of the project.
 - i. Innovative solutions and prototypes: Participants often develop new ideas, products or services as part of the competition. These may include prototypes, working models or detailed plans that can be further developed and disseminated on the platform.
 - ii. Content and publications: The contest may result in the creation of various types of content, such as articles, reports, presentations and videos. These materials can be used to promote the project, disseminate knowledge and share good practices.
 - iii. Enhancing partnerships: Successful competitions can lead to new partnerships and collaborations with other organisations, companies and stakeholders. These partnerships can bring additional resources, expertise and support to the project.
 - iv. Event documentation: Comprehensive documentation of the competition, including photographs, videos and records of the event, can serve as valuable marketing and promotional material. This documentation can be used to showcase the activities and successes of the project to a wider audience.
- b) Determining Focus and Target Groups: AM is an innovative methodology that covers many topics by its nature. However, the main theme of the competition is to implement the "green deal approach". Therefore, the following focus has been determined by the partners through various meetings, workshops and current competition benchmarks.

"With this competition, it is expected to contribute to the green deal with a sustainability-oriented perspective and the spread of additive manufacturing as an alternative manufacturing method."

The project idea may include one and more of the following focuses:

1. Reducing non-renewable energy sources with additive manufacturing.
2. Environmentally friendly designs with additive manufacturing.
3. Environmentally friendly materials in additive manufacturing.
4. Environmentally friendly production process with additive manufacturing method."

Target Groups are;

"2.1. Student:

- Those who are currently continuing their education.
- Over 18 years of age.
- The project has not received an award (or is being under evaluation) in another competition or event related to the application subject.
- The participant (or team) owns 100% of the intellectual property and all rights of the project subject to application.
- The participant has enrolled Address for Future online training <https://addressforfuture.mynocta.com/addressforfuture/eep/login/?&err=-1>.

2.2. Professionals:

- Any professional interested or having activities in Additive Manufacturing.
- Over 18 years of age.
- The project has not received an award (or is being under evaluation) in another competition or event related to the application subject.
- The participant (or team) owns 100% of the intellectual property and all rights of the project subject to application."

- c) Creating Awareness and Emphasizing Green Deal: In order to disseminate the Green Deal Approach throughout the EU, project proposals were requested in the competition announcements in line with the following strategy.

"The EU's Green Deal approach and its policies and practices in different sectors can give different themes and ideas examined at this link. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en"

- d) Country and Industry Selection: All EU Countries and third countries associated to Erasmus Program has been determined as the country of applicants. Moreover, to engage the contestant candidates and motivate AM applications in different sectors, the industries were determined as follows.

“All sector topics, including transportation, manufacturing, construction, energy, food and health, including new methods and solution suggestions that will contribute to the green deal more than traditional methods by using Additive Manufacturing.”

5.2.2 Launching the Contest and Collecting Applications

The contest was spread through all network channels, starting with the launch in www.addressforfuture.com website. A summary of the relevant launch activities can be viewed under the Contest heading in Appendix 35. Utilization of Results Report. The aim was to receive as many applications as possible from both platform members and those who are not members of the platform but have heard about the contest. Since one of the most important goals of the contest is to engage in AM and to create re/upskilled individuals for this purpose, applications in the "student" category were requested to become members of the platform and receive training. The application rules can be seen below;

- *Each applicant can apply for more than one project.*
- *All applications are received by filling out the form at (<https://forms.coskunuz.com.tr:443/jf/d97c60j86b/j4d6e>)*
- *All application documents must be filled out in English.*
- *In addition to the explanations in the application form, the project idea can be supported with visual representations to get more score.*
- *If more than one person participates in the project as a team, the team members' name and information must be written in the form as well but they will be represented only by the project leader if they will win the prize.*
- *Visual representations (photos, drawings, tables, or CAD images) must be in .pdf format.*
- *If you want to send a video demonstration, a link to a video uploaded to YouTube can be added. (maximum 2 minutes)*
- *Application to contest is free of charge.*
- *Employees of project partners cannot participate to the contest.*

In addition, during the contest launch, the evaluation criteria of the contest, the code of ethics, and the jury approach were explained in detail (can be seen in addressforfuture.com). In this way, all details were shared with the contest candidates to make the contest transparent.

Lastly, the following consents were requested from the contestants before the application for the contest participants.

With this Letter of Undertaking;

By entering the Contest and submitting an application for evaluation, I/We hereby declare:

☐ I/We have carefully read and examined the Rules of Contest and fully agree to be bound by these Rules.

☐ I/We have the required application qualifications as set out in the competition prerequisites and that all the information that I/We provided is correct.

☐ I/We consent to the processing and examination of all kinds of information, documents, written content, presentations, audio or video etc., including my/our personal data sent by me for the Contest, by the Jury, Project Coordinator and Project Partners in order to conduct, evaluate and announce the results of the Contest.

☐ I/We consent to the publication of the results of the Contest, limited to the project name and summary content, in print and visual media, social media, applications and channels and all media deemed appropriate by the Project Coordinator and its Partners.

☐ In the event that I/We win the competition, in addition to my consent in the above article, I/We hereby give consent to the Project Coordinator and its Partners, to use my/our personal data and, if any, the personal data, videos, photographs, audiograph containing me/us, my/our image, my/our voice or of other team members participating in the Contest and for these to be published in written-visual press, social media, applications and channels etc.

☐ I/We hereby warrant that to the best of my/our knowledge: (1) my/our entry is an original idea or; (2) I/We are authorized by the owner of the design to enter the design in the contest; and that (3) the design does not infringe the intellectual property rights of any third party.

☐ I/We warrant and represent that my/our submission is an original work, does not infringe any third-party intellectual property rights and has not been previously published or won prior awards. I/We will hold the Project Coordinator and Partners free from any liability and indemnify the Project Coordinator in case of any claims from third parties regarding the intellectual property rights of mine/our submission that I/We hereby claim to be mine/ours.

CONSENT FORM REGARDING PERSONAL DATA

Required by European Union General Data Protection Regulation
2016/679 ("EUGDPR") and
6698 numbered Turkish Personal Data Protection Law ("KVKK")

Project Coordinator and Project Partners (hereinafter referred to together as "PC and PP") is collecting your personal data for the Additive Manufacturing for Green Future Contest ("Contest") within the Erasmus+ Project numbered - [2021-1-TR01-KA220-VET-000034888] funded by EU called Address for Future ("Project"), which is EU's program to support education, training, youth and sport in Europe.

Project Coordinator and Project Partners are the controller of your personal data. You may contact Project Coordinator, Bursa Coşkunöz Eğitim Vakfı at Bursa Organize Sanayi Bölgesi Sarı Cad. No:1 16140 Bursa, Türkiye or email at: info@coskunozegitimvakfi.org.

The categories of personal data you are being asked to consent to PC and PP's collection, use and storage are;

1. Name, surname and username
2. Address and e-mail address
3. Phone Number
4. Age
5. Education (last graduated school/university/institute)
6. Occupation
7. Employment Status
8. Citizenship and Country of Residence
9. Video and Audio containing your image and voice

Your personal data will be used for the following purposes:

- ___ communicating activities such as trainings, meetings, competitions, conferences etc. to be held within scope of the Contest and the Project;
- ___ measuring effectiveness of trainings;
- ___ announcements regarding Contest and Project
- ___ publications regarding contest and project on different platforms, social media and all venues;
- ___ reporting to the European Commission and National Agency of Türkiye granting authorities.

Your personal data will be stored for a period of five (5) years for the following purposes:

- ___ Retrospective analysis of the Contest and the Project
- ___ Proof of realization of the contest and the Project;
- ___ promotion activities;
- ___ evaluation of the Project success;

PC and PP will share your personal data with third party software providers who collect, store and process your personal data on behalf of PC and PP and who are contractually obligated to keep your personal data confidential subject to appropriate safeguards to prevent it from unauthorized disclosure.

Your personal data will be transferred out of the European Union to Bursa Coşkunöz Eğitim Vakfı located in Türkiye and vice versa

Your personal data will also be stored in accordance with the record retention requirements applicable to Bursa Coşkunöz Eğitim Vakfı as a foundation of Türkiye, and applicable Turkish Laws and Regulations regarding data protection.

Under the EUGDPR and KVKK, you have the right to request access to, rectify, erase and restrict the processing of your personal data. You also have the right to revoke this consent to use your personal data. If you feel PC and PP has violated the EUGDPR and/or KVKK, you have the right to file a complaint with the appropriate authority.

5.2.3 Evaluating Applications by The Jury

Before all announcements, the determination of the contest criteria was done with a huge effort of partners with the shared tasks seen below;

- a) Review of similar competitions across the EU
- b) Analysis of evaluation criteria from an academic perspective
- c) Interviewing industry professionals who are subject matter experts to determine feasibility
- d) Finalization of the criteria
- e) Determination of the coefficients of the criteria
- f) Testing the criteria in a sample project

The following criterias are determined as the final criteria set for the evaluation of the contest.

NO	Evaluation Criterias	Weight	Jury Member 1	Jury Member 2	Jury Member 3	TOTAL
1	1. Innovation (30 points)		Does the project idea contain innovation? Does this idea provide an advantageous alternative to existing methods based on novelty? Does the idea or design is original, aesthetic or ergonomic?			
1.1	How innovative and creative is the project?	15				
1.2	Does the project offer new and effective solutions to existing problems?	15				
2	2. Technical Feasibility (20 points)		Is the project idea suitable and ready to be produced? Does it provide ease of application compared to other methods? Does design appropriate to material? Does the process or material is valid and reliable for manufacturing?			
2.1	How technically feasible is the project?	10				
2.2	How solid are the technical details and plans of the project?	10				
3	3. Financial Feasibility (15 points)		Is the project idea cost-effective? Can it find a place for itself in the market? Does it create demand? Does it viable for future?			
3.1	Is the project financially feasible?	15				
4	4. Sustainability (30 points)		Is the project idea reduce dependence on non-renewable energy resources? Does the product design uses environmentally friendly materials in AM? Does the product idea impact a large variety of sectors, product or usages? Has the product idea impact 17 sustainability development goals focuses? (communities, disadvantaged groups, planet, environment)			
4.1	What impact does the project have in terms of environmental sustainability?	15				
4.2	What impact does the project have in terms of economic sustainability?	10				
4.3	What impact does the project have in terms of social /community sustainability?	10				

The jury members were selected from partners, AM academics and subject matter experts, and their GDPR and consent forms were also obtained. The jury members are as follows;

Name Surname	Institution	Title
Prof. Dr. José Luis OCAÑA	Polytechnical University of Madrid (UPM)	Professor of Mechanical Engineering
Prof. Dr. Angel GARCÍA-BELTRAN	Polytechnical University of Madrid (UPM)	Professor of Computer Science and Artificial Intelligence.
Dr. Francisco CORDOVILLA	Polytechnical University of Madrid (UPM)	Assistant Professor of Mechanical Engineering
Dr. Ignacio ANGULO	Polytechnical University of Madrid (UPM)	Assistant Professor of Mechanical Engineering
Fernando Mañas	Spanish Welding and Joining Technologies Association	General Manager
Dr. Alberto Toledo	Spanish Welding and Joining Technologies Association	R&D Researcher and Adhesive Coordinator
Prof. Michele Palermo	University of Bologna	Professor of Structural engineering
Prof. Vittoria Laghi	University of Bologna	Professor of Structural engineering
Dr. Taner KARAGÖZ	Coşkunöz Die and Machine	Product Manager / Researcher
Volkan AKINCI	Coşkunöz Holding	R&D and Innovation Director
Burak S. PEKCAN	Infotron	CEO
Rüveyda TUNALI	Infotron	Marketing Director
Kenan BOZ	EPMA	Technical Manager
Murat KÖKSAL	Coşkunöz Education Foundation	Technical Consultant
Emine Cansu TÜRKKAN	Coşkunöz Education Foundation	Project Specialist
Stefan RITT	AM/3-D Printing concepts & market integration · Lecturer	Founder and CEO / Technical University of Lübeck
Dr. Paul Davies	INDO - MIM LIMITED	Business Development Manager – Europe
Oğuzhan YILMAZ	Gazi University	Professor of Mechanical Engineering
Ulaş YAMAN	Middle East Technical University	Assoc.Prof. Of Mechanical Engineering

Each application was evaluated by at least two different juries, and the arithmetic average of the scores given by the two evaluators was taken into account. If there was a deviation of more than 25% between the scores given by two evaluators to the same project application, the applications were re-evaluated by a third evaluator. For applications subject to the third evaluation, the final score was determined by considering the score of the third evaluator and the evaluation score closest to this evaluation.

Jury members and their family members did not participate in the competition and did not evaluate applications from their institutions.

The application with the highest score and the reserve application below were listed according to the scores given by independent evaluators, and the final evaluation was made by online presentation of the applicants.

There were 44 applications for the competition. At this stage, requests were made to do some projects as a team and they were accepted. Thus, a total of 72 people prepared competition projects.

All projects firstly evaluated with the criteria and the top 10 projects were selected. So, in the second phase, these 10 projects evaluated with applicants' video descriptions. The first four the projects came from 3 student and 1 professional applicants. Because it was awarded that the professional's application consisted of some elements related with the previous machine production, it was eliminated in this phase. So, none of the applications in the professional category remained in the final three. In the student category, when the competition applications were evaluated, it was deemed appropriate to give awards to both since the third project in the ranking had 62 points and the fourth project had 61.5 points. Thus, the first-place winner of the competition was awarded 3,000 euros, the second-place winner was awarded 2,000 euros, and the third and fourth-place winners were awarded 1,000 euros.

This award was made with the Coşkunöz Education Foundation's own private resources.

5.2.4 Announcing Results and Hosting Award Ceremony

The results of the project competition were communicated to all applicants through one-on-one communication. They were also invited to the competition award ceremony. The 4 projects that were ranked in the competition results were invited to the Network Members and Award Ceremony held in Ankara on November 7, 2024, their projects were introduced and awarded. All project applications are presented as a summary document in Appendix 18. In addition, the winning projects are shown below. Lastly, detailed information about the ceremony can be found in Appendix 53. ME2_Agenda Ankara file.

1st Place:

Project Owner : Mustafa Melih GÜRER

Project Name: Reusable Support Structure for FDM

Aim of The Project: In this project, the goal is to reduce the amount of wasted filament in FDM printing by replacing traditional support structures with reusable support rods. To achieve this, an algorithm developed with Grasshopper will analyse the model wanted to be printed and identify spots that require support.

2nd Place:

Project Owner: Meryem İsra Tunç

Project Name: Hydroloom

Aim of The Project: This project introduces an innovative, efficient, and eco-friendly hydroponic farming system. Deep Water Culture (DWC) techniques, the system enables plants to grow efficiently with minimal water usage, making it ideal for areas with water scarcity or for individuals practicing sustainable farming in small spaces.

3rd Place:

3rd Place

Project Owner: Mustafa Duhan Adıguzel

Project Name: Additive Manufacturing of Organic Photovoltaic (OPV) Solar Panels.

Aim of The Project: The aim is to develop flexible, lightweight, and sustainable organic photovoltaic (OPV) solar panels using additive manufacturing (AM).

This approach reduces material waste, enhances energy efficiency, and creates versatile solar panels that can be applied on various surfaces, contributing to renewable energy adoption.

4th Place:

Project Name: Salih AŞKIN

Project No: Geometric Design and Analysis of TPMS Suitable for Powder Bed Metal Additive Manufacturing of Critical Stainless Steel-Based Filter Components in Air Carbon Capture Devices

Aim of The Project: The project significantly contributes to the European Green Deal by advancing both environmental and economic sustainability through its innovative carbon capture technology. This design enhances filtration efficiency, effectively removing carbon dioxide from the atmosphere and reducing greenhouse gas emissions, a core objective of the Green Deal.



5.3 Additive Manufacturing Training Network

The stronger the networks on a given subject, the more effective distance education programs related to that subject can be established and developed.

Developments in information and communication technologies have highlighted international regime approaches based on knowledge, particularly the understanding of international cooperation centered on "ideas, learning, and knowledge communities. Similarly, the advancement of additive manufacturing (AM) technologies requires training and skilled professionals of capable overcoming significant scientific and engineering challenges, as well as fostering their collaboration.

In the AM field, the availability of information and content aimed at addressing skill gaps is not sufficient on its own. Within the scope of this project, a unified platform was created to integrate all communication networks established across the EU. The digital alliance network's target groups, which will be developed collaboratively by the project partners, includes institutions, organizations, professionals, NGOs, volunteers, local governments, and citizens at the EU level. This network will enable these stakeholders to come together around shared interests, goals, and values, fostering synergy and promoting sustainable growth.

The creation of a comprehensive AM education network at the EU level, which does not yet exist, is an innovative initiative. By building a network that connects relevant institutions, establishing a digital platform with partners and NGOs, and simplifying the delivery of education to the public, the accessibility of education will increase. This approach will ensure the interactive continuity

of active education initiated through learning-teaching activities. Consequently, a network where NGOs across EU countries can receive training will be established, enhancing their capacities.

For all these reasons, a core network of 1,010 people from different countries and different categories (such as academics, technical teachers, engineers, professionals, students, NGOs, public institutions) was provided in the Address for Future project. The project reached more than 2,750 unique individuals at various stages. with 60 institutions, 750 companies, and over 2,750 people connected through surveys, conferences and visits. With this network, the following activities were carried out during the project;

1. Survey in AM International Framework work package
2. AM Curriculum Analysis
3. Skill Map Interviews and Benchmarks
4. Multiplier Events
5. AM for Green Contest
6. Conference participations
7. Integration of the project results into a credit AM course at Uludağ University
8. Ministry of National Education with technical teacher in-service training
9. Scientific article contributions (UNDP)

The activities to be carried out after the project closure are as follows;

1. AM E-Learning Platform new trainings
2. Idea, question, project sharing on the platform
3. CEF AM Hackathon
4. Uludağ University credit courses continued
5. National Education in-service trainings (one is already planned for May 2025)
6. EU-wide AM center of excellence new project structure

Although the project provided one-on-one contact with more than 2,750 people, the demographic information of the 1,010 people in the network who were contacted in more than one project activity is as follows;

Category of Network	Number of Person
Academician	153
Chamber of Professions	32
Company	710
NGO	28
Public Institution	16
Research Institution	19
Start-up	8
Student	12
Technical Teacher	23
Vet Provider	9
Grand Total	1010

Distribution of the network by category

Country of Network	Number of Person
Austria	10
Belgium	3
Brazil	3
Bulgaria	14
China	1
Croatia	19
Czech Republic	7
Denmark	4
Estonia	4
Finland	1
France	24
Germany	16
Global	2
India	1
Ireland	1
Israel	1
Italy	43
Kuwait	1
Latvia	1
London	1
Luxembourg	1
Malaysia	5
Netherlands	6
Nigeria	1
Pakistan	1
Peru	1
Portugal	3

Country of Network	Number of Person
Romenia	4
Serbia	1
Slovakia	1
Slovenia	3
South Africa	1
Spain	54
Sweden	3
Switzerland	1
Taiwan	2
Türkiye	747
Ukraine	1
United Kingdom	11
USA	5
Uzbekistan	1
Grand Total	1010

Distribution of the network by country

6. CONCLUSION

The successful execution of WP7 was supported by several facilities and tools;

- Enrichment of the platform with training modules, events, and resources tailored to different user groups.
- Organization of the "Additive for Green" competition to foster innovative AM solutions aligning with sustainability goals.
- Networking and community-building efforts to connect stakeholders, including SMEs, NGOs, public institutions, and academia.
- Implementation of dissemination and sustainability strategies to ensure long-term platform engagement and impact.

The scope was aligned with the project's broader objective of integrating AM technologies into various industries, addressing skill gaps, and contributing to global sustainability goals.

The outcomes of WP7 exceeded expectations, delivering impactful and sustainable contributions to the project's goals:

- High-quality content, including videos, webinars, and reports, was widely shared and platform membership exceeded the target (350 people) as more than 400 people.
- Institutional partnerships ensured the continuity of platform activities beyond the project timeline.
- Increased public awareness and adoption of AM technologies.
- Attracted 72 contest participants from diverse backgrounds.

- Collaborations with academic institutions, SMEs, and NGOs ensured the availability of resources and expertise. Generated innovative ideas addressing sustainability, such as zero-waste designs and eco-friendly materials.
- Provided participants with valuable skills in project management, public speaking, and teamwork.
- Strengthened the integration of AM into various industries, promoting sustainable growth.
- Add value to accelerated innovation through competition-driven problem-solving.
- Enhanced the visibility of AM's role in achieving the Green Deal objectives.
- Engaged a network of 1,010 stakeholders, including NGOs, learners, engineers, academia, and private companies.
- Fostered partnerships and collaborations, creating a foundation for future initiatives.

WP7 successfully established a comprehensive and sustainable ecosystem for additive manufacturing, achieving its aim of enhancing skills, fostering innovation, and promoting sustainability. The digital platform and accompanying activities created lasting value for stakeholders, laying the groundwork for continued collaboration and growth in the AM sector.

Through innovative approaches such as contest and targeted dissemination efforts, WP7 not only addressed current challenges but also set a benchmark for future projects in digital and sustainable manufacturing.

The platform will continue to add sustainable educational content after the project period. For example, new content on laser applications and WAAM technologies is planned for next year. In addition, CEF has planned an AM Hackathon Competition in its own training and experience center as of 2025 for those who receive training on the platform with its own resources and successfully pass the tests for the sustainability of the platform. In this way, both the platform will be kept up to date and individuals who receive training on the platform will have the chance to experience their own cases with the hackathon.



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