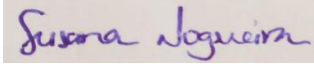





WP7 Dissemination and Exploitation of Results

D7.5 Dissemination Portfolio

Version	Date	Author	Institution	Status	Change Description
V1.0	03/07/2018	Elvira Raquel Silva	EFW	Version sent with information about the first dissemination reporting period	
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Final	30/10/2020	Susana Nogueira	EFW	Update of the report	Based on an update of all ADMIRE partners' dissemination activities and final dissemination elements

Author Institution Sign-Off 1	Signature	Date
EFW		30/10/2020
Approval Institution Sign-Off	Signature	Date
Eurico Assunção EFW		30/10/2020



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1 Introduction

ADMIRE “Knowledge Alliance for Additive Manufacturing between Industry and Universities” dissemination report/portfolio is a live document developed to collect all the evidences of the dissemination tools and activities carried out by Cranfield University, University of Bremen, University of Birmingham, Instituto Superior Técnico (IST), IREPA Laser, Manufacturing Technology Centre (MTC), GKN Aerospace and the European Federation for Welding, Joining and Cutting (EFW), Partners of ADMIRE consortium, periodically updated between January 2017 and October 2020.

This document is composed of a description of the dissemination tools developed to increase ADMIRE impact on key stakeholders from Education and Additive Manufacturing (AM) Industry, and it also contains information about the dissemination activities carried out by all ADMIRE partners, listed in a specific table and sorted out by types for a better comprehension of those activities.

This document starts with a reference to ADMIRE external image definition and its logo, going through press activity, online activity and organization and attendance to events by ADMIRE partners, in line with the Dissemination, Sustainability and Exploitability Plan (deliverable D7.4).

At the end of this document, a list of the activities carried out by all Partners is presented, organised by chronological order. Their respective evidence can be found in Annex 1.



2 ADMIRE Project identity

2.1 Project logo and Templates

ADMIRE logo was created in February 2017 to be used by all Partners to identify the project in all dissemination activities:



Figure 1 ADMIRE Logo

In addition to the project’s logo, specific Word (used for Deliverables, for example) and PowerPoint (used for events, for example) templates were created, ensuring that ADMIRE was always presented by Partners in a harmonized way, as Figs. 2 and 3 illustrate:



Figure 2 Word Template

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Figure 3 PowerPoint template

3 Press Activity (Hard Copies)

3.1 ADMIRE Press Release

In the very beginning, ADMIRE released a statement in the form of Press Release, addressing the objectives and mission of the project in bringing companies from AM supply chain, research centres and universities together to discuss AM workforce qualification.

This Press Release was distributed with all ADMIRE partners for dissemination, was uploaded on ADMIRE website for consultation/download and was published on [“Welding and Cutting – Technical journal for welding and allied processes”](#), thus ensuring its visibility.



Figure 4 [ADMIRE #1 Press Release](#)

A second Press Release was planned to be published in the beginning of November 2020, short after ADMIRE conclusion, to provide to ADMIRE target groups information about the project’s achievements and how its outcomes can be implemented by Universities and AM Industry (i.e. ADMIRE European MSc and AM Hub/Platform) at European and International levels.

This Press Release will be shared amongst ADMIRE partners for dissemination and will be available on [ADMIRE website](#) for consulting and downloading.

Due to their scope and target groups, both Press Releases were elaborated in EN.



Figure 4.A 1 ADMIRE #2 Press Release

3.2 Articles on Journals and Publications

3.2.1 International Technical Journal

In the beginning of the project, an article about the ADMIRE project was published in Welding and Cutting Issue 3 (May/June 2017), an international technical journal in English language about welding, cutting and brazing technology and related fields with a circulation of 8000 copies.

--LIZENSIERT FÜR: DVS Media GmbH--

NEWS

Global steel market to reach \$ 865.5 billion by 2020

The global steel market reached a value of 730.4 billion in 2015, representing a average compound annual growth rate (CAGR) of 11.2% from 2011, according to data from international research company MarketLine. The company's latest report states that China is the largest steel producer globally, commanding 49.6% of total market value and exporting more than the North American Free Trade Agreement (NAFTA) and European Union (EU) countries combined. As it accounts for almost half of the global market, changes in the Chinese steel supply and demand impact the global market situation significantly.

Goeka Kaled, Analyst for MarketLine, explains: "The key factor driving recent market contraction is the large overcapacity of steel that has forced prices down. In 2015, as demand for steel dropped in China, production volumes took a dump globally. Additionally, China is exporting its overcapacity below its costs to the rest of the world, adding pressure to other regions which also face overcapacity issues".

Steel prices rose throughout most of 2016 as a protectionist backlash has prompted authorities in the US, the EU and other regions to clamp down on cheap imports from China. However, the enactment of tariffs and duties by other countries and regions could likely have the negative long-term impact of allowing protectionism to become the standard, which may allow inefficient steel producers to have a safe haven.

The global market is forecast to grow with a CAGR of 2.8% between 2015 and 2020, reaching a value of \$ 865.5 billion. The end of the commodity boom, combined with restrained capital investment around the world are key cyclical factors contributing to the weak outlook, according to the World Steel Association.

Goeka Kaled concludes: "China will keep its position as the largest producer and consumer of steel globally. However, as the country is under pressure to curb production due to rising trade cases against its dumping, it is expected that the increased production of Chinese steel will serve domestic demand more rather than flood international markets in 2017." (According to press information from MarketLine; www.marketline.com)

--LIZENSIERT FÜR: DVS Media GmbH--

Technology tournament inspires young engineers to fly high

Teams from North Yorkshire schools took part in a fun educational engineering challenge to construct and launch a space capsule from a kit of selected materials. The ninth annual Technical Tournament, which took place on 2 March 2017, saw students create inspirational designs and impressive launches. Marks were awarded by the judges to the competing teams for design analysis, construction and team work. Eskdale School won the Foundation Class, while teams from Fyling Hall won both the Intermediate and Senior Classes. The winning teams were awarded trophies, presented by Wing Commander Darren Whiteley, Commander of RAF Fylingdales, while all participants received a certificate.

Vince Dawkins, from the Welding Institute's Teesside Branch, commented: "This event was a fantastic opportunity for the local school children to demonstrate their technical ability, and it was a pleasure to see so many enjoying the challenge." Tournament organiser, Fred Payne of Whitby Rotary Club, said: "This was one of our best Technology Tournaments yet. It was a very interactive and fun day and all the young people should be congratulated for the way in which they responded to the challenge. It was superb!"

In addition to The Welding Institute (Teesside Branch), event sponsors included Sirin Minerals, The Cleveland Scientific Institute, Scarborough Borough Council and BDIH Partners of Whitby with extra support given by Masvac Engineering and Dabry Offshore.

The Younger Members of The Welding Institute are dedicated to developing the next generation of engineers. They do this by participating in outreach activities (many of the Younger Members are STEM ambassadors) and by promoting the benefits of professional development, through Professional Membership and Registration. The Younger Members are actively engaged with local schools and communities in their area. They attend a variety of events, large and small, held throughout the United Kingdom. (According to press information from TWI; www.twi-global.com)



The „Admire“ project: Extending the qualification of the additive manufacturing workforce

Enhancing the collaboration between universities and the industry at large is of paramount importance, especially at a time when additive manufacturing (AM) and other "Industry 4.0" technologies are becoming increasingly mainstream and bring new challenges related to the qualification of the workforce to deal with this change. The Knowledge Alliance for additive manufacturing between industry and universities ("Admire") project, under Erasmus Programme of the European Union, intends to address this gap by establishing a solid relationship among enterprises working in the AM supply chain, research centres and universities.

Connecting the dots from education to industry

Additive manufacturing is quickly moving into the mainstream production, given its clear advantages in terms of efficiency, flexibility and even from an environmental perspective. Due to its novelty and fast growth, the AM field has a distinctive set of features: it is still quickly evolving and, as such, job positions are very hard-to-fill because of the insufficiency of manpower with the required expertise; similarly, currently available educational offers are unable to provide students with the needed skills that can meet the expected high levels of such high performance, high-value products. Consequently, there are two important hurdles to overcome:

- 1) the absence of comprehensive and all-encompassing curricula (education in universities) and
- 2) the availability of skilled employees for a wide variety of positions, including engineers with AM proficiency.

The "Admire" project has one main goal - to address the widely identified death-walking among the academic and industrial world, while at the same time responding to an urgent industrial need: the qualification of AM workforce. Together, universities, companies and students will design a Metal AM Master degree according to level 7 of the European Qualification Framework,



Figure 5 Article on Welding and Cutting (2017) No.3

3.2.2 “Additive Manufacturing – Developments in Training and Education”

Also at the beginning of ADMIRE project, a reference to the project was made on chapter *Professional Training of AM at the European Level* section of the book “Additive Manufacturing – Developments in Training and Education”. ADMIRE was highlighted as an example of how companies, universities, training institutions and governments can work together to address the challenge of tackling AM skills needs and shortages. A full description of this reference can be found on [ADMIRE website](#).

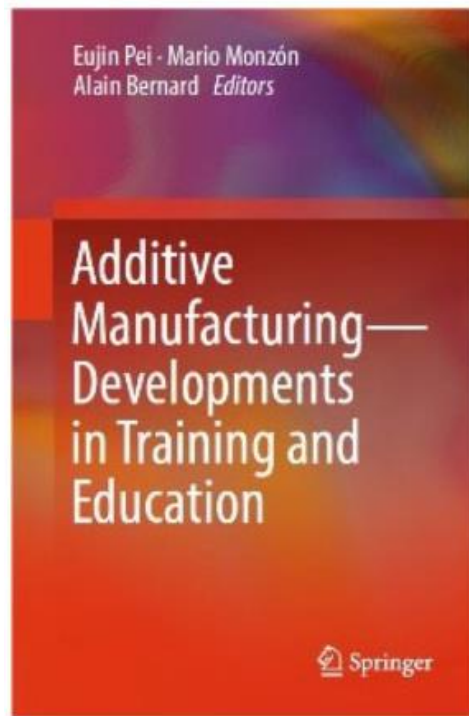


Figure 5a 1 "Additive Manufacturing - Developments in Training and Education" book cover

4 ADMIRE Project Flyers

Four different flyers were created to enlighten the general information about ADMIRE. The flyers, which also contain a QR code that leads to ADMIRE website, were distributed at both national and international levels and are also available on the project's website to increase the public awareness.

The first flyer (produced in May 2017) was developed to promote ADMIRE project as a solution to reply to the gap between AM Industry's needs for highly qualified personnel in the field and University qualifications in AM, at European level. It also mentioned the background of each ADMIRE Partner, crucial to achieve the project's purposes of creating/developing a European Metal AM MSc and the AM Hub/Platform:



Figure 6 [Flyer #1 EN](#)

The second flyer (developed in May 2019) focused on the curricula of the European Metal AM MSc, with a brief summary of each module's contents, informing the readers that the MSc's piloting phase would start in October 2019 and that they should access to ADMIRE website for more information on how to apply:



Figure 7 [Flyer #2 EN](#)

The third flyer (concluded on December 2019) focused on the features of the European Metal AM MCs and on its benefits for European universities:

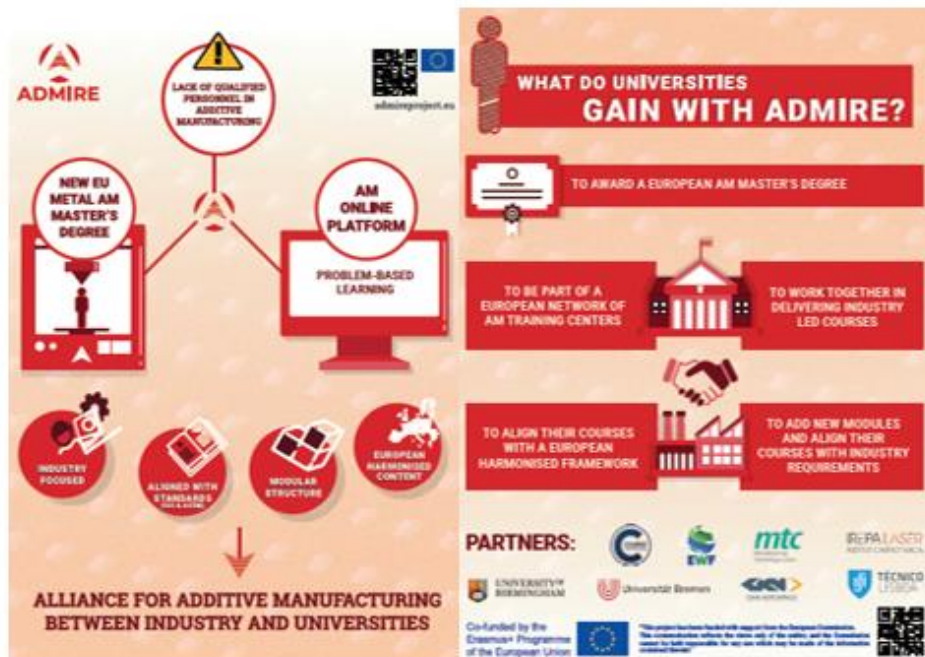


Figure 8 [Flyer #3 EN](#)

Following the extension of ADMIRE project for three more months, the project partners decided to elaborate a fourth flyer, focusing on one of the most important ADMIRE outcomes: the European Metal AM Engineer MSc which, for sustainability purposes, will be implemented by the International AM Qualification System (IAMQS), managed by EWF. This flyer was developed in September 2020 and focused on the advantages provided to Universities of being part of a European Network of Universities and of implementing the European Metal AM Engineer MSc and its specializations. It also provided information about its curriculum:



Figure 9 [Flyer #4 EN](#)

All flyers were translated into German, French and Portuguese to bring the project closer to the national target groups/key stakeholders, on the countries of the partnership, as illustrated in the following pages.

4.1 Project Flyers (DE)

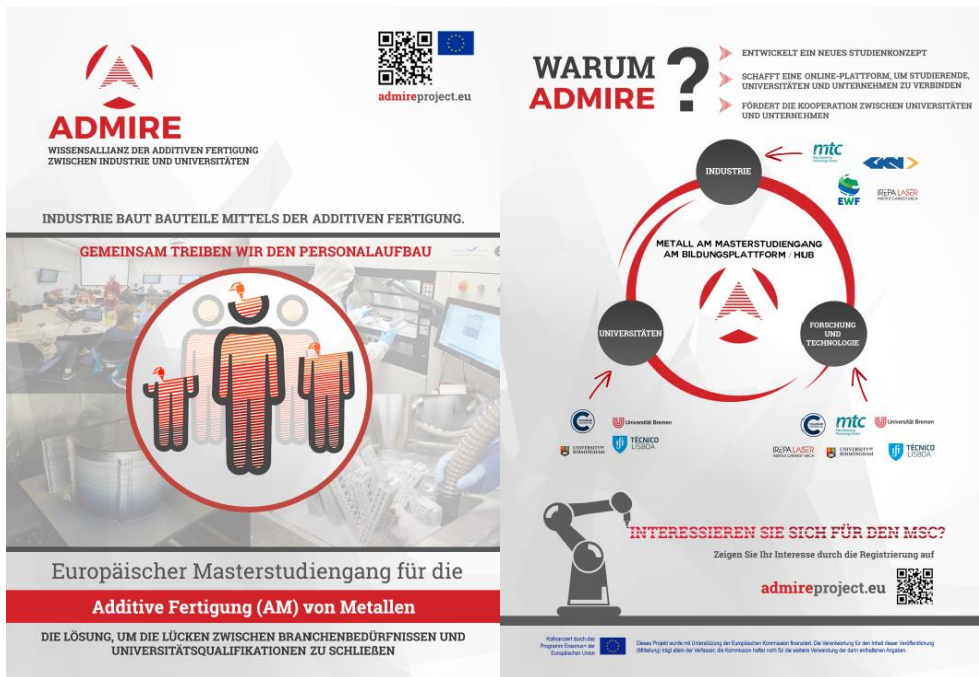


Figure 10 [Flyer #1 DE](#)



Figure 11 [Flyer #2 DE](#)

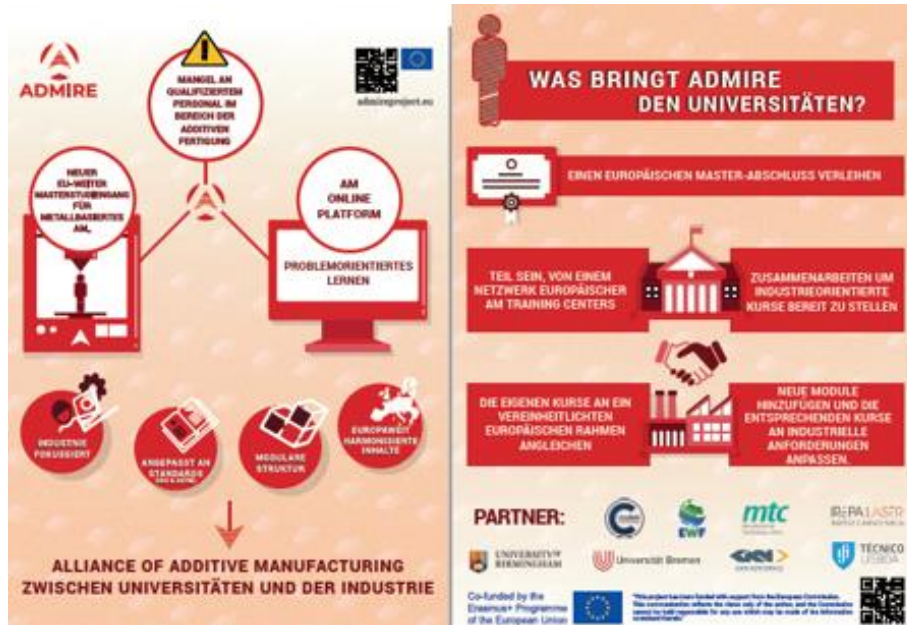


Figure 12 Flyer #3 DE



Figure 13 Flyer #4 DE

4.2 Project Flyers (FR)

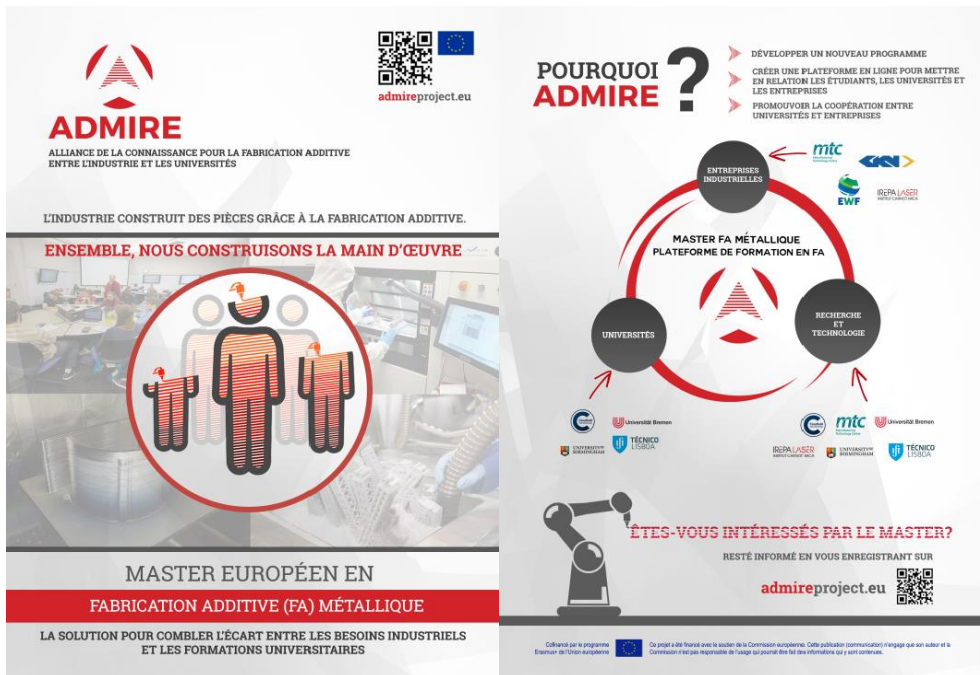


Figure 14 [Flyer #1 FR](#)



Figure 15 [Flyer #2 FR](#)

Figure 16 Flyer #3 FR

Figure 17 Flyer #4 FR

4.3 Project Flyers (PT)

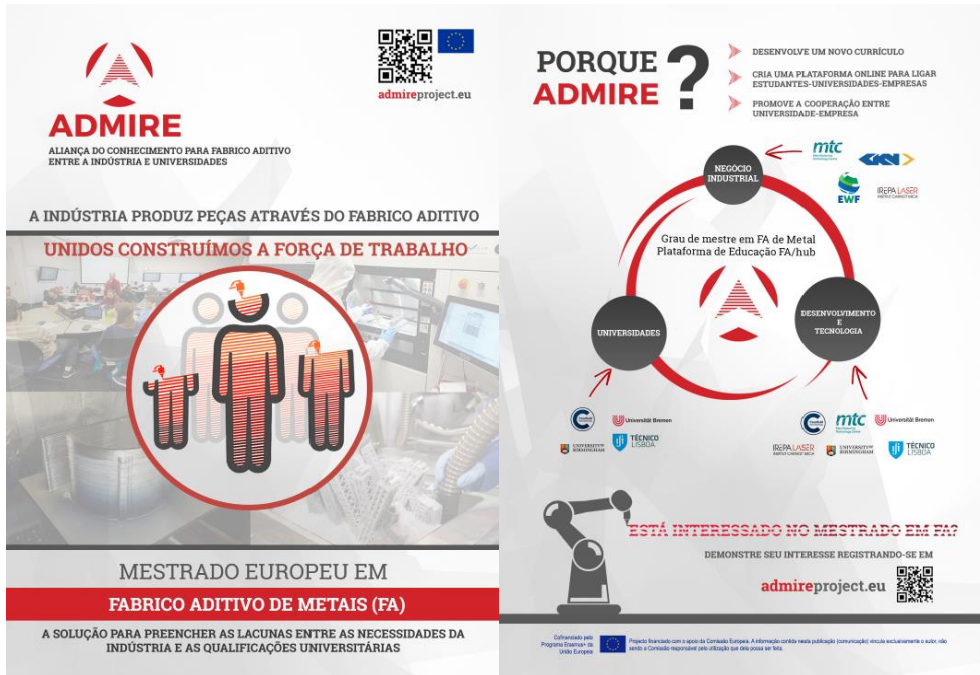


Figure 18 Flyer #1 PT



Figure 19 Flyer #2 PT



Figure 20 Flyer #3 PT



Figure 21 Flyer #4 PT

5 Project Posters

ADMIRE project's posters were created as additional dissemination material in order to promote the project in conferences and other public events where Partners participated. Due to their large printing format, posters were ideal to catch the viewers' attention when displayed on those events.



Figure 22 ADMIRE Poster displayed at EWF 2nd AM Qualification Workshop (October 2018)

5.1 ADMIRE Poster #1

The first poster was produced in October 2017 and focused on the scope of ADMIRE project and on the presentation of the project's Partners and their background (i.e. Industry/Business, Universities and Research & Technology):

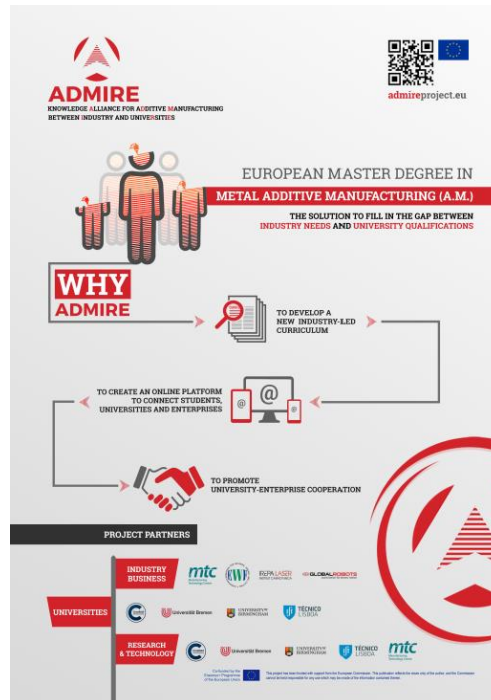


Figure 23 [ADMIRE Poster #1 EN](#)

5.1.1 Translated versions

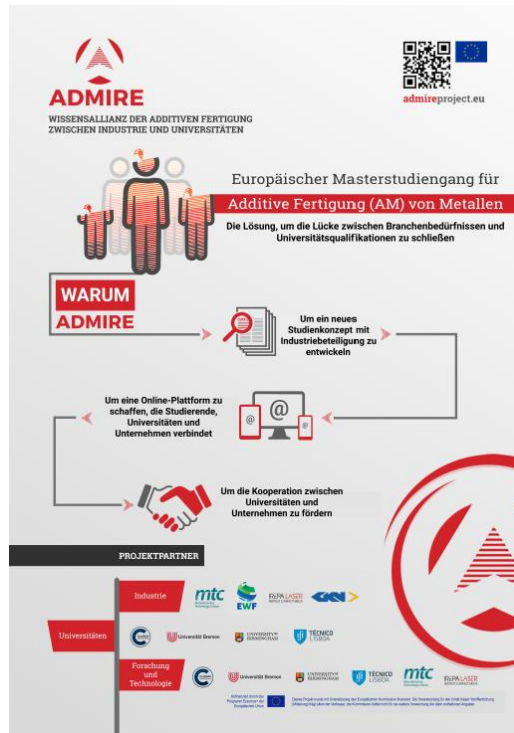


Figure 24 [ADMIRE Poster #1 DE](#)

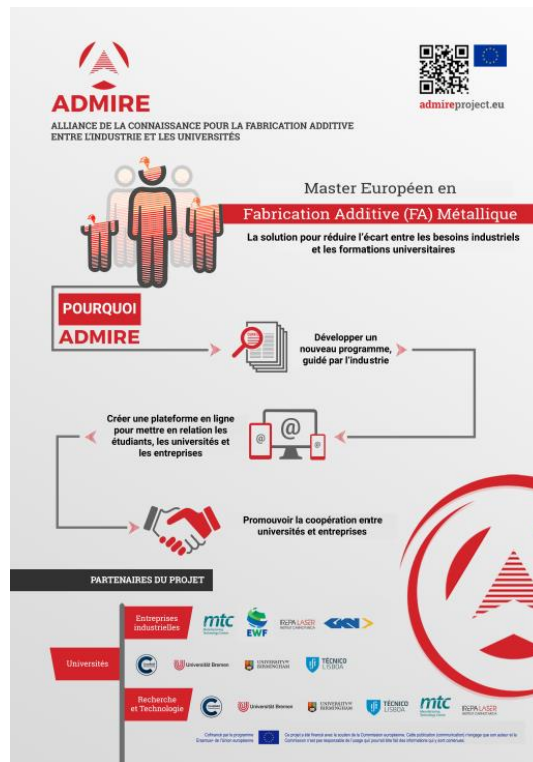


Figure 25 [ADMIRE Poster #1 FR](#)

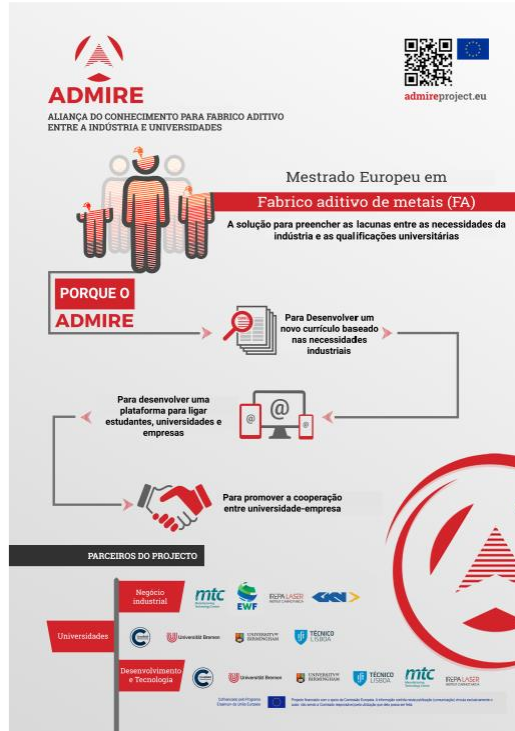


Figure 26 [ADMIRE Poster #1 PT](#)

5.2 ADMIRE Poster #2

The second ADMIRE poster was developed in June 2018, focusing on one of the project's purposes: to promote contacts between stakeholders from AM Industry and Education for future endeavors, closing the gap between both sectors:



Figure 27 [ADMIRE Poster #2 EN](#)

5.2.1 Translated versions

This poster was also translated into the languages of the partnership, as illustrated below:



Figure 28 [ADMIRE Poster #2 DE](#)



Figure 29 [ADMIRE Poster #2 FR](#)



Figure 30 [ADMIRE Poster #2 PT](#)

6 Roll-Up

Also created as additional dissemination material, a roll-up was developed to be used in ADMIRE meetings and external meetings (e.g. in the scope of other projects addressing Additive Manufacturing), conferences and workshops addressing AM where Partners could participate, as a way to bring the attention towards the project and foster events' participants' curiosity about ADMIRE.

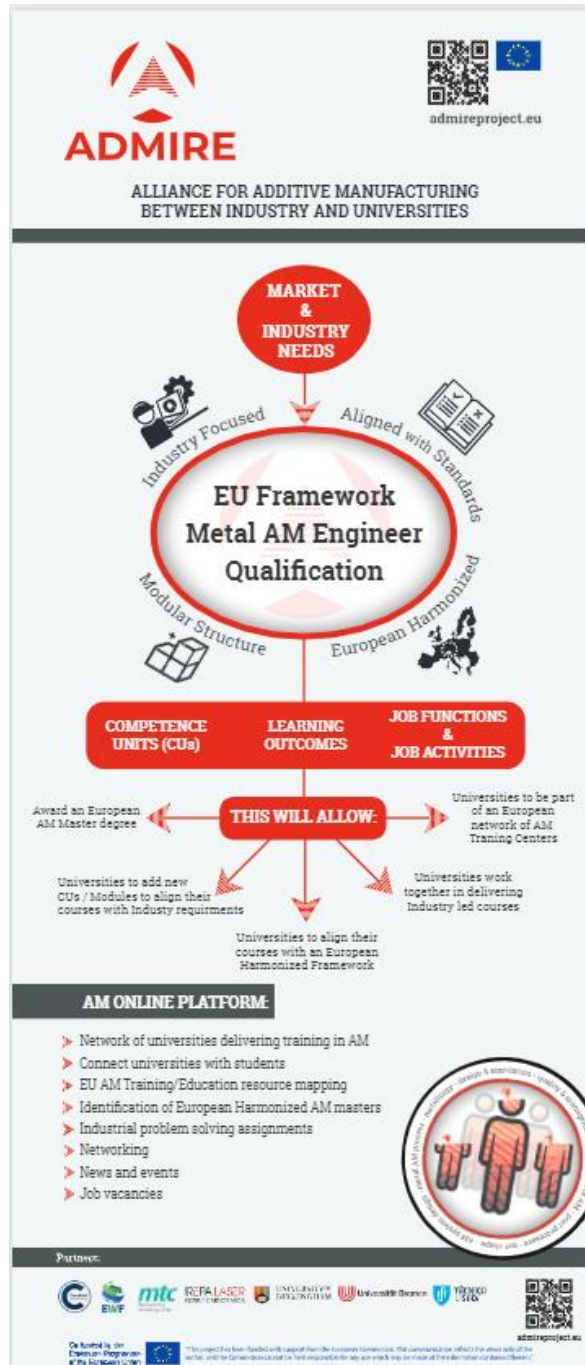


Figure 31 [ADMIRE Roll-Up](#)

7 ADMIRE Newsletters

Newsletters are a mean to publicise the projects' development in terms of activities carried out during a certain period of time and those still to be implemented. ADMIRE had three newsletters, created and circulated among the Partners' networks by email, using a specific platform (MailChimp) to generate links to which key stakeholders could access to read the Newsletters.

Each Newsletter was translated to the languages of the partnership, for a broader reach and uploaded on ADMIRE website and referred Social Media, as described below in this document, to increase their visibility.

7.1 ADMIRE Newsletter #1

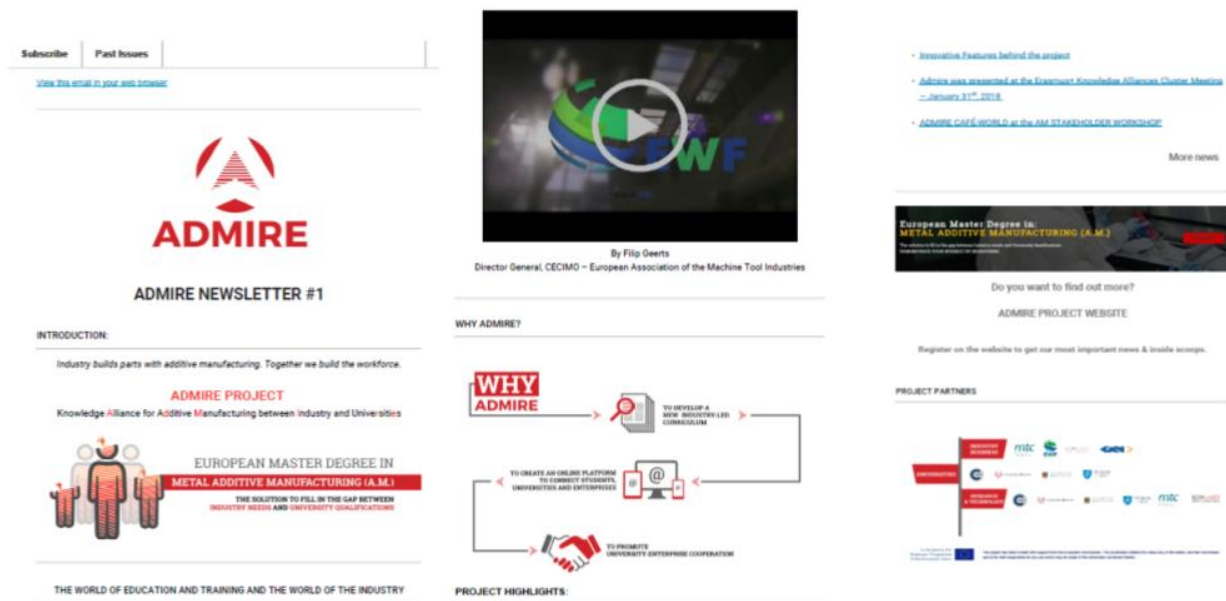


Figure 32 ADMIRE Newsletter #1 EN (June 2018)

7.1.1 Translated versions

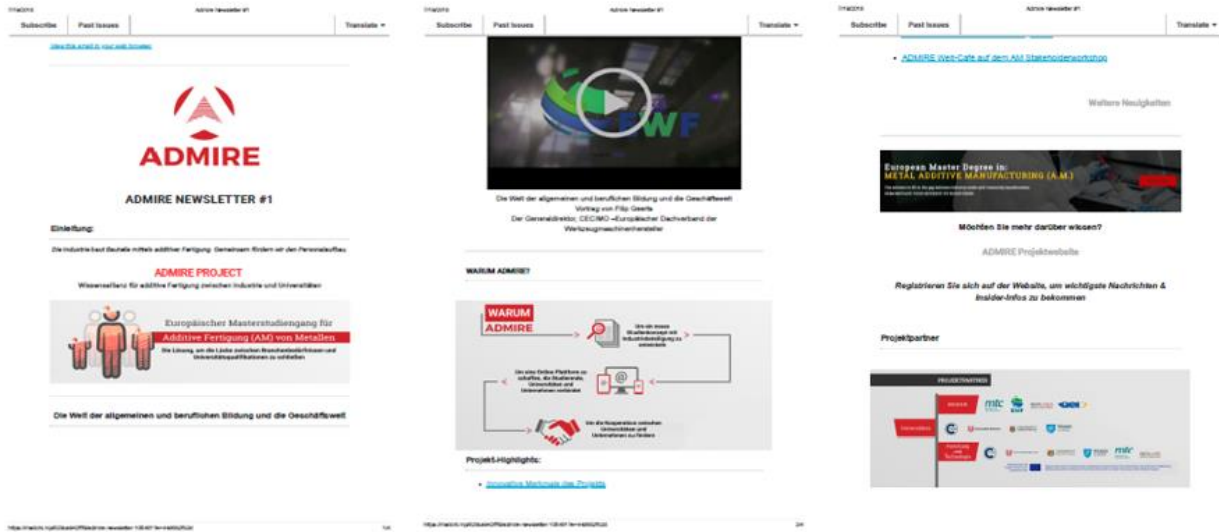


Figure 33 ADMIRE Newsletter #1 DE

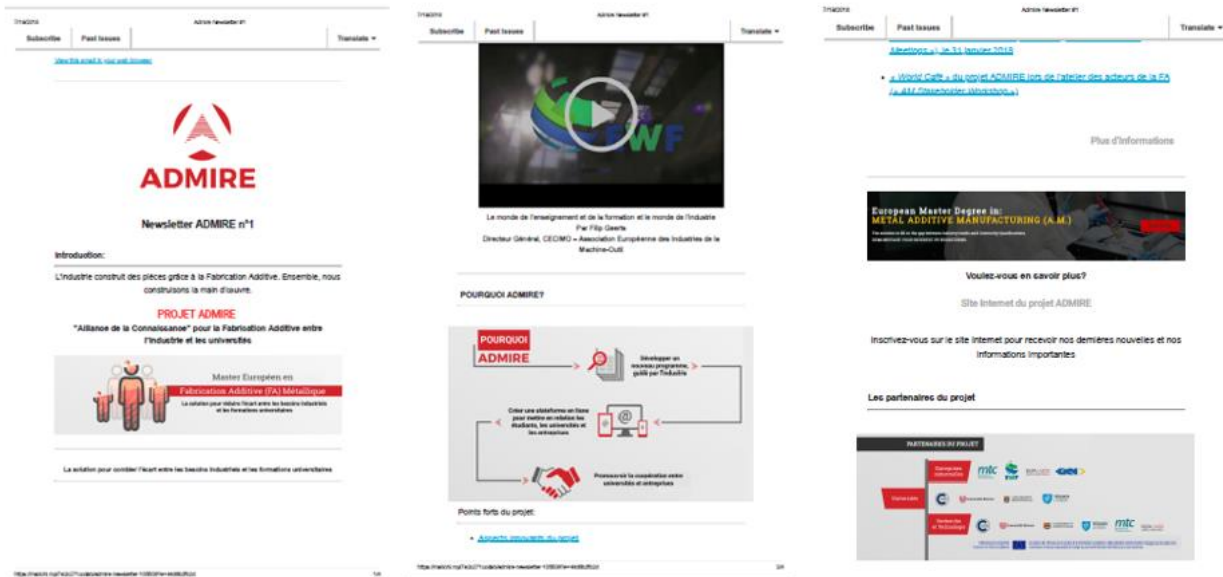


Figure 34 ADMIRE Newsletter #1 FR

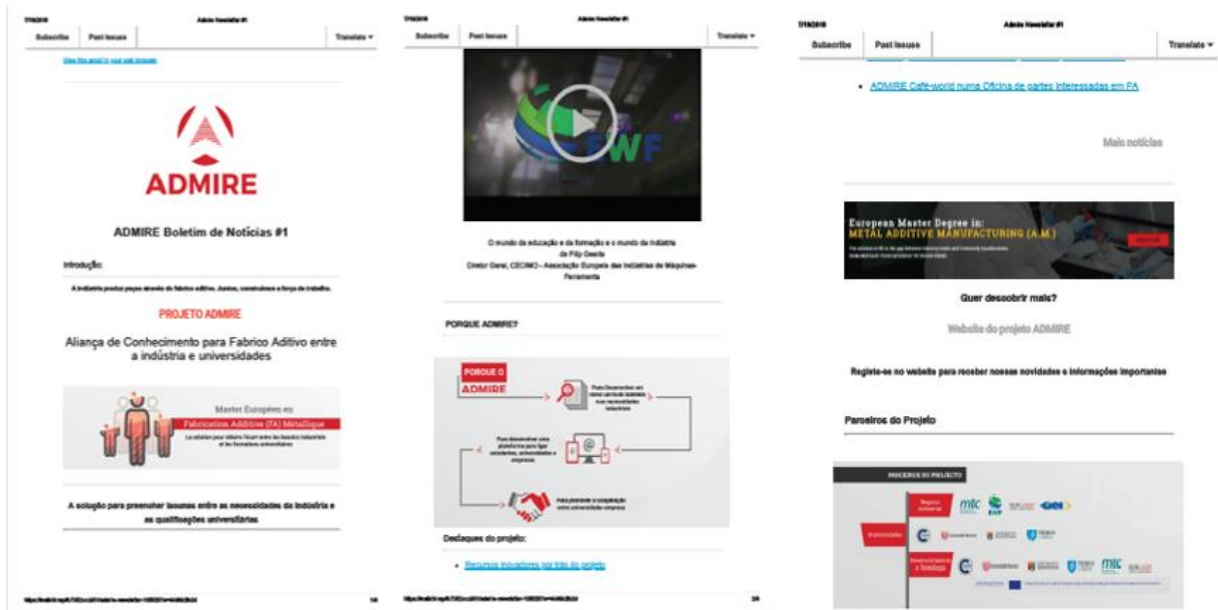


Figure 35 ADMIRE Newsletter #1 PT

7.2 ADMIRE Newsletter #2



Figure 36 Newsletter #2 EN (June 2019)

7.2.1 Translated versions



Figure 37 ADMIRE Newsletter #2 DE

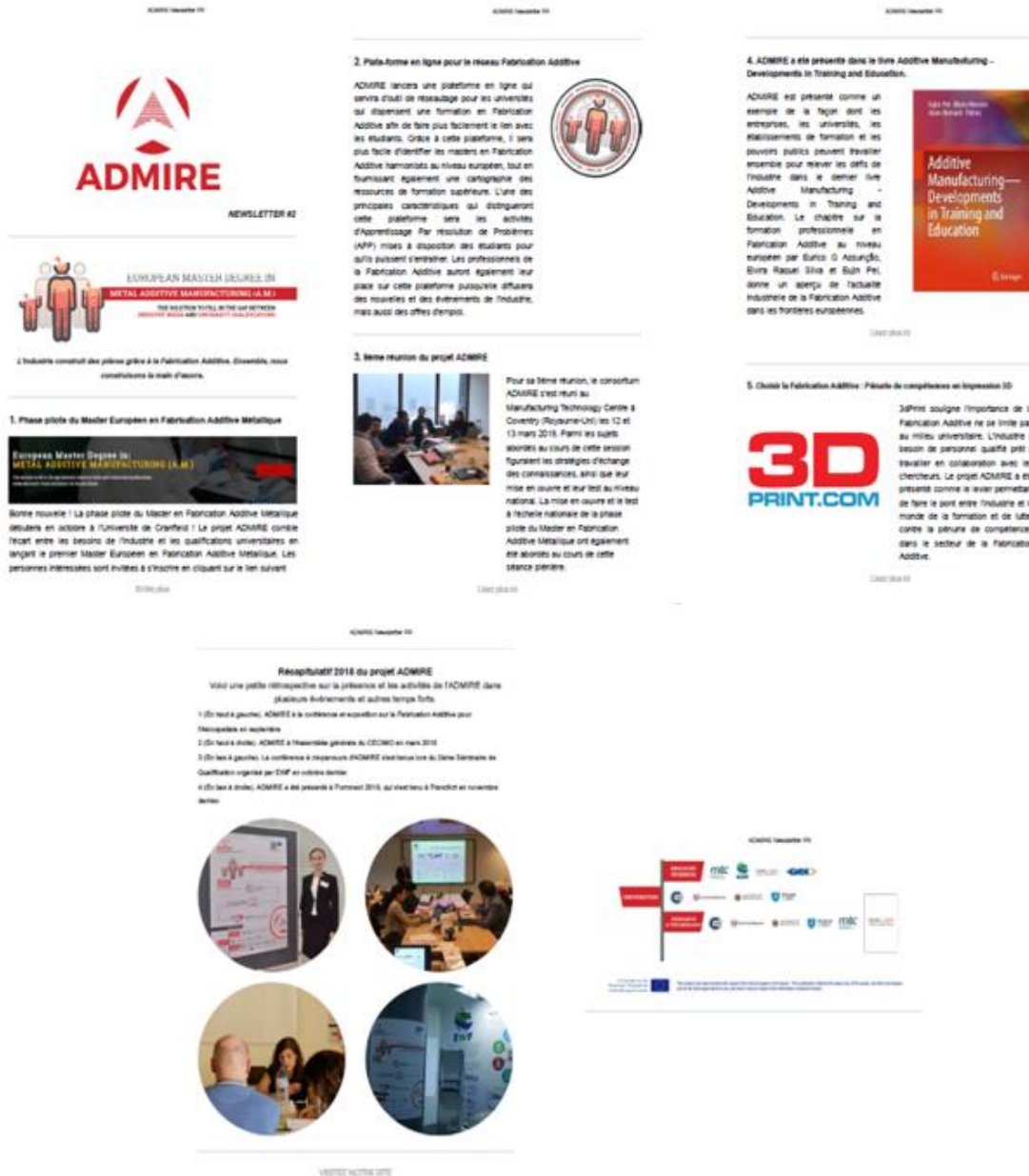


Figure 38 ADMIRE Newsletter #2 FR



Figure 39 ADMIRE Newsletter #2 PT

7.3 ADMIRE Newsletter #3

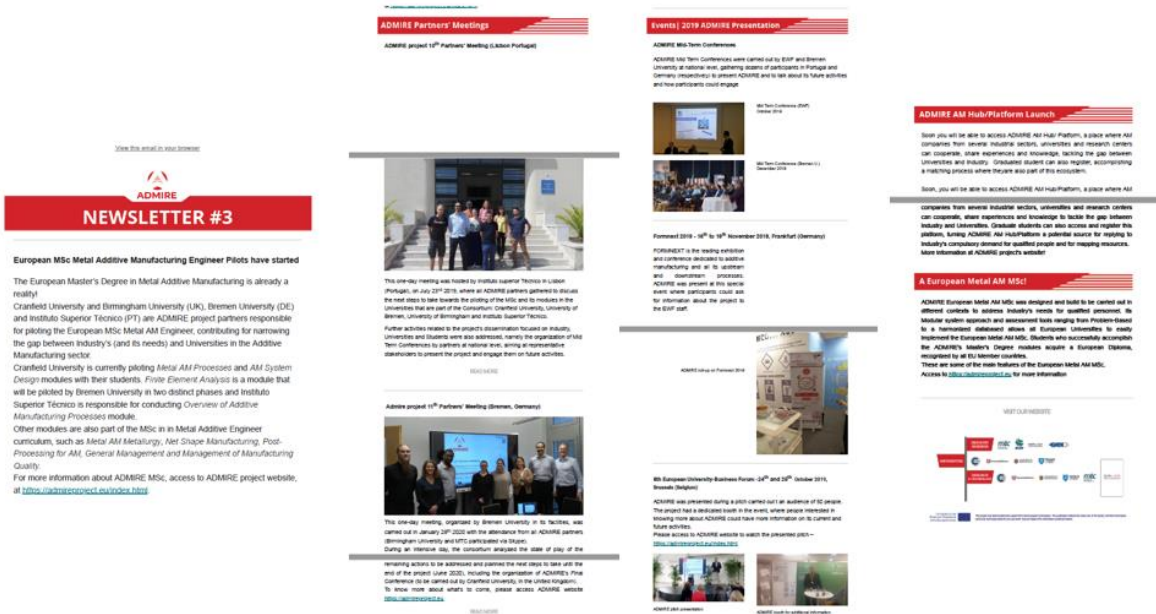


Figure 40 ADMIRE Newsletter #3 EN (March 2020)

7.3.1 Translated versions

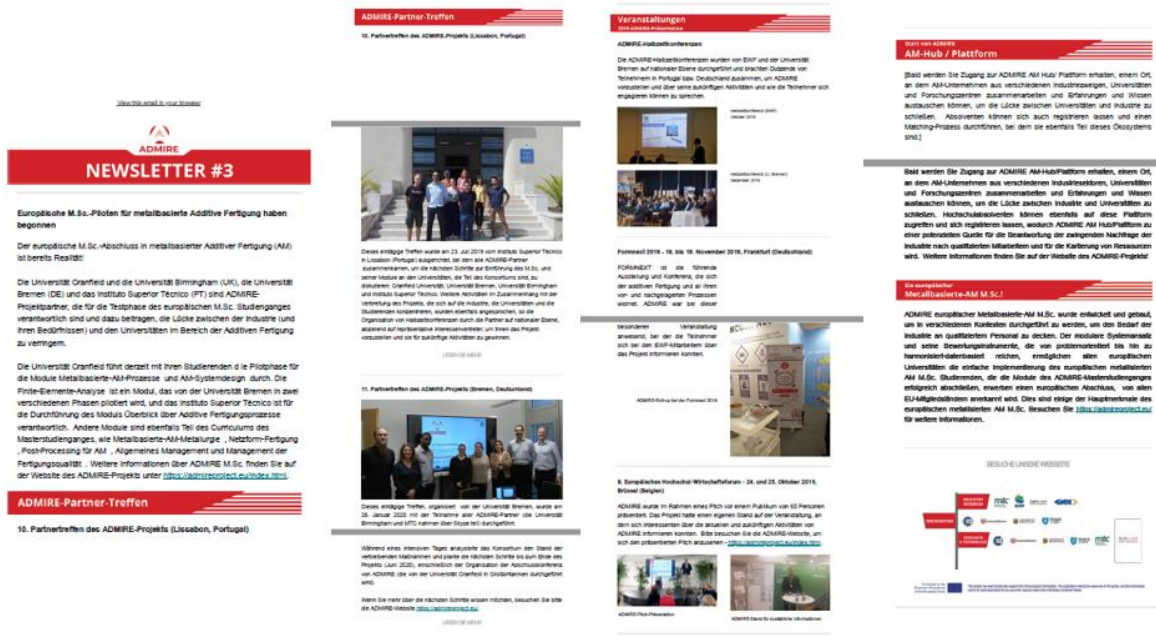


Figure 41 ADMIRE Newsletter #3 DE

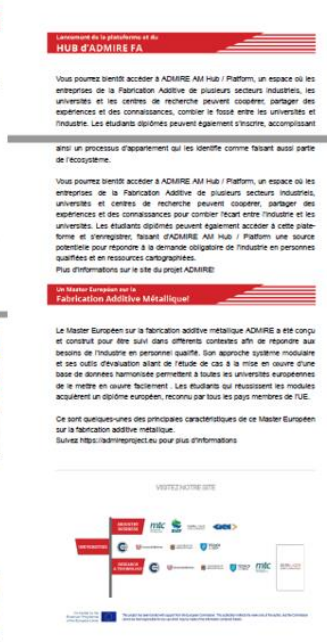


Figure 42 ADMIRE Newsletter #3 FR

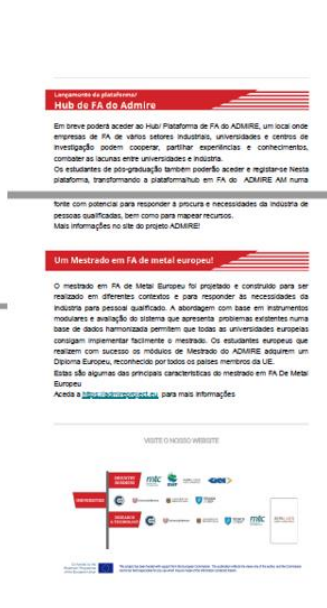


Figure 43 ADMIRE Newsletter #3 PT

8 ADMIRE: The future is now – The European Metal AM Engineer MSc

In order to have a dissemination product that would assist the exploitation of ADMIRE project, partners developed a “booklet” focusing on the European Metal AM Engineer MSc and on the AM Hub/Platform, created in the scope of ADMIRE.

This product aims at Universities and Students and provides information about:

- The scope of ADMIRE project;
- Features of the European Metal AM Engineer MSc and its curriculum, including a description of the professional profiles addressed by its specializations (in Metal AM Process Engineer and Metal AM Coordinator);
- Information about how Universities can implement the European Metal AM Engineer curriculum and what its advantages are to Students;
- Features of the AM Hub/Platform and information about how to access to it;
- Advantages in using this platform both for Universities and Students;
- Links for ADMIRE website and for AM Hub/Platform.

This “booklet” was uploaded on ADMIRE website and available in English to be consulted/downloaded by its visitors. It was also sent as annex to the email sent to ADMIRE partners’ contacts /networks to invite key stakeholders to attend ADMIRE Final Conference. EWF printed 100 copies to use this dissemination tool in future in person events, when possible.



Figure 44 ADMIRE « Booklet » [ADMIRE : The Future is Now – The European Metal AM Engineer MSc](#)

9 ADMIRE Partner Organizations' Publications: Reference to ADMIRE Project

Throughout the project, ADMIRE partners were actively engaged in referring the project, its development and results achieved on their own publications.

This specific activity aimed to an add-on in terms of dissemination, engaging key stakeholders from the networks and contacts of ADMIRE partner organizations with the project, to raise their awareness towards the activities carried out and work developed to achieve ADMIRE results and, ultimately, promote their exploitation.

9.1 EWF

9.1.1 EWF Annual Reports

An Annual Report is a comprehensive report on an organisation's activities throughout the preceding year. Annual Reports are intended to give shareholders and other interested people information about the organisations' activities and financial performance.

During ADMIRE lifetime, EWF dedicated a short note to the project in its Annual Reports as one of the organisation's actions, disseminating the project to EWF members and network/contacts. A printed version was used by EWF on several occasions to be distributed among events' participants interested and/or involved in the field of AM.



Figure 45 Cover of EWF Annual Report 2017, where a reference to ADMIRE is made

Project topics cover a variety of areas like Additive Manufacturing, Health and Safety, Microbonding, Laser processing and Adhesives, that go beyond Welding and Joining and target Manufacturing as a whole.

Harmonisation/Modernisation of the EWF System



State-of-the-art Courses/Modules



Benchmark to other teaching Areas



Modernisation of teaching methods



Support for learning



Implementation in new countries/new markets



Figure 46 Reference to ADMIRE on EWF Annual Report 2017



Figure 47 Cover of EWF Annual Report 2019 and Reference to ADMIRE project

9.1.2 EWF Corporate Profile

EWF Corporate profile was intended to show EWF’s main activities to all its members and key stakeholders. It encompassed an overview on EWF’s mission, team and technical committees, focusing also on its key activities, highlights, main projects, core projects and EWF Network Members. ADMIRE was presented in the “Core projects” section of this Corporate Profile.



Figure 48 Cover of EWF Corporate Profile 2018 and References to ADMIRE project

9.1.3 EWF White Paper (2019)

ADMIRE project was once again addressed by EWF in its White Paper, a publication which aimed to provide information about the state of the art of Additive Manufacturing in Europe and how EWF have been contributing for the growth of this field with its International AM Qualification System (IAMQS) and EWF’s active involvement on several Erasmus+ funded projects, including ADMIRE (presented with a brief summary of its scope and main purposes, with a link for the project’s website):



Figure 49 EWF White Paper (Dec. 2019)

9.1.4 EWF Newsletters

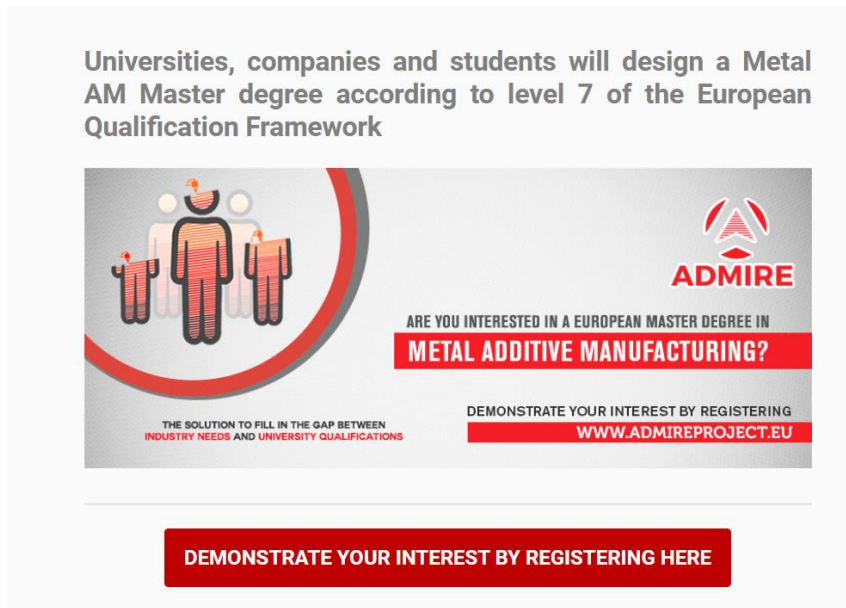


Figure 50 Reference to ADMIRE on [EWF Newsletter](#) (First semester of 2017)

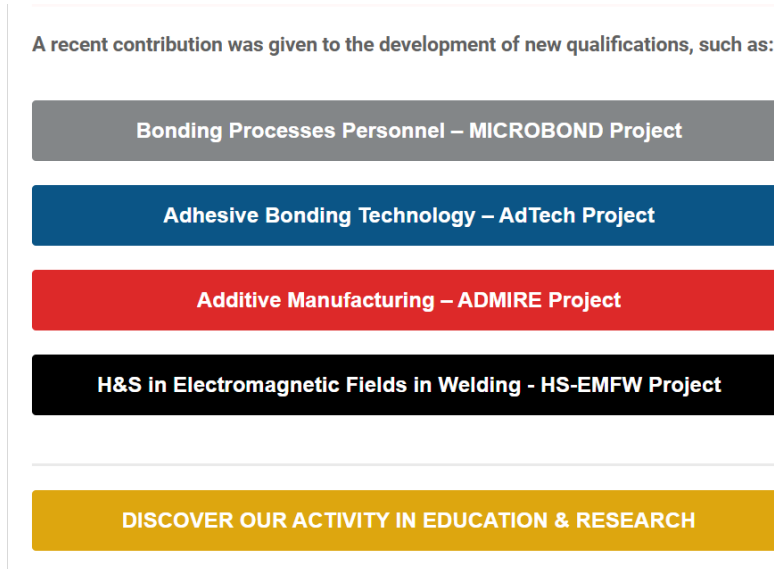


Figure 51 Reference to ADMIRE on [EWF Newsletter](#) (Last semester of 2017): Link to ADMIRE website



Figure 52 Banner addressing a collaborative Workshop in which ADMIRE was presented
([EWF Newsletter – March 2018](#))

10 Online Activity

In today's world, having a strong online presence is of paramount importance to ensure that projects' activities are disseminated to a wider audience.

In ADMIRE, this effort was done by conducting the following activities:

- Creation of ADMIRE website;
- Creation of news articles for publishing in the official ADMIRE project website;
- Specific publications in the several ADMIRE Partner Organizations' websites;
- Publications across social media platforms (i.e. Facebook, LinkedIn and Twitter).

10.1 ADMIRE Project website

As part of the ADMIRE project, a website was developed on behalf of the consortium (with the domain name <https://admireproject.eu/index.html>) by EWF, with contributions from all ADMIRE partners. This website was the focal point of the project, containing all ADMIRE dissemination tools (as referred in their respective links, above in this report) and also ADMIRE public deliverables, to be accessed and downloaded by all its visitors to be used in the scope of their activities, including after the project's conclusion.

Since May 2017, this website was continuously updated when needed, helping Partners to communicate new information about the project and its activities to the website's visitors (e.g. news about the focus groups, information about the opening of the European Metal AM MSc pilot sessions, link for the AM Hub/Platform, news about ADMIRE Transnational Partners' Meetings, news about the National Roundtables, links for registering ADMIRE AM Symposium 2020 and ADMIRE Final Conference |Skilling the AM Future 2020, etc.). By the end of the project, it reached a total of 12 187, as further described. It continued being updated after the project's conclusion, with news on ADMIRE second Press Release, posted at its general publication on social media (November 11th, 2020).

The following pictures show the homepage of the website as it currently appears on the web browser. The website is multiplatform, as it is also prepared to be used on mobile devices.

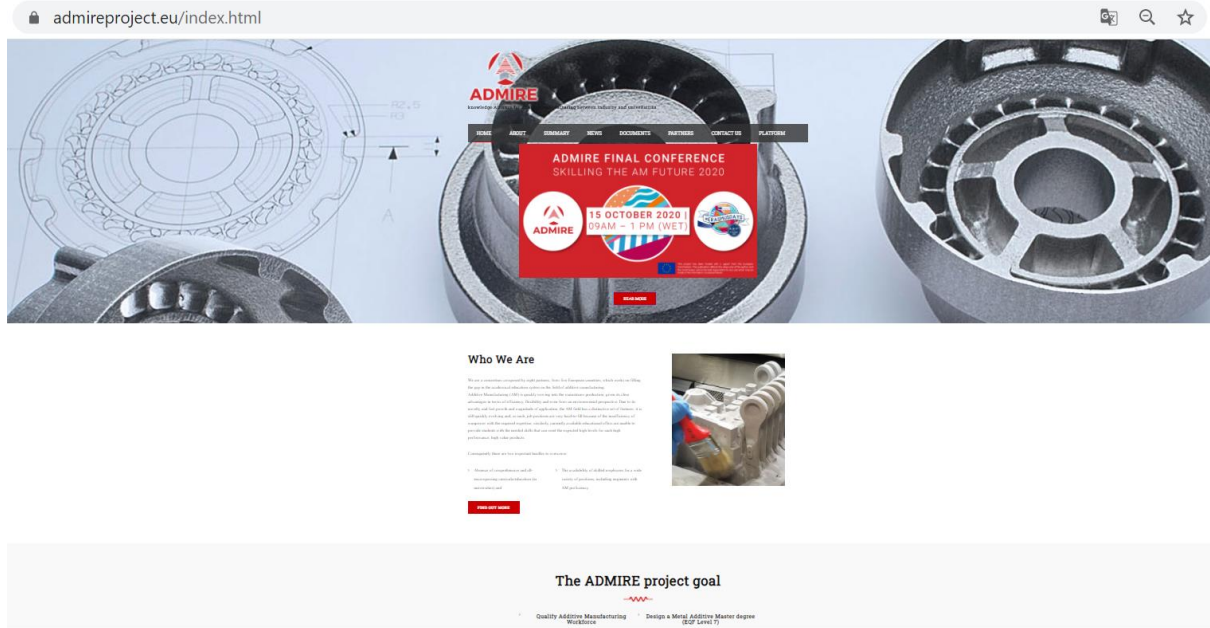
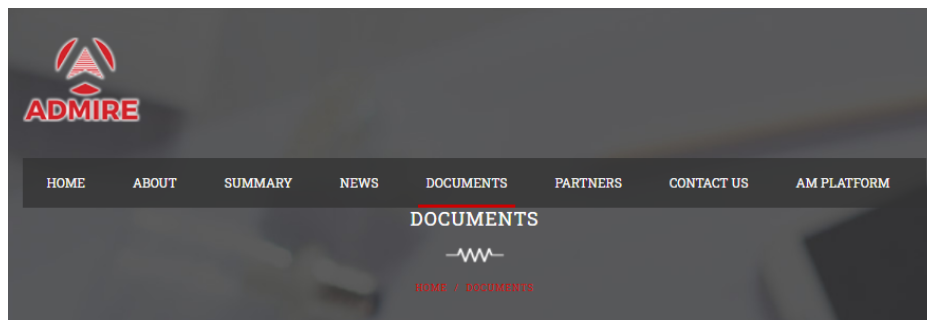


Figure 53 [ADMIRE website homepage](#)



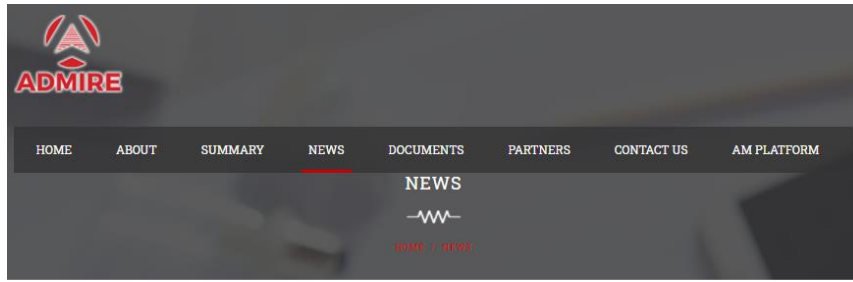
Documents

DELIVERABLES	FLYERS
D1.1 - Research and Needs Analysis on Metal Additive Manufacturing	
D2.1 - Theoretical State-of-art Report	
D2.2 - MSc's Rules and Requirements and Draft Guideline	
D2.3 - Design Process Draft Guideline	
D3.1 - Draft Guideline of the AM/MSc's Purposes and Strategies Alignment	
D3.2 - Students support strategies	
D3.3 - Mapping and inventory of available resources	
D6.2 - Additive Manufacturing World Cafe Meetings	
D6.3 - AM Knowledge Speed Datings	
D6.4 - Roundtables Report	
D7.1 - Project Website & Logo identity	
D7.5 - Dissemination Portfolio	
D7.6 - Mid Term Conference & Evaluation	
D7.7 - The Future is now_European Metal AM Engineer MSc	
PRESS RELEASES	POSTERS
NEWSLETTERS	ROLLUP
BOOKLET	

Figure 54 ADMIRE website [Documents section](#)

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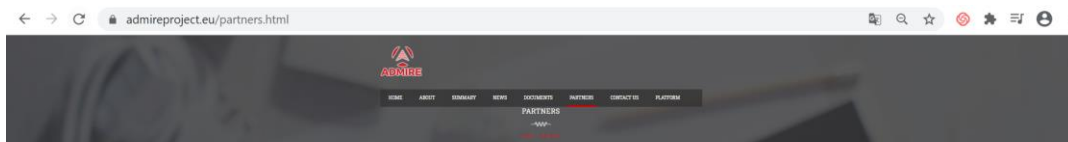
TAKE A LOOK AT ADMIRE FINAL PRESS RELEASE

November 11, 2020
By EWF

Take a look at ADMIRE final Press Release, in which the project's main purposes and results are addressed, as well as their potentialities for Universities and Companies across Europe!

ADMIRE FINAL PRESS RELEASE

Figure 55 ADMIRE website [News section](#)



Meet Our Partners

Partner names from top to bottom: CERN, UNIVERSITY OF BIRMINGHAM, Universität Bremen, TÉCNICO LISBOA, Institut Teknologi Sepuluh Nopember, University of Antwerp, University of Warwick, Institut Teknologi Sepuluh Nopember, IRCPA LASER, mtc, EWF, and others.

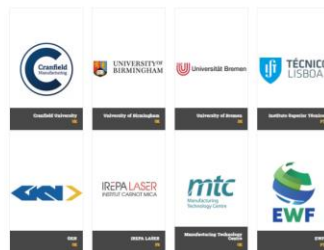


Figure 56 ADMIRE website [Partners section](#)

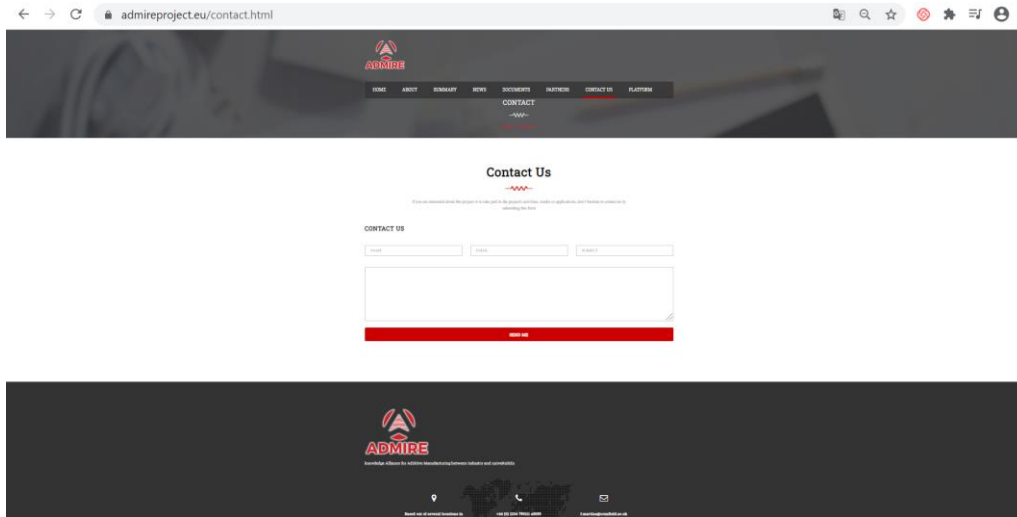


Figure 57 ADMIRE [Contact Us](#) section

ADMIRE website has a specific section that allows its visitors to directly access to ADMIRE AM Hub/Platform (deliverable D6.1):

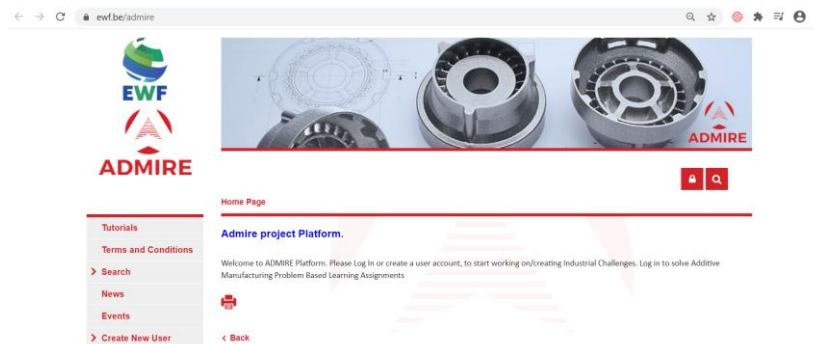


Figure 58 ADMIRE website [Platform](#) section

10.1.1 ADMIRE Website in numbers

Managed by EWF (ADMIRE partner responsible for updating the website, as previously mentioned), this online dissemination tool provided an overview of ADMIRE, the scope of the project, its goals, innovative features, partners, news to be highlighted, documents (dissemination tools and public project deliverables) and contacts.

Throughout the project's implementation, it was possible to register a growing number of visitors, from all corners of the world.

Between May 2017 and 20th June 2018 it had **3,237 views/visitors**, most of which were from Europe:

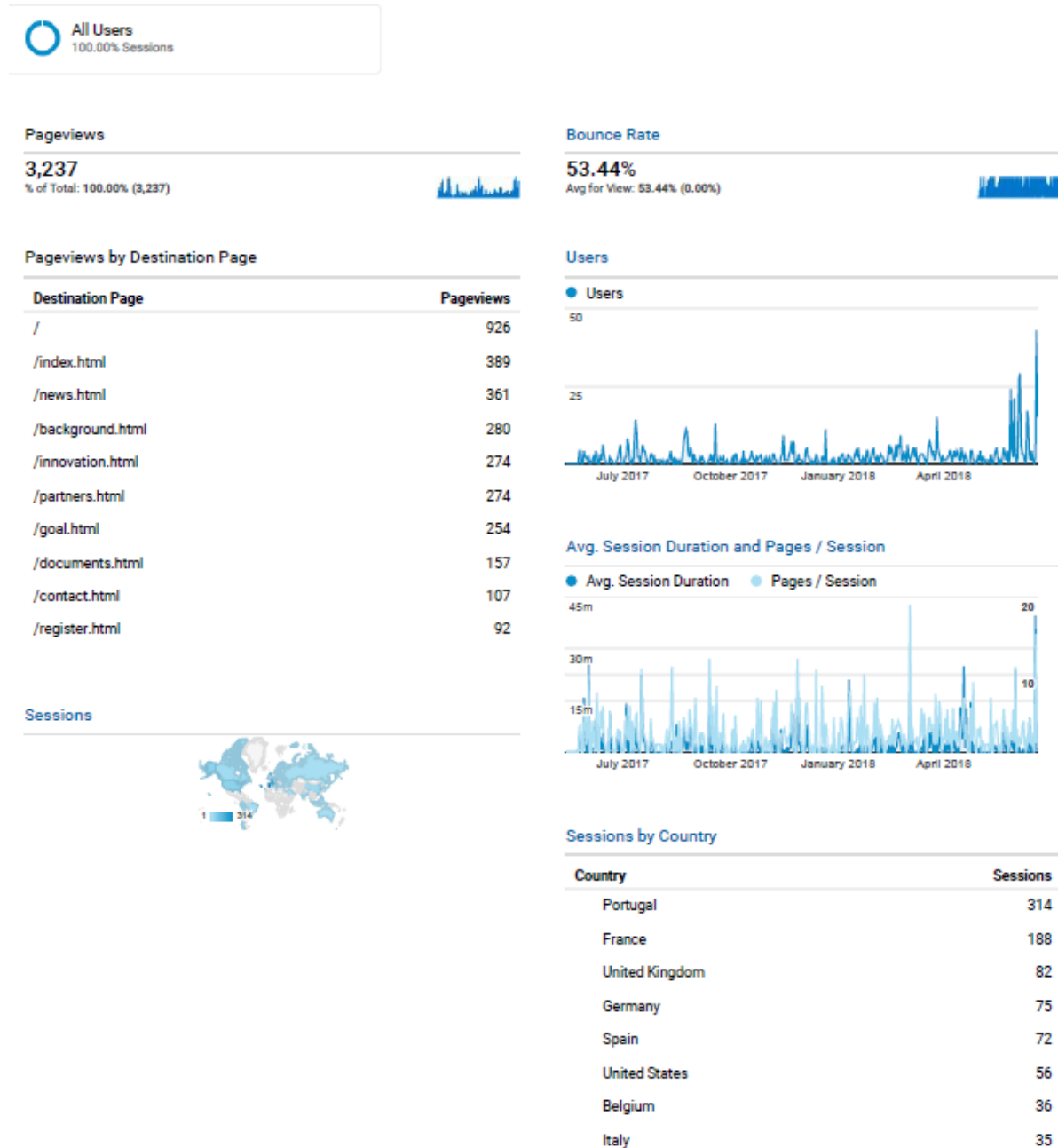


Figure 59 Data analytics on ADMIRE's website (May 2017 – June 2018)

In the figure below, the graphics show that, even though there was a large number of new visitors, 11,5% were returning visitors looking for news about the project (which indicates their engagement with the project's activities):

Audience Overview

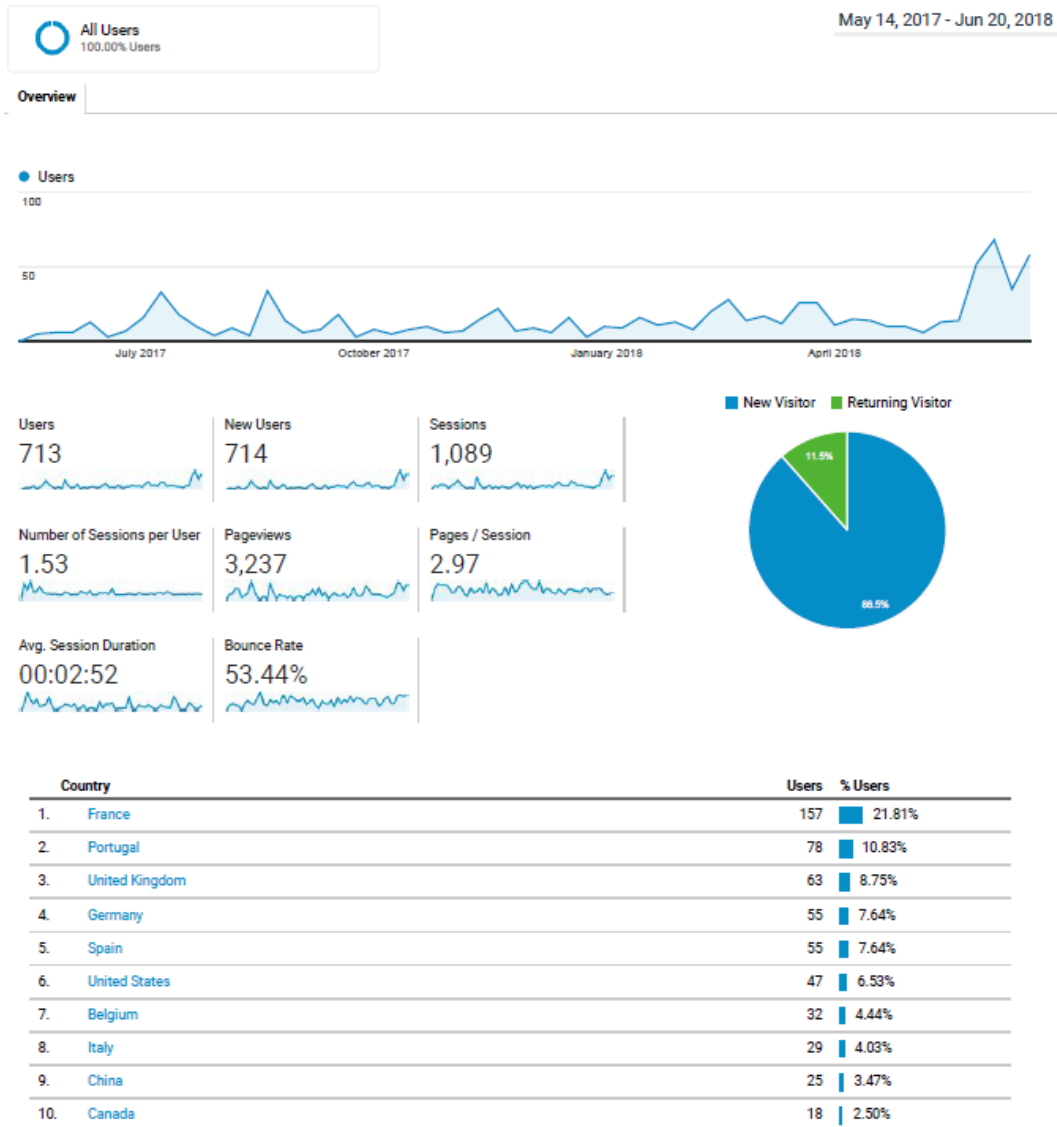


Figure 60 Data analytics on ADMIRE's website (May 2017 – June 2018) II

In the period between the 1st July 2018 and August 2020, the number of views increased almost 5 000, with a total of 8 236 views. As seen in the image below, the top three countries to which visitors belonged were United States of America (690), followed by Portugal (585) and United Kingdom (465). It is also interesting to observe that, in this period, ADMIRE website also registered views from India (136) and China (113), an indication of the reach and impact of the project not only at European level, but also beyond borders.

The difference between returning and new visitors kept the same percentage as in the previous period.

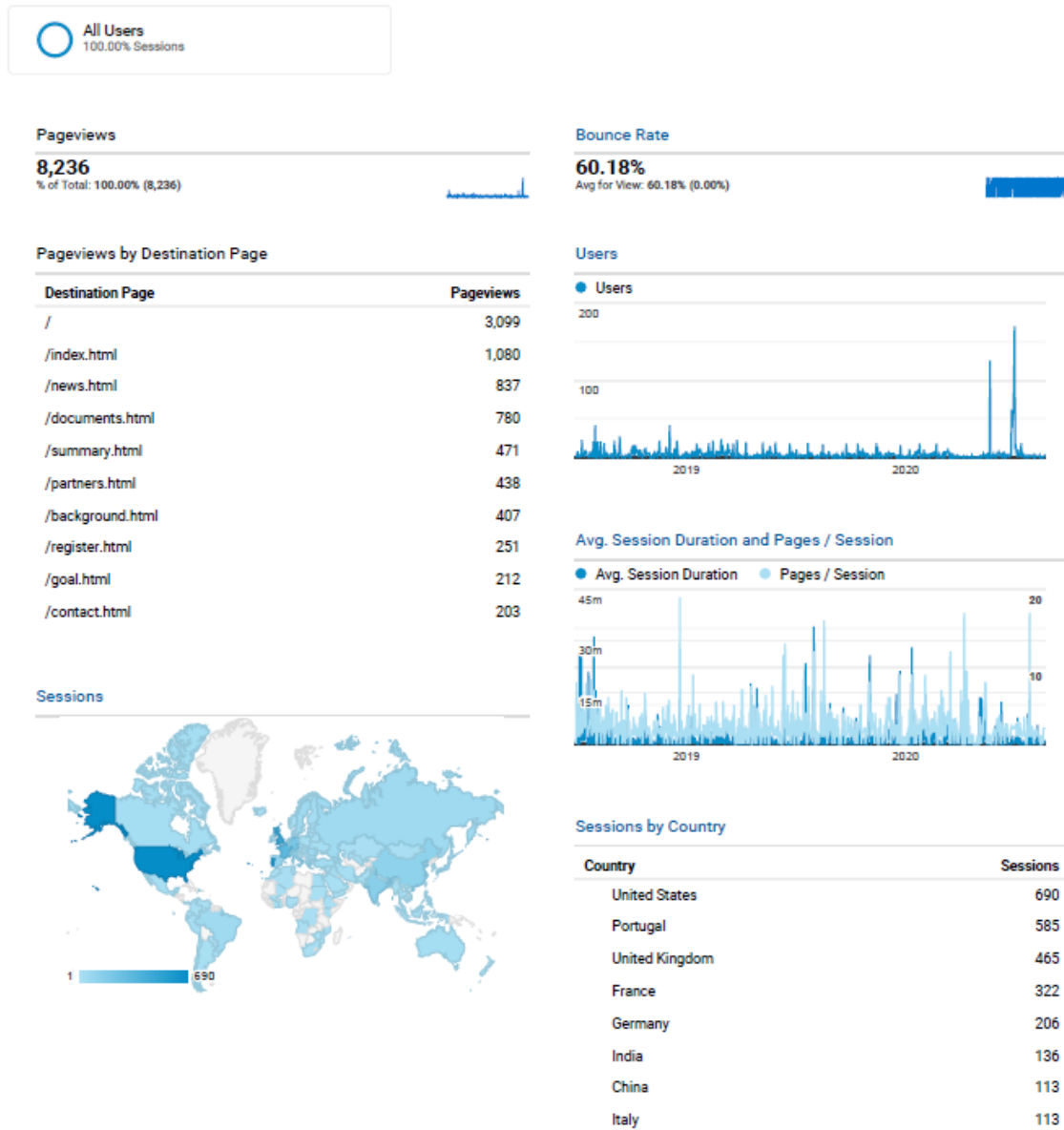


Figure 61 Data analytics on ADMIRE’s website (July 2018 – August 2020)

At the end of the project, a final analysis was made to ADMIRE website, focusing on its overall progression since May 2017 (when it was made available to public) until the end of October 2020 (final month of ADMIRE project’s implementation).

Figure 62, below, allows to conclude on the success of this website based on the total number of visitors/views: 12 187 (which means that between August 2020, where 8 236 views were recorded, and the end of October 2020, the website had 3 951 visits).

As for the countries to which the visitors belong, the most represented one is Portugal (with 1 012 visitors), followed by the United States of America (a total of 787 visitors). Other countries from the EU are also represented, with 546 visitors from France and 309 from Germany. The United Kingdom and India also had visitors accessing to ADMIRE website (569 and 148, respectively).

Once again, these numbers prove the scope of ADMIRE website in the four corners of the world, a significant aspect of ADMIRE dissemination activity with an important impact in terms of potential sustainability and exploitation of the project’s results:

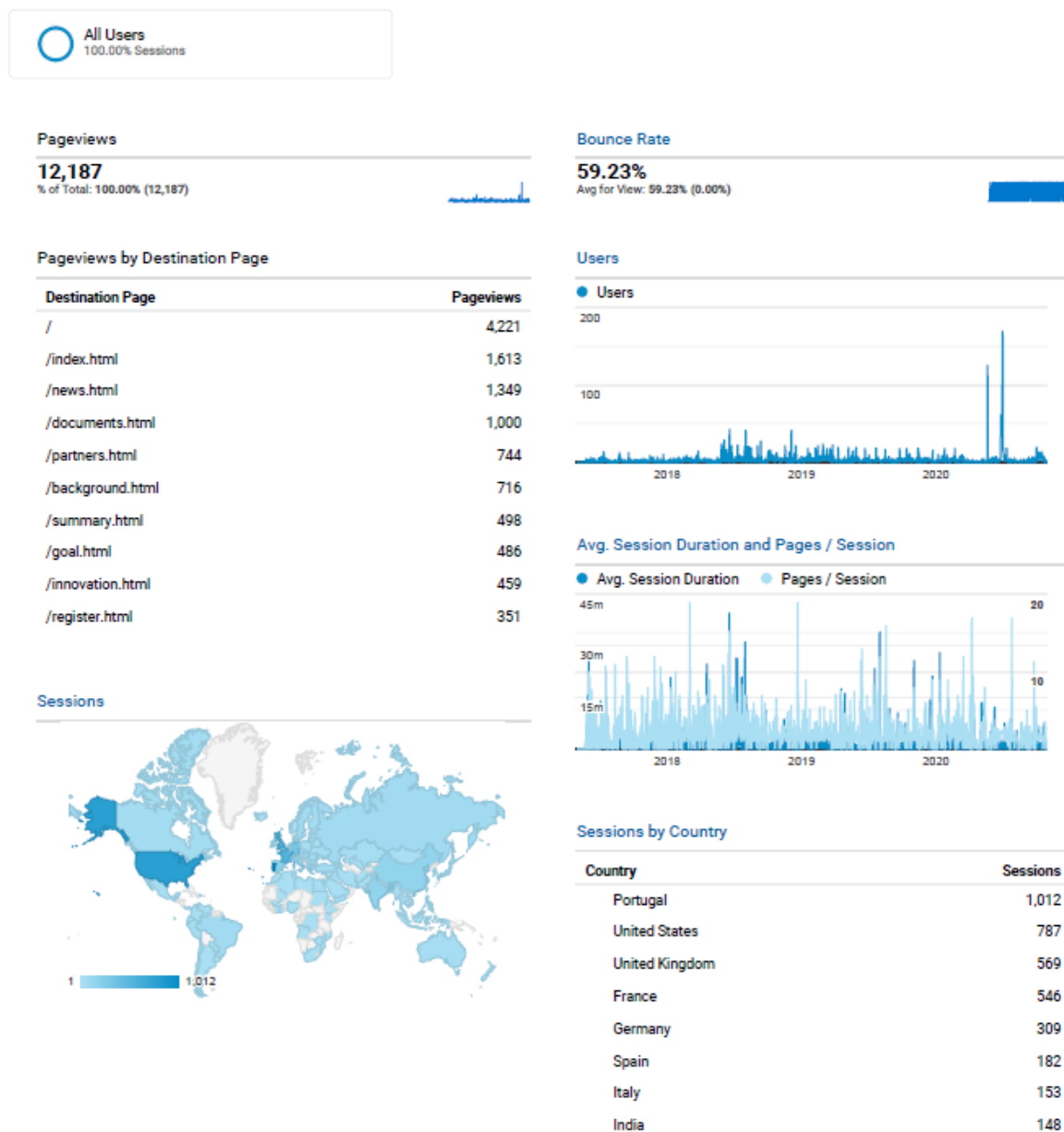


Figure 62 Data analytics ADMIRE Website (May 2017 – October 2020) - Visitors

Figure 63 shows that the majority of visits was made to ADMIRE website’s **Index**, where visitors accessed to information about the project’s scope and main goals, to the video made to present the project in an interactive way (i.e. pitch video), dedicated tabs to the most recent news published on the website and information about ADMIRE partners (1 613 visitors), followed by the **News** section (total of 1 349 visitors).

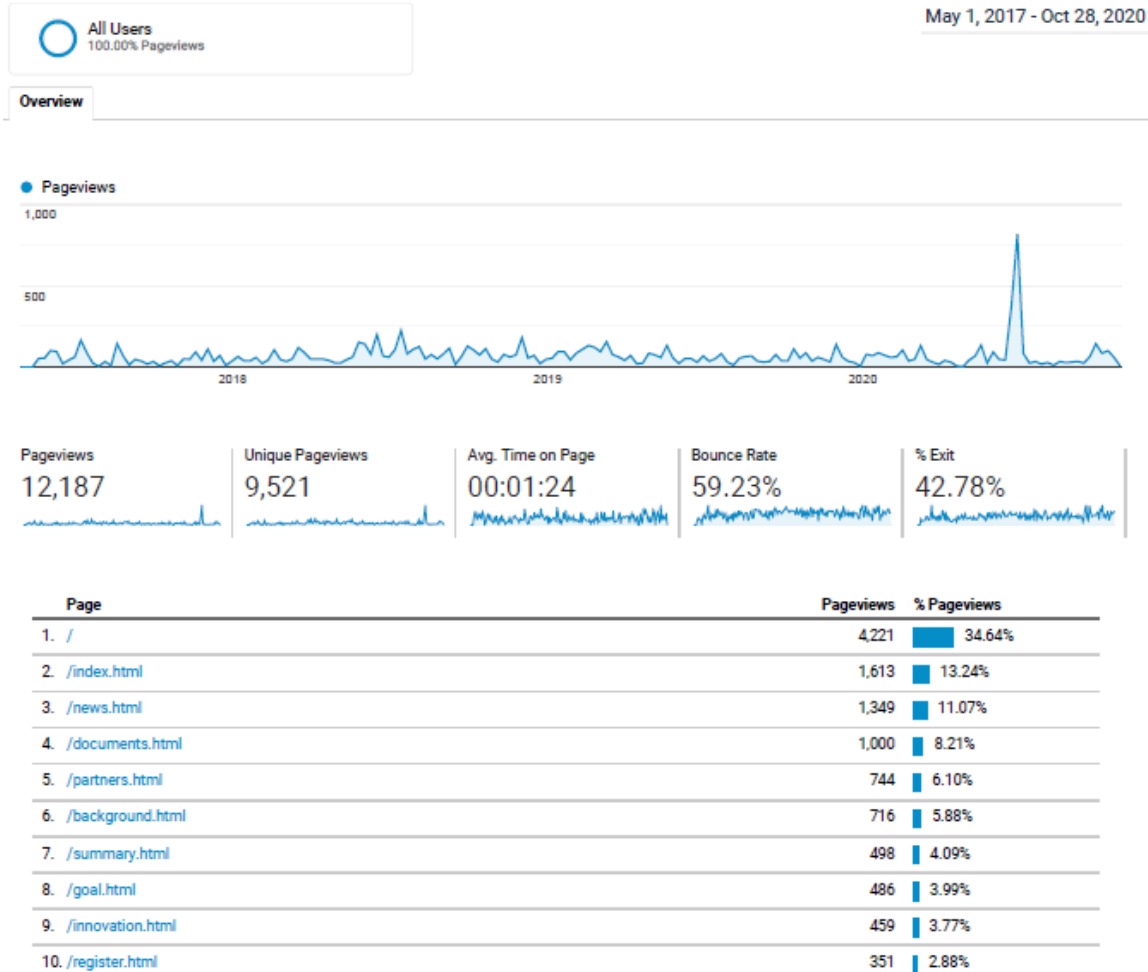


Figure 63 Data analytics ADMIRE Website (May 2017 – October 2020) – Views per Section

Roughly 1 000 visitors accessed to ADMIRE documents, an indication of their interest for ADMIRE results and their potential usage by them, in line with the Dissemination, Sustainability and Exploitation Plan (deliverable D7.4).

In conclusion, ADMIRE website proved to be a successful dissemination tool, narrowing the bridge between ADMIRE project and its target groups, providing them with updated

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information on the project's activities and achievements, with ADMIRE results and a link for the AM Hub/Platform, which also enables its sustainability.

10.2 ADMIRE Partner Organizations' websites

According to the established project's dissemination strategy, most ADMIRE Partners created, within their organisations' website, specific sections featuring ADMIRE information and/or news articles about the project, which enable to reach a specific target group related to Partner Organizations' own field of expertise, whether on Education or AM Industry sectors, or even the general public.

Below are the descriptions and links to ADMIRE partner organizations which created a specific section within their websites to disseminate the project:

10.2.1 University of Birmingham

ADMIRE had a special reference on AMPLab website, which is University of Birmingham's Advanced Materials Processing Laboratory (responsible for studying the impact of advanced materials processing techniques, like additive manufacturing or powder processing, on the microstructure-property development in advanced materials):

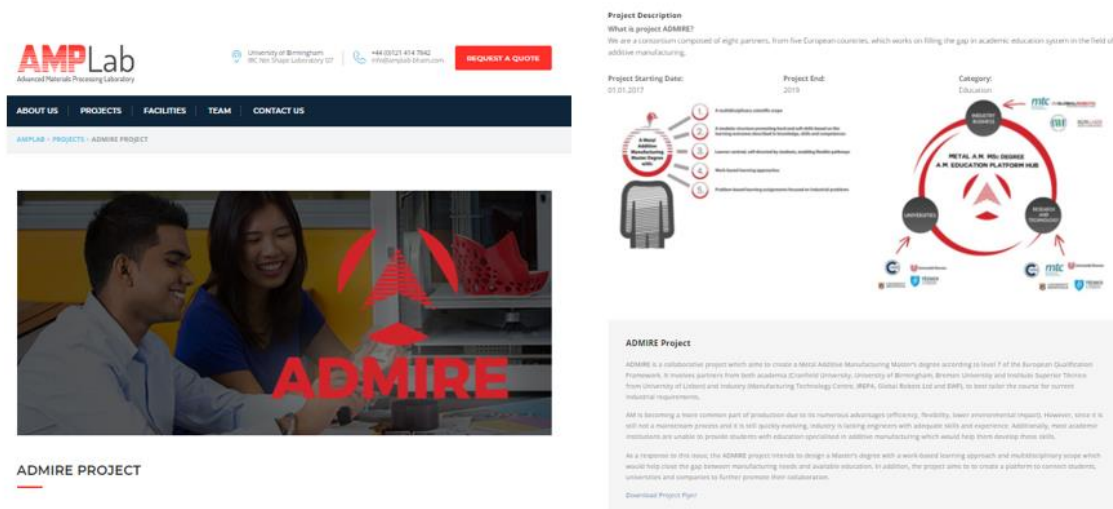


Figure 64 Reference to ADMIRE at University of Birmingham [AMPLab's website](#)

10.2.2 Bremen University

Another example can be found in ISEMP, Airbus Endowed Chair for Integrative Simulation and Engineering of Materials and Processes located at Bremen University which, in addition to researching methods and approaches for numerical simulation of innovative materials and manufacturing processes, also teaches experts in the field of computer simulation, focusing on finite element method.

Information provided by ISEMP about the project can be found in EN and DE:

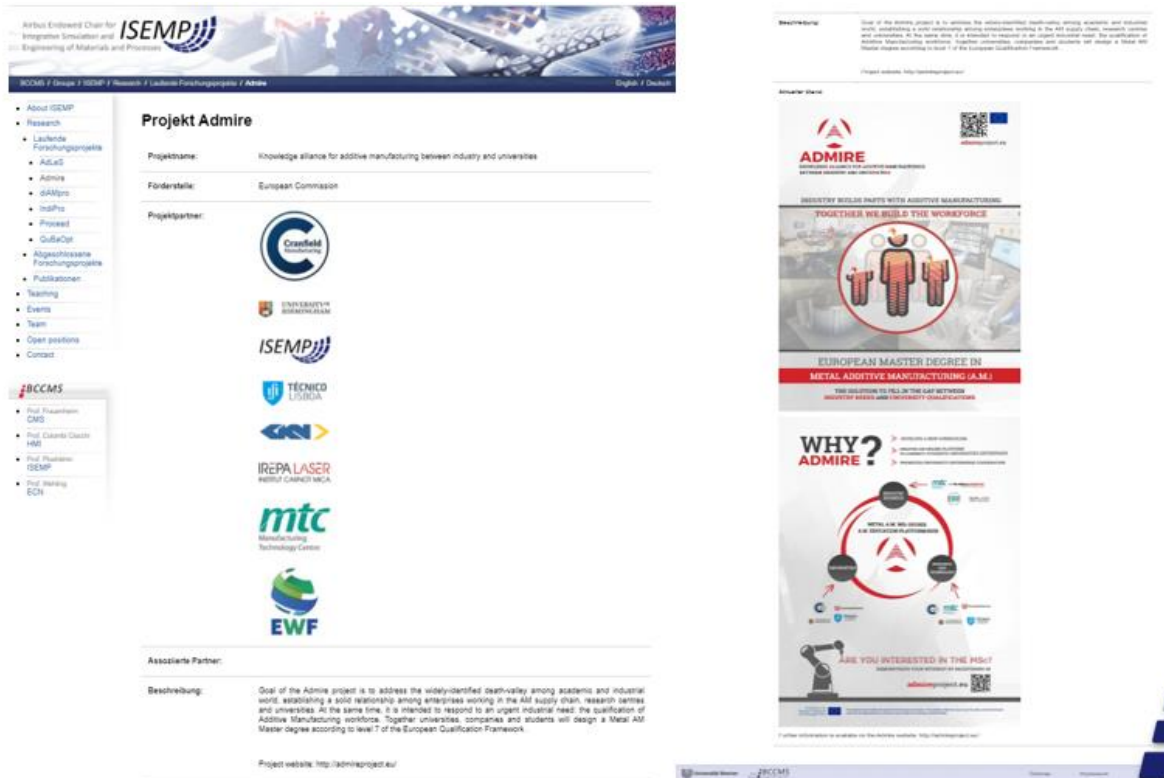


Figure 65 ADMIRE's reference at [ISEMP website](http://www.isemp.de) (contents)

10.2.3 Cranfield University

Cranfield University's webpage has a number of references to ADMIRE to which visitors can access by clicking the respective links. Below an example of the publications made on Cranfield University's website:

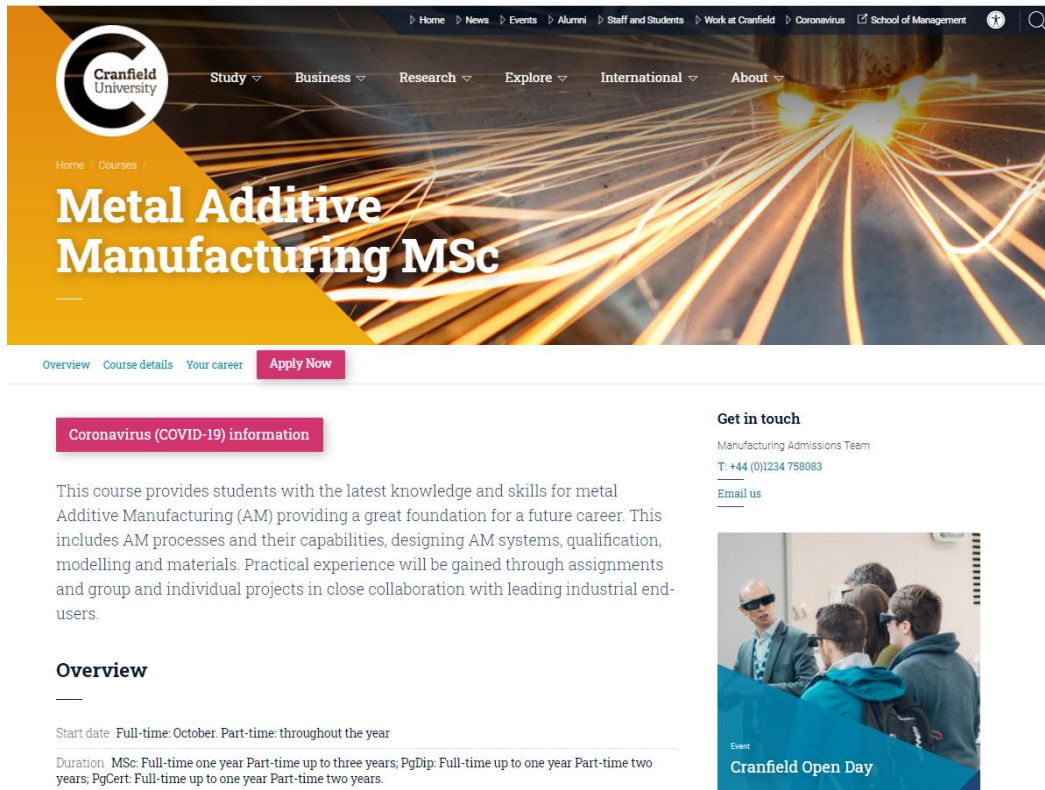


Figure 66 Reference to ADMIRE Metal AM MSc on [Cranfield University website](#)

10.2.4 EWF

EFW also has a specific section dedicated to Erasmus+ funded projects in its website, which ADMIRE is part of, as seen in the Figure below:



Figure 67 Reference to ADMIRE on [EFW's website](http://ewf.be)

EFW kept on publishing news about ADMIRE activities in its website, as exemplified in the Figures below:

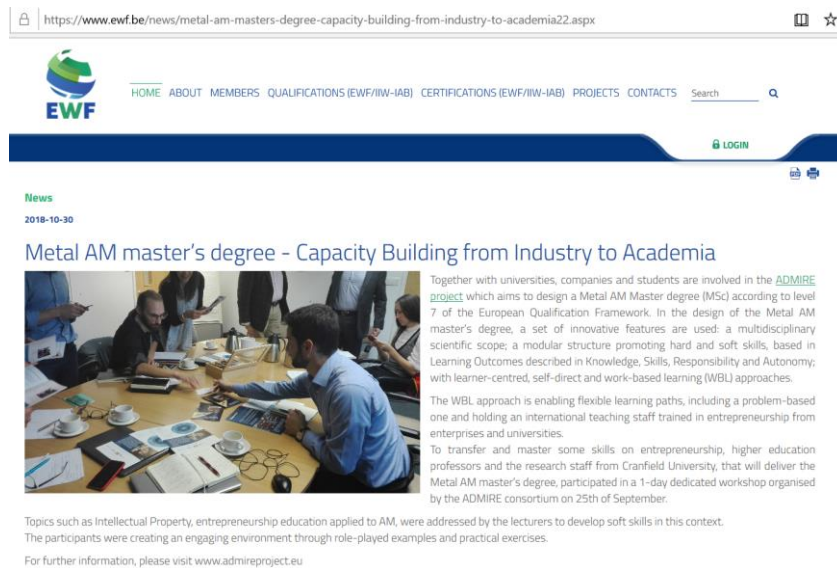


Figure 68 News about ADMIRE Capacity Building from Industry to Academia (at Cranfield University)

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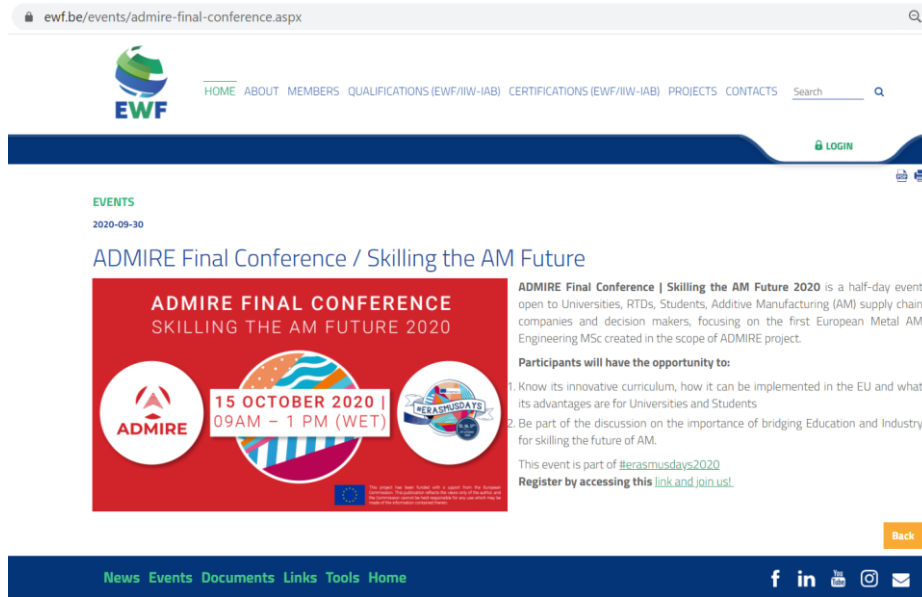


Figure 69 News about ADMIRE Final Conference, with banner and links for registration

10.2.5 IREPA Laser

IREPA Laser also created a specific section in its website (www.irepa-laser.com/en/news/admire-project) to provide its visitors a brief summary of ADMIRE project and information about its role in the project (available in EN and FR).

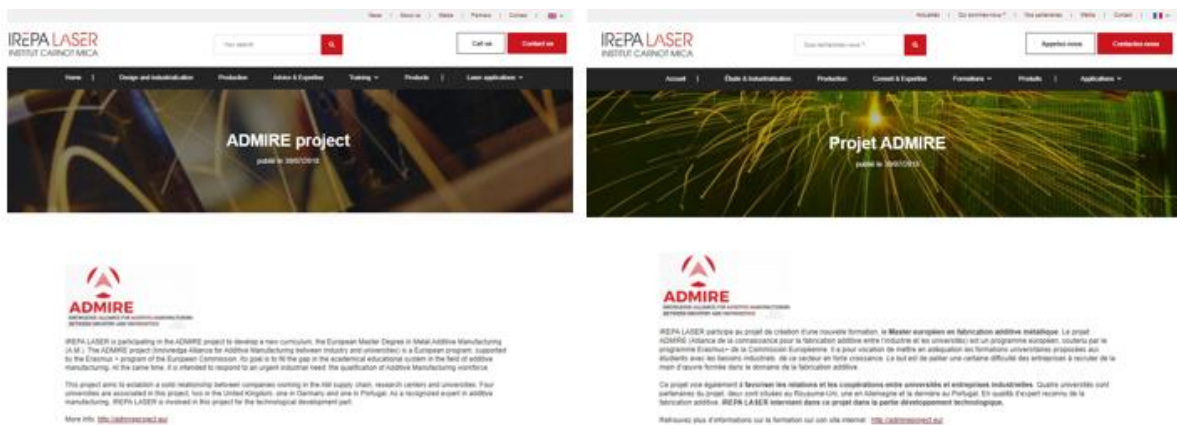


Figure 70 Reference to ADMIRE on [IREPA LASER website](http://www.irepa-laser.com/en/news/admire-project) (EN & FR)

10.3 Social media

Main social media networks (Facebook, Twitter and LinkedIn) were used to promote the news related to ADMIRE.

A hashtag related to the project, (#ADMIREproject), was created to bring attention and assemble all information published about it.

As partner responsible for ADMIRE dissemination, EWF was fruitful in using its Facebook account to share news about the project and its activities with its followers, whenever applicable and/or necessary. Some examples are illustrated by the figures below:

10.3.1 EWF Facebook publications



Figure 71 Facebook Post about ADMIRE Kick off Meeting (February 2017)



Figure 72 Facebook post 2nd Meeting (July 2017)



Figure 73 Facebook Posts on ADMIRE project (August 2017)

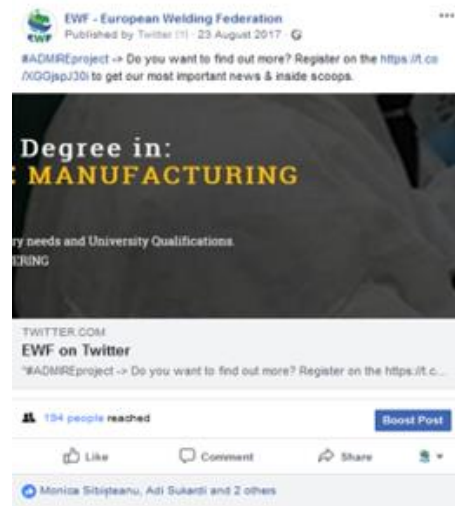


Figure 74 Facebook Posts on ADMIRE project (August 2017)



Figure 75 Facebook Post about Erasmus+ Knowledge Alliance Cluster (January 2018)



Figure 76 Facebook Post - David Brackett on AM and ADMIRE (February 2018)



Figure 77 Facebook Post – AM Stakeholder Workshop (March 2018)



Figure 78 Facebook Post – News about the ADMIRE project (June 2018)

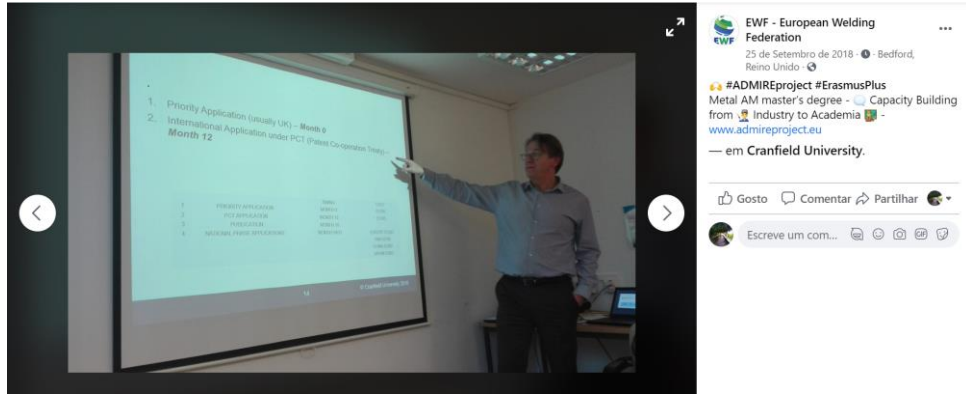


Figure 79 Facebook Post on ADMIRE's Capacity Building workshop at Cranfield University (September 2018)



Figure 80 Facebook Post to promote ADMIRE website (January 2019)



Figure 81 Facebook Post to inform of the launching of the European Metal AM MSc, at Cranfield University (October 2019)



Figure 82 Facebook Post on ADMIRE's pitch presentation during 8th University to Business Forum (Brussels, BE) (October 2019)





Table 1 Metrics about EWF Facebook activity on ADMIRE (August 2017 – June 2020)

facebook

Date	Post Message	Permalink	Type	Likes	Shares	Lifetime Post Total Reach Lifetime: The total number of people your Page post was served to. (Unique Users)
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Date	Post Message	Permalink	Type	Likes	Shares	Lifetime Post Total Reach Lifetime: The total number of people your Page post was served to. (Unique Users)	Lifetime Post Total Impressions Lifetime: The number of impressions of your Page post. (Total Count)	Lifetime Engaged Users Lifetime: The number of people who clicked anywhere in your posts. (Unique Users)
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7/2/20 20	<p> </p> <p>This week, ADMIRE's AM Symposium 2020 took place and was an online event that gathered more than 80 participants!</p> <p>▶ Here it was discussed the objectives and results of the project and the importance of Education in AM field. Plus, during this session the attendees had the opportunity to understand how different Universities from the UK, Portugal and Denmark tested the contents of the European Joint Executive Metal AM Engineer Master's Degree course and how Universities can be part of an European Network and implement this Metal AM MSc.</p> <p>ALSO, ADMIRE's AM Hub/Platform was presented, arousing much curiosity among the Symposium participants.</p> <p>Next big event will be ADMIRE Final Conference, in October, stay tuned! 😊</p> <p>For more info: https://admireproject.eu/index.html.</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/3548463091849100</p>	Link	11.00	2.00	362.00	451.00	16.00
--------------	--	--	------	-------	------	--------	--------	-------



6/5/2020	<p>🔔🔔</p> <p>As ADMIRE is reaching its conclusion, Partners are committed to carry out its last activities. ADMIRE National Roundtable sessions are currently taking place online, one of which took place yesterday, June 4th, aiming to test ADMIRE AM Hub/Platform.</p> <p>▾</p> <p>The purpose of this innovative online Platform is to provide its users access to a European network of Education/Training in AM, access to PBLs created by Industry, allowing Students to have access to real industrial problems and to be part of their solution, and publication of job vacancies by Companies, to which Students can apply.</p> <p>🖥️ Access ADMIRE AM Hub/Platform: https://www.ewf.be/admire More about ADMIRE project: https://admireproject.eu/index.html</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/3472588069436603</p>	Link	11.00	3.00	329.00	379.00	14.00
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1/31/2020	<p>Having reached its final semester, ADMIRE project is now in a phase where all its activities must be scheduled in order to be concluded by June 2020.</p> <p>ADMIRE 11th Partners' Meeting gathered all project partners in Bremen University (Germany) to analyze the state of play of the remaining actions to be addressed and to plan the next steps to take, including the organization of ADMIRE's Final Conference (to be carried out by Cranfield University, with support from EWF).</p> <p>To know more about what's to come, please access ADMIRE website admireproject.eu.</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/3164754836886596</p>	Text	16.00	0.00	300.00	333.00	22.00
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11/19/2019	<p>Hi!</p> <p>We are at FORMNEXT, in Frankfurt, Germany! Feel free to visit us at booth 11.0-B71.</p> <p>Come see how EWF is qualifying the world in Additive Manufacturing!</p> <p>#FORMNEXT2019 #jobsforthefuture #3dprinting #industry #manufacturing #engineering #visitus #AM #Additivemanufacturing #Qualifications</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/photos/a.181045008590942/2996326013729480/?type=3&theater</p>	Text	12.00	3.00	449.00	510.00	34.00
10/25/2019	<p>This week EWF was present at the 8th University to Business Forum in Brussels! Several projects within the knowledge alliances were presented and pitched. #ADMIRE was one of them!</p> <p>The event counted with 400 people, and industry as well as university participants were present.</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/photos/a.181045008590942/2938851476143601/?type=3&theater</p>	Text	16.00	1.00	357.00	474.00	22.00



10/14/2019	<p>Today is the launch of the new Master’s Degree in Metal Additive Manufacturing at Cranfield University through our #ADMIRE project!</p> <p>The new Master’s Degree combines technical knowledge with industrial manufacturing skills! It is a highly specialised program for a fascinating and rapidly growing technology and it is considered a cutting edge course for the next generation of engineers.</p> <p>If you are interested in getting to know more about this innovative Master’s program, please visit: https://www.cranfield.ac.uk/courses/taught/metal-additive-manufacturing</p>	https://www.facebook.com/EuropeanWeldingFederation/posts/2912908738737875	Link	10.00	2.00	321.00	434.00	18.00
5/20/2019	<p>#Admire project will design a Metal AM Master degree according to level 7 of the European Qualification Framework. Learn more www.admireproject.eu/</p>	https://www.facebook.com/EuropeanWeldingFederation/photos/a.181045008590942/2632067176822034/?type=3&theater	Link	10.00	2.00	299.00	424.00	12.00
1/21/2019	<p>Additive Manufacturing workforce can only get more skilled with the #ADMIRE project! The project includes an innovative Metal Additive Manufacturing Master Degree.</p> <p>Learn more in: https://admireproject.eu/</p>	https://www.facebook.com/EuropeanWeldingFederation/photos/a.181045008590942/2437571839604903/?type=3&theater	Link	15.00	1.00	439.00	626.00	22.00



10/30/2018	<p>During the 53rd EWF General Assembly is highlighted the work developed by so far on developing #additivemanufacturing qualifications to provide a qualified workforce that respond the industry needs.</p>	<p>https://www.facebook.com/EuropeanWeldingFeederation/photos/a.687605721268199/2304481876247234/?type=3&theater</p>	Link	11.00	0.00	360.00	493.00	16.00
10/24/2018	<p>Having an 🧑‍🏭 operational workforce in #AdditiveManufacturing is a must. At #AMEF2018 are presented #ErasmusPlus #EUfunded projects in which we are partners, such as #AdmireProject and #CLLAIMproject that address the #AMskills — em BluePoint Venues (BluePoint Brussels, Région de Bruxelles-Capitale).</p>	<p>https://www.facebook.com/EuropeanWeldingFeederation/photos/a.687605721268199/2294394500589305/?type=3&theater</p>	Link	11.00	0.00	285.00	404.00	17.00



10/9/2018	<p>#AdmireProject #AdditiveManufacturingSkills "If you're going to start additive, you need a staff to work on your machines," said Dr David Brackett, Technology Manager, AM, National Centre for AM, Manufacturing Technology Centre (MTC). https://lnkd.in/guvxyP4</p>	<p>https://www.facebook.com/EuropeanWeldingFeederation/posts/2273043379391084</p>	Link	9.00	0.00	230.00	337.00	10.00
9/25/2018	<p>👤 #ADMIREproject #ErasmusPlus Metal AM master's degree - 💬 Capacity Building from 👤 Industry to Academia 👤 - www.admireproject.eu</p>	<p>https://www.facebook.com/EuropeanWeldingFeederation/posts/2304017169627038</p>	Link	13.00	3.00	414.00	666.00	34.00
6/21/2018	<p>Check the #AdmireProject Newsletter! Is out! mailchi.mp/7681afe48a09/admire-newsletter-68733 - Find out about the European Master Degree in Metal #AdditiveManufacturing #ErasmusPlus</p>		Link	8.00	2.00	239.00	10.00	3.00



1/31/2018	<p>Today at the #ErasmusPlus Knowledge Alliances Cluster Meeting, we are representing the #ADMIREproject - designing a #MetalAdditive Master degree and qualify the #AdditiveManufacturing workforce - https://goo.gl/NF5f4U</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/1930726626956096</p>	Photo	9.00	0.00	301.00	452.00	13.00
2/20/2018	<p>#AdmireProject #AdditiveManufacturingSkills "If you're going to start additive, you need a staff to work on your machines," said Dr. David Brackett, Technology Manager, AM, National Centre for AM, Manufacturing Technology Centre (MTC).</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/1953529778009114</p>	Link	10.00	0.00	300.00	410.00	14.00



3/20/2018	<p>Today at the #AdditiveManufacturing Stakeholders workshop about AM Education and Skills in Aachen (Germany) our representative André Cereja gave a presentation stressing the necessity of having a skilled workforce and an AM Qualification System. Projects such as #AdmireProject, #AmableProject #CLLAIMproject and initiatives such as #AMplatform & #AMmotion contributes to the development of new technologies & skilled workforce.</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/1988353811193377</p>	Photo	12.00	0.00	216.00	290.00	20.00
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7/2/20 17	<p>#AMskills #ADMIREProject team gathered at the kick-off meeting. What is important to mention about this project is that it includes an innovative Metal Additive Manufacturing Executive Joint Master Degree and the creation of a collaborative hub to store problem-based learning assignments, allowing them to be solved collaboratively as well as providing a unique place to store information relevant to the AM community.</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/1546566522038777:0</p>	Photo	17.00	0.00	1100.00	1893.00	39.00
5/7/20 17	<p>The second meeting of ADMIRE's consortium took place in Cranfield (UK), once again, to discuss the structure of the Joint Metal Additive Manufacturing Master degree. If you are interested in this project or to take part in the project's activities, results or applications, please demonstrate it, visiting our website and filling in the form: http://admireproject.eu/</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/1710069619021799:0</p>	Photo	13.00	0.00	1314.00	2295.00	42.00



8/23/2017	<p>#ADMIREproject -> Universities, companies and students will design a Metal AM Master degree according to level 7 of the European Qualification Framework. Do you want to find out more? Register on the www.admireproject.eu to get our most important news & inside scoops.</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/1762858957076198:0</p>	Photo	8.00	9.00	2467.00	5242.00	
8/23/2017	<p>#ADMIREproject -> Do you want to find out more? Register on the https://t.co/XGGjspJ30i to get our most important news & inside scoops.</p>	<p>https://www.facebook.com/EuropeanWeldingFederation/posts/1762771267084967</p>	Link	4.00	0.00	192.00	295.00	

10.3.2 LinkedIn

10.3.2.1 IREPA

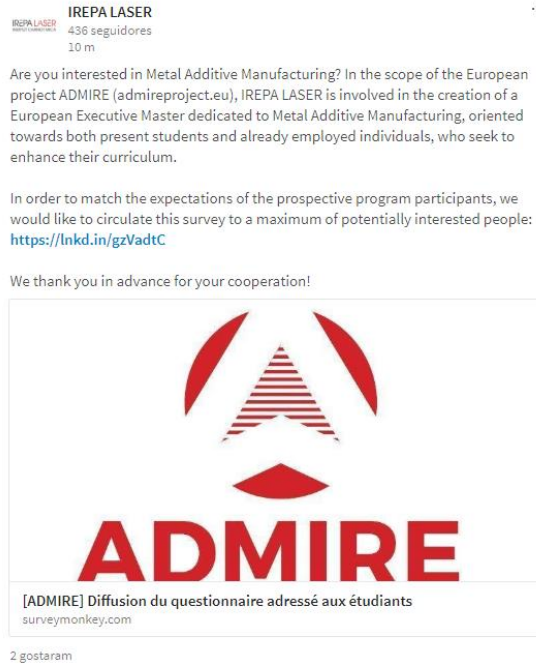


Figure 83 LinkedIn post of IREPA LASER on the ADMIRE project surveys (August 2017)

10.3.2.2 EWF



Figure 84 LinkedIn post on Erasmus+ Knowledge Alliance Cluster (January 2018)

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Figure 85 LinkedIn post regarding David Brackett on AM and ADMIRE (February 2018)



Figure 86 LinkedIn post on AM Stakeholder Workshop (March 2018)

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Figure 87 LinkedIn post on news about the ADMIRE project (June 2018)



Table 2 Metrics about LinkedIn activity on ADMIRE



Date	Message	Link	Type	Likes	Impressions	Clicks	Social Actions
					The number of times each update was shown to LinkedIn members. This includes both organic and sponsored impressions.	The number of clicks on your content, the company name, or the logo. This includes both organic and sponsored clicks, but doesn't include interactions (shares, likes, and comments) or followers acquired.	The number of times that each update is liked, shared, and commented on.
3/20/2018	#AdditiveManufacturing Stakeholders workshop (https://goo.gl/a6GZTc) about AM Education and Skills in Aachen, DE. Projects such as #AdmireProject, #AmableProject and #AMPlatform (European Technology Platform in				878.00	11.00	



	<p>Additive Manufacturing) contributes to the development of new technologies & skilled workforce.</p>						
<p>10/30/20 18</p>	<p>During the 53rd EWF General Assembly is highlighted the work developed by so far on developing hashtag #additivemanufacturing qualifications to provide a qualified workforce required by the industry. hashtag #ADMIREproject hashtag #CLAIMproject hashtag #education</p>	<p>https://www.linkedin.com/feed/update/urn:li:activity:6463011827143053312/</p>	<p>Photo</p>	<p>13.00</p>	<p>1019.00</p>	<p>32.00</p>	<p>0.04</p>



11/1/2018	<p>Together with universities, companies and students are involved in the hashtag #ADMIREproject which aims to design a Metal AM Master degree (MSc) according to level 7 of the European Qualification Framework. https://lnkd.in/guXsR37</p>	<p>https://www.linkedin.com/feed/update/urn:li:activity:6463771720800178176/</p>	Photo	11.00	713.00	17.00	0.04
1/21/2019	<p>In the #ADMIRE project partners from five countries (UK, DE, FR, BE, and PT) universities (Cranfield University, University of Birmingham, Bremen University and Instituto Superior Técnico from University of Lisbon), companies (Manufacturing Technology Centre, IREPA and Global Robots Ltd) and students will design a Metal AM Master degree according to level 7 of the European Qualification</p>	<p>https://www.linkedin.com/feed/update/urn:li:activity:6493117184800223233/</p>	Link	12.00	1161.00	16.00	0.03



	<p>Framework, with a set of innovative features. Learn more in: http://admireproject.eu</p>						
<p>3/14/2019</p>	<p>In the #ADMIRE project partners from 5 countries will design a Metal AM Master degree according to level 7 of the European Qualification Framework, with a set of innovative features. A capacity building meeting took place in Coventry, at MTC facilities.</p>	<p>https://www.linkedin.com/feed/update/urn:li:activity:6511961920898105344/</p>	<p>Photo</p>	<p>32.00</p>	<p>2294.00</p>	<p>95.00</p>	<p>0.06</p>

TITLE: WP7 Dissemination and Exploitation of Results



Subject/Deliverable: D7.5 Dissemination Portfolio

<p>3/27/2019</p>	<p>#Admire project was presented to IST students today to promote their engagement in the Metal Additive Manufacturing MSc at Cranfield University. The presentation on the Additive Manufacturing Technologies was a huge success amongst these future engineers.</p> <p>Lear more about Admire https://lnkd.in/d23pRQk</p>	<p>https://www.linkedin.com/feed/update/urn:li:activity:6516731254652571648/</p>	<p>Photo</p>	<p>8.00</p>	<p>1142.00</p>	<p>62.00</p>	<p>0.06</p>
<p>5/20/2019</p>	<p>hashtag #Admire project will design a Metal AM Master degree according to level 7 of the European Qualification Framework. Learn more www.admireproject.eu/</p>	<p>https://www.linkedin.com/feed/update/urn:li:activity:6536271397696614400/</p>	<p>Link</p>	<p>18.00</p>	<p>1031.00</p>	<p>29.00</p>	<p>0.05</p>



<p>10/14/2019</p>	<p>Today is the launch of the new Master’s Degree in Metal Additive Manufacturing at Cranfield University through our #ADMIRE project!</p> <p>The new Master’s Degree combines technical knowledge with industrial manufacturing skills! It is a highly specialised program for a fascinating and rapidly growing technology and it is considered a cutting edge course for the next generation of engineers.</p> <p>The course provides students with the latest knowledge and skills for metal Additive Manufacturing (AM) providing a great foundation for a future career. This includes AM processes and their capabilities, designing AM systems,</p>	<p>https://www.linkedin.com/feed/update/urn:li:activity:6589496986603405312/</p>	<p>Link</p>	<p>49.00</p>	<p>2751.00</p>	<p>97.00</p>	<p>49.00</p>
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TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



qualification, modelling and materials. Practical experience will be gained through assignments and group and individual projects in close collaboration with leading industrial end-users.

If you are interested in getting to know more about this innovative Master's program, please visit:
<https://lnkd.in/dEYhbTu>

#additivemanufacturing
#metal #materials
#engineers #designing
#technical



10/25/2019	<p>This week EWF was present at the 8th University to Business Forum in Brussels! Several projects within the knowledge alliances were presented and pitched. #ADMIRE was one of them!</p> <p>The event counted with 400 people, and industry as well as university participants were present.</p>	<p>https://www.linkedin.com/feed/update/urn:li:activity:6593509750577606656/</p>	Text	15.00	1000.00	36.00	15.00
1/31/2020	<p>Having reached its final semester, ADMIRE project is now in a phase where all its activities must be scheduled in order to be concluded by June 2020.</p> <p>ADMIRE 11th Partners' Meeting gathered all project partners in Bremen University (Germany) to analyze the state of play of the remaining actions to be addressed and to plan the next steps to take, including the</p>	<p>https://www.linkedin.com/posts/ewf-european-federation-for-welding-joining-and-cutting_having-reached-its-final-semester-admire-activity-6628990594813304833-0vjz/</p>	Link	23	1919	62	23

TITLE: WP7 Dissemination and Exploitation of Results

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	<p>organization of ADMIRE's Final Conference (to be carried out by Cranfield University, with support from EWF). To know more about what's to come, please access ADMIRE website admireproject.eu.</p>						
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6/6/2020	<p>As ADMIRE is reaching its conclusion, Partners are committed to carry out its last activities. ADMIRE National Roundtable sessions are currently taking place online, one of which took place yesterday, June 4th, aiming to test ADMIRE AM Hub/Platform.</p> <p>▼</p> <p>The purpose of this innovative online Platform is to provide its users access to a European network of Education/Training in AM, access to PBLs created by Industry, allowing Students to have access to real industrial problems and to be part of their solution, and publication of job vacancies by Companies, to which Students can apply.</p> <p>📄 Access ADMIRE AM Hub/Platform: https://www.ewf.be/ad</p>	<p>https://www.linkedin.com/posts/ewf-european-federation-for-welding-joining-and-cutting_as-admire-is-reaching-its-conclusion-partners-activity-6674637041264844800-s3O8/</p>	link	10	885	7	10
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TITLE: WP7 Dissemination and Exploitation of Results



Subject/Deliverable: D7.5 Dissemination Portfolio



mire

More about ADMIRE
project:
<https://lnkd.in/e9d-DWu>



7/2/2020	<p> This week, ADMIRE's AM Symposium 2020 took place and was an online event that gathered more than 80 participants!</p> <p> Here it was discussed the objectives and results of the project and the importance of Education in AM field.</p> <p>Plus, during this session the attendees had the opportunity to understand how different Universities from the UK, Portugal and Denmark tested the contents of the European Joint Executive Metal AM Engineer Master's Degree course and how Universities can be part of an European Network and implement this Metal AM MSc.</p> <p>ALSO, ADMIRE's AM Hub/Platform was presented, arousing</p>	<p>https://www.linkedin.com/posts/ewf-european-federation-for-welding-joining-and-cutting-this-week-admires-am-symposium-2020-activity-6684417579643092992-2bQt/</p>	Link	8	980	10	8
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TITLE: WP7 Dissemination and Exploitation of Results



Subject/Deliverable: D7.5 Dissemination Portfolio

much curiosity among the Symposium participants.

Next big event will be ADMIRE Final Conference, in October, stay tuned!

For more info:
<https://lnkd.in/e9d-DWu>.

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



10.3.3 Twitter



Figure 88 Twitter post on the ADMIRE project (August 2017)



Figure 89 Twitter Post about Erasmus+ Knowledge Alliance Cluster (January 2018)

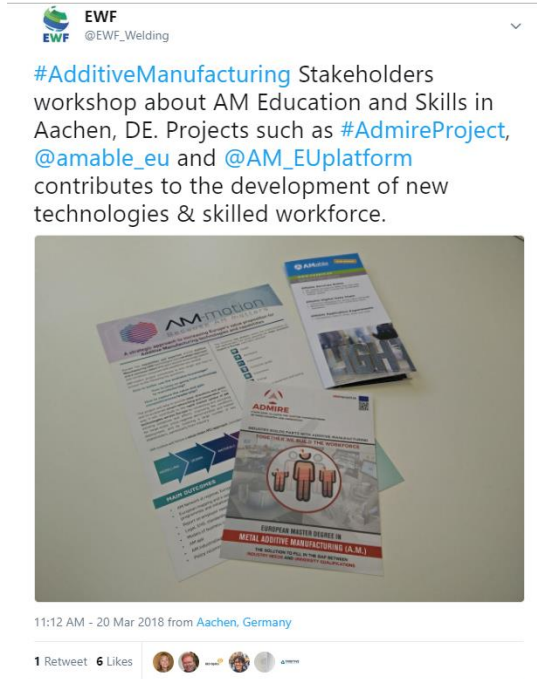


Figure 90 Twitter Post regarding AM Stakeholder Workshop (March 2018)



Figure 91 Twitter Post on news about the ADMIRE project (June 2018)



Table 3 Metrics about Twitter activity on ADMIRE

Date	Tweet text	Tweet permalink	Type	Impressions	Engagements	Retweets	Likes	Url Clicks
				No. of times users saw the Tweet on Twitter	total number of times a user has interacted with a Tweet. This includes all clicks anywhere on the Tweet (including hashtags, links, avatar, username and tweet expansion), retweets, replies, follows, and likes.			
1/31/2018	Today at the #ErasmusPlus Knowledge Alliances Cluster Meeting, we are representing the #ADMIREproject - designing a #MetalAdditive Master degree and qualify the #AdditiveManufacturing workforce - https://t.co/hRoUN8gCwH https://t.co/9ovToYtK4w	https://twitter.com/EWF_Welding/status/958618795190386688	Photo	486	8	2	2	0
3/20/2018	#AdditiveManufacturing Stakeholders workshop about AM Education and Skills in Aachen, DE. Projects such as #AdmireProject, @amable_eu and @AM_EUplatform contributes to the development of new technologies & skilled workforce. pic.twitter.com/yPhCaugwiM	https://twitter.com/EWF_Welding/status/976053917887946752	Photo	911	8	1	6	0
6/4/2018	#AdmireProject - European Master Degree in Metal #AdditiveManufacturing Click here: https://lnkd.in/epmDf7A to read the news about this #ErasmusPlus project, which aims to provide the solution to fill in the gap between Industry needs and University Qualifications.	https://twitter.com/EWF_Welding/status/1003634917765472259	Photo	1514	25	4	7	6



6/21/2018	<p>Check the #AdmireProject Newsletter! Is out! http://mailchi.mp/7681afe48a09/admire-newsletter-68733 ... - Find out about the European Master Degree in Metal #AdditiveManufacturing #ErasmusPlus https://twitter.com/EWF_Welding/status/1003634917765472259</p>	<p>https://twitter.com/EWF_Welding/status/1009715055708049408</p>	Photo	941	9	2	5	0
10/23/2018	<p>Having an operational workforce in #AdditiveManufacturing is a must. At #AMEF2018 are presented #ErasmusPlus #EUFunded projects in which we are partners, such as #AdmireProject and #CLAIMproject that address the #Amskills</p>	<p>https://twitter.com/EWF_Welding/status/1054716211425148929</p>	Photo	902	12	1	4	0
11/1/2018	<p>Together with universities, companies and students, we are involved in the #ADMIREproject, supported by #ErasmusPlus which aims to design a Metal #AdditiveManufacturing Master degree (MSc) according to level 7 of the European Qualification Framework. https://ewf.be/news/metal-am-masters-degree-capacity-building-from-industry-to-academia.aspx</p>	<p>https://twitter.com/EWF_Welding/status/1058006583538524163</p>	Photo	996	7	1	2	3



3/14/2019	<p>In the #ADMIRE project partners from 5 countries will design a Metal AM Master degree according to level 7 of the European Qualification Framework, with a set of innovative features. A capacity building meeting took place in Coventry, at MTC facilities. http://admireproject.eu</p>	<p>https://twitter.com/EWF_Welding/status/1106196616623652864</p>	Photo	940	17	1	5	3
3/27/2019	<p>http://www.admireproject.eu was presented to @istecnico students today to promote their engagement in the Metal Additive Manufacturing MSc at Cranfield University. The presentation on the Additive Manufacturing Technologies was a huge success amongst these future engineers. pic.twitter.com/ggXTsGLPQu</p>	<p>https://twitter.com/EWF_Welding/status/1110964633802805253</p>	Photo	276	8	0	1	0
10/25/2019	<p><u>This week EWF was present at the 8th University to Business Forum in Brussels! Several projects within the knowledge alliances were presented and pitched. #ADMIRE was one of them! The event counted with 400 people, and industry as well a university participants were present.</u></p>	<p>https://twitter.com/EWF_Welding/status/1187744176248709126</p>	Photo	530	0	0	0	0

10.4 Other online platforms

10.4.1 Online general newspapers

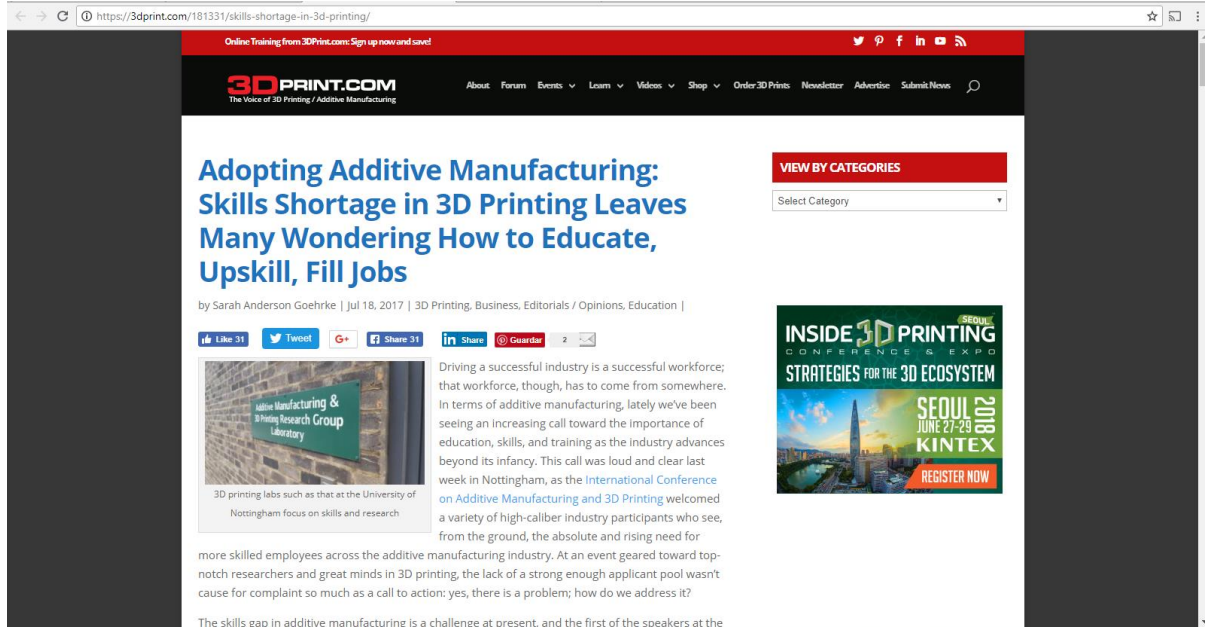


Figure 92 Article about the International Conference on Additive Manufacturing and 3D Printing with mention to [ADMIRE project](#), on behalf of MTC

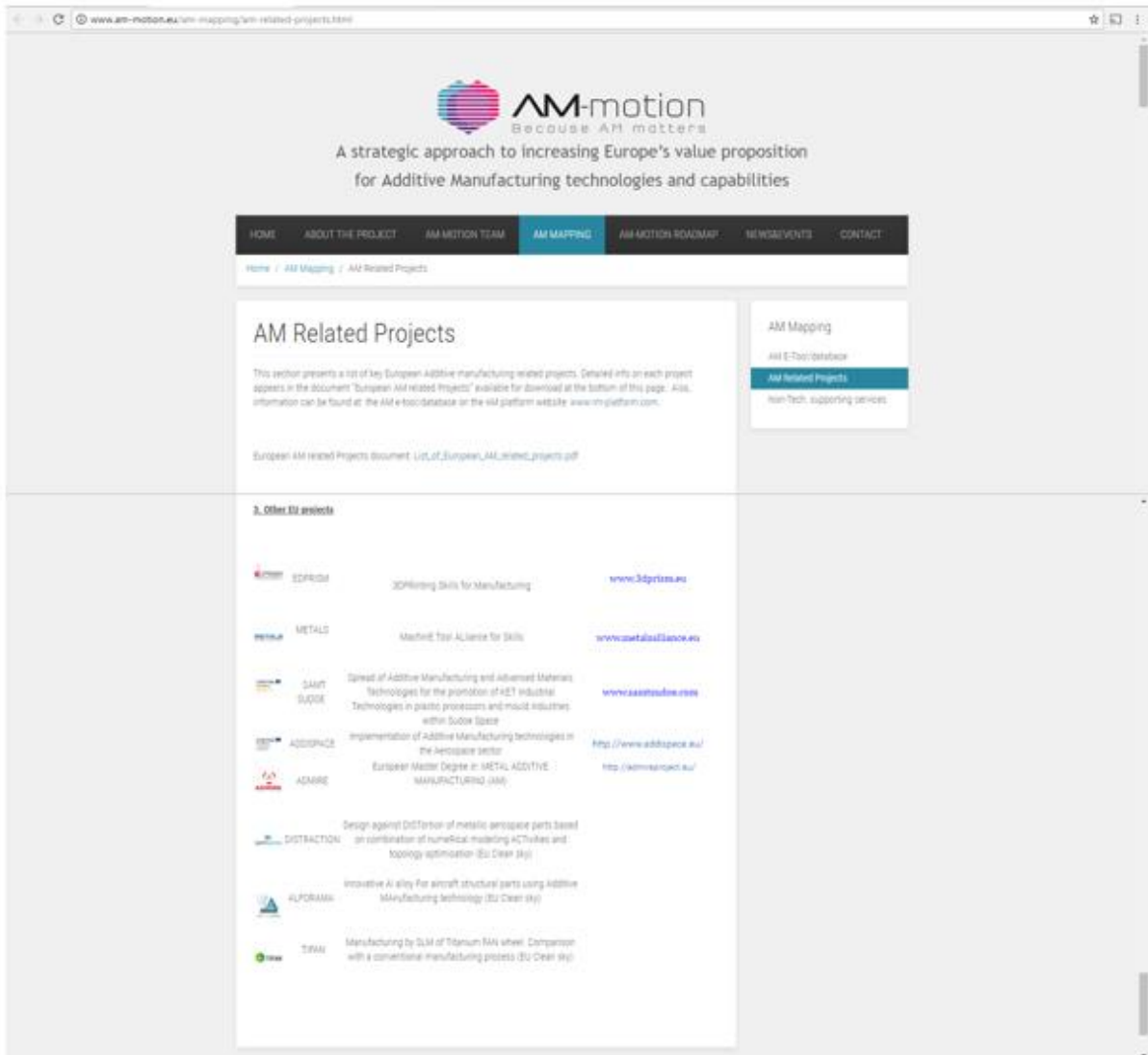


Figure 93 reference to ADMIRE project on [AM-Platform website](http://www.am-platform.com)

10.4.2 Online surveys platforms

Several surveys were developed and distributed using online platforms such as Survey Monkey and Google forms, allowing partners to collect key stakeholders' feedback about the activities in which they participated and use the information on the development of ADMIRE outcomes.



Survey on Skills needs on Metal Additive Manufacturing

The increasing growth of metal additive manufacturing is leading the need for defining the Professional Levels required by industry for personnel working in this area.

Your views on this need are crucial in achieving an understanding of the requirements.

EFW is a European Association with 25 years of experience in running International qualifications used in 45 countries worldwide.

* 1. Your Name:

* 2. Organization Name:

* 3. Type of organization:

Figure 94 Survey “Skills needs on Metal Additive Manufacturing”, using Survey Monkey (I)



Survey on Skills needs in Metal Additive Manufacturing - PART II

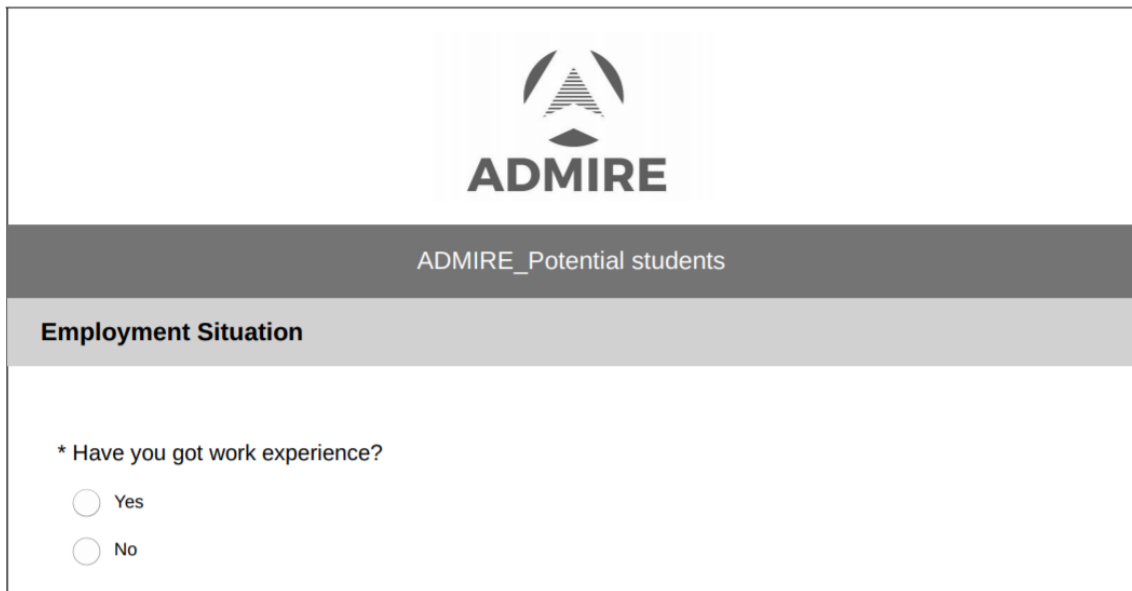
1. INTRODUCTION

The European Welding Federation for Welding, Joining and Cutting (EWF) is a European Association with 25 years of experience in running International qualifications used in 45 countries worldwide. The increasing growth of Metal Additive Manufacturing (MAM) technology is demanding the definition of new professional levels required by industry for personnel working in this area. EWF is currently performing a research on this topic, being this the second part of a preliminary survey. We are very much interested in collecting your views on the requirements for the following professional profiles:

- European Metal AM Engineer
- European Metal AM Supervisor
- European Metal AM Designer
- European Metal AM Inspector / Quality Assurance Supervisor
- European Metal AM Operator

This survey was structured based on the results of the first survey.

Figure 95 Survey “Skills needs on Metal Additive Manufacturing”, using Survey Monkey (II)



The screenshot shows a survey interface. At the top, there is the ADMIRE logo. Below it, the survey title 'ADMIRE_Potential students' is displayed. A section header 'Employment Situation' is visible. The question is: '* Have you got work experience?'. There are two radio button options: 'Yes' and 'No'.

Figure 96 “Potential Students”, using Survey Monkey

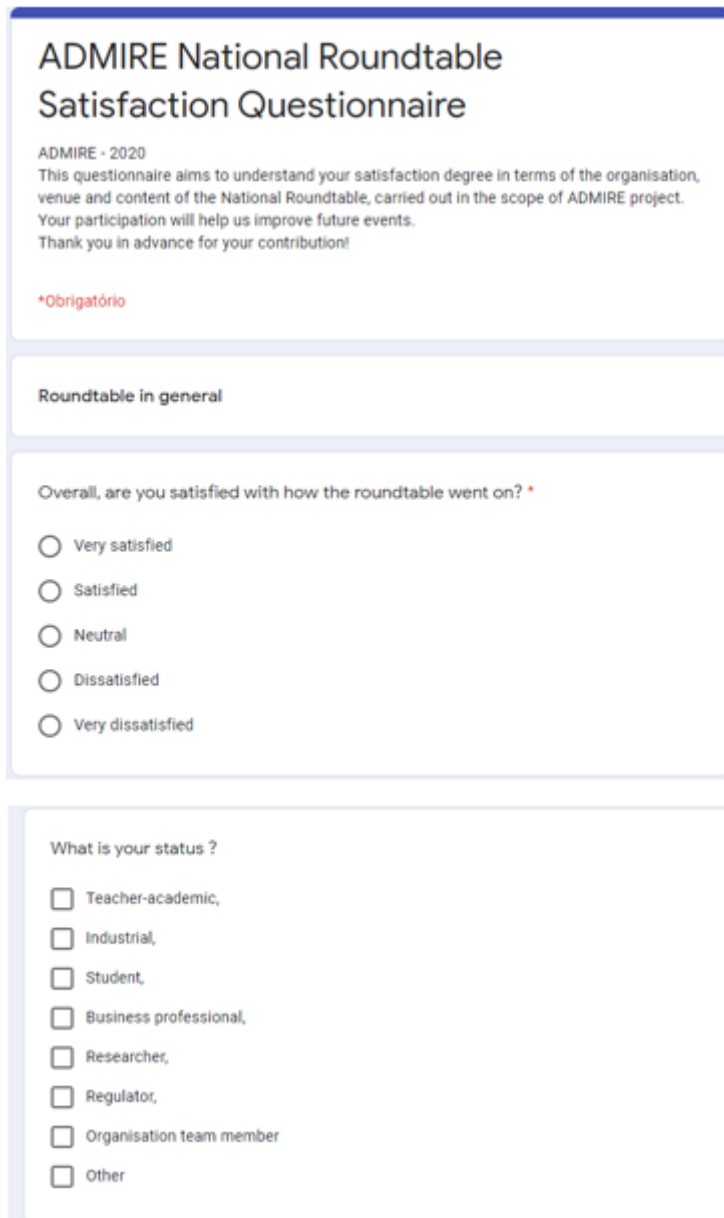
The image shows a screenshot of a Google Forms questionnaire. The title is 'ADMIRE National Roundtable Satisfaction Questionnaire'. Below the title, it says 'ADMIRE - 2020' and provides a brief explanation of the questionnaire's purpose: to understand satisfaction with the organization, venue, and content of the National Roundtable. It also includes a thank you message. A red asterisk indicates that the questionnaire is mandatory. The first section is titled 'Roundtable in general' and contains a question: 'Overall, are you satisfied with how the roundtable went on?'. This question has five radio button options: 'Very satisfied', 'Satisfied', 'Neutral', 'Dissatisfied', and 'Very dissatisfied'. The second section is titled 'What is your status?' and has seven checkbox options: 'Teacher-academic,', 'Industrial,', 'Student,', 'Business professional,', 'Researcher,', 'Regulator,', 'Organisation team member', and 'Other'.

Figure 97 Excerpt of the Satisfaction Questionnaire « National Roundtables », using Google Forms (I)

Are you willing to participate in such other roundtable ?

Yes

No

Would you be interested in presenting ADMIRE AM Hub/Platform to other colleagues?

Yes

No

Which subjects do you want to be developed in such roundtable ?

A sua resposta _____

Figure 98 Excerpt of the Satisfaction Questionnaire « National Roundtables », using Google Forms (II)

11 Events

11.1 ADMIRE Events

During the project's lifecycle, ADMIRE partners carried out several presentations on the goals and results achieved. Those presentations were made to a wide audience, representing the several target groups of the project, particularly targeted at EWF members, education committees, VET centres, HE education institutions, policy and decision makers, practitioners in general.

ADMIRE dissemination in events comprised dissemination in meetings, conferences, fairs and during the ADMIRE specific events. Some examples are illustrated below.

11.1.1 CECIMO Meeting

On the 15th of July 2017, an assembly was organized at CECIMO to discuss European Qualification Systems and try to solve the lack of skilled workers in manufacturing, the same problem ADMIRE is tackling. This meeting had an attendance of 3 people.



Figure 99 CECIMO Meeting (July 2017)



Knowledge Alliance for Additive Manufacturing between Industry and universities
575938-EPP-1-UK-EPPKA2-KA

Brussels, Belgium
19th of July 2017

Presence List

Name	Organisation	Country	Signature
MARTINE OLABAJA	CECTO	BELGIUM	
VINCENTO REYSA	CECIMO	BELGIUM	
EUARCO ASSUNÇÃO	EWB	PORTUGAL	

Co-funded by the European Programme for the European Union. This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Figure 100 Presence List CECIMO General Assembly (July 2017)

11.1.2 Meeting with Irish stakeholders

ADMIRE project organized a meeting in Ireland on the 23rd and 24th of August 2017 to discuss the qualification of Additive Manufacturing workforce.



Presence List

Dublin, Ireland
23rd August 2017

Name	Organisation	Country	Signature
Andrew Lynch	IMR	IRELAND	
Alejandro Espino	IMR	IRELAND	
Duncan Murphy	TEC	IRELAND	
EDDIE MC HUGH	Amazon	Ireland	
SEAN O REILLY	STRIBERK	IRELAND	
John Hunt	TEG	Ireland	
Bob Lawless	NCIL	IRELAND	

Co-funded by the European Union. This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Figure 101 Presence list of Meeting with Irish stakeholders (August 23rd 2017)



Presence List

Dublin, Ireland
24th August 2017

Name	Organisation	Country	Signature
David Torrey	ISI SINS	Ireland	
Dermot Brogan	DCU	Ireland	
Thomas Hughes	SEAM-UIT	Ireland	
Esther O'Donoghue	SEAM-UIT	Ireland	

Cofunded by the European Programme of the European Union. This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Figure 102 Presence list of Meeting with Irish stakeholders (August 24th 2017)

11.1.3 Schweissen & Schneiden 2017

The ADMIRE project participated in the Schweissen & Schneiden fair from the 25th to the 29th of September 2017, in Germany, which had an attendance of 25 000 participants.



Figure 103, Figure 104 & Figure 105 Schweissen & Schneiden fair (September 2017)

11.1.4 AM Stakeholder Workshop (ADMIRE World Cafe meeting)

In March 2018 a Workshop on Additive Manufacturing occurred at Aachen (Germany) with an attendance of 40 people. The aim was to set a strategic vision for AM, concerning education needs and validate which curricula needs to be developed and which infrastructure is needed to support skills development, employer's needs and scientific education. Within the scope of this event, the first ADMIRE World Café was organised.



Figure 106, Figure 107 & Figure 108 AM Stakeholder Workshop (March 2018)

11.1.5 1st AM Qualifications Workshop

Experts in Additive Manufacturing discussed the development of AM Qualifications at the 1st AM Qualifications Workshop hosted by EWF, in Porto Salvo (Portugal), from 8th to the 10th of May 2018. This event gathered key stakeholders from Education/Research Centers (e.g. Brunel University, Politecnico di Milano, SINTEF and TWI) and from Industry (Voestalpine, FRONIUS and Lloyd's Register).



Figure 109 EWF 1st AM Qualifications Workshop in Porto Salvo (May 2018)

11.1.6 2nd AM Qualification Workshop (ADMIRE AM Knowledge “Speed-Dating”)

During the 2nd AM Qualification Workshop held by EWF in Porto Salvo (Portugal), on October 2nd, 2018, the AM Knowledge Speed-Dating (ADMIRE deliverable 6.3) was carried out involving all 22 participants of the Workshop. Additional information about this activity can be found on D6.3 Report. Similar to the previous EWF AM Qualification Workshop, representatives from Education and Industry sectors were also present, including University of Patras, Fraunhofer, AIMWN, PRODINTEC and General Electric (GE), to name a few.



2nd AM QUALIFICATIONS WORKSHOP 

AM Networking 'Speed Dating'

From the following AM topics, which of them are you interested in? You can pick more than one.

1. Discussing calls and proposals (e.g. FETs, etc.)
2. Products and solutions (e.g. design optimisation, material properties, build layout optimisation, inspection, etc.)
3. Education and training in AM
4. Standardisation in AM
5. Other

#	First Name	Surname	Organisation	Interests
1	Almudena	Corredera Alvarez	INDUSTEC	1,2
2	Arjan	de Klerk	SEI	
3	Danielle	Bassan	CRP	1,2
4	Gerhard	Probst	VOESTALPINE	3
5	Hermann	Albers	LTM	1,2
6	Jakob	Ding	Cherfield	1,2
7	Jakob	Sermon	ISI	1,2
8	Jonathan	Porter	Renishaw	
9	Olav	Rovde	SNTEC	1,2
10	Lin	Yu	TWU	1,2
11	Martin	Dury	MPC	1,2
12	Martin	Indermann	HS	1,2
13	Paragis	Chrysospylos	Spertax	1,2
14	Philipp	Stoll	Argonne	1,2
15	Simone	Dietsch	Fraunhofer	1,2
16	Stephan	Witarski	TWI	1,2
17	Stewart	Williams	Cherfield	1,2
18	Stjepan	Petrovic Filipovic	ADMEN	1,2
19	William	Whitman	Lynx Register	1,2

 ADMIRE is a project funded by the European Union under the Horizon 2020 research and innovation programme.

Figure 110 2nd AM Qualifications Workshop in Lisbon (October 2018)

11.1.7 International Conference on EWF Qualification System (ADMIRE Mid Term Conference)

During International Conference on EWF Qualification, carried out in Porto Salvo (Portugal) in October 2019, ADMIRE was presented to an audience of 22 participants interested in knowing about EWF's Qualification System and about the Qualifications developed in the scope of some of the projects in which EWF is actively involved. ADMIRE European Metal AM MSc was presented in this collaborative event, carried out to present other projects related to the development of qualifications, including CLLAIM project, to which ADMIRE was also connected. More information about ADMIRE Mid Term Conference can be found on the D7.6 Mid Term Conference & Evaluation report.



Figure 111 International Conference on EWF Qualification Agenda & ADMIRE presentation, by Rute Ferraz (EWB Director)

11.1.8 4th EWF AM Qualification Workshop (ADMIRE World Cafe meeting)

This Workshop, carried out on 28th and 29th of October, gathered 13 participants from Education and Industry sectors, represented by entities such as CESOL, LORTEK, IDONIAL, Ensiaet and Laser Akademie (some of the above mentioned entities were also present at this Workshop). One of ADMIRE World Cafe meetings was carried out in the scope of this event, in which all participants discussed the future of AM and its implementation in the next 5 years was an issue discussed among them. As explained on ADMIRE *Deliverable 6.2 Additive Manufacturing World Café meetings* report, all participants were divided into three different groups. There were three tables where a specific theme was discussed: AM Materials, AM Processes and AM Sectors. Each group sat on each table, where a moderator asked participants to discuss the issue at hand, focusing on the table's theme. After 15 minutes, the groups changed tables and provided inputs additional to the ones provided by the previous group about that specific theme, and so on.

At the end of the rounds, the moderator from each table presented the global results (also described on the previously mentioned report).



Figure 112 4th EWF AM Qualification Workshop/ADMIRE World Cafe (October 2019)

ADMIRE roll up was placed in the room where this two-days event took place, in Porto Salvo (Portugal).



Figure 113 4th EWF AM Qualifications Workshop (October 2019)

The third EWF AM Qualification Workshop (held in Porto Salvo, in May 2019) was also an opportunity to collect inputs for ADMIRE project's results, namely the collection of case studies and validation of the contents of the European Metal AM MSc. Therefore, EWF took the opportunity to address ADMIRE project in all its AM Qualification Workshops, by implementing its activities (e.g. World Cafe meeting and Knowledge "Speed-Dating") and/or as a trusted source of information to develop its results in accordance with the inputs provided by all key stakeholders attending the events.

11.1.9 ADMIRE National Roundtables

ADMIRE National Roundtables were carried out by Partners in the scope of Work Package 6/Deliverable D6.4 Roundtables (a report was developed by Partners with main results achieved in each session), with Students, Teachers and AM Company representatives to test AM Hub/Platform's (D6.1) functionalities and to collect participants' feedback on its positive aspects and those in need for improvements.

Due to the global pandemic, these sessions were carried out online, after intense contacts made by ADMIRE partners with to invite potential participants from ADMIRE target groups (e.g. emails, messages, etc.).

During the session, ADMIRE project was briefly presented, focusing on its scope and main outcomes, not only to engage participants with the project, but also to provide context to the National Roundtable Session.

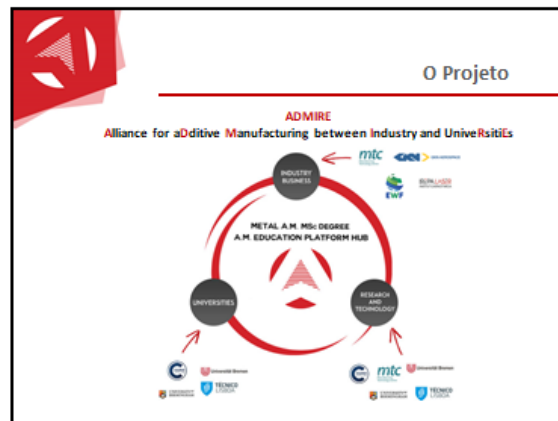




Figure 114 PPT Presentation used by IST & EWF to present ADMIRE to Portuguese participants of ADMIRE National Roundtable (June 2020)

These online sessions gathered a total of 19 participants (including one company representative participating from China), who demonstrated interest and availability to participate in future ADMIRE events and enthusiasm with the AM Hub/Platform and its potentialities:

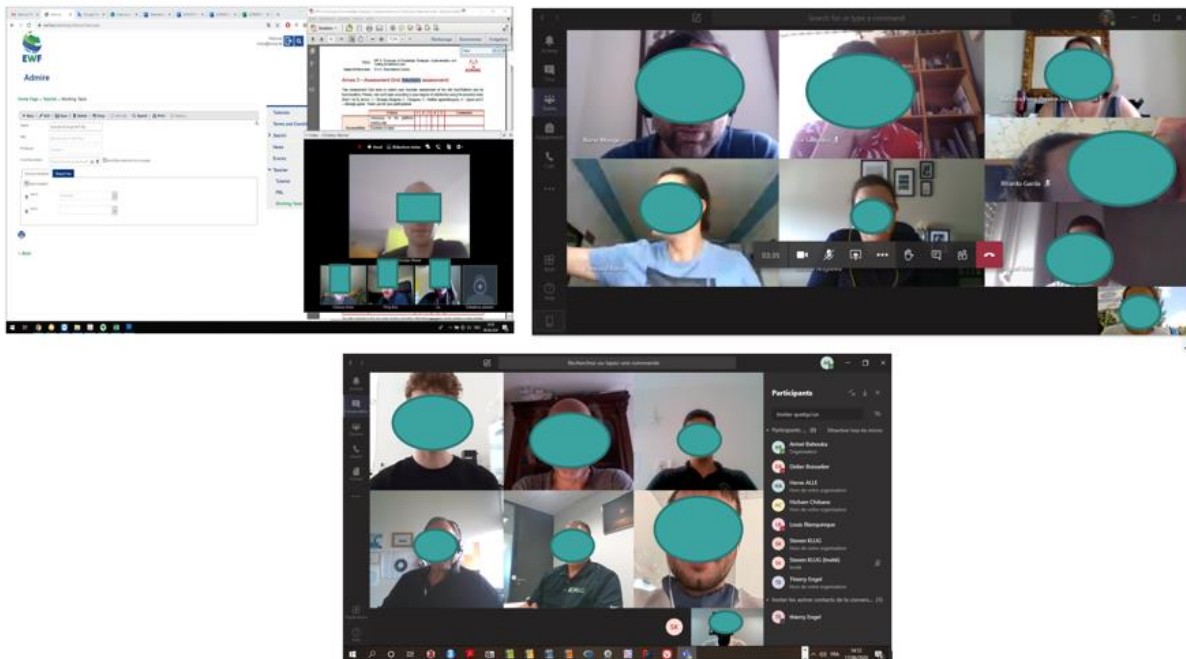


Figure 115 Print screens taken during National Roundtable online sessions' with participants from DE, PT and FR (between April and June 2020)

11.2 Other Events



Figure 116 Presentation ADMIRE during 49th EWF General Assembly (November 2016)



Figure 117 Presence at ICWAM in Metz (May 2017)

2017 WAAMat Industry Day
25/26 May 2017
Cranfield University, CMRI building

Day 1

10:00 Introduction to the day, programme update (Stewart Williams)
10:40 WAAM into production - ADS case study (Jason Gilmore)
11:00 Latest titanium mechanical properties (Xiang Zhang)
11:20 Microstructural characterisation of Ti (Alistair Ho)
11:40 BREAK
12:00 Advanced gas use (cooling and cleaning) (Paul Colegrove)
12:20 HIVE development and RAWFEED (Anthony McAndrew)
12:50 Alternative cold work methods (Jan Hoennige)
13:20 LUNCH
14:00 Aluminium wire production (Prof Zhai)
14:30 Laser + wire (Filomeno Martina)
14:50 WAAM Design, WAAMSoft, WAAMCtrl (Florent Michel)
15:20 Photonic sensors (Tom Klasinger + Tom Charrett)
15:40 BREAK
16:00 Deposition of refractories (Gianrocco Marinelli)
16:20 JIP for qualification and standardisation of WAAM (Andrew Imrie)
16:40 WAAM company and commercialisation plans (Stewart Williams)
17:00 Lab tours

Day 2

09:30 Latest parts built (Jialuo Ding)
10:10 Aluminium MMCs (Kwasi Ayarkwa)
10:30 Deposit/plate interface studies in aluminium (Eloise Eimer)
11:00 AC/DC WAAM of aluminium (Jialuo Ding)
11:20 BREAK
11:35 Characterisation of WAAMed aluminium (Joseph Fixter)
12:05 Machining of WAAMed aluminium (Helen Lockett)
12:25 Modelling activities (Xingwang Sai)
12:45 Gas flow visualisation during WAAM (Ioannis Bitharas)
13:05 LUNCH
13:55 Steels properties (Armando Caballero)
14:15 Multi-steel WAAM (Supriyo Ganguly)
14:35 Mixed-materials structures (Xiangfang Xu)
14:55 ADMIRE

Figure 118 WAAMat Industry Day Agenda (May 2017)



Figure 119 Project presentation IJW 70th Annual Shanghai Assembly and Conference (June 2017)

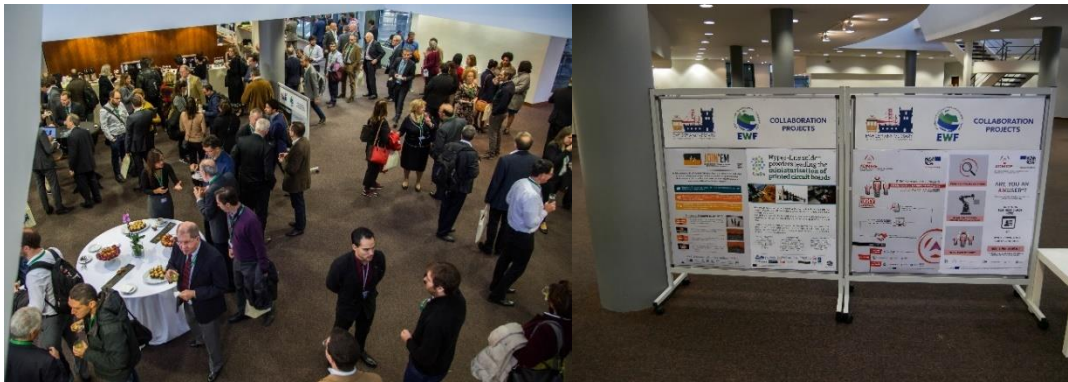



Figure 120, Figure 121 & Figure 122 EWF 25th Anniversary (November 2017)



Figure 123 ADMIRE at CAMA (December 2017)

List of attendees CAMA 2017



Title	First name	Last name	Company
Alexander	Arnold	Alexander Arnold	
Carole	Aath	Carole Aath	
Dr. Jochen	Bayerl	IPC	
Yannic	Beßler	QMS-WERK GmbH & Co KG	
Christoph	Behrens	University Bremen	
Prof. Uwe	Berger	Wachholtz AG	
Trifun	Bernward	Airbus Helicopters	
Detlev	Böckler	University Bremen	
Detlev	Böckler	CEMP, University of Bremen	
Paul	Bonke	Airbus Engineering Institut Hamburg Centre for Data and Manufacturing	
Ralf	Bredemeyer	3D Systems GmbH	
Jan	Bredemeyer	Emerson Automation Solutions	
Prof. Giovanni	Brune	Fritz-Haber Institute of Molecular Research and Testing	
Mario	Buczkowski	Autodesk	
Alexander	Chapuis	ESI GmbH	
Dr. Laurent	D'Almeida	Geant3	
Dr. Michel	Daloz	GEOS 3A	
Simon	Dina	CEMP, University of Bremen	
Nicholas	Diwan	GE Additive	
Ulf	Dobrowolski	Aljar Engineering GmbH	
Dr. Alberto	Echevarria	IA LUTEX	
Prof. Georges	Fabre	Georges Fabre	
Nolan	Farrman	Nolan Farrman	
Dr. Telling	Franzger	Telling Franzger	
Carole	Garcier	Wissenschaftliche Technische Universität / UFG and Schwanbach	
Philip	Gebhan	CEMP, University of Bremen	
Mark	Gumbel	CEMP, University of Bremen	
Benjamin	Grafel	Fraunhofer Institute for Digital Electronics, Cognitive Systems and Plasma Technology, Institute of Micro-Optic Mechanical Engineering	
Markus	Gross	WZL HAWB Systems GmbH & Co. KG	
Jens	Großmann	WZL HAWB Systems GmbH & Co. KG	
Other	Hardy	Devolet Systems	
Dr. Alexander	Hess	IBM Research Institute	
Prof. Michael	Hessebarth	DFW/DFVLR A. Hessebarth	
Dr. Thomas	Holmann	AMV	
Ulf	Huber	ibm, Institut für Mechanische Systeme	
Dr. Alexander	Hin	Alexander Hin - Robert Bosch GmbH	
Other	Hies	CEMP, University of Bremen	
Other	Hies	University Bremen	
Jan-Patrick	Jürgens	CEMP, University of Bremen	
Dr. Ni	Keller	ADDITIVE WORKS GmbH	
Thomas	King	Laminate University Bremen Laboratory	
Christian	Kuhn	CEMP, University of Bremen	
Prof. Carole	Kühner	Wissenschaftliche Helmholtz Hamburg	
Thomas	Kühn	3D Systems Group AG	
Michael	Kühn	CEMP, University of Bremen	
Niclas	Lahmann	Siemens Industry Software for	
Dr. Harald	Lemke	Harald Lemke	
Dr. Florian	Loghinov	New Materials Bayreuth GmbH	
Hilbertus	Lohrer	Airbus operations	
Elena	Lopez	Fraunhofer Institut für Werkstoffe und Strahltechnik IPT	
Julian	Loß	Technische Universität Hamburg-Harburg	
Anna	Löse	University Bremen	
Robert	Maisner	GEA Sinter Metall Engineering GmbH	
Sergio	Mantel	University Bremen	
Patrick	Mehner	Zinsselt Engineering GmbH	
Florent	Michel	Cranfield Engineering GmbH	
Matthias	Michler	Materialize GmbH	
Basim	Müller	Ministry of Economic Affairs, Labour and Ports	
Pyatich	Narita	Mitsubishi Heavy Industries Europe, Ltd.	
Dr. Gordon	Nicklas	MICADO	
Ligita	Pakuti	NLR - National Aerospace Laboratory	
Dr. Philip	Parke	Airbus - Central R&T	
Franz	Paul	CEMP, University of Bremen	
Franz-Johann	Pine	SA-ET-Group	
Prof. Vasily	Plachkin	BCCM/CEMP	
Ronald	Podzik	CEMP, University of Bremen	
Gabriel	Pozzani	University of Luxembourg	
Jan	Riege	Fraunhofer Institut für Produktionstechnologie IPT	
Prof. Dieter	Ruhler	University of Stuttgart	
Jiang	Sander	Hennrich Sensors GmbH	
Michael	Schäfer	Michael Schäfer - Robert Bosch GmbH	
Uwe	Scheffauer	Fraunhofer IPT Bremen	
Jan	Scheumann	University Bremen	
Uwe	Schwar	BOEING GmbH	
Markus	Siemann	CEMP, University of Bremen	
Marcel	Stellink	Robert Bosch GmbH	
Dr. Jens	Strang	ET-Group	
Georgios	Strobel	University Bremen	
Thomas	Strödel	DFW/DFVLR IPT	
Michael	Süb	Fraunhofer Institut für Fertigungstechnik und angewandte Materialforschung	
Dr. Jens	Tegeler	Airbus Operations GmbH	
Markus	Tschopik	Ministry of Economic Affairs, Labour and Ports	
Matthias	Vasilevski	3D Systems	
Prof. Frank-Joost	Vilmer	HS-Osn	
Karl	Voschke	3D Systems	
Matthias	Vothke	Fraunhofer IPT	
Dr. Christian	Werner	BSI GmbH	
Andreas	Wittnebach	Airbus Engineering GmbH	
Jan	Wittnebacher	Jan Wittnebacher, TU Darmstadt	
David	Zani	Fraunhofer IPT/ITW Jachen GAP	
Malcolm	Dean	Siemens Industry Software GmbH	
Saharun	Zimmermann	3D Systems	
Dr. Alexander	Zwischen	CEMP, University of Bremen	
Dr. Olga	Zwischen	CEMP, University of Bremen	

Figure 124 Presence list at CAMA (December 2017)



Figure 125 Erasmus+ Knowledge Alliance main auditorium (January 2018)



Figure 126 Erasmus+ Knowledge Alliance Flyer (January 2018)



Figure 127 Programme Erasmus+ Knowledge Alliance (January 2018)



Figure 128 CECIMO General Assembly (March 2018)





European approach to
Additive Manufacturing Qualifications

A link between AM supply chain, research centres and universities
L. Coutinho¹, M. Sibisteanu², A. Cereja³

¹EWF - European Federation for Welding, Joining and Cutting

Abstract: One of the pillars of the 4th Industrial Revolution is Additive Manufacturing (AM) technology that it is used currently in a smaller scale, but which has within manufacturing its most significant and lasting commercial impact. Several hurdles need to be overcome to achieve full utilisation of additive manufacturing in most industrial scenarios, from parts size and resistance to the ability to mix materials in one production run and, last but not the least, the qualification of personnel able to use these technologies. Therefore, to realise the full potential of AM, manufacturing organisations must focus on developing a capable and skilled AM workforce.

EWF is tackling these aspects in collaboration projects focusing on two main topics, research and development (RTD) and training and qualification of personnel.

Through the participation in RTD projects, EWF is aware of the progress the AM technologies are undergoing, disseminates the results in its network and includes the innovations in the EWF personnel qualification profiles. As such, EWF is also involved in collaboration projects addressing the development of new qualifications for additive manufacturing personnel which are tackling the industrial needs in this field. The present paper focuses on the results obtained in some of the projects EWF has been involved.



I. INTRODUCTION

Manufacturing is considered the backbone of European economy. It provides 32 million jobs in more than 2 million enterprises, including around 13 million jobs in a growing high-tech manufacturing sector¹, and around 60 million additional jobs related to associate services.² The share of manufacturing in the EU-28 was 16.1 % of GDP in 2016.³

Addressing Additive Manufacturing's workforce disruption

Consulting firm McKinsey describes the 4IR, as the next phase in the digitization of the manufacturing sector, driven by four disruptions: the rise in data volumes, computational power, and connectivity; analytics and business-intelligence capabilities; human-machine interaction, and improvements in transferring digital instructions to the physical world. Taken together, they will lay the foundation for a revolution more comprehensive and all-encompassing than anything we have ever seen. In the near future, they may transform the economics of global production in many industries, as smart systems—homes, factories, farms, grids or cities—will help tackle problems ranging from supply chain management to climate change.⁴

One of the pillars of this revolution is Additive Manufacturing that is currently used on a smaller scale, but which has within manufacturing its most significant and lasting commercial impact. Several hurdles need to be overcome in order to achieve full utilisation of additive manufacturing in most industrial scenarios, from parts size and resistance to the ability to mix materials in one production run and, last but not the least, the qualification of personnel able to use these technologies. Moreover, the World Economic Forum has assessed just that in a recent document. Looking at the core curriculum content of many academic fields, WEF's study highlights that nearly 50% of subject knowledge acquired during the first year of a four-year technical degree is estimated to be outdated by the time students graduate. Which, in fact, means that any assessment made today needs to take into consideration the fact that a significant share of the subject knowledge of the current workforce will be outdated in just a few years. Secondly and, on average, by 2020, more than a third of the desired core skill sets of most occupations will be comprised of skills that are not yet considered crucial to the job today, according to the respondents of this report.

That change is pervasive and will be felt in all areas, going from the most traditional jobs to the highest qualified technical jobs. Industry 4.0 will bring added change given the compound effect of its pillars on each other. And in keeping up with the tradition of moving in tandem with the evolution of industry since 1992 with its harmonised qualification system for personnel involved in welding, joining and related technologies, EWF is already responding by adapting its system to current and future industry requirements.

Reducing costs, improving efficiency and production flexibility are core pillars to improve Europe's industrial competitiveness. And for this to be assured a few initiatives are being undertaken. In continuation, this paper will present briefly some of these projects.



II. RESEARCH AND TECHNICAL DEVELOPMENT (RTD) PROJECTS
 II.1 THE DEVELOPMENT OF A LARGE ADDITIVE SUBTRACTIVE INTEGRATED MODULAR MACHINE

The LASIMM project (Large Additive Subtractive Integrated Modular Machine) aims to address this need through the development of a large scale and flexible all-in-one hybrid machines, based on a modular architecture that is easily scalable, and ensuring that the properties of the material produced surpass those of a forged material. It will enable the production of a part/product directly from computer-aided design (CAD) models within a reduced timeframe. The machine resulting from this project will be equipped with both subtractive and additive manufacturing technologies that will provide the optimum solution for the hybrid manufacturing of large engineering parts, with cost benefits of more than 50% compared to conventional machining processes.

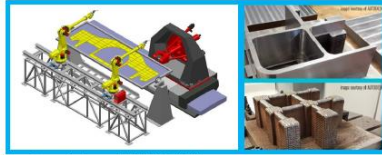


Figure 1 - www.lasimm.eu - LASIMM PROJECT

In order to produce large-scale engineering structures, material needs to be deposited at a relatively high rate, with exceptional properties and excellent integrity. To achieve such results, the deposition process will be based on Wire + Arc Additive Manufacture (WAAM). Another unique feature of the machine will be the capability for parallel manufacturing, featuring either multiple deposition heads or concurrent addition and subtraction processes.

This parallel manufacturing process requires that the machine architecture is based on robotics. To ensure that the surface finish and accuracy needed for an engineering component is obtained, a parallel kinematic motion (PKM) robot is employed for the subtractive step. This robot can also be used for applications of cold work by rolling between passes. This ensures that material properties can be better than those of a forged material. A key part of this project is the development of the ICT infrastructure and toolboxes needed to programme and run the machine. The implementation of parallel manufacturing is extremely challenging from a software perspective and will require a strong focus on the project.

II.2 THE DEVELOPMENT OF AN HYBRID ADDITIVE MANUFACTURING SOLUTION
 The OPENHYBRID project will offer unmatched flexibility, high quality on parts produced and increased productivity for companies looking into taking advantage of its unique ability to perform both additive and subtractive manufacturing.



OPENHYBRID will be a game changer for faster creation of new opportunities and applications for Metal Additive Manufacturing (AM). This new solution, when implemented, will increase the level of robustness and repeatability of such industrial processes, will optimise and evaluate the increased performance of production lines in terms of productivity and cost-effectiveness and, finally, it will assess the sustainability, functionality and performance of the produced new materials. Beyond new parts production, this new manufacturing method will also allow for a very effective repair technique.¹¹

II.3. THE DEVELOPMENT OF AN INTEGRATED DESIGN DECISION SUPPORT SYSTEM
 ENCOMPASS is a three-year project that aims to significantly improve the overall productivity of the laser-based metal powder bed fusion technology process chain, principally through the creation of an integrated design decision support (DDS) system.

Commercial metal AM machines have been available for many years, and the interest from industry for the adoption of this technology for production of end parts is steadily increasing. However, for these technologies to be widely adopted by the industry as a viable production method, process chain productivity needs to be significantly improved. The specific category of metal AM that stands at the heart of the ENCOMPASS project is laser powder bed fusion (L-PBF), where metal powder is fused together to form solid material employing a laser-based energy source. Whilst metal AM is used for prototyping and has begun to penetrate some smaller markets, it is not yet entirely competitive on a larger scale, especially concerning production speed and cost.

Where metal AM is being used, the current state of the process chain is typified by non-integrated process stages dependent on the knowledge of experts for appropriate decision making. In order to increase the productivity of the process chain and to bring it a significant step further towards industrial manufacturing, a better mastering of all stages of the process chain and their interaction is necessary. Although metal AM is highly flexible, the change from one production lot to the next usually requires operator intervention and time to optimise new build files and processing strategies.

The trend towards mass customisation of products requires a high degree of digitisation as well as tools and systems that are highly autonomous and automated to reduce production time and costs.

The three key overall challenges in the industrial exploitation of metal AM can be summarised as 1. Time and cost for manufacture of components through the whole process chain; 2. Time and cost to get from component design to production 3. Reliability and robustness of the process. To address these challenges, the overall aim of the ENCOMPASS project is to create an integrated design decision support (DDS) system for the whole L-PBF process chain to optimize the exploitation of metal AM flexibly.



Currently, it is not possible to undertake a wide range of processes in a seamless automated operation with a single manufacturing system. The OPENHYBRID project has been designed to address the technical and commercial limitations of current hybrid manufacturing systems by developing a single manufacturing system which can achieve this goal. Furthermore, the industrial cases that will prove the technology will range from power generation to automotive and mining equipment sectors.



Figure 2 OPENHYBRID Project - www.openhybrid.eu

The new system will be able to switch between powder and wire feed-stock within a single part, providing unmatched flexibility in terms of materials, a must-have for these industries as they look for optimisation on cost, weight and resources utilisation, to which the ability to use several materials within the same piece is paramount. Moreover, the process can be fitted to a diverse range of platforms (with minimal machine modification being required) as well as to existing machine tools; it strongly reduces the investment needed while at the same time provides new capabilities to large and small companies.

A number of technologies will be leveraged and developed to ensure the project's long-term success, creating a solid base for the future widespread adoption of Additive Manufacturing, and among them:

- Smart Laser cladding heads, incorporating temperature sensors and material feed sensing;
- Laser scanning head for heat treatment, polishing and texturing;
- Laser ultrasonic non-destructive testing inspection for defect analysis;
- Enhanced gas shielding, medium shielding through a trailing shield and high shielding through a flexible enclosure;
- Mechanical stress relieving through the development of ultrasonic needle peening head;
- Contamination control through the development of a cleaning head;
- Enhanced inspection utilising combined thermal and optical imaging.

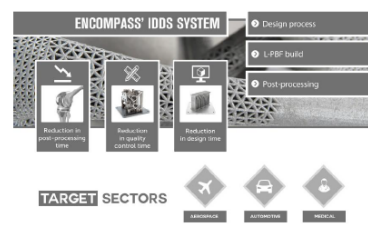


Figure 3 ENCOMPASS PROJECT - www.encompass-am.eu

The three key process chain steps tackled in the ENCOMPASS project are the component design process, the L-PBF build process itself, and the post-build processes (including post-processing and inspection). The integration at digital level enables numerous synergies between these steps, and in addition, the steps themselves are being optimised to improve the capability and efficiency of the overall chain. This will enable a significant reduction in time and cost, and an enhanced level of quality for safety critical parts.¹²

II.4. BRINGING ADDITIVE MANUFACTURING BENEFITS INTO THE BUSINESS MAINSTREAM

As emerging technologies increase flexibility in production, the prospect of new business models arises, with a new mix of production functions. While automation of production can lead to a greater efficiency and safety, the cost of such changes can be prohibitive. In order not to hold back European industry, the business dimension is crucial to unleash the potential of the new technology and to mitigate risks of losing competitiveness.

In order to meet the needs of European SMEs and mid-caps interested in engaging with AM technology has been created and developed the AMable project, a sustainable Digital AM ecosystem that will accelerate the uptake of AM technologies by SMEs; leading to the development of innovative business and service models and new value-chain models in a fully digital environment.

AMable provides support to SMEs and mid-caps for their uptake of additive manufacturing. Across all technologies from plastics through polymers to metals, AMable offers services that target challenges for newcomers, enthusiasts and experts alike. Grouped along the value chain, four stages guide your ideas to delivery.



Is your idea Additively Manufacturable? This question is driving and guiding all actions within the AMable eco-system, which is based on three core offerings: – Stages, Platforms and AM Services – with the manufacturing chain divided into four ‘stages’: concept, construct, print and finish.

Table 1 - AMable Manufacturing chain stages - www.amable.eu

Stage	Description
Concept Stage	The concept stage captures the product idea and assists in the development of suitable implementation scenarios. Visualisation through augmented and virtual reality (AR/VR) technologies allows you in depth discussion of features and functionalities. At this early stage, the AMable business case assessment tool assists you with a first estimate on the economic viability of the envisioned product.
Construct Stage	At the construct stage, experts give support on simulating product properties such as fluid dynamics or load cases. Topology optimisation as a service stands at the heart of an interlinked holistic approach to ensure the achievement of all expected properties.
Print Stage	Once the 3D model was fully assessed, it can be printed wherever the owner chooses. The print stage supports data preparation and execution of critical prints. Data acquisition during production tracks progress and specifications.
Finish Stage	Finishing a part makes your part ready for use. If it needs milling or grinding, testing or computer tomography, your specifications at construct stage define the finish line.

Each of these stages will act as an entry point into the ecosystem, directing potential parties to the relevant competence center that can support the fulfilment of new AM ideas by SMEs. Regarding the AM services that AMable offers: SMEs (and mid-caps) are organised through three platforms: business, skills and education, and technology. (Figure 4)

Starting off with a business case analysis, more than fourteen service offerings facilitate the transition from idea to the first prototype, from the willingness to invest in training on the job. There are as many solutions as there are use cases fueled by the AMable Digital Innovation Hub (DIH) as a one stop-shop.

It is expected that AMable will offer guidance to more than 150 additive ideas, with financial support to three parties of more than 5 Million Euros. The European Commission supports this effort under the umbrella of the IMES initiative with a strong commitment to SME support and digitization. The ideas will be matched with the AMable eco-system organization, according to the platforms, services and stages that the project addresses, which will result in possible new AM challenges.



III. VOCATIONAL EDUCATION AND TRAINING (VET) PROJECTS

Enhancing the collaboration between Universities and the industry at large is of paramount importance, especially at a time when Additive Manufacturing (AM) and other Industry 4.0 technologies are becoming increasingly mainstream and bring new challenges related to the qualification of the workforce to deal with this change.



Figure 5 - EWF's mission - www.ewf.eu

With the aim to bridge the gap between market demand and the job seekers' skills in the professions related to AM, in 2017 EWF developed a survey on Skills needs on Metal Additive Manufacturing, with more than 200 responses. The survey results represent the AM qualifications needs identified by companies, as well as the relevance of each topic for a specific AM qualification.

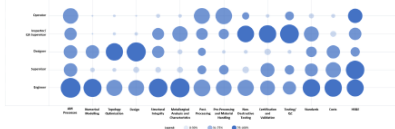


Figure 6 - AM Survey Results

It was shown that due to its novelty and fast growth and magnitude of application, the AM field has a distinctive set of features. AM is still quickly evolving and, as such, job positions are very hard-to-fill because of the insufficiency of a workforce with the required expertise, similarly, currently available educational offers are unable to provide students with the needed skills that can meet the expected high levels for such high performance and high-value products.



Each challenge receives a business case assessment to identify the potential of the idea, the suitable services to develop it and the best roadmap to ramp up production for successful market entry.

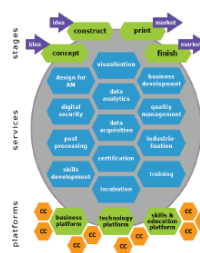


Figure 4 - Organization and initial services offered by the AMable eco-system to assist SMEs in adoption of AM - www.amable.eu

Key elements from the design stage are visualization services that use latest technologies in virtual reality and augmented reality to create an understanding of geometries, simulation results and the effects of design changes. Feasibility of functional requirements is ensured by design recommendations from experts who use the latest construction and simulation tools.

While the process of 3D printing is commonly perceived as an easy and well automated task, a successful build is still critical for functional parts. The AMable tutors accompany each idea from start to end to ensure that all relevant information is carried through.

At the digital heart of AMable, the tutors, the customers and the experts are supported by a digital backbone that tracks all changes in design, construction, print and finish while preserving privacy and transparency simultaneously. AMable implements the Industrial Dataspace principle for Additive Manufacturing (IDS-AM) which follows the paradigm of leaving the data with the owner to put each participant in full command of his intellectual property. Each participant decides what to share and under which conditions to share. Transparency is created through the creation of the first ever AM blockchain. The AMable is fully integrated into the Industrial Dataspace to create digital fingerprints of all relevant blockchain data continuously and to link these to the evolution of the product.¹³

Europe is firmly committed to position itself at the leading edge of Manufacturing innovation, as the industry is considered one of the drivers that will provide the foundation for sustainable economic growth, competitiveness and long-term jobs in the region. Within the new technologies that are reshaping the industry, Additive Manufacturing stands out. Challenges remain that need to be addressed, among them qualified professionals capable of taking advantage of this technology.¹⁴



III.1 Knowledge Alliance for Additive Manufacturing Between Industry and Universities

Consequently, there are two important hurdles to overcome: i) absence of comprehensive and all-encompassing curricula/education (in universities) and ii) the availability of skilled employees for a wide variety of positions, including engineers with AM proficiency.

To address the widely-identified death-valley among the academic and industrial world, and at the same time responding to an urgent industrial need, the qualification of AM workforce is one of the ADMIRE project's main goals.

Together universities, companies and students will design a Metal AM Master degree (MSc) according to level 7 of the European Qualification Framework, with a set of innovative features: a multidisciplinary scientific scope, a modular structure promoting hard and soft skills, based in Learning Outcomes described in Knowledge, Skills, Responsibility and Autonomy; with learner-centred, self-directed and work-based learning approaches, enabling flexible learning paths, including a problem-based one and holding an international teaching staff trained in entrepreneurship from enterprises and universities.

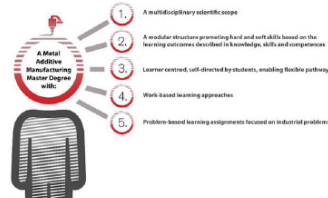


Figure 7 - Innovative features of the ADMIRE MSc in MAM - www.admirerproject.eu

Furthermore, the ADMIRE project enhances the flow of knowledge and innovation, through the creation of a collaborative AM platform/hub to store problem-based learning (PBL) assignments and solve them collaboratively, matching students, research institutions and enterprises, unloading research positions, internships and job vacancies in AM, promoting AM knowledge speed-dating and AM world café meetings.

In a meta-analytical perspective, ADMIRE contributes to improve higher education systems quality and relevance, make the triangle knowledge work, enhance transversal competences in a lifelong perspective, strength quality through mobility and cross-border cooperation while, simultaneously, promoting ICT skills.¹⁴



Figure 8 - Knowledge flow in ADMIRE project

A qualification system and a qualification body will ensure that European companies will remain competitive on this leading-edge technology.

III.2. CREATING KNOWLEDGE AND SKILLS IN ADDITIVE MANUFACTURING

Addressing the current qualifications shortcomings by creating a European Additive Manufacturing qualification body and designing a European harmonized qualification system and particular qualifications matching market requirements: what defines the CLLAIM project. The training, developed as part of the project, will allow for approximately 40 trainees from the partner countries to attain qualifications recognised in Europe, with enhanced mobility potential, lifelong learning and easy adjustment to markets with European Credit system for Vocational Education and Training (ECVET) points (credits). These points can be transferred to other professions, assuring transparency of qualifications in all Europe and flexibility of professionals to embrace other tasks/professions, namely in manufacturing.

The qualification system will embed several brand-new profiles (European AM operator, European AM designer, European AM specialist and inspector) that fit the requirements of the industry and apply the EQF (European Qualifications Framework) and ECVET (European Credit system for Vocational Education and Training) methodologies. For that, it is mandatory to design new training curricula and assessment tools, as well as introducing innovative training approaches, allowing experiential learning and the recognition of work-based learning (award of prior learning, recognition of current experience at the workplace).¹⁵

Figure 9 - Additive Manufacturing Qualifications - www.cllaimproject.eu

The European Federation for Welding, Joining and Cutting has been engaged in developing, since 1992, a harmonised qualification system for personnel involved in the welding, joining and related technologies, which has worldwide recognition. It is also leading the way in developing a modular approach to its qualification system, enabling professionals to pick and choose the adequate qualifications to achieve the required diploma, instead of doing it all from scratch, thus enabling further flexibility on the workforce in response to changing industry's requirements.

In summary, in order to ensure that the future workforce is prepared for the challenges of industry 4.0 and, specifically of Additive Manufacturing, there is the need to:

- Facilitate retraining, reskilling
- Ensure transferability between traditional education systems and technical education
- Integrate modularity on the qualifications systems
- Align industry's qualification systems with the European Qualifications framework, hence ensuring a more qualified and mobile workforce within EU.

Governments and industrial organisations should proactively find ways to coordinate initiatives that can foster qualification, transition and transfer of professionals, as well as nurturing the creation of new jobs. EWF is leading the way showcasing how these challenges can be met, together with our members and partners.

CONCLUSIONS:

A number of technological advances are making flexibility in production possible, and the EU contribution is helping European industry to benefit from this advantage as it was shown in the previous chapter. However, flexibility also brings some non-technical challenges at human and business levels.

Additive Manufacturing in combination with computer-aided design and engineering tools is one of the core technologies bringing flexibility and possibility of customization in design, which is highly prized attributes in today's products. Additionally, the adoption of AM technologies can be very resource and investment intensive, e.g. training of staff, changes in the production lines. EWF addresses this last issue by underlining that lifelong learning is particularly important. The disruptive nature of the 4th Industrial Revolution technologies and their fast innovation cycles make lifelong learning programmes necessary for the optimum performance of the workforce and the other stakeholders.

EWF, through the EU funded projects' results contribute to this adaptability requirement by developing training methodologies and tools that help the worker adapt to the new technology. This approach requires the identification of the right mix of skills demanded by the 4th Industrial Revolution. Its complex nature, based on automation, robotization and cyber-physical systems, requires skills and a knowledgeable workforce capable of building, operating, maintaining. The goal of these funded projects is to enable stakeholders, notably industry and workforce, to benefit from the result, with impact on tackling skills deficiencies and mismatches between the demand and supply of skills. They are important as already, industry cannot find all the skills needed for new job profiles and further improvements in their competitiveness.

A better understanding of the needs with regard to skills and core competences will also help policy makers to respond to better address the current social, economic and technological challenges in Europe.

In order to take full advantage of all opportunities provided by the 4th Industrial Revolution, industrial research has to master new technologies and to address non-technical challenges. These issues related to human dimension, value chains, business models, or product development can hamper the diffusion of innovative solutions or processes through the whole economy.

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¹⁷Europe: GDP percentage of total, industry breakdowns: 10.1.2018.

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¹⁹World Economic Forum - The Future of Jobs Report, January 2016

²⁰MIT Technology Review - *Amplifiers are making additive manufacturing a 1-2 punch printed part*, April 2016

²¹Mckinsey&Company - *Europe the asset of industry 4.0*, April 2016

²²Foundry Management and Technology - *IGT, Siemens Invest, Re-Commit to Metal Manufacturing*, September 2016

²³EWf Whitepaper-Additive Manufacturing Skills, December 2016

²⁴Large Additive Subtractive Integrated Modular Machine L-ASIMM Press-release

²⁵Developing a novel hybrid AM approach which will offer unrivalled flexibility, part quality and productivity - OPENHYBRID Press-release

²⁶Engineering Compass - ENCOMPASS Press-release

²⁷Additive Manufacturing - AMABLE Press-release

²⁸Knowledge Alliance for Additive Manufacturing Between Industry and Universities - ADMIRE Press-release

²⁹Creating Knowledge and Skills in Additive Manufacturing - CLL-AM Press-release

Figure 129 Paper presented at Sudura by EWF, referring ADMIRE project (April 2018)



European Approach to Additive Manufacturing Qualifications

A link between AM supply chain, research centers and universities

Monica Sibisteau



www.ewf.be



European Manufacturing Industry



Manufacturing is considered the backbone of European economy.

It provides **32 million jobs** in more than **2 million enterprises**, including around 13 million jobs in a growing high-tech manufacturing sector

The share of manufacturing in the EU-28 was **16.1 %** of GDP in 2016.

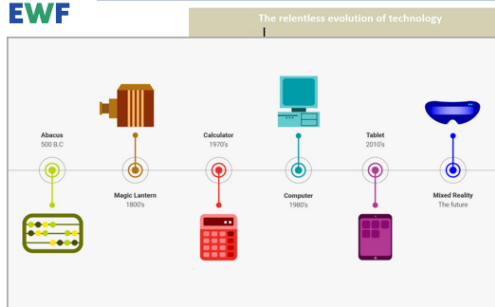
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Technology Evolution



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Industry 4.0 – the 4th Industrial Revolution

Steam engine 1st INDUSTRIAL REVOLUTION Quality of life Engineering sciences Late 18th - early 19th Century	Conveyor belt 2nd INDUSTRIAL REVOLUTION Mobility Late 19th - mid 20th Century	Computer, NC, PLC 3rd INDUSTRIAL REVOLUTION Microelectronics Second half of 20th Century	Cyber Physical Systems 4th INDUSTRIAL REVOLUTION Information and communications technology Early 21st Century
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Industry 4.0 – the 4th Industrial Revolution



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Industry 4.0 – the 4th Industrial Revolution

- The challenge of change is pervasive and will be felt in all manufacturing areas
- Industry 4.0 will bring added change given the compound effect of its pillars on each other.
- Going from the most traditional jobs to the highest qualified technical jobs.



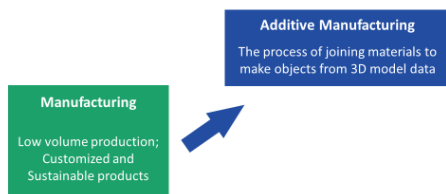
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Industry 4.0 – the 4th Industrial Revolution



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Europe's industrial competitiveness

The core pillars to improve Europe's industrial competitiveness.



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The 2018 vision for welding in 2025



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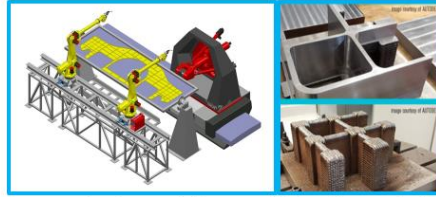


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THE DEVELOPMENT OF A LARGE ADDITIVE SUBTRACTIVE INTEGRATED MODULAR MACHINE

www.lasimm.eu



based on a scalable open architecture framework with associated software enabling full parallel manufacturing.

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THE DEVELOPMENT OF A LARGE ADDITIVE SUBTRACTIVE INTEGRATED MODULAR MACHINE

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THE DEVELOPMENT OF AN HYBRID ADDITIVE MANUFACTURING SOLUTION

www.openhybrid.eu



unrivalled flexibility, high quality on parts produced and increased productivity for companies looking into taking advantage of its unique ability to perform both **additive and subtractive manufacturing**.

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THE DEVELOPMENT OF AN HYBRID ADDITIVE MANUFACTURING SOLUTION

www.openhybrid.eu



26-27 Aprile 2018 - Conferenza "Sukura 2018", TIMESOARA - Romania



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THE DEVELOPMENT OF AN INTEGRATED DESIGN DECISION SUPPORT SYSTEM

www.encompass-am.eu



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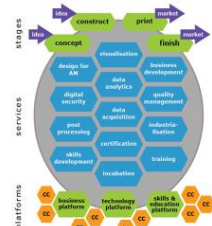


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BRINGING ADDITIVE MANUFACTURING BENEFITS INTO THE BUSINESS MAINSTREAM

www.amable.eu



Is your idea Additively Manufacturable?

Organisation and initial services offered by the AMable eco-system to assist SMEs in adoption of AM - www.amable.eu

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CONNECTING THE DOTS BETWEEN INDUSTRY AND EDUCATION



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CONNECTING THE DOTS BETWEEN INDUSTRY AND EDUCATION

survey on Skills needs on Metal Additive Manufacturing, with more than 200 responses.

26-27 April 2018 - Conferinta "Sudura 2018", TIMISOARA - Romania

www.ewf.be

Knowledge Alliance for Additive Manufacturing Between Industry and Universities

www.admireproject.eu

1. A multidisciplinary scientific scope
2. A modular structure promoting hard and soft skills based on the learning outcomes described in knowledge, skills and competences
3. Learner centred, self-directed by students, enabling flexible pathways
4. Work-based learning approaches
5. Problem-based learning assignments focused on industrial problems

Together universities, companies and students will design a Metal AM Master degree (MSc) according to level 7 of the European Qualification Framework.

26-27 April 2018 - Conferinta "Sudura 2018", TIMISOARA - Romania

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CREATING KNOWLEDGE AND SKILLS IN ADDITIVE MANUFACTURING

www.claimprojectam.eu

WHAT SHOULD WE **CLAIM** FOR?

The missing piece to overcome Additive Manufacturing (AM) skills' shortages.

INNOVATIVE OUTPUTS

- A European AM Qualification Body
- New professional profiles
- Innovative training tools
- Recognition of prior learning scheme for professionals working in AM field

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EWF's Approach to Additive Manufacturing

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Thank You

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Figure 130 Presentation at Sudura in Timisoara (April 2018)



ISO/ASTM JG 74 – Personnel Training

Eurico Assunção
EWF Deputy Director



www.ewf.be



Agenda

Meeting Agenda
ISO TC 261 / ASTM F42 – JG74 on Personnel Training

- Call to order and introduction of attendees
1. Approval of Agenda
 2. Membership updates
 3. Presentation and discussion of the results obtained in a survey carried out by EWF on Qualifications for Metal AM
 4. Discussion of the scope of activity of JG 74
 5. Definition of future work items
 6. New business
 7. Future meetings
 8. Meeting adjournment



Membership

Role	Appointed by	Country	Stakeholder category	Salutation	Last name, First name
Committee member	BSI	United Kingdom	A - Industry and commerce	Mr	Pei, Eujin
Committee member	DIN	Germany	A - Industry and commerce	Mr Dr.-Ing.	Seidel, Christian
Committee member	IPQ	Portugal	A - Industry and commerce	Dr	Assunção, Eurico
Committee member	SAC	China	A - Industry and commerce	Mr	Li, Haibin
Committee member	SIS	Sweden	A - Industry and commerce	Ms	Widström, Katarina
Technical programme manager	ISO	-	-	Mr	Bazin de Calx, Charles-Pierre



Background Information

EWF's Education, Training and Certification System

3 AREAS OF COMPANIES' CERTIFICATION: QUALITY, ENVIRONMENTAL, HEALTH & SAFETY

23 TRAINING GUIDELINES

52 COURSES QUALIFICATIONS & CERTIFICATIONS

MORE THAN 650 AUTHORISED TRAINING CENTRES

MORE THAN 300.000 INDUSTRIAL PERSONNEL QUALIFIED



Background Information

EWF's Education, Training and Certification System

ONE SYSTEM

referred in CEN and ISO Standards

based in training guidelines

FORTY SIX COUNTRIES

46

from project management to workshop level

based in harmonised examination database

25 YEARS OF INTERNATIONAL QUALIFICATIONS

- Training Personnel in Welding & Joining
- Qualification of Personnel in Welding & Joining
- Certification of Personnel / Companies
- Technical Information
- Technical Products
- Collaboration Projects



EWF's Education, Training and Certification System

Harmonised Qualification System:

- From project management to workshop level
- Used in 46 countries
- Referred in CEN and ISO Standards
- Based in training guidelines
- Based in harmonised examination database

Quality Assurance System based on:

- Rules/Requirements for ATBs
- Harmonized Assessors Training and Peer Review
- 25 Years of experience in international qualification of personnel for the manufacturing industries

Success driven by recognition of "quality" of the system by stakeholders

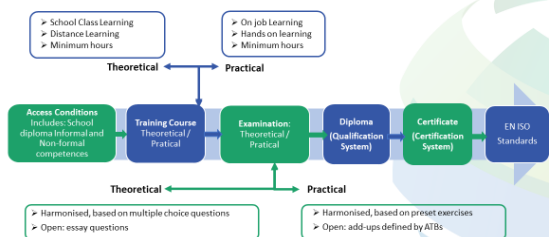
Quality

Experience to be benchmarked to other professions.

Benchmark



EWF's Education, Training and Certification System



Background Information

Our approach to Skills in AM

Create an International Additive Manufacturing Qualification System!



But...why?



Background Information

Our approach to Skills in AM



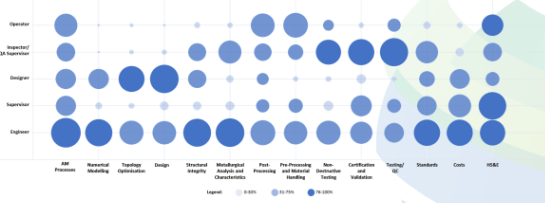
- Developing Qualifications and Guidelines
- Creating alliances (European Projects)
- Assuring harmonisation of Education & Training
- Authorising E&T centres
- Industry Skills needs



Surveys on Skills



Question: how important is each AM Skill for each Job Profile?



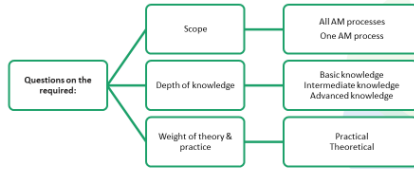
• 200+ answers across Europe



New job profiles in Metal AM



Further definition the new Job Profiles characteristics:



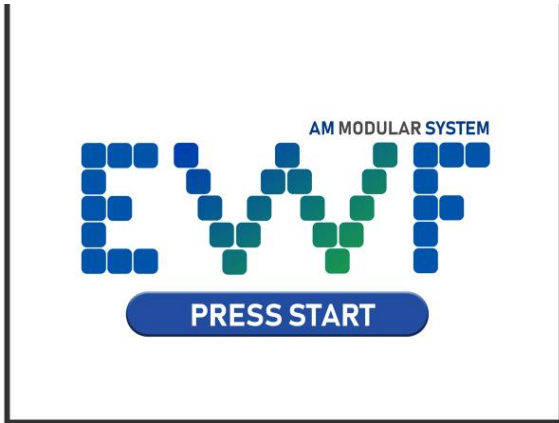
EUROPEAN METAL AM PROFILES				
Engineer	Supervisor	Designer	Inspector	Operator



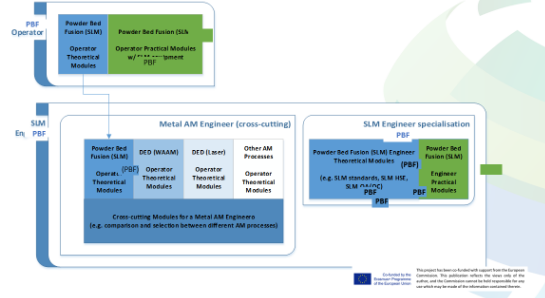
Some remarks for the new job profiles in metal AM

Some remarks from the Surveys:

- Engineers, Inspectors, Designers and Supervisors should cover all materials and all processes used in Metal AM → the driver is the PROCESS
- Operators should cover one process and all materials relevant for that process
- The training scheme needs to be fully MODULAR, without repetitions between the modules
- Higher level profiles are built upon the modules from lower levels, giving the possibility of an Operator becoming a Supervisor, for instance
- Metal AM Engineer job profile:
 - Characteristics of a Manufacturing Engineer
 - Cross-cutting Engineer qualification, with a possibility to specialize in a process



AM System Modularity



Discussion of the scope of activity of JG 74
Definition of future work items

JG Scope - ISO/TC261/JG74 is a Joint Group developing guidelines related to establish a comprehensive training program for the different roles necessary for the metal Powder Bed Fusion (PBF) process. This includes powder technicians, build set-up engineers, machine operators and other personnel necessary for the production of metal PBF parts. This JG liaises with ISO/TC44/SC14 which focuses on standards on welding, brazing and structural soldering for aerospace applications.

- Do we need to update the JG scope?
- Are we aiming at preparing Qualifications?



Discussion of the scope of activity of JG 74
Definition of future work items

Proposed Work Items - Additive Manufacturing-General Principals-Standard Guidelines for Establishing a Personnel Training Program for Metal Powder Bed Fusion Process. Excluded from this standard guide is the machine operator qualification for aerospace, which is covered by ISO/TC 261/JWG 5.

- Are all members ok with the proposed work items?
- How do we ensure that there is no overlapping between JG74 and JWG5?
- Is the Standard being developed in JWG 5 a Qualification or a Certification Standard?



Discussion of the scope of activity of JG 74
Definition of future work items

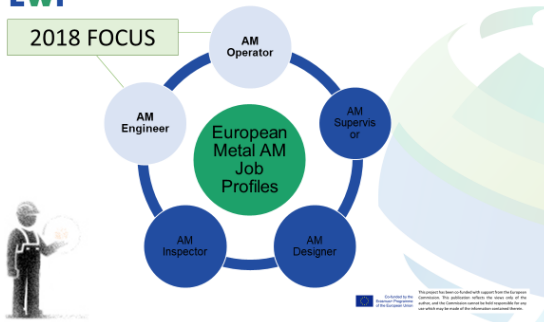
Scope Standard Guideline (see document ISO/TC 261 N 334): Scope that was initially proposed by ASTM, *not yet agreed*
 1.1 This guide is intended to be used in conjunction with existing standards to establish a comprehensive training program for powder technicians, build set-up engineers, and machine operators.
 1.2 This guide defines the different roles necessary for powder bed fusion part production and training requirements for the different roles in a production environment where an IQ, OQ and PQ create a fixed process.

Only for Powder Additive Processes?
 How should the collaboration with other JG be promoted?

Supported by the European Union under the Horizon Europe programme. The publication reflects the views of the author and the Commission cannot be held responsible for any use of the information contained therein.



New Job Profiles in Metal AM



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ENGINEER – Scope

Cross Cutting Modules for a Metal AM Engineer
(e.g.: comparison and selection between different AM Processes)

	Transversal		
	Specific		
Powder Bed Fusion (PBF)	DED (WAAM)	DED (Laser)	Other AM Processes
Operator Theoretical Modules	Operator Theoretical Modules	Operator Theoretical Modules	Operator Theoretical Modules

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PROFESSIONAL PROFILE - ENGINEER



- He/she will be able to:
- Choose an AM process for a specific part, based on its design, required properties and application
 - Support the implementation, in an industrial involvement, of a specific AM technology
 - Prepare, implement and supervise Quality Assurance procedures
 - Troubleshoot and, if necessary, adapt the manufacturing process

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PROFESSIONAL PROFILE - ENGINEER



- He/she will be able to:
- Evaluate manufacturing suitability for clients' requests defining which process is fit for the request, developing cost models and providing feedback concerning operating costs
 - Develop and execute custom and standard manufacturing plans for additive manufacturing, from validation of design, development, pre and post processing operations, parts conformity and to identifying causes and corrective actions of technical production problems
 - Coordinate the tasks distribution between the operators according to the workplan as well as manage the link between them and the management

Supported by the European Union under the Horizon Europe programme. The publication reflects the views of the author and the Commission cannot be held responsible for any use of the information contained therein.

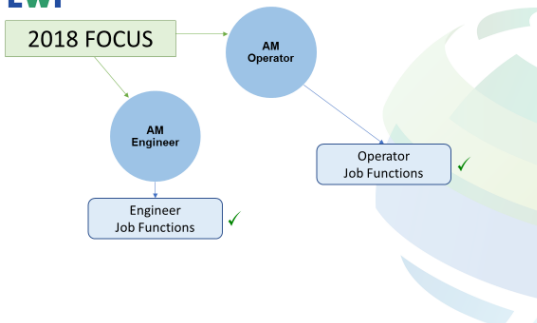


Professional Profile – PBF OPERATOR

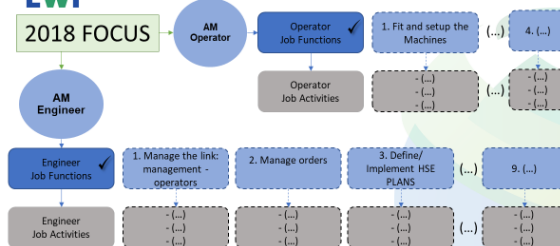
- He/she will be able to:
- Develop solutions on basic and specific problems related with powder-bed-based machines and processes for AM
 - Operate powder bed based laser beam machines for AM, including fitting and setting up, maintenance and repair
 - Verify laser beam measurement and positioning in powder-bed-based machines for AM
 - Self manage the handling of powder (approval, storage, contamination, traceability);



New Job Profiles in Metal AM



New Job Profiles in Metal AM



Join at [Slido.com](https://www.slido.com) with #M035 - sli.do



New Job Profiles in Metal AM

2018 FOCUS

AM Engineer

Manage the link: management - operators	Manage orders	Define/implement HSE PLANS	Design validation of AM Parts
Providing feedback concerning operating costs	Receiving and validating raw materials Handling and storing materials	Verifying individual & collective personal protection equipment	Selecting materials (includes considering material costs?) Defining part orientation
Defining operators work distribution in terms of workload/shifts based on the workplan	Defining procedures for reception and validation of raw materials Defining procedures for handling and storage of materials	Preparing incidents reports when needed Ensuring workers safety requirements on shop floor Creating HSE procedures	Performing structural and thermal analysis of part fabrication (CAE) Evaluating manufacturing suitability of clients specific requests Defining post processing requirements



New Job Profiles in Metal AM

2018 FOCUS

AM Engineer

Define Production of AM parts	Ensure part conformity	Create cost model	Integrate AM in the manufacturing chain
Establishing production parameters (e.g. laser, powder, gas)	Developing testing and inspection plan (specifying acceptance criteria + NDT/DT)	Establishing quotations for clients	Analyzing all the manufacturing existing
Defining post processing operations (support removal, heat treatment, surface finishing and treatment)	Defining corrective measures for defects (metallurgical, imperfections and deformation and warping) based on testing results (Quality control measures)	Making cost comparisons between different AM processes	Updating production management procedures
Compiling production plans	Standards/Certifications		Creating growing opportunities based on the incorporation of new manufacturing processes



New Job Profiles in Metal AM

2018 FOCUS

AM Operator

Fit and Setup the PBF Machine	Printing of AM parts	Post processing of AM parts	Maintain and Repair PBF Machines
Verifying the conditions of use (energy, power supply, gas supply, etc.)	Manufacturing process monitoring	Removing/preparing the powders for the next use	Checking manufacturer's maintenance routines
Performing file loading and parameters Setup		Finishing the part with simple/manual subtractive manufacturing	Cleaning and exchanging materials (powder bed and filters)
Verifying Laser Beam characteristics (power, geometry, positioning)		Performing Visual testing of the printed parts (includes other NDT?)	Replacing components (e.g. glass cover)
Performing parts; nesting		Storing and shipping the printed pieces	



EWF systems framework & correspondence to EQF

EQF Levels	EWF Proficiency Levels	ISCED Levels
7	EXPERT	7
6	ADVANCED	6
5	PROFICIENT	5
4	INDEPENDENT	4
3	BASIC	3
2	ELEMENTARY	2



Overview regarding depth of subjects OPERATOR

	AM PROCESSES	SUBTRACTIVE PROCESSES	POST-PROCESSING	PRE-PROCESSING AND MATERIAL HANDLING	NON-DESTRUCTIVE TESTING	TESTING/QUALITY CONTROL	HEALTH, SAFETY & ENVIRONMENT
Validate Operator	4 – Independent Operator	4 – Independent Operator	4 – Independent Operator	4 – Independent Operator	4 – Independent Operator	4 – Independent Operator	4 – Independent Operator
Validate	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No

Validate levels at: [sli.do #M035](#)



Overview regarding depth of subjects AM (General) ENGINEER

Validate levels at: [sli.do #M035](#)

	AM PROCESSES	SUBTRACTIVE PROCESSES	NUMERICAL MODELLING	TOPOLOGY OPTIMIZATION	DESIGN	STRUCTURAL INTEGRITY	METALLURGICAL ANALYSIS/CHARACTERISTIC
Validate Engineer	6 - Advanced	5 - Proficient	5 - Proficient	5 - Proficient	5 - Proficient	5 - Proficient	5 - Proficient
Validate	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No

	POST-PROCESSING	PRE-PROCESSING/MATERIAL HANDLING	NON-DESTRUCTIVE TESTING	CERTIFICATION AND VALIDATION	TESTING/QUALITY CONTROL	STANDARDS	COSTS	H&S AND ENVIRONMENT
Validate Engineer	6 - Advanced	6 - Advanced	5 - Proficient	5 - Proficient	5 - Proficient	5 - Proficient	5 - Proficient	5 - Proficient
Validate	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No



Overview regarding depth of subjects PBF ENGINEER

Suggest levels at: [sli.do #M035](#)

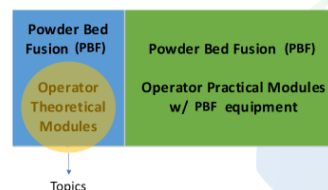
	AM PROCESSES	SUBTRACTIVE PROCESSES	NUMERICAL MODELLING	TOPOLOGY OPTIMIZATION	DESIGN	STRUCTURAL INTEGRITY	METALLURGICAL ANALYSIS/CHARACTERISTIC
Validate Engineer	?	?	?	?	?	?	?
Validate	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No

	POST-PROCESSING	PRE-PROCESSING/MATERIAL HANDLING	NON-DESTRUCTIVE TESTING	CERTIFICATION AND VALIDATION	TESTING/QUALITY CONTROL	STANDARDS	COSTS	H&S AND ENVIRONMENT
Validate Engineer	?	?	?	?	?	?	?	?
Validate	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No



OPERATOR – Scope

[sli.do #M035](#)





1st AM QUALIFICATIONS WORKSHOP



Aim: Gather Metal AM experts to support in the definition of the profiles
 When: 8th to 10th May 2018
 Where: Lisbon, PT

8 th May	9 th May	10 th May
Powder Bed Fusion (PBF)	DED (Laser)	DED (WAAM)

The workshop will be focused on:

- Operators
- Engineers



Summary

Expected Outcomes (2018):

- New System for Education & Training in AM
- New Job Profiles in Metal AM
- Rules for Quality Assurance and harmonisation
- Rules for authorizing training centres and universities



Designer Professional Profile

What is expected from an AM Designer?



Thank You



Eurico Assunção
 EGAssuncao@ewf.be

Figure 131 ISO Meeting (May 2018)



Overview

- EWF AM 2018 Objectives
- Completed activities
- Upcoming actions
- EWF AM Risks
- EWF System Rules

EWF AM – New AM System

EWF Board of Directors – Moscow 2018








www.ewf.be

EWF AM 2018 Objectives

- Creation of EWF AM by the EWF General Assembly (November 2017)
- New System for Education & Training in AM
- Rules for QA and Harmonisation
- 7 new Job Profiles in Metal AM
 - 3x Metal AM Operator
 - 1x Metal AM Engineer
 - 3x Metal AM Specialized Engineer (e.g. LPBF Engineer)
- Engagement with Experts and Industry



EWF AM 2018 Objectives New Job Profiles



Co-funded by the Erasmus+ Programme of the European Union
This project has been co-funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Completed activities

- Draft system Rules and Structure, including Modularity
- Draft contents for the Guidelines of the 7 Qualifications
 - Entry Requirements
 - Professional Profile description
 - Job Functions
 - Job Activities
 - Course Competence Units



Completed activities


- 1st AM Qualifications Workshop




Upcoming actions

Until the end of 2018:


- Final version of the new Guidelines
- Organisation of the 2nd AM Qualifications Workshop, for the validation of the completed Guidelines
- Presentation of the EWF AM System Rules




EWF AM Risks

Risks to EWF AM System:

- Other organizations, like ASTM, are already developing AM Qualifications
- EWF members are not recognized in the market as the main experts in AM
- The project results (AM Qualifications) are public and if we do not implement them quickly someone else will do so



EWF System Rules	EWF Opportunity
<p>In order to ensure the sustainability of the EWF AM we need to:</p> <ul style="list-style-type: none">• Create in the market the recognition of EWF AM• Ensure that the main organizations in AM are using our system• Have a set of rules that allow a fast implementation of the EWF AM System, this will require a flexible procedure to approve ATBs 	<p>EWF has the opportunity to become the recognised organization for AM Qualifications in Europe (and not only)</p> 





EWF System Rules	EWF System Rules
<p>Required changes to system rules for EWF AM:</p> <ul style="list-style-type: none">• It is expected that, at an initial stage, the number of awarded diplomas will be small. Adding to this the current ANBs to not have the required expertise in AM. So a direct approval of the ATBs through EWF ,with the support of the ANBs, will ensure that the ANBs are involved as the EWF AM System grows• Use of the ANBs auditors team (which will generate income to the ANBs) in the audit process of the EWF AM ATBs 	<p>Change the rules in order to:</p> <ul style="list-style-type: none">• Create a Virtual ANB across Europe, with members that are involved in AM<ul style="list-style-type: none">• This Virtual ANB would be responsible to provide the exam expertise for the award of the Diplomas• And the audit expertise for the creation of na audit team and authorization of AM ATBs 



Figure 132 Presentation at 52nd EWF General Assembly in Moscow (May 2018)



2018 WAAMat Industry Day
 12/13 June 2018
 Cranfield University, Stafford Cripps SC2



Day 1

Registration: 10am

Session 1 (10.30am)

1. Introduction and updates on programme, grants, future opportunities (S. Williams)
2. Latest parts built + local shielding (F. Martina)

Coffee

Session 2

3. Tool path planning for WAAM: software capabilities + use demonstration (C. Liu)
4. Control system and data acquisition (P. Kurzynski + M. Tolisz)

Lunch

Session 3

5. Multi-steel components + effect of surface roughness on fatigue life (P. Dirisu)
6. Surface roughness characterisation and its effect on fatigue in Ti (S. Muhammad)
7. Internal defects and fatigue life (R. Biswal)
8. ADMIRE Project (F. Martina)

Coffee

Session 4

9. WAAM3D and commercialisation plans (F. Martina)
10. Properties of Inconel 718 + Maraging Steel (X. Xu)
11. WAAM of Cu and Mg (G. Pardo)

Lab tour

Day 2

Start: 9.30am

Session 5

12. Updates on Ti64 microstructural characterisation (A. Ho)
13. Latest Ti64 mechanical results (A. Syed)
14. New titanium alloys (A. Caballero)
15. High build rate Ti64 deposition (C. Wang)

Coffee

Session 6




16. WAAM of Aluminium Alloy: Sate66, ZL205, and parts (P. Colegrove)
17. Deposition of AATxxx (E. Eimer)
18. Fundamental of plasma processing (P. Bridgeman)
19. Non-destructive evaluation of WAAM parts (C. MacLeod)

Lunch

Session 7

20. New peening methods (L. Nieto)
21. Peening vs rolling and influence of the thermal history on grain morphology and stress (J. Homige)
22. Process monitoring (C. Dao + G. Pardo)
23. Multi-material structures in steel and Inconel 625 (X. Xu)


Figure 133 WAAMat Industry day, at Cranfield University (June 2018)







AMEF2018 POSTERS SUMMARY

AM key projects summary
 Posters from European projects

1. ADMIRE

POSTER TITLE	ADMIRE-Industry builds parts with additive manufacturing, together we build the workforce
PROJECT	ADMIRE – Knowledge Alliance for Additive Manufacturing between industry and universities Reference: 57938-EPIC-1-UK-EPPK2-KA Website: http://ADMIREproject.eu
AUTHORS & AFFILIATION	Elvira Raquel Silva, European Federation for Welding, Joining and Cutting (EFWF) Eurico Assunção, European Federation for Welding, Joining and Cutting (EFWF)
ABSTRACT	ADMIRE, funded under the Erasmus+ programme, intends to address the gap between enterprises, working with Additive Manufacturing supply chain, research centres and universities whilst qualifying the workforce in AM. Due to its novelty and fast growth, the AM field has a distinctive set of features: it is still quickly evolving and, as such, job positions are very hard to fill because of the scarce manpower with the required expertise. Similarly, the available educational programmes are unable to provide students with the skills needed for such high levels of performance (AM Engineers). Together, universities, companies and students are designing a Metal AM Master degree.  Figure 1 - Features behind the Metal AM Master To enhance the flow of knowledge and innovation between the industry, universities and students a platform is going to be created for the following purposes (refer to Figure 2).

ADMIRE contributes to reaching the European Commission policy priority: a Smart, sustainable and inclusive economic growth.
 Figure 2 - Features of the ADMIRE platform

Poster Contact
 Elvira Raquel Silva (partner) erasilva@efwf.eu
 Portuguese Machine project coordinator: Luiz@cranfield.ac.uk

Figure 134 AMEF 2018 Additive Manufacturing European Forum / Posters' Summary (October 2018)



Figure 135 53rd EWF General Assembly (October 2018)



Figure 136 ADMIRE Poster displayed at FORMNEXT 2018 (November 2018)



Figure 137 ADMIRE Roll-up displayed at FORMNEXT 2019 (November 2019)



Figure 138 55th EWF General Assembly (October 2019)



Figure 139 FORMEXT 2019 (December 2019)

11.2.1 8th European University-Business Forum (Brussels, BE)

During the 8th European University-Business Forum (held in Brussels, on October 2019), Bremen University and EWF representatives attended the event to present ADMIRE project to its more than 50 participants, using a video-pitch (which is available on ADMIRE website - <https://admireproject.eu/index.html>).

ADMIRE had a dedicated booth at this two-days event, where all participants had the opportunity to be given information about ADMIRE and its results, as well as its flyer for future reference.

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Figure 140 ADMIRE project presentation at 8th European University- Business Forum (October 2019)

11.2.2 Presentation of ADMIRE Project at EFFRA “Made in Europe” online working groups (22 September 2020)

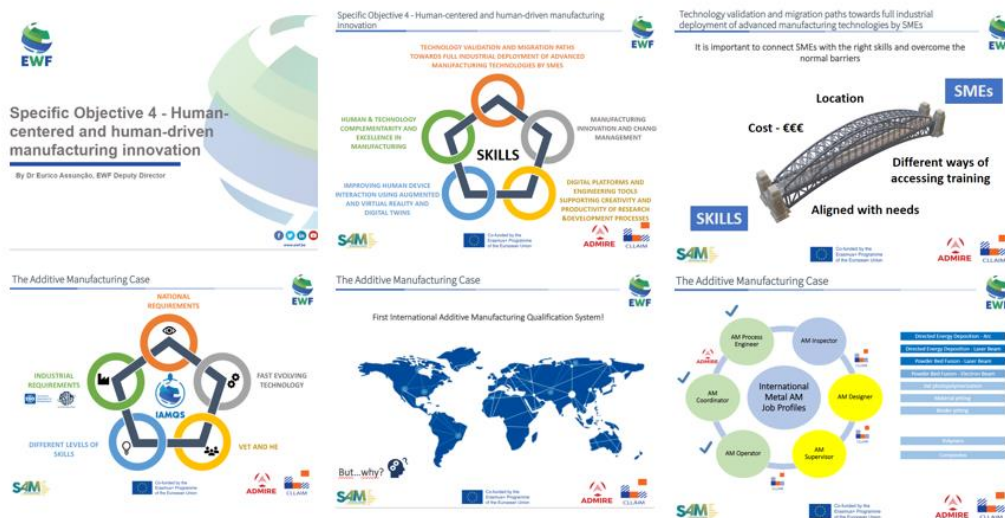


Figure 141 Excerpt from the PPT presentation made at EFFRA “Made in Europe” online working groups, where ADMIRE project was also addressed (September 2020)

12 ADMIRE Final Conference

12.1 ADMIRE Additive Manufacturing Symposium 2020 (June 2020)

Due to the global pandemic, ADMIRE partners were not able to conduct the project's Final Conference at Cranfield University in person, as initially planned. Therefore, the solution found was to conduct an online event entitled ADMIRE Additive Manufacturing (AM) Symposium 2020.

This half-day event, carried out on 30th June 2020, was organized by Cranfield University, with support from EWF and all ADMIRE partners, who actively participated on the Symposium, attended by 80 participants (with initial 188 registrations made).

Cranfield University created a registration page, where visitors could access information about ADMIRE, a brief summary of the event, a link for the Symposium's Agenda and also the form for registration:



The screenshot shows the registration website for the ADMIRE Additive Manufacturing Symposium 2020. The header features the Cranfield University logo and navigation menus for Study, Business, Research, Explore, International, and About. The main banner displays the event title, type (Symposium), and location (Online). A navigation bar includes links for Overview, Who should attend, Cost & concessions, and a Register now button.

The main content area is divided into two columns. The left column contains text describing the ADMIRE project's goal to bridge the skills gap between education and industry, the symposium's objectives, a guest speaker (Professor Stewart Williams), and links for the full event programme and further details. The right column features a 'Get in touch' section with contact information for Surya Krishnaswamy, a 'Supported by' section with the ADMIRE logo, and two images: one of a welding robot with the caption 'Welding Engineering and Laser Processing Centre' and another of a laser cutting process with the caption 'Metal Additive Manufacturing MSc'.

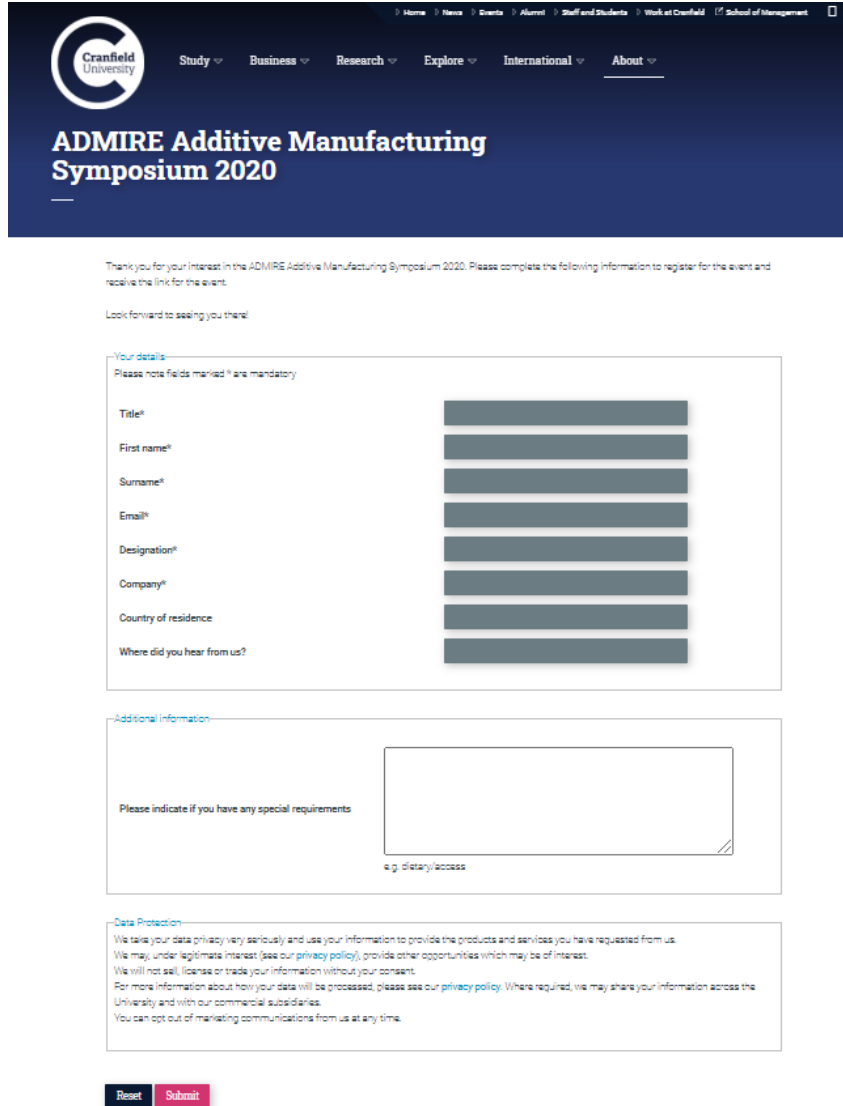
Who should attend

AM supply chain companies, policy/decision makers, researchers, educators, students and members of public interested in additive manufacturing and its education.

Cost

Free to attend, registration required.

Figure 142 ADMIRE AM Symposium 2020 [Registration website](#)



The screenshot shows the registration form for the ADMIRE Additive Manufacturing Symposium 2020. At the top, there is a navigation bar for Cranfield University with links for Home, News, Events, Alumni, Staff and Students, Work at Cranfield, and School of Management. The main header features the Cranfield University logo and the event title 'ADMIRE Additive Manufacturing Symposium 2020'. Below the header, a message thanks the user for their interest and asks them to complete the form to register. A 'Look forward to seeing you there!' message follows. The form is divided into three sections: 'Your details', 'Additional information', and 'Data Protection'. The 'Your details' section includes fields for Title, First name, Surname, Email, Designation, Company, Country of residence, and 'Where did you hear from us?'. The 'Additional information' section has a text area for special requirements with an example 'e.g. dietary/access'. The 'Data Protection' section contains a privacy policy notice. At the bottom, there are 'Reset' and 'Submit' buttons.

Figure 143 ADMIRE AM Symposium 2020 [Registration form](#)



ADMIRE Additive Manufacturing Symposium 2020- Agenda

Time	Event	Speaker(s)
0930-1000	Introduction and Welcome	Surya Krishnaswamy (Cranfield University)
1000-1045	Aim/objectives of ADMIRE	Susana Nogueira (EWF)
1045-1130	Guest Lecture- <i>The need for AM education</i>	Prof. Stewart Williams
1130-1145	<i>Break</i>	
1145-1230	Results from ADMIRE	Susana Nogueira (EWF) Inês Pires (IST) Surya Krishnaswamy/Filomeno Martina (Cranfield University) Yuvaraj Patil (University of Bremen)
1230-1300	Conclusion	Surya Krishnaswamy (Cranfield University)



Figure 144 ADMIRE AM Symposium 2020 Agenda

Once the registration was submitted, the registered participants automatically received an email confirming the registration and thanking them for their interest on behalf of ADMIRE Partnership, along with the event and satisfaction questionnaire, as illustrated below:

Hello

Thank you for registering for the ADMIRE Additive Manufacturing Symposium, 2020. We are extremely happy to be able to welcome you to the event. Please use the following link to attend the event on the day.

[Event Link](#)

We would also be extremely grateful if you could take the time to fill in a satisfaction questionnaire about the event to help us improve in the future.

[Satisfaction Questionnaire](#)

Kind regards,

The [ADMIRE Consortium](#)

Figure 145 Registration response email

Before the event took place, ADMIRE partners were active in disseminating it among their contacts/network, sharing the link for the registration website via email or by posting it on social media.

ADMIRE website also made reference to ADMIRE AM Symposium 2020.

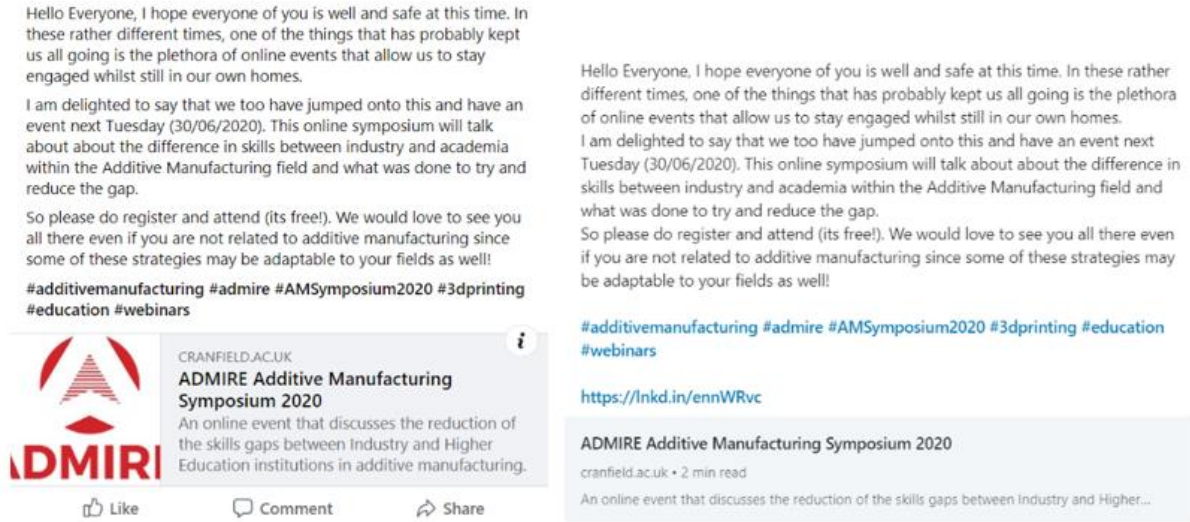


Figure 146 Cranfield University's representative Facebook & LinkedIn post



Figure 147 Cranfield University's Tweet

Sent on behalf of Surya [redacted]
Research Fellow – Additive Manufacture

Dear Colleagues

I hope you and your families are keeping safe and well.

We have scheduled a half-day symposium on Education In Additive Manufacturing next Tuesday, 30th June, from 9.30 am until 1.00 pm, as part of a Erasmus+ project (ADMIRE) that Cranfield is involved with. This symposium will talk about the objectives and results achieved by the project that looked to reduce the skills gap between industry and academia using different strategies; it also features a talk by Professor Stewart Williams, Professor of Welding and Science Engineering at Cranfield.

Please could I ask you to review the link below that provides further information about the Symposium.

Event link: <https://www.cranfield.ac.uk/events/events-2020/admire-additive-manufacturing-symposium-2020>

Kind Regards

Surya

Surya [redacted]
Research Fellow – Additive Manufacture
Email: [redacted]

Figure 148 Cranfield University's intranet invitation



Dear EWF Member,
Good morning!

EWF is glad to invite you to attend **ADMIRE Additive Manufacturing Symposium 2020** on the 30th June (starting at 09.30 am/London time), an event that will allow attendees to learn more about ADMIRE project ([ADMIRE – knowledge Alliance for Additive Manufacturing between Industry and UniverSitiEs](#)) and its results' potential impact on Education and AM Industry at EU level.

During the event, ADMIRE project's innovative joint European Metal AM MSc curriculum and the AM Hub/Platform will be presented . This Platform intends to be a contact point between AM Industry, Universities and Students, offering a collaborative environment to its users and to map AM resources at European level.

This event will have the presence of all ADMIRE Partners, some of who will talk about their experience in piloting ADMIRE European Metal AM MSc, and a guest speaker from Cranfield University, who will talk about the importance of Education in AM.

The registration website for **ADMIRE Additive Manufacturing Symposium 2020** is already available (please access [here](#)) and the Agenda of the event is in annex to this invitation. In case you are interested, please carry out your registration until Monday (29th June). Afterwards, you will receive a confirmation email and the link for the session.

Hoping to see you there, we wish you a good day!

Kind regards,

[redacted]
Projects and Administrative Assistant



Figure 149 Content of the email sent by EWF to all its members

admireproject.eu/news.html



ADMIRE ADDITIVE MANUFACTURING SYMPOSIUM 2020

(June 30th, 09:30am/London time – online session)
By EWF

ADMIRE AM Symposium 2020 is an online event organized by ADMIRE partners to present the project's scope, main objectives and the results achieved which address the gap between AM Industry and Education to establish a solid relationship between these sectors, allowing Universities to answer Industry's needs for a highly qualified AM workforce.

[Register](#)

HERE FOR ATTENDING

**ADMIRE ADDITIVE MANUFACTURING SYMPOSIUM 2020
(UNTIL JUNE 29TH)**

(until June 29th) and learn more about the project, its European Metal AM MSc course and AM Hub/Platform, and discuss the importance of Education in AM.

FULL EVENT PROGRAMME

Figure 150 News on ADMIRE website with links for the Registration webpage

After the Symposium, a publication was made on ADMIRE website providing information about the event and urging its visitors to be aware of ADMIRE Final Conference, to be held on October 2020.

admireproject.eu/news.html



OVERVIEW ADMIRE ADDITIVE MANUFACTURING SYMPOSIUM 2020

(June 30th, 09:30am/London time – online session)
By EWF

ADMIRE AM Symposium 2020 was a successful online event that gathered more than 80 participants (Researchers, AM Companies, Educators and Students) to present ADMIRE project, its aims and results achieved, and to discuss the importance of Education in AM.

Attendees had the opportunity to know how Cranfield University (UK), Instituto Superior Técnico (PT) and University of Bremen (DE) tested the contents of the European Joint Executive Metal AM Engineer Master's Degree course and how Universities can be part of an European Network and implement this Metal AM MSc. ADMIRE AM Hub/Platform was also presented, arousing much curiosity among the Symposium participants. The next big event will be ADMIRE Final Conference, in October!

Figure 151 News on ADMIRE website about ADMIRE AM Symposium 2020



Figure 152 EWF Facebook post about ADMIRE AM Symposium 2020

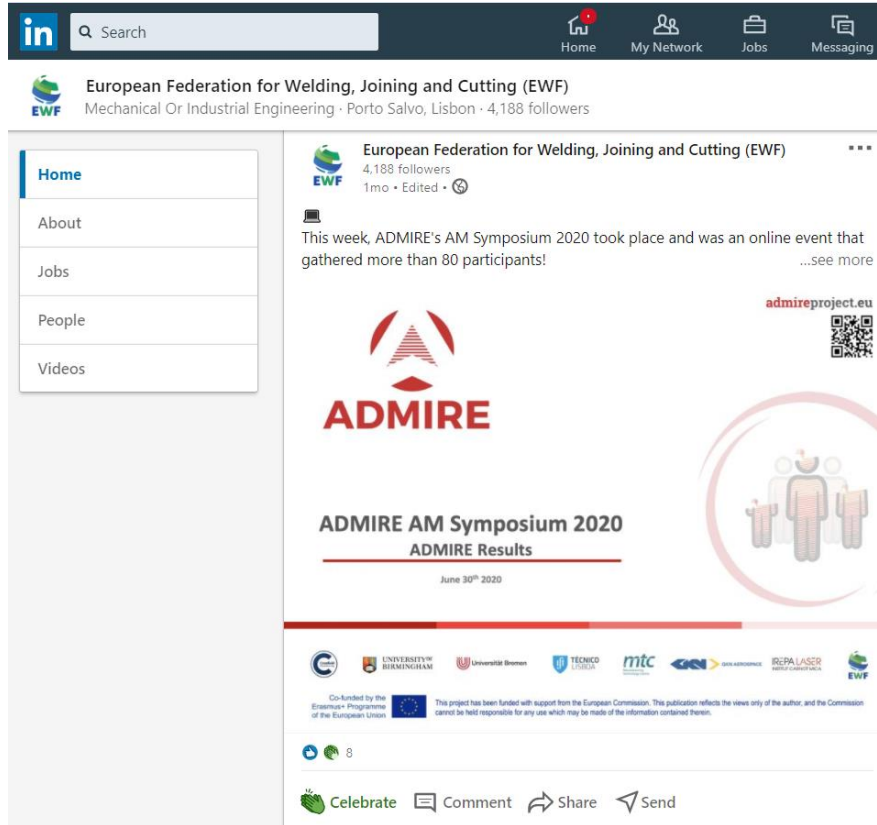


Figure 153 EWF LinkedIn post about ADMIRE AM Symposium 2020

All ADMIRE AM Symposium 2020 participants were requested to fill in a Satisfaction Questionnaire, previously prepared by IREPA Laser (partner responsible for Evaluation).

The results of this questionnaire can be found on D8.1 Final Evaluation Report.

12.2 ADMIRE Final Conference | Skilling the AM Future 2020

As a result from the extension of ADMIRE project until October 2020, in the wake of the impact of the global pandemic on ADMIRE activities, the project consortium decided to carry out an additional Final Conference, again organized by Cranfield University (partner responsible for this task in the project), with contributions from EWF and all ADMIRE Partners.

The registration platform created for this event had a total of 345 visits, as a total of 29 participants attended ADMIRE Final Conference.

In terms of dissemination, and in order to ensure this special event was disseminated to a broader audience, EWF registered ADMIRE Final Conference on an Erasmus+ programme initiative, entitled #ErasmusDays2020. Because this registration was made in Portugal, the text confirming it came from the Portuguese National Agency, in Portuguese language:



Figure 154 Registration confirmation from the Portuguese Erasmus National Agency

One of the main requests made was to include #ErasmusDays2020 logo and hashtag in all dissemination tools and in all online publications, as a way to ensure a wider dissemination of the event and of this initiative.

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Figure 155 Reference to ADMIRE Final Conference | Skilling the AM Future 2020 on [#ErasmusDays2020 Platform](#)

Before registering the Conference in this Platform, EWF assisted Cranfield University with the creation of a registration platform, using Eventbrite, where all the necessary details were provided in terms of scope of the event, date, place and agenda, with a link for ADMIRE website as well.

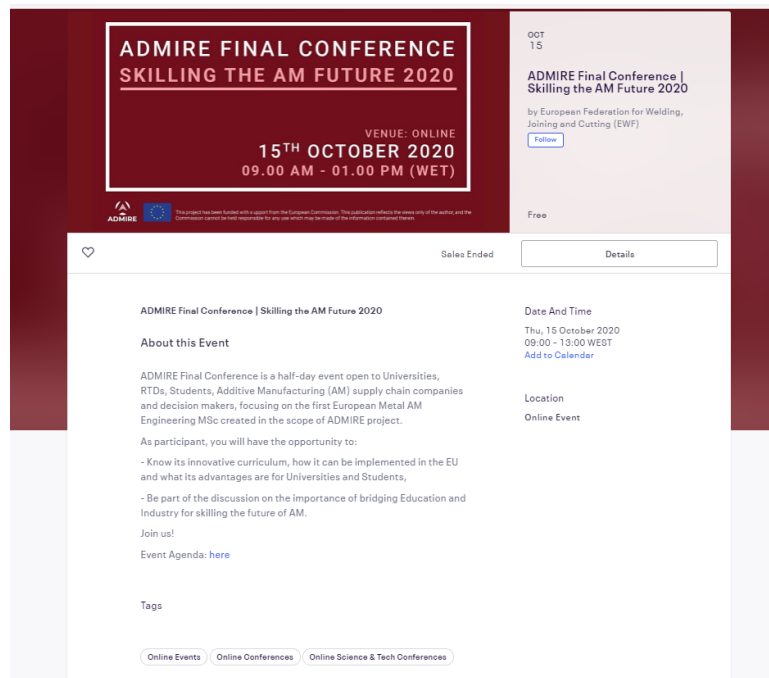


Figure 156 Registration platform



The Agenda of ADMIRE Final Conference was also extensively shared by partners with their own contacts, and was also available on ADMIRE website, which link for a specific news about this event was provided in all dissemination activities carried out to promote/disseminate the Final Conference:



ADMIRE Final Conference | Skilling the AM Future 2020

October 15th, 2020 ([Online Session](#))

09.00 am – 01.00 pm (WET)

Agenda

Time	Activities
09.00 to 09.15	Welcome to ADMIRE Final Conference Surya Krishnaswamy – Cranfield University
09.15 to 09.45	Introduction to ADMIRE project Susana Nogueira- EWF
09.45 to 10.15	The new European Metal AM Engineer MSc: Curriculum and Implementation Susana Nogueira – EWF
10.15 to 10.35	Skilling the AM Future: Contributions from ADMIRE and SAM projects Adelaide Almeida - EWF
10.35 to 10.45	Break
10.45 to 11.15	Participating on the European Metal AM Engineer MSc pilots: Testimonies from Students/Teaching Staff Surya Krishnaswamy – Cranfield University
11.15 to 11.45	The importance of bringing Education & Industry closer (from Industry point of view) Martin White - Head of Additive Manufacturing Programs – Europe/ASTM
11.45 to 12.00	Break
12.00 to 12.30	AM World Cafe meeting (<i>Sustainability and Exploitation of ADMIRE Results</i>) (Moderated by ADMIRE Partners)
12.30 to 12.45	Main results from the AM World Café meeting (Main Moderator of each Room)
12.45 to 13.00	Wrap up and conclusion Surya Krishnaswamy – Cranfield University

ADMIRE is coordinated by :



In Partnership with:



Figure 157 Agenda of ADMIRE Final Conference

EFW also created a banner to be used by all partners for disseminating the event:



Figure 158 ADMIRE Final Conference | Skilling the AM Future 2020 banner

All ADMIRE partners were actively involved in disseminating the event by contacting their own networks with dedicated emails and/or by using social media to share the link for the registration platform created, as shown in the examples below:



Figure 159 Bremen University post on Facebook



Figure 160 Cranfield University Twitter



Figure 161 Cranfield University LinkedIn post

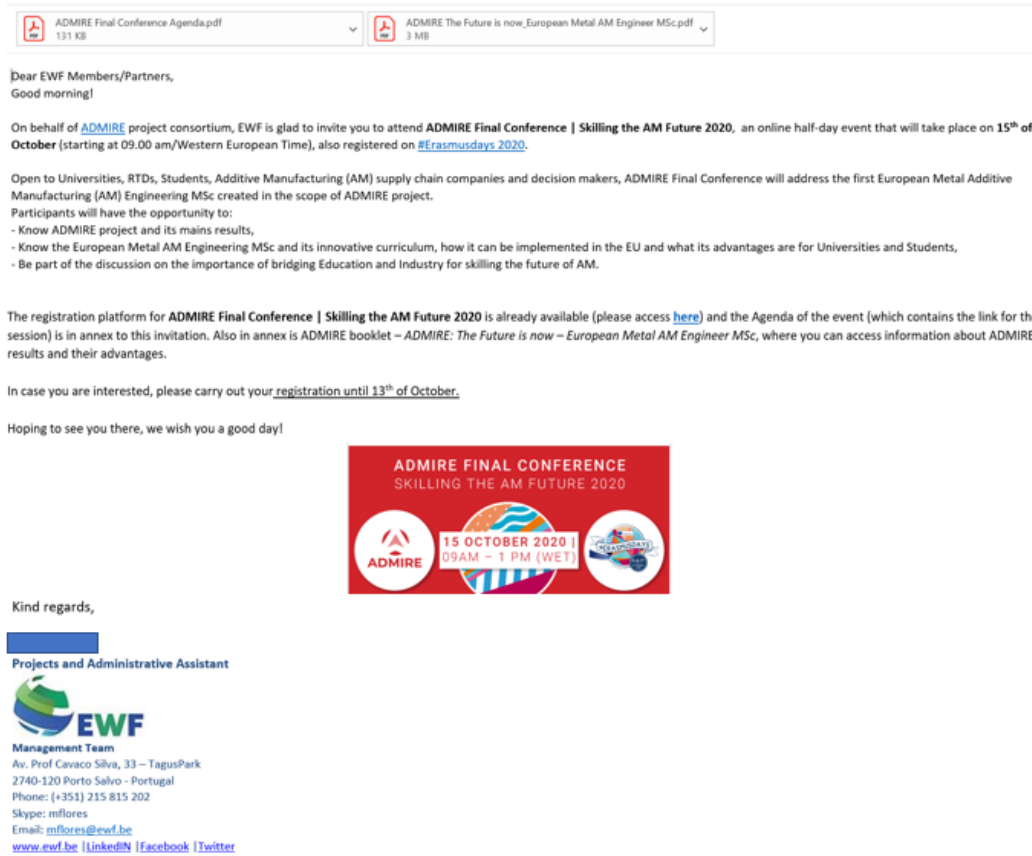


Figure 162 Email sent by EWF to all its Members and Partners from other projects related to AM

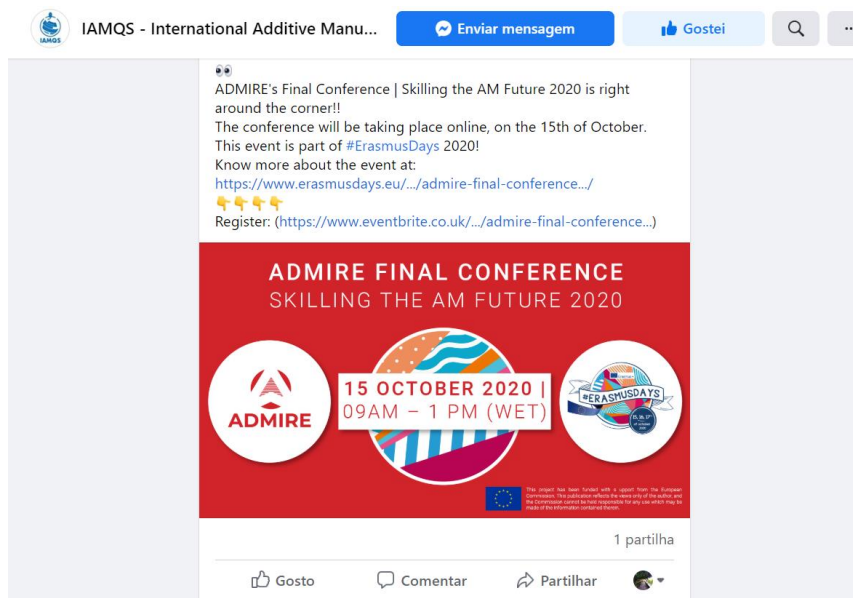


Figure 163 Post on EWF's International AM Qualification System Facebook account

In the beginning of the session, a reference was made to the fact that ADMIRE Final Conference was being organized in partnership with #ErasmusDays2020 initiative, and its logo was used in all PowerPoint (PPT) presentations used during the event:



Figure 164 First slide of some of the PPT presentations used on ADMIRE Final Conference

A link for the previously prepared Satisfaction Questionnaire was sent to all participants to allow ADMIRE partners understanding participants' degree of satisfaction towards the event and the topics addressed during the Final Conference (results reported on D8.1 Final Evaluation Report).

12.2.1 Participants from both ADMIRE Final Conference events

Overall, a total of 106 participants attended both events. Those participants were mainly representatives from AM Industry and Education, i.e. companies belonging to AM supply chain, Universities' teaching staff and Students.

Therefore, all dissemination activities carried out by ADMIRE partners to promote both events had a positive result in gathering a high number of key stakeholders targeted by the project and engaging them with ADMIRE results.

List of Dissemination Activities (January 2017 – November 2020)

The following list of Dissemination Activities include all dissemination activities carried out by ADMIRE partners throughout the implementation of the project (January 2017 to October 2020).

It also includes the activities already planned for November 2020, some of which already with an expected number of participants, in line with ADMIRE partners' commitment of continuing disseminating the project beyond its lifecycle, at national, European and international levels. Most of those activities will be carried out by EWF in the scope of its activities, in conferences and workshops to be realised both at European and International levels, in line with ADMIRE partners' commitment to continue disseminating ADMIRE project and its results beyond the project's implementation. Those activities will be conducted based on the integration of the European Metal AM Engineer MSc/specialization on the International Additive Manufacturing Qualification System (IAMQS), managed by EWF, and on the integration of the AM Hub/Platform on AM Observatory (as also described on deliverable D7.4 Dissemination, Sustainability and Exploitation Plan).

It is important to point out that [ADMIRE website](#) was systematically updated with information about most of these listed activities, in line with most social media publications (which also mentioned ADMIRE website).

Overall, ADMIRE partners conducted a total of **234 dissemination activities**, using ADMIRE dissemination tools, such as flyers, posters, roll-up, through emails sent to their own contacts at national, European and International levels, social media (Facebook, Twitter, LinkedIn) and by participating on several events in which ADMIRE project was (and will continue being) presented. These activities reached and/or actively involved a total of 60.510 people, a number that continue rising after the project's conclusion.

This List of Dissemination Activities is organised by chronological order, and the respective evidence can be found either in this Portfolio (Figures) or in **Annex 1**.



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
1	UK	A/B	Technical progress meeting with Siemens.	Industry	2	8	11/01/2017	Confidential	Briefed them on the ADMIRE project	Cranfield University
2	UK	A/B	Technical progress meeting with the Culham Centre for Nuclear Fusion.	Research orgs	3	15	16/01/2017	Confidential	Briefed them on the ADMIRE project.	Cranfield University
3	UK	A/B	Technical progress meeting with Tampere University.	Research orgs	3	15	19/01/2017	Confidential	Briefed them on the ADMIRE project.	Cranfield University
4	JAP	A/B	Meeting with KOBE Steel.	Industry	2	7	26/01/2017	Confidential	Briefed them on the ADMIRE project.	Cranfield University
5	EU	D.	Logo	General public	-	-	02/2017	Figure 1	N.A.	EFW
6	EU	C.	Facebook Post – Kick Off Meeting	General public	-	1100	07/2/2017	Fig. 71	https://www.facebook.com/EuropeanWeldingFederation/photos/a.181045008590942.49349.173216522707124/154656652203877/?type=3&theater	EFW
7	EU	C.	EFW website – Kick Off OMeeting	General public	-	-	07/2/2017	N.A.	N.A	EFW
8	UK	A/B	Meeting with Queen's Mary University.	Research orgs	2	3	17/02/2017	Confidential	Briefed them on the ADMIRE project. Discussed possible collaborations	Cranfield University
9	DEN	A/B	Meeting with Vestas.	Industry	2	9	21/02/2017	Confidential	Briefed them on the ADMIRE project. Discussed possible involvement of Vestas in the ADMIRE project.	Cranfield University

¹ Key for "Type" of activity:

A. Distribution of information

B. Project presentations

C. Articles and postings (websites, blogs, newspapers, journals, etc.). *Note: you do not need to fill in columns marked with * for type C.*

D. Other activities



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
10	USA	A/B	Meeting with GE.	Industry	2	5	15/03/2017	Confidential	Briefed them on the ADMIRE project. Discussed possible involvement of GE in the ADMIRE project also through GE educational campaign	Cranfield University
11	AUS	A/B	Meeting with Bohler.	Industry	2	11	20-21/03/2017	Confidential	Briefed them on the ADMIRE project	Cranfield University
12	FR	A/B	APS conference in Lyon	Industry, and research orgs	Several	357	20-21/03/2017	Evid. 1 Congress Program APS2 017	Closed technical presentation with one slide on the ADMIRE project	Cranfield University
13	EU	C.	ADMIRE #1 Press Release	General public, technology	-	1500	05/2017		Word Document/Pdf document	EFW
14	EU	C.	Press Release Publication Joining and Cutting	Research institutes, Companies, manufacturers	-	8000	05/2017	Fig. 4	http://www.welding-and-cutting.info/article/the-admire-project-extending-the-qualification-of-the-additive-manufacturing-workforce/	EFW
15	GR	A.	EFW 50 th General Assembly, Greece	EFW members	29	29	09/05/2017	Confidential	N.A.	EFW
16	UK	A/B	Meeting with Boeing	Industry	2	5	09/05/2017	Confidential	Briefed them on the ADMIRE project. Discussed possible involvement of Boeing.	Cranfield University
17	NED	A/B	Titanium Europe 2017	Industry, research orgs, general public	Several	~100	17-19/05/2017	Evid. 2 Titanium Europe 2017	Closed technical presentation with one slide on the ADMIRE project	Cranfield University



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
18	EU	A.	Flyer distribution - ICWAM	HE institutions, researchers and students	-	50	17/05/2017 - 19/05/2017	Fig 117	N.A.	EFW
19	EU	D.	ADMIRE's website	General public	-	-	24/5/2017	Fig. 53 to 58	N.A.	EFW
20	EU	D.	ADMIRE flyer #1	General public	-	-	24/5/2017	Fig. 6	N.A.	EFW
21	UK	A/B	WAAMMat 2017 Industry days	Industry and research organisations	Several	80	25-26/05/2017	Fig. 118	Presented the ADMIRE project to the WAAMMat industry partners	Cranfield University
22	DEN	A/B	3D printing live! Conference	Industry, research orgs, general public	Several	80-100	30/05/2017	Evid. 3 3D printing live! Conference	Closed technical presentation with one slide on the ADMIRE project	Cranfield University
23	UK	A/B	AMAZE project final plenary and public dissemination	Industry, research orgs, general public	Several	80-100	6-7/06/2017	N.A.	Closed technical presentation with one slide on the ADMIRE project, delivered by Filomeno Martina	Cranfield University
24	NED	A/B	Invited lecture at TU Delft	Research org	2	20	16/06/2017	N.A.	Closed technical presentation with a few slides on the ADMIRE project, delivered by Filomeno Martina	Cranfield University
25	EU	A.	EFW Newsletter - Survey on Skills Needs on AM – part I	Companies' managers, companies' professional	-	(1258 people) 126	23/06/2017	Fig. 94	https://www.surveymonkey.com/r/Survey_on_Skills_needs_on_Metal_Additive_Manufacturing	EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
				Is dealing with AM						
26	China (CH)	A.	Presentation at the 70th IIW Conference, at the members meeting, in Shanghai (CH)	Research institutes, Companies, Manufacturers	-	150	28/06/2017	Fig. 119		EFW
27	EU	C.	ADMIRE website – 2 nd Meeting	General Public	-	-	02/07/2017	Evid. 4_ADMIRE 2nd Meeting Proj. Website	https://admireproject.eu/news-detail_2.html	EFW
28	ITA	A/B	EUCASS 2017	Industry, research orgs, general public	Several	~25	3-6/07/2017	N.A	Closed technical presentation with a few slides on the ADMIRE project, delivered by Filomeno Martina	Cranfield University
29	EU	C.	Facebook post – ADMIRE 2 nd Meeting	General Public	-	1316	05/07/2017	Fig. 72	https://www.facebook.com/EuropeanWeldingFederation/posts/1710069619021799:0	EFW
30	EU	C.	Facebook post – Link for survey Skills Needs on AM – Part I	HE students, professionals, researchers	-	789	06/07/2017	Evid. 5 Survey Skills Needs for AM Facebook		EFW
31	EU	C.	LinkedIn Post – EU MAM MSc	General Public	-	1401	11/07/2017	Evid. 6 EU Metal AM MSc Linkd.		EFW
32	EU	B.	Meeting with CECIMO	EU organisation	1	3	15/07/2017	Fig. 99	Presence list	EFW
33	EU	C.	Facebook Post – Meeting with CECIMO	General Public	-	516	19/07/2017	Evid. 7_Meeting		EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
								CECIMO Facebook		
34	FR	A.	Paris air show	Industry, research orgs, general public	Several	~400	19-24/07/2017	N.A.	Distribution of ADMIRE leaflets at the stand Cranfield University had at the Air Show	Cranfield University
35	UK	A/B	Meeting with GKN Aerospace	Industry	2	4	27/07/2017	Confidential	Briefed them on the ADMIRE project. Discussed possible involvement of GKN.	Cranfield University
36	USA	A/B	Solid Freeform Fabrication Symposium	Industry, research orgs, general public	Several	~35	7-9/08/2017	https://sffsymposium.engr.utexas.edu/sites/default/files/SFF2017_final%20Front%20Matter.pdf	20 min presentation on the ADMIRE project delivered by Filomeno Martina	Cranfield University
37	EU	A.	Survey Potential students	HE students, professionals, researchers	-	142	08/2017	Fig. 96	https://www.surveymonkey.com/r/ADMIRE_students	EFW
38	EU	C.	LinkedIn Post – Universities, companies and students will design MAM MSc	Research institutes, students, manufacturers and companies	-	1474	23/08/2017	Evid. 8_European Metal AM MSc LinkedIn		EFW
39	EU	A.	E-mail - Survey Potential students	HE students, professionals	NA	NA	23/08/2017	N.A.	https://www.linkedin.com/feed/update/urn:li:activity:6306055467089166336	IREPA Laser



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
				Is, researchers						
40	EU	C.	Facebook Post - Universities, companies and students will design MAM MSc	Research institutes, students, manufacturers and companies	-	2470	23/08/2017	Evid. 9_ European Metal AM MSc Facebook		EFW
41	IRL	B.	Meeting with Irish stakeholders	Research institutes, manufacturers and companies	5	7	23/08/2017	Fig. 101	Presence list	EFW
42	EU	C.	Twitter post – ADMIRE project dissemination	General Public	-	552	23/08/2017	Evid. 10_ European Metal AM MSc Twitter.PNG		EFW
43	IRL	B.	Meeting with Irish stakeholders	Research institutes, manufacturers and companies	3	4	24/08/2017	Fig. 102	Presence list	EFW
44	EU	C.	LinkedIn Post – Meeting Irish industry and academia	General Public	-	2267	24/08/2017	N.A.		EFW
45	EU	C.	EFW newsletter August/September	Research centres, VET providers, industry representatives	-	752	25/08/2017	Fig. 50		EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
46	EU	A.	Schweissen & Schneiden 2017	Research institutes, Companies, manufacturers	-	25.000 participants	25/09/2017 - 29/09/2017	Fig 103 to 105		EFW
47	FR	A.	E-mail - Survey Potential students	Prospective students	1	NA	29/08/2017	N.A.	https://www.surveymonkey.com/r/ADMIRE_students	IREPA Laser
48	FR	A.	E-mail - Survey Potential students	Prospective students	1	NA	30/08/2017	N.A.	https://www.surveymonkey.com/r/ADMIRE_students	IREPA Laser
49	UK	A/B	Meeting with TechnipFMC	Industry	2	10	18/09/2017	Confidential	Briefed them on the ADMIRE project. Discussed possible involvement of TechnipFMC.	Cranfield University
50	UK	A/B	TCT Conference	Industry, research orgs, general public	Several	~150	26/09/2017	Evid. 11 TCT Conference	Closed technical presentation with a few slides on the ADMIRE project, delivered by Filomeno Martina	Cranfield University
51	UK	A/B	Invited lecture at Imperial College London	Research org	2	30	04/10/2017	Evid. 12_lecture at Imperial College Twitter	Closed invited lecture with a few slides on the ADMIRE project, delivered by Filomeno Martina	Cranfield University
52	FR	C.	ADMIRE entry on the Research & Development web page of IREPA LASER's website	General public	-	-	05/10/2017	Fig. 70	https://www.irepa-laser.com/fr/recherche-et-developpement	IREPA Laser
53	USA	A/B	American Welding Society Conference on large-scale AM	Industry, research orgs, general public	Several	~50	10-11/10/2017	Evid. 13 American Welding Society Conference	Closed invited technical presentation with a few slides on the ADMIRE project, delivered by Stewart Williams	Cranfield University



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
54	EU	D.	ADMIRE's poster	General public	-	-	11/10/2017	Fig. 23		EFW
55	EU	A.	E-mail - Survey on Skills Needs on AM – part II		-	(853) 80	31/10/2017	N.A.	https://www.surveymonkey.com/r/AMskillsneeds-2	EFW
56	UK	A/B	Meeting with Rolls Royce	Industry	2	40	08/11/2017	Confidential	Briefed them on the ADMIRE project. Discussed possible involvement of Rolls Royce.	Cranfield University
57	FR	A.	E-mail - Survey Potential students	Prospective students	1	NA	09/11/2017	N.A.	https://www.surveymonkey.com/r/ADMIRE_students	IREPA Laser
58	FR	A.	E-mail - Survey employers' needs	Prospective employers	1	NA	10/11/2017	N.A.	https://www.surveymonkey.com/r/AMskillsneeds-2	IREPA Laser
59	DE	A.	Flyer distribution – Formnext 2017	Research institutes, manufacturers and companies	200+	4800+	14/11/2017 - 17/11/2017	N.A	https://www.mesago.de/de/727altfon/Fuer_Besucher/Hallenplan/messeiplan.htm?sid=c6056d19b603b1961a3de238d2910a59&stamp=1528448565	ISEMP, University of Bremen
60	PT/EU	A.	EFW 51 th General Assembly, Oeiras	EFW members	30	30	14/11/2017	Confidential		EFW
61	PT/EU	A.	EFW Annual Report 2017	EFW Members	30	30	14/11/2017	Fig. 45 and 46		EFW
62	FR	A/B	Additive in Aerospace Summit	Industry, research orgs, general public	Several	~200	20-22/11/2017	http://france.additive-aerospace-summit.com/index.php/summit/speakers/8-2017-speakers/35-filomeno-martina	Round-table discussion. Promoted ADMIRE project as a mean to address skill-gap in EU industry	Cranfield University



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
63	UK	A/B	Meeting with GE Aviation.	Industry	2	8	23/11/2017	Confidential	Briefed them on the ADMIRE project. Discussed possible involvement of GE Aviation in the ADMIRE project	Cranfield University
64	EU	B.	Computer Aided Additive Manufacturing Conference	Research institutes, manufacturers and companies	68	90	12/12/2017 – 13/12/2017	Fig. 133 and 134		ISEMP, University of Bremen
65	DE	A.	Focus Group Discussion: Higher Education stakeholder group	HE professionals, researchers	1	5	15/12/2017	Focus Group Report	See Focus Group Report	ISEMP, University of Bremen
66	UK	C.	Blog post	Industry, research orgs, general public	Several	235	28/12/2017	Evid.14 WAAM Final 2018 Newsletter	End of the year newsletter	Cranfield University
67	UK	A.	Focus group	Students at UoB	1	3	08/01/2018		See Focus group transcript/WP1 report	University of Birmingham
68	BE	A.	Erasmus+ Knowledge Alliance Cluster Meeting	Research institutes, manufacturers and companies	-	100	31/01/2018 – 01/02/2018	Fig. 125 to 127	Pictures Flyer Programme	EFW
69	EU	C.	Facebook Post – Erasmus+ Knowledge Alliance Cluster	General Public	-	301	31/01/2018	Fig. 75	https://www.facebook.com/EuropeanWeldingFederation/posts/1930726626956096	EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
70	EU	C.	Twitter Post – Erasmus+ Knowledge Alliance Cluster	General Public	-	486	31/01/2018	Fig. 89	https://twitter.com/EWF_Welding/status/958618795190386688	EFW
71	EU	C.	LinkedIn Post – Erasmus+ Knowledge Alliance Cluster	General Public	-	1492	31/01/2018	Fig. 84	https://www.linkedin.com/feed/update/urn:li:activity:6364401350154948608	EFW
72	UK	A/B	Evolution journey into Industry 4.0	Industry, research orgs, general public	Several	~60	15/02/2018	https://www.eventbrite.co.uk/e/evolution-journey-into-industry-40-tickets-39873493693#	Closed invited technical presentation with a few slides on the ADMIRE project, delivered by Filomeno Martina	Cranfield University
73	EU	C.	Facebook Post – David Brackett on AM and ADMIRE	General Public	-	300	20/02/2018	Fig. 76	https://www.facebook.com/EuropeanWeldingFederation/posts/1953529778009114	EFW
74	EU	C.	LinkedIn Post – David Brackett on AM and ADMIRE	General Public	-	1146	20/02/2018	Fig. 85	https://www.linkedin.com/feed/update/urn:li:activity:6371671572805144576	EFW
75	UK	A/B	Meeting with ArcelorMittal	Industry	2	5	07/03/2018	Confidential	Briefed them on the ADMIRE project. Discussed possible involvement of ArcelorMittal in the ADMIRE project	Cranfield University
76	USA	A/B	TMS2018 Conference	Industry, research orgs, general public	Several	~40	12-16/03/2018	Evid.15_TMS2018_Conference_Twitter	Closed invited technical presentation with a few slides on the ADMIRE project, delivered by Filomeno Martina	Cranfield University



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
77	DE	B.	AM Stakeholder Workshop	RTDs, Midcaps, SMEs	-	40	20/03/2018	Fig. 105 to 108	https://www.amable.eu/events/am-stakeholder-workshop/	EFW
78	EU	C.	Facebook Post – AM Stakeholder Workshop	General Public	-	216	20/03/2018	Fig. 77	https://www.facebook.com/EuropeanWeldingFederation/posts/1988353811193377	EFW
79	EU	C.	Twitter Post – AM Stakeholder Workshop	General Public	-	851	20/03/2018	Fig. 90	https://twitter.com/EFW_Welding/status/976053917887946752	EFW
80	EU	C.	LinkedIn Post – AM Stakeholder Workshop	General Public	-	878	20/03/2018	Fig. 86	https://www.linkedin.com/feed/update/urn:li:activity:6381824046656483329	EFW
81	USA	B.	Qualifications workshop at ISO Technical Committee	Research institutes, Companies, manufacturers	-	25	04/04/2018	Confidential		EFW
82	RO	B.	Paper Presentation at Sudura 2018 in Timisoara (RO)	Research institutes, Companies, manufacturers	-	250	26/04/2018 – 27/04/2018	Fig. 129 and 130	Paper and Presentation	EFW
83	EU	A/B	EFW 1st AM Qualifications Workshop	Companies, research centres, academia	15	17	8-10/05/2018	Fig. 109		EFW
84	EU	C.	AMPlab website	General Public	-	-	23/05/2018	Fig. 64	https://amplab-bham.com/projects/admir-e-project/	University of Birmingham
85	EU	C.	ADMIRE's webpage at ISEMP website	General public	-	-	06/2018	Fig. 65	http://www.bccms.uni-bremen.de/en/isemp/rese	ISEMP, University



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
									arch/laufende-forschungsprojekte/	of Bremen
86	DE	A.	Flyer distribution – Rapid.Tech + FabCon 3.D	Research institutes, manufacturers and companies	200+	4800+	04/06/2018 - 06/06/2018	Hall Plan (presence)	http://www.rapidtech-fabcon.de/aussteller/halle_nplan.html	ISEMP, University of Bremen
87	EU	C.	Facebook Post – News about the ADMIRE project	General public	-	438	04/06/2018	Fig. 78	https://www.facebook.com/EuropeanWeldingFederation/posts/2072936519401772	EFW
88	EU	C.	Twitter Post – News about the ADMIRE project	General Public	-	827	04/06/2018	Fig. 91	https://twitter.com/EFW_Welding/status/1003634917765472259	EFW
89	EU	C.	LinkedIn Post – News about the ADMIRE project	General Public	-	763	04/06/2018	Fig. 87	https://www.linkedin.com/feed/update/urn:li:activity:6409399571809660928	EFW
90	UK	A/B	LOGNET-18 Conference	Industry, research orgs	Several	~150	07/06/2018	https://www.eventbrite.co.uk/e/lognet-18-1-modernising-defence-logistics-tickets-42896377219#	Closed invited technical presentation with a few slides on the ADMIRE project, delivered by Filomeno Martina	Cranfield University
91	UK	A/B	WAAMMat 2018 Industry days	Industry and research organisations	Several	95	12-13/06/2018	Evi. 16_CRAN_dissemination_agenda_WAAMMat_2018	Presented the ADMIRE project to the WAAMMat industry partners	Cranfield University
92	EU	C.	1 st ADMIRE newsletter	General Public	-	43	14/06/2018	Fig. 32		EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
93	EU	C.	Facebook Post – ADMIRE's newsletter	General Public	-	219	21/06/2018	Evid. 17_ADMIRE_1st Nsltr_Facebook	https://www.facebook.com/EuropeanWeldingFederation/posts/2096760763686014	EFW
94	EU	A./B.	Technical progress meeting with SAAB	Industry	2	5	26/06/2018	Confidential		Cranfield U.
95	EU	A./B.	Plasma Conference, in Toulouse	Scientific Community (Higher Education, Research)	N.A.	50-60	N.A.	N.A.	https://http15ups.scienceconf.org/?forward-action=index&forward-controller=index&lang=en	Cranfield U.
96	Indonesia	A./B.	Presentation of ADMIRE results and discussion of their implementation at IIW Annual Assembly and Conference	Research institutes, Companies, Manufacturers	N.A.	150	15-20/07/2018	Confidential		EFW
97	EU	C.	Short article on IREPA LASER's website	Industry General Public	N.A.	N.A	25-26/07/2018	N.A	https://www.irepa-laser.com/fr/les-actualites/irepa-laser-partenaire-du-projet-admire-pour-un-master-europeen-en-fabrication https://www.irepa-laser.com/en/news/irepa-laser-partner-admire-project-european-master-degree-metal-additive-manufacturing	IREPA
98	EU	A./B.	Technical progress meeting with Tampere University	Scientific Community (Higher	2	8	16/08/2019	Confidential		Cranfield U.



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
				Education, Research)						
99	EU	A./B.	Visit from Nanyang Technological University	Scientific Community (Higher Education, Research)	2	15	21/08/2019	<u>N.A.</u>		Cranfield U.
100	EU	A./B.	8 th International Conference on Structural Analysis of Advanced Materials	Scientific Community (Higher Education, Research)	N.A.	30	28/08/2019	N.A.	https://icsaam2018.sciencesconf.org/	Cranfield U.
101	UK	A.B.	Promote the planned short pilot courses to be implemented by Cranfield University at AM in Aerospace Conference & Exhibition	Scientific Community (Higher Education, Research), Students & Industry	N.A.	N.A.	19-20/09/2018	N.A.		Cranfield U.
102	EU	B.	Stand with leaflets at OpenHybrid final project event	Industry	N.A.	80	18/09/2018	N.A.		MTC
103	China	B.	Presentation of the project on ISO TC261 Meetings	Industry	N.A.	>200	18-21/09/2018	Confidential		EFW
104	China	B.	Presentation of the project and validation of results on ISO TC261 – JG74 Personnel Training Meetings	Industry	N.A.	>200	20/09/2018	Confidential		EFW
105	EU	C.	Facebook post on ADMIRE Capacity Building carried out by Cranfield University	General Public	N.A.	13 likes/3 shares	25/09/2018	Evid.18_ADM IRECapacBuild_Facebook	https://www.facebook.com/EuropeanWeldingFederation/posts/2304017169627038?_tn_=-R	EFW
106	EU	A.	Flyer distribution at ADS Show	Industry	N.A.	5000	26-27/09/2019	N.A.	Evid.19_ADS Show	IREPA
107	EU	A./B.	Technical progress meeting with Reaction Engines	Industry	2	6	02/10/2018	Confidential		Cranfield U.



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
109	EU	A./B	2 nd EWF AM Qualifications Workshop	Companies, research centres, academia	N.A.	22	02/10/2018	Fig. 110		EWF
109	EU	A./B.	Technical progress meeting with Steelo Ltd	Industry	2	3	05/10/2018	Confidential		Cranfield U.
110	EU	C.	Facebook post on 3DPRINT.COM news about MTC's presentation of ADMIRE and link to the project's website	General Public	N.A.	9 likes	09/10/2018	N.A.	https://www.facebook.com/EuropeanWeldingFederation/posts/2273043379391084?_tn=-R	EWF
111	USA	B.	Presentation of ADMIRE and collection of inputs from Industry for the development of the results at ISO TC261	Industry	N.A.	>200	17.18/09/2018	Confidential		EWF
112	EU	A.	Flyer distribution at Ecole de la mécanique de l'IN2P3	Scientific Community (Higher Education, Research)	N.A.	N.A.	15-19/10/2018	Evid.20_Ecole de la mécanique de l'IN2P3		IREPA
113	EU	A.	ADMIRE poster displayed on EWF booth at the AMEF 2018 for further information on the project	Industry representative, other organizations	N.A.	>300	23-24/10/2018	Fig.134		EWF
114	EU	C.	Facebook post on ADMIRE poster at AMEF2018	General Public	N.A.	11 likes	24/10/2018	Evid.21_EWF Booth_AMEF 2018_FB	https://www.facebook.com/EuropeanWeldingFederation/photos/a.687605721268199/2294394500589305/?type=3&theater	EWF
115	EU	A.	Flyer distribution at 4th Symposium of Additive Manufacturing	Scientific Community (Higher Education, Research)	N.A.	200	25/10/2019	N.A.		IREPA



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
116	EU	A.	ADMIRE project's presentation at EWF's 53rd General Assembly in Portugal	Industry	29	40	30/10/2018	Fig. 135		EFW
117	EU	C.	Facebook post on ADMIRE presentation at EWF's 53rd General Assembly in Portugal	General Public	N.A.	11 likes	30/10/2018	Evid.22_EWF_53rdGA_Facebook	https://www.facebook.com/EuropeanWeldingFederation/photos/a.687605721268199/2304481876247234/?type=3&theater	EFW
118	EU	C.	LinkedIn post on ADMIRE presentation at EWF's 53rd General Assembly (Porto Salvo, PT - Oct. '18)	General Public	N.A.	13 likes	30/10/2018	Evid.23_EWF_53rdGA_LinkedIn	https://www.linkedin.com/feed/update/urn:li:activity:6463011827143053312/	EFW
119	EU	C.	News about ADMIRE Capacity Building carried out by Cranfield University on EWF website	General Public	N.A.	>1500 hits	30/10/2018	Fig. 68	https://www.ewf.be/news/metal-am-masters-degree-capacity-building-from-industry-to-academia22.aspx	EFW
120	EU	C.	Twitter on ADMIRE MSc	General Public	N.A.	843 views/ 1 retweet	01/11/2018	Evid.24_ADMIRE MSc_Twitter	https://twitter.com/EFW_Welding/status/1058006583538524163	EFW
121	EU	C.	LinkedIn post on ADMIRE MSc	General Public	N.A.	11 likes	01/11/2018	Evid.25_ADMIRE MSc_LinkedIn	https://www.linkedin.com/feed/update/urn:li:activity:6463771720800178176/	EFW
122	EU	A./B.	ADMIRE poster displayed on EWF booth at FORMNEXT 2018	Industry Scientific Community (Higher Education, Research)	>90	500	13-16/11/2018	Fig. 136		EFW
123	EU	C.	Facebook post on ADMIRE post displayed on Formnext 2018	General Public	N.A.	414 Reached/ 75 Engagement	15/11/2018	Evid.26_EWF_Formnext2018_Facebook	https://www.facebook.com/EuropeanWeldingFederation/photos/ms.c.eJxFkMkNxAAIAztacRrov7FVJJdVvyAdGVMkdRaQErfzJAEmFVpS~_INQfgMQqmFChbLaK8M7gs6Az4B~_YFtmWYHsyyGhBWivoQ	EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
									jkaBC9wbqCxQMacs~ hY~; CzEvUW2BYVZKwdiFJdBO YfhWnJa7ILj~ ccHZm3sWui 8MG9~ znzKP9JFSw8~- .bps.a.2327573947271360/2 330557600306328/?type=3& theater	
124	EU	A.	Flyer distribution at the poster session (MATERIAUX 2018)	Scientific Community (Higher Education, Research)	N.A.	1600	19-23/11/2019	Evid.27_Matériaux 2018_Strasbourg_1 Evid.28_Matériaux 2018_Strasbourg_2		IREPA
125	EU	A./B.	Technical progress meeting with Safran / Zodiac	Industry	4	10	22/10/2018	Confidential		Cranfield U.
126	EU	A./B.	Technical progress meeting with GE Aviation	Industry	2	7	29/10/2018	Confidential		Cranfield U.
127	EU	A./B.	Visit from Pix Moving (China)	Industry	2	10	01/11/2018	Confidential		Cranfield U.
128	EU	A./B.	Visit from Pix Moving (China)	Industry Scientific Community (Higher Education, Research)	N.A.	70-80	05/12/2018	Evid. 29_Programme R2 Journée Technique FA	https://www.isgroupe.com/fr/espace-membres/Documents/Programme%20R2%20Journée%20Technique%20FA%20%20Arc-Fil%20-%2005.12.18.pdf	Cranfield U.
129	EU	A.	Flyer distribution at Metal Days (Forum CTIF)	Industry	N.A.	N.A.	07/11/2018	Evid.30_CTIF		IREPA
130	EU	A./B.	TWI local branch talk	Industry Scientific Community	N.A.	10	06/12/2018	N.A.		Cranfield U.



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
				(Higher Education, Research)						
131	EU	C.	Facebook post with link to ADMIRE website	General Public	N.A.	10 likes/1 share	21/01/2019	Fig. 80	https://www.facebook.com/EuropeanWeldingFederation/photos/a.181045008590942/2437571839604903/?type=3&theater	EFW
132	EU	C.	LinkedIn post describing who will be involved in ADMIRE MSc's development	General Public	N.A.	12 likes	21/01/2019	Evid.31_ADMIRE MSc development_LinkedIn	https://www.linkedin.com/feed/update/urn:li:activity:6493117184800223233/	EFW
133	EU	B.	Admire MSC advertised to MTC community via email	Scientific Community (Higher Education, Research)	1	25	08/03/2019	N.A.		MTC
134	EU	C.	Twitter on ADMIRE Capacity Building meeting held in MTC facilities (Coventry, UK)	General Public	N.A.	757 views/1 retweet	14/03/2019	Evid.32_ADMIRE Capacity Building MTC_Twitter	https://twitter.com/EFW_Welding/status/1106196616623652864	EFW
135	EU	C.	LinkedIn on ADMIRE Capacity Building meeting held in MTC facilities (Coventry, UK)	General Public	N.A.	32 likes	14/03/2019	Evid.(.)_LinkedIn ADMIRE Capacity Building MTC	https://www.linkedin.com/feed/update/urn:li:activity:6511961920898105344	EFW
136	EU	B.	APS meeting (flyers at disposal on the booth)	Industry	N.A.	200	19-20/03/2019	N.A.		IREPA
137	EU	B.	Mastering AM event - information on AM stand	Industry	N.A.	100	27/03/2019	N.A.		MTC
138	EU	C.	Twitter on ADMIRE MSc presentation to students at Instituto Superior Técnico (Lisboa, Portugal)	General Public	N.A.	276 views	27/03/2019	Evid.34_ADMIRE MSc presentation at IST_twitter	https://twitter.com/EFW_Welding/status/1110964633802805253	EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
139	EU	C.	LinkedIn post on ADMIRE MSc presentation to students at Instituto Superior Técnico (Lisboa, Portugal)	General Public	N.A.	8 likes	27/03/2019	Evid.35_ADMIRE MSc presentation at IST_linkedin	https://www.linkedin.com/feed/update/urn:li:activity:6516731254652571648/	EFW
140	EU	C.	Website post about ADMIRE MSc	General Public	N.A.	N.A.	01/04/2019	N.A.	https://www.cranfield.ac.uk/courses/taught/metal-additive-manufacturing	Cranfield U.
141	EU	A.D.	ADMIRE Conference (Disseminate project results & introduce new MSc)	Industry Scientific Community (Higher Education, Research)	N.A.	40-50	07/04/2019	N.A.	Attendance List	Cranfield U.
142	EU	B.	MadAM days (conference on ADMIRE and evaluation questionnaires)	Industry	N.A.	50	10-11/04/2019	N.A.		IREPA
143	EU	A./B.	Strategic meeting with Boeing	Industry	2	20	09/05/2019	Confidential		Cranfield U.
144	EU	C.	Facebook post about ADMIRE Metal AM Master's degree and link to the project's website	General Public	N.A.	10 likes	20/05/2019	Evid.36_ADMIRE Metal AM Master's degree & Link_Facebook	https://www.facebook.com/EuropeanWeldingFederation/photos/a.181045008590942/2632067176822034/?type=3&theater	EFW
145	EU	C.	LinkedIn post about ADMIRE Metal AM Master's degree and link to the project's website	General Public	N.A.	19 likes	20/05/2019	Evid.37_ADMIRE Metal AM Master's degree & Link_Linkedin	https://www.linkedin.com/feed/update/urn:li:activity:6536271397696614400	EFW
146	EU	A.	Distribution of ADMIRE flyers among participants on EWF 3rd AM Workshop	Industry	N.A.	30	29-31/05/2019	N.A.		EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
				Scientific Community (Higher Education, Research)						
147	EU	B.	Exhibition at salon Le Bourget (flyers at disposal on the booth)	Industry	N.A.	N.A.	21-23/06/2019	N.A.		IREPA
148	EU	C.	Post on GKN intranet introducing the ADMIRE project	Industry	1	100-200	03/07/2019	Evid.GKN_intranet		GKN
149	EU	C.	ADMIRE description on EWF White Paper 2019	EWF members (Industry, Training Centers) General Public	>100	>200	10/2019	Fig.49	https://www.ewf.be/news/white-paper-2019.aspx?fbclid=IwAR1K7z9Dza8hkLBXwHISRB2SMSS1bde26cT6447SL0galjJAd2koX7AnXis	EWF
150	BE	C.	Presentation of ADMIRE on Knowledge Alliance Cluster Meeting	Research institutes, manufacturers and companies	40	>40	31/01/2018	PPT_Presentation_Cluster Meeting		EWF
151	EU	C.	Facebook on ADMIRE MSc launch at Cranfield University	General Public	N.A.	10 likes/2shares	14/10/2019	Evid.38_Launch of ADMIRE MSc at Cranfield U. Facebook	https://www.facebook.com/EuropeanWeldingFederation/posts/2912908738737875?__tn__=-R	EWF
152	EU	C.	LinkedIn post on ADMIRE MSc launch at Cranfield University	General Public	N.A.	49 likes	14/10/2019	Evid.39_Launch of ADMIRE MSc at Cranfield U. LinkedIn	https://www.linkedin.com/feed/update/urn:li:activity:6589496986603405312	EWF
153	EU	B.	Knowledge Alliances Cluster Meeting, Brussels	Scientific Community (Higher Education, Research)	N.A.	170	23/10/2019	Confidential		Bremen U.



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
				Education, Research)						
154	EU	B.	ADMIRE-stand at the University Business Forum	Scientific Community (Higher Education, Research)	N.A.	>200	24-25/10/2019	Evid.40_UB-ForumBrussels2019		Bremen U.
155	EU	B.	Pitch carried out through a video on ADMIRE project, presented at lunch time; booth at the forum displaying ADMIRE poster to advertise the project and present it to participants	Scientific Community (Higher Education, Research)	N.A.	>200	24-25/10/2019	Evid.41_Presentation of the pitch video		EFW
156	EU	C.	Facebook post on the presentation made at the 8th European University-Company Forum, in Brussels	General Public	N.A.	16 likes/1 share	25/10/2019	Evid.42_8th European University-Company Forum Facebook	https://www.facebook.com/EuropeanWeldingFederation/photos/a.181045008590942/2938851476143601/?type=3&theater	EFW
157	EU	C.	LinkedIn post on the presentation made at the 8th European University-Company Forum, in Brussels	General Public	N.A.	10 likes	25/10/2019	Evid.43_8th European University-Company Forum_Linkedin	https://www.linkedin.com/feed/update/urn:li:activity:6593509750577606656	EFW
158	EU	B.	ADMIRE presentation on EWF 4th AM Workshop (Portugal)	Industry Scientific Community (Higher Education, Research)	13	13	28/10/2019	Evid.44_4thAgenda_EWF_Worksh.		EFW
159	EU	C.	ADMIRE presentation on EWF International Conference	EWF members (Industry,	N.A.	40	30/10/2019	Fig.111		EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
				Training Centers) Scientific Community (Higher Education, Research)						
160	EU	C.	Re-distribution of 2 nd Newsletter around campus.	General Public	-	-	05/11/2019	N.A.	Aiming to promote this within the University and further.	Birmingham U.
161	EU	D.	Hard copies of #2 ADMIRE Newsletter posted around University of Birmingham	Scientific Community (Higher Education, Research)	N.A.	N.A.	05/11/2019	N.A.		Birmingham U.
162	EU	C.	Facebook post on ADMIRE advertisement at FORMNEXT 2019, in Frankfurt, using its roll-up	General Public	N.A.	12 likes/13 shares	19/11/2019	Evid.45_EWF_BoothFORMNEXT2019_FB	https://www.facebook.com/EuropeanWeldingFederation/photos/a.181045008590942/2996326013729480/?type=3&theater	EFW
163	EU	B.	Display of ADMIRE Roll-up in EWF booth at FORMNEXT 2019 to introduce/present the project	Industry Scientific Community (Higher Education, Research)	N.A.	500	19-22/11/2019	Fig.137		EFW
164	EU	B.	Flyer distribution at FORMNEXT 2019	Other	N.A.	>26 000	19-22/11/2019	Evid.46_Flyer_Distribution-Formnext2019		Bremen U.



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
165	EU	B.	Poster presentation at MSTAM Conference	Other	N.A.	85	10-11/12/2019	Evid.47_PicturesMSTAM2019		Bremen U.
166	EU	B.	Additive Aero Summit 2019	Industry	N.A.	N.A.	03-04/12/2019	N.A.		IREPA
167	EU	C.	Dissemination of ADMIRE project at IST Facebook account	General Public	N.A.	7 likes	05/12/2019	Evid.48_IST_FB_2019	https://www.facebook.com/dem.tecnico/posts/2639672639412224	IST
168	EU	C.	Dissemination via LinkedIn	General Public	N.A.	4 likes	January 2020	N.A.		Birmingham U.
169	EU	C.	Post about ADMIRE 11th Transnational Partners' Meeting, in Bremen (Germany) on EWF Facebook account	General Public	N.A.	13 likes	30.01.2020	Evid.49_EWF_FB_11TPMs	https://www.facebook.com/EuropeanWeldingFederation/posts/3164754836886596	EWF
170	EU	C.	Publication about ADMIRE 11th Transnational Partners' Meeting, in Bremen (Germany) on EWF LinkedIn account	General Public	N.A.	23 likes/ 1 comment	30.01.2020	Evid.50_Evid.49_ADMIRE_11TPMs_Linked.	https://www.linkedin.com/posts/ewf-european-federation-for-welding-joining-and-cutting-having-reached-its-final-semester-admire-activity-6628990594813304833-0vjz/	EWF
171	EU	C.	Dissemination via LinkedIn to promote the planned short sample courses being run by Cranfield	General Public	N.A.	4 likes	07.02.2020	Evid.B'ham_MSc_LkdIn	https://www.linkedin.com/feed/update/urn:li:activity:6631466671208968192/	Birmingham U.
172	EU	C.	AMPlab website	General Public	N.A.	N.A.	Ongoing		https://amplab-bham.com/projects/admire-project/	Birmingham U.
173	UK	C.	Post on GKN intranet introducing ADMIRE project	Industry	N.A.	100-200	20.03.2020	Evid.63_GKN_Intranet		GKN
174	PT	B	Presentation of ADMIRE results on EWF General Assembly	EWF Members	46	53	26.05.2020	Evid.51_EWF_GA_ADMIRE		EWF



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
175	UK	A/B	Dissemination of Cluster Meeting Reports (The pilot satisfaction questionnaire and cluster meeting reports were circulated to all staff members of the Wedling Engineering and Laser Poessing Centre so that they knew what the feedback was)	Scientific Community (Higher Education, Research)	N.A.	10-50 people	01.06.2020	Evid.56_Clust .Meet.Report		Cranfield U.
176	EU	C.	Post about ADMIRE National Roundtable carried out in Portugal (IST & EWF) and link for the AM Hub/Platform, on EWF Facebook account	General Public	N.A.	11 likes/3 shares	05.06.2020	Evid.52_ADM IRE_NR_PT_FB	https://www.facebook.com/EuropeanWeldingFederation/posts/3472588069436603	EWF
177	EU	C.	Post about ADMIRE National Roundtable carried out in Portugal (IST & EWF) and link for the AM Hub/Platform, on EWF Facebook account	General Public	N.A.	10 likes	05.06.2020	Evid.53_ADM IRE_NR_PT_Linkd.	https://www.linkedin.com/posts/ewf-european-federation-for-welding-joining-and-cutting_as-admire-is-reaching-its-conclusion-partners-activity-6674637041264844800-s3O8/	EWF
178	PT	A.	Dissemination of ADMIRE AM Symposium 2020 on LinkedIn	General Public	N.A.	454	08.06.2020	Evid.62_Sym posium_IST_Linkedin	Personal LinkedIn account	IST
179	UK	B.	Presentation to MTC staff/sales team on outputs of ADMIRE and MSc to help with further engagement	Scientific Community (Higher Education, Research)	N.A.	100	18.06.2020	Confidential		MTC
180	UK	B.	Additive Manufacture Training: External MTC training course offered online. ADMIRE project mentioned as example of helping to address skills gap	Industry	N.A.	150	23.06.2020	Confidential		MTC
181	UK	C.	AM Final Symposium (Personal LinkedIn Posts; although multiple staff members shared a post on LinkedIn, for the sake of	General Public	N.A.	>500	25.06.2020	Evid.60_Sym posium_Linked.		Cranfield U.



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
			brevity and GDPR only one post is shown here)							
182	UK	C.	AM Final Symposium (Personal Facebook post)	General Public	N.A.	200-300	25.06.2020	Evid.61_Symposium_SS_Linkedin		Cranfield U.
183	EU	A.	Invitation email sent to all EWF contacts (incl. EWF members and partners from other projects)	VET, Scientific Community (Higher Education, Research), Industry	>300	N.A.	25.06.2020	Fig. 149	ADMIRE Final Conference/Symposium 2020	EWF
184	UK	C.	Post on GKN intranet introducing ADMIRE project	Industry	N.A.	100-200	25.06.2020	Evid.64_AMSympos._GKN_Intra		GKN
185	UK	C.	AM Final Symposium (Add in Cranfield's internal Intranet for registering and attending the AM final symposium)	Scientific Community (Higher Education, Research)	N.A.	N.A.	26.06.2020	Evid.57_Cranfi.Intranet_Symp.	Cranfield University's staff and students who would have accessed the events page of the intranet	Cranfield U.
186	UK	C.	AM Final Symposium (An email was sent to all staff and students at the School of Aerospace, Transport and Manufacturing advertising the event)	Scientific Community (Higher Education, Research)	SATM staff and students	>500	26.06.2020	N.A.		Cranfield U.
187	UK	A.	ADMIRE Final Symposium (Information added in NEWAM website - NEWAM is a project with multiple partners that works on WAAM)	Scientific Community (Higher Education, Research)	N.A.	N.A.	26.06.2020	Evid.58_NEWAM	NEWAM project partners and general public (if they access the website)	Cranfield U.
188	UK	C.	AM Final Symposium (Tweet by Cranfield University's official account to advertise the event)	General Public	N.A.	>500	29.06.2020	Evid.59_Symp._Cranf.Twitter	Followers of Cranfield University's twitter account (currently at 23.2K followers; on 09/07/2020)	Cranfield U.



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
189	EU	C.	Post about ADMIRE AM Symposium 2020, on EWF Facebook account	General Public	N.A.	11 likes/ 2 shares	02.07.2020	Evid.54_ADMIRE Symp. Facebook	https://www.facebook.com/EuropeanWeldingFederation/posts/3548463091849100	EWF
190	EU	C.	Publication about ADMIRE AM Symposium 2020, on EWF LinkedIn account	General Public	N.A.	8 reactions	02.07.2020	Evid.55_EWF_LkdIn_Symp osium 2020	https://www.linkedin.com/posts/ewf-european-federation-for-welding-joining-and-cutting-this-week-admires-am-symposium-2020-activity-6684417579643092992-2bQt/	EWF
191	UK	C.	Dissemination of ADMIRE events within MTC via email/team meetings	MTC internal staff	N.A.	10	September 2020	Confidential		MTC
192	EU	C.	Link for ADMIRE website on AM Platform – European Technology Platform in Additive Manufacturing website	Scientific Community (Higher Education, Research), Industry	700	>500	September 2020	Evid.75_AMPIatform_ADMI RE	https://www.rm-platform.com/am-related-projects/projects-list	EWF
193	EU	B.	Presentation of ADMIRE professional profiles at ISO Plenary Meeting	Industry	N.A.	30	19.09.2020	Confidential		EWF
194	EU	B.	Presentation of ADMIRE project and main results at EFFRA “Made in Europe Working Groups” – Working Group 4 “Human-centred and human-driven manufacturing innovation”	Scientific Community (Higher Education, Research), Industry	192	80	22.09.2020	Evid.74_EFFRA_Presentation	https://cloud.effra.eu/index.php/s/H7lm9RLPAnJPSGq#pdfviewer	EWF
195	EU	D.	Creation of a promotional banner for ADMIRE Final Conference, to be used as “Save the Date” and to be published online	Scientific Community (Higher Education,	N.A.	N.A.	25.09.2020	Fig.158	This banner was published on ADMIRE website on this day, and all EWF staff included it on their email signatures as a way to	EWF



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
				Research), Industry, General Public					increase promotion of the event, reaching all their contacts	
196	EU	D.	Creation of a registration platform, using Eventbrite, so that potential participants of ADMIRE Final Conference could register	Scientific Community (Higher Education, Research), Industry, General Public	N.A.	345	25.09.2020	Fig. 156	EWF sent the link for this registration platform to all ADMIRE partners for dissemination	EWF
197	EU	B.	Presentation of ADMIRE at CLLAIM project Mid-Term Conference	Scientific Community (Higher Education, Research), Industry	N.A.	61	29.09.2020	Evid.76_ADMIREatCLLAIM_MTConf.	Connection between CLLAIM project and ADMIRE, with reference to the IAMQS	EWF
198	EU	A.	Invitation by email to EWF members and to other contacts to attend ADMIRE Final Conference	VET, Scientific Community (Higher Education, Research), Industry	>300	N.A.	30.09.2020	Fig. 162	The Agenda and D7.7 was sent attached to the email	EWF
199	EU	C.	Registration of ADMIRE Final Conference on #ErasmusDays2020 initiative platform	VET, Scientific Community (Higher Education, Research), General Public	>1000	>500	30.09.2020	Figs. 154 & 155		EWF



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
200	EU	C.	Post about ADMIRE's final conference, on EWF facebook account	General Public	N.A.	9 likes / 1 share	30.09.2020	Evid.77_EWF_FBewf_FinalConf 2020	https://www.facebook.com/EuropeanWeldingFederation/posts/3826747177354022	EWF
201	EU	C.	Post about ADMIRE's Final Conference, on IAMQS' facebook account	General Public	N.A.	2 likes/ 2 shares	30.09.2020	Evid.78_EWF_FBiamqs_FinalConf 2020	https://www.facebook.com/iamqsystem/posts/123972572786936	EWF
202	EU	C.	Post about ADMIRE's Final Conference, on EWF's Linkedin account	General Public	N.A.	10 likes	30.09.2020	Evid.79_EWF_Lkdlnewf_FinalConf 2020	https://www.linkedin.com/feed/update/urn:li:activity:6717006987088953344/	EWF
203	EU	C.	Post about ADMIRE's Final Conference, on IAMQS' Linkedin account	General Public	N.A.	5 likes	30.09.2020	Evid.80_WF_Lkdlniamqs_FinalConf 2020	https://www.linkedin.com/feed/update/urn:li:activity:6717005615480221697	EWF
204	EU	C.	Post on IAMQS Facebook account about the presentation made at EFFRA Workshop, including ADMIRE project presentation	General Public	N.A.	3 likes/ 4 shares	30.09.2020	Evid.81_EWF_FBiamqs_EFFRA 2020	https://www.facebook.com/iamqsystem/posts/124788606038666	EWF
205	EU	C.	Post on EWF Facebook account about the presentation made at EFFRA Workshop, including ADMIRE project presentation	General Public	N.A.	5 likes/ 2 shares	30.09.2020	Evid.82_EWF_FBewf_EFFRA 2020	https://www.facebook.com/EuropeanWeldingFederation/posts/3827568347271905	EWF
206	EU	C.	Post on EWF LinkedIn account about the presentation made at EFFRA Workshop, including ADMIRE project presentation	General Public	N.A.	11 likes	30.09.2020	Evid.83_EWF_Lkdlnewf_EFFRA 2020	https://www.linkedin.com/feed/update/urn:li:activity:6717085307151364096/	EWF
207	EU	C.	Dissemination of ADMIRE Final Flyer on EWF Facebook account	General Public	N.A.	7 likes/ 1 share	30.09.2020	Evid.84_EWF_FBewf_launchFinalFlyer	https://www.facebook.com/EuropeanWeldingFederation/posts/3827874793907927	EWF
208	EU	C.	Dissemination of ADMIRE Final Flyer on IAMQS Facebook account	General Public	N.A.	3 likes/ 2 shares	30.09.2020	Evid.85_EWF_FBewf_launchFinalFlyer	https://www.facebook.com/iamqsystem/posts/124831542701039	EWF
209	EU	C.	Dissemination of ADMIRE Final Flyer on EWF LinkedIn account	General Public	N.A.	19 likes	30.09.2020	Evid.86_EWF_Lkdlnewf_launchFinalFlyer	https://www.linkedin.com/feed/update/urn:li:activity:6717115510867161088	EWF



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
210	EU	C.	Dissemination of ADMIRE Final Flyer on IAMQS LinkedIn account	General Public	N.A	5 likes	30.09.2020	Evid.87_EWF_Lkdlniamqs_launchFinalFlyer	https://www.linkedin.com/feed/update/urn:li:activity:6717114074745847808/	EFW
211	EU	C.	Publication of reference to ADMIRE Final Conference on 3DPI Platform schedule for events connected to Additive Manufacturing	Industry	N.A.	N.A.	30.09.2020	Evid.88_EWF_3DPI_FinalConf,	https://3dprintingindustry.com/events/	EFW
212	DE	C.	Announcement of ADMIRE Final Conference event on social media page	Students, professionals, researchers	N.A.	68 likes	02.10.2020	Evid.72_ADMIRE_FinalConf_BremenFacebook	https://www.facebook.com/Bremen-Center-for-Computational-Materials-Science-BCCMS-106825316089553	Bremen University
213	DE	C.	Announcement of ADMIRE Final Conference event on ISEMP's webpage	Research institutes, manufacturers and companies	N.A.	N.A.	02.10.2020	Evid.73_ADMIRE_FinalConf_ISEMPsite	https://www.bccms.uni-bremen.de/de/isemp/veranstaltungen	Bremen University
214	PT	C.	Dissemination of ADMIRE Final Conference	General Public	N.A.	860 views/9 likes	03.10.2020	Evid.68_IST_FinalConferenceADMIRE	https://www.linkedin.com/in/%C3%AAs-pires-201a0011/detail/recent-activity/shares/	IST
215	EU	C.	Post about ADMIRE's Final Conference on EWF's facebook page	General Public	N.A	6 likes	07.10.2020	Evid.89_EWF_FBewf_FinalConf2020	https://www.facebook.com/EuropeanWeldingFederation/posts/3866744156687657	EFW
216	EU	C.	Post about ADMIRE's Final Conference on IAMQS's facebook account	General Public	N.A	3 likes/2 shares	07.10.2020	Evid.90_EWF_FBiamqs_FinalConf2020	https://www.facebook.com/iamqssystem/posts/143500610834132	EFW
217	EU	C.	Post about ADMIRE's Final Conference on EWF LinkedIn account	General Public	N.A	9 likes	07.10.2020	Evid.91_EWF_Lkdlnewf_FinalConf2020	https://www.linkedin.com/feed/update/urn:li:activity:6719594971151790080/	EFW
218	EU	C.	Post about ADMIRE's Final Conference on IAMQS LinkedIn account	General Public	N.A	5 likes	07.10.2020	Evid.92_EWF_Lkdlniamqs_	https://www.linkedin.com/feed/update/urn:li:activity:6719590452451938305/	EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
								FinalConf 2020		
219	UK	C.	Post on LinkedIn about the ADMIRE Final Conference	General Public	N.A.	841 views	09.10.2020	Evid.65_Final Conf._Cranf.	Personal LinkedIn account	Cranfield U.
220	UK	C.	Post on GKN intranet introducing ADMIRE project	Industry	N.A.	100-200	09.10.2020	Evid. 69_ADMIRE Booklet_GKN_Intra		GKN
221	UK	C.	Post by Cranfield University on LinkedIn about the ADMIRE Final Conference	General Public	N.A.	77 695 followers	12.10.2020	Evid.66_Final Conf._Cranf_Linkedin		Cranfield U.
222	UK	C.	Post by Cranfield University on Twitter about the ADMIRE Final Conference	General Public	N.A.	23 600 followers	12.10.2020	Evid.67_Final Conf._Cranf_Twitter		Cranfield U.
223	EU	C.	Post about ADMIRE's Final Conference on EWF's facebook page	General Public	N.A.	6 likes	12.10.2020	Evid.93_EWF_FBewf_Final Conf 2020	https://www.facebook.com/EuropeanWeldingFederation/posts/3866744156687657	EFW
224	EU	C.	Post about ADMIRE's Final Conference on EWF's LinkedIn page	General Public	N.A.	15 likes	12.10.2020	Evid.94_EWF_Lkdlnewf_FinalConf 2020	https://www.linkedin.com/feed/update/urn:li:activity:6721441611647094784/	EFW
225	PT	C.	Dissemination of ADMIRE Final Conference	General Public	N.A.	104 views/ 2 likes	13.10.2020	Evid.70_Final Conf.ADMIRE_IST_Linkedin	https://www.linkedin.com/in/in%C3%AAs-pires-201a0011/detail/recent-activity/shares/	IST
226	PT	C.	Dissemination of ADMIRE Final Partners' Meeting	General Public	N.A.	80 views/ 2likes	15.10.2020	Evid.71_ADMIRE_FinalTPM_Linkedin	https://www.linkedin.com/in/in%C3%AAs-pires-201a0011/detail/recent-activity/shares/	IST
227	EU	C.	Post about ADMIRE's Final Conference and Final Partners' Meeting on EWF's Facebook page	General Public	N.A.	5 likes	15.10.2020	Evid.95_EWF_FBewf_Final Conf&FPM2020	https://www.facebook.com/EuropeanWeldingFederation/posts/3875665672462172	EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
228	EU	C.	Post about ADMIRE's Final Conference and Final Partners' Meeting on IAMQS Facebook page	General Public	N.A.	3 likes/ 1share	15.10.2020	Evid.96_EWF_FBiamqs_FinalConf&FPM 2020	https://www.facebook.com/iamqsystem/posts/150361010148092	EFW
229	EU	C.	Post about ADMIRE's Final Conference and Final Partners' Meeting on EWF's LinkedIn page	General Public	N.A.	11 likes	15.10.2020	Evid.97_EWF_Lkdlnewf_FinalConf&FPM 2020	https://www.linkedin.com/feed/update/urn:li:activity:6722549345868107776/	EFW
230	EU	C.	Post about ADMIRE's Final Conference and Final Partners' Meeting on IAMQS LinkedIn page	General Public	N.A.	4 likes	15.10.2020	Evid.98_EWF_Lkdlniamqs_FinalConf&FPM 2020	https://www.linkedin.com/feed/update/urn:li:activity:6722547780641947648	EFW
231	EU	C.	Post announcing ADMIRE's last day on EWF's Facebook account (with pitch video)	General Public	N.A.	4 likes	30.10.2020	Evid.99_EWF_FBewf_Last Day 2020	https://www.facebook.com/EuropeanWeldingFederation/posts/3917673648261374	EFW
232	EU	C.	Post announcing ADMIRE's last day on IAMQS Facebook account (with pitch video)	General Public	N.A.	1 likes/ 1 share	30.10.2020	Evid.100_EWF_FBiamqs_LastDay 2020	https://www.facebook.com/iamqsystem/posts/160363012481225	EFW
233	EU	C.	Post announcing ADMIRE's last day on EWF's LinkedIn account (with pitch video)	General Public	N.A.	7 likes	30.10.2020	Evid.101_EWF_Lkdlnewf_LastDay 2020	https://www.linkedin.com/feed/update/urn:li:activity:6727903845726330880	EFW
234	EU	C.	Post announcing ADMIRE's last day on IAMQS LinkedIn account (with pitch video)	General Public	N.A.	8 likes	30.10.2020	Evid.102_EWF_Lkdlniamqs_LastDay 2020	https://www.linkedin.com/feed/update/urn:li:activity:6727903092647460864	EFW
Planned Dissemination Activities for November 2020										
235	EU	C.	Post about Thesis developed by IST students during the MSc pilot sessions, on EWF's LinkedIn account	General Public	N.A.	10 likes	02.11.2020	Evid.103_ADMIRE_ThesisIST_EWFLinkd.	https://www.linkedin.com/feed/update/urn:li:activity:6729048018647052288	EFW
236	EU	C.	Post about Thesis developed by IST students during the MSc pilot sessions, on IAMQS LinkedIn account	General Public	N.A.	3 likes	02.11.2020	Evid.104_ADMIRE_ThesisI	https://www.linkedin.com/feed/update/urn:li:activity:6729047518224646144/	EFW



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
								ST_IAMQSLinkd.		
237	EU	B.	Joint FAA – EASA Workshop on Qualification / Certification of Additively Manufactured Parts (online session)	Research institutes, Industry (incl. Standardization bodies – ISO)	N.A.	179 participants	04.11.2020	Evid.105_JointFAA_Presentation Evid.106_JointFAA_Agenda	Presentation about Standards and Training Programs for the Qualification of AM Personnel, including ADMIRE European Metal AM Engineer MSc/specializations	EFW
238	EU	C.	ADMIRE Press Release #2	General public, technology	N.A.	N.A.	11.11.2020	Fig. 4a1	https://admireproject.eu/documents/ADMIRE%20%232%20Press%20Release.pdf	EFW
239	EU	B.	ICAAM – International Conference on Additive Manufacturing 2020 (online session , organised by ASTM Center of Excellence)	Research institutes, Industry	N.A.	N.A.	16-20.11.2020	Evid.107_EWF_PPT_ICAAM2020	EFW will be presenting “Personnel Qualification for Polymer and Composite in AM”, providing information about AM Qualifications that are part of IAMQS, including ADMIRE European Metal AM Engineer MSc/specializations	EFW
240	Brazil	B.	1 st Brazilian Congress on Additive Manufacturing (CBMAdi)	Research institutes, Industry	N.A.	N.A.	30.11.2020	Evid.108_EWF_CBMAdiPresent.	EFW will be presenting “Additive Manufacturing in Europe – Recent results from collaborative projects and development of professional qualifications”, including ADMIRE European Metal AM Engineer	EFW

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



No.	Country/EU	Type	Descrip. of the activity ¹	Target groups	Institutions (No.)	Persons (No.)	Date	Document.	Comments	Partner Responsible
									MSc/specializations, D7.7 (ADMIRE "booklet" and an explanation on how can the MSc be implemented by Universities, with assistance of IAMQS	

Conclusion

Efficient dissemination is a fundamental activity in any project, since the success of the dissemination activities carried out during (and after) the project contribute decisively to both the short and long-term success of it.

As previously mentioned, the overall 234 dissemination activities carried out between January and the end of October 2020 were realised on a regular basis, making use of diversified sort of means on the endeavour to reach and engage relevant stakeholders (e.g. local, national, European education authorities, training managers, education practitioners, vet providers, higher education providers, trainees, companies, business representatives and manufacturing representatives).

Overall, a total number of 60.510 people were reached or actively involved on those activities, a number that will continue to rise beyond the project. During the month of November 2020, a total of 6 dissemination activities are already planned to be conducted as a way to ensure ADMIRE results' sustainability and exploitation opportunities.

Because the European Metal AM Engineer MSc/specializations is being implemented by EWF's International Additive Manufacturing Qualification System (IAMQS), and the AM Hub/Platform is already part of the AM Observatory (created in the scope of SAM² project (as explained on deliverable D7.4 - Dissemination, Sustainability and Exploitation Plan), EWF will continue disseminating ADMIRE in the future, as part of its activities.

Supporting this document was a group effort done by all the ADMIRE partners to lead the project to good outcomes, having in mind the still to come and necessary steps to exploit the results in a proper way.

² <http://www.skills4am.eu/>

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



ANNEX 1 – Dissemination Evidence



Evid. 1 Congress_Program_APS2017



Evid. 2 Titanium Europe 2017



Evid. 3_3D printing live! Conference

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio

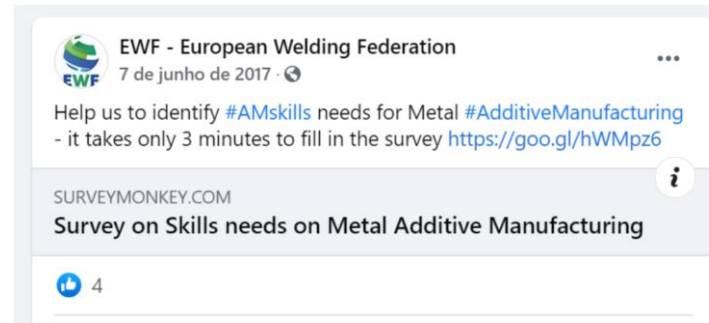


ADMIRE SECOND MEETING

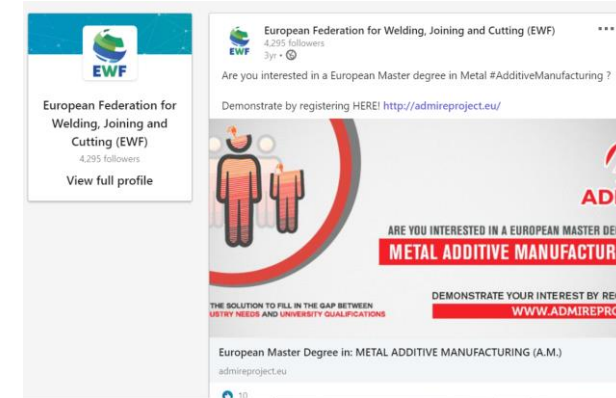
By EWF

The second meeting of ADMIRE's consortium took place in Cranfield (UK), once again, to discuss the structure of the Joint Metal Additive Manufacturing Master degree.

Evid. 4_ADMIRE 2nd Meeting Proj. Website



Evid. 5 Survey Skills Needs for AM Facebook



Evid. 6 EU Metal AM MSc Linkd.



Evid. 7_ Meeting CECIMO Facebook



Evid. 8_ European Metal AM MSc LinkedIn



Evid. 9_ European Metal AM MSc Facebook

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Subject/Deliverable: D7.5 Dissemination Portfolio



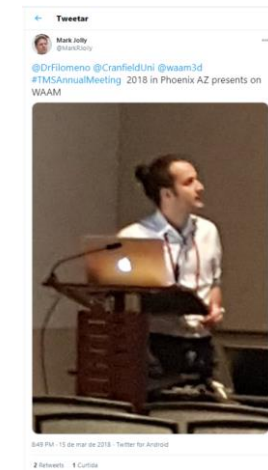
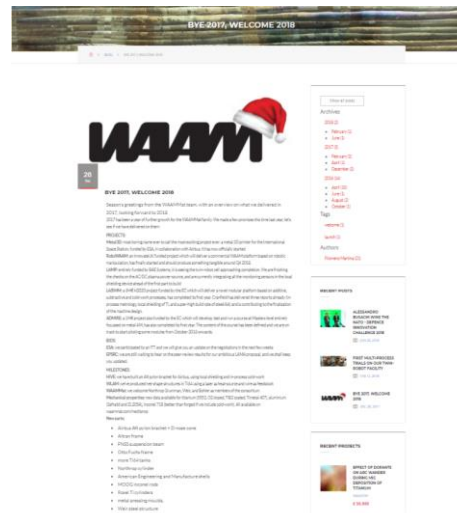
Evid. 10_ European Metal AM MSc Twitter



Evid. 11_TCT Conference

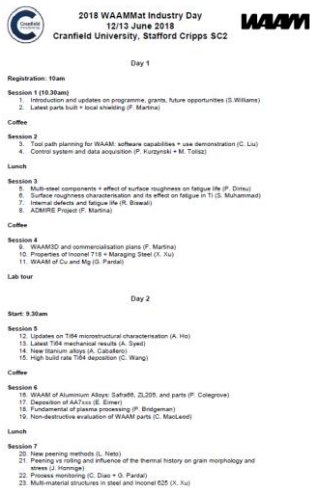


Evid. 12_lecture at Imperial College Twitter

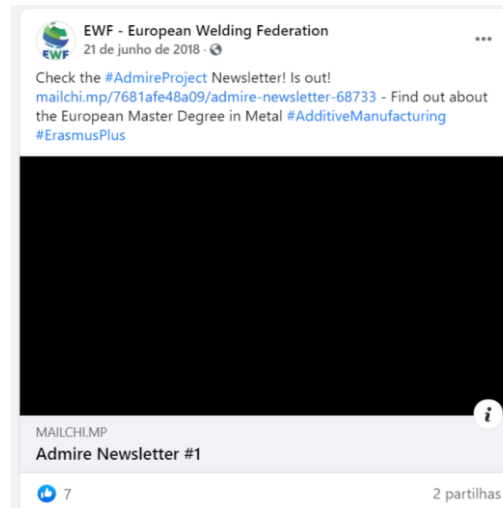


TITLE: WP7 Dissemination and Exploitation of Results

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Evid. 16_CRAN_dissemination_agenda_WAAMMat_2018



Evid. 17_ADMIRE_1st Nsltr_Facebook



Evid.18_ADMIRECapacBuild_Facebook



Evid.19_ADS Show



Evid.20_Ecole de la mécanique de l'IN2P3



Evid.21 Booth AMEF 2018_FB

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Evid.22_EWF_53rdGA_Facebook



Evid.23_EWF_53rdGA_LinkdIn



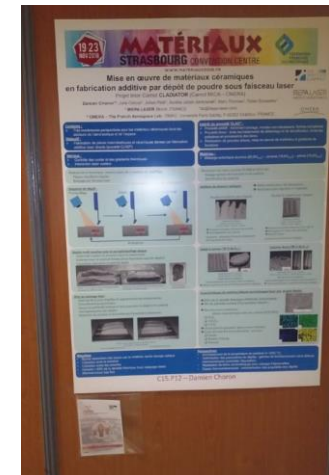
Evid.24_ADMIRE MSc_Twitter



Evid.25_ADMIRE MSc_Linkedin



Evid.26_EWF_Formnext2018_Facebook



Evid.27_Matériaux 2018_Strasbourg_1

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Subject/Deliverable: D7.5 Dissemination Portfolio



Evid.28_Matériaux 2018_Strasbourg_2



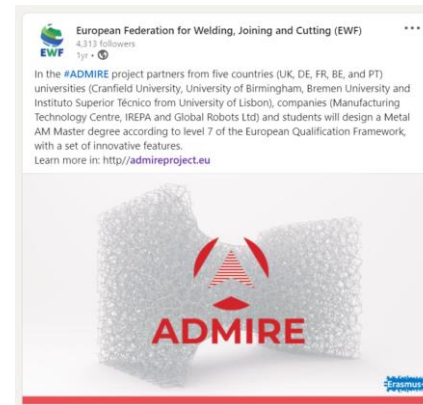
Evid. 29_Programme R2 Journée Technique FA



Evid.24_ADMIRE MSc_Twitter



Evid.30_CTIF



Evid.31_ADMIRE MSc development_LinkedIn



Evid.32_ADMIRE Capacity Building MTC_Twitter

TITLE: WP7 Dissemination and Exploitation of Results

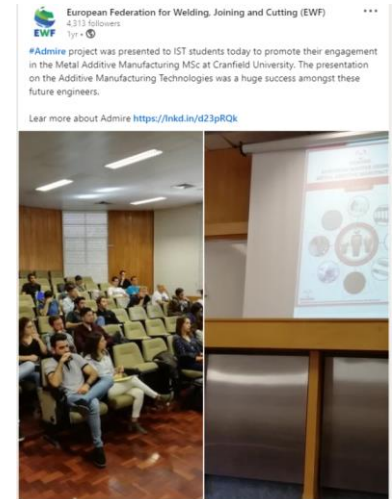
Subject/Deliverable: D7.5 Dissemination Portfolio



Evid.33_ADMIRE Capacity Building MTC_LinkedIn



Evid.34_ADMIRE MSc presentation at IST_twitter



Evid.35_ADMIRE MSc presentation at IST_linkedin



Evid.36_ADMIRE Metal AM Master's degree & Link_Facebook



Evid.37_ADMIRE Metal AM Master's degree & Link_Linkedin



Evid.38_Launch of ADMIRE MSc at Cranfield U. _Facebook

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Evid.39_Launch of ADMIRE MSc at Cranfield U. _LinkedIn



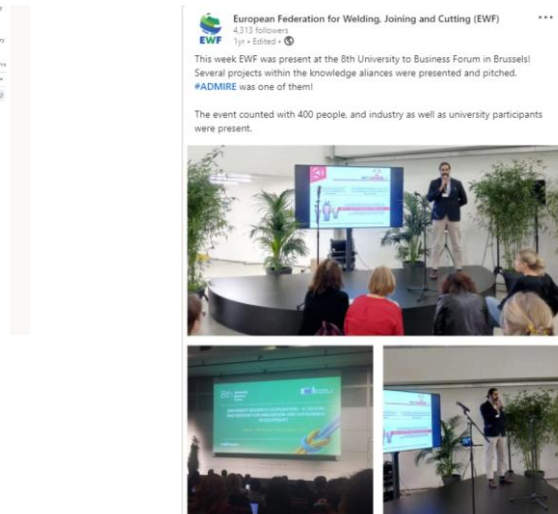
Evid.40_UB-ForumBrussels2019



Evid.41_Presentation of the pitch video at UB Forum



Evid.42_8th European University-Company Forum Facebook



Evid.43_8th European University-Company Forum_Linkedin

4th AM QUALIFICATIONS WORKSHOP
28th and 29th of October 2019

Location: ISQ facilities – Avenida Professor Dr. Cavaco Silva, 33 Taguspark, 2740-120 Porto Salvo, Building A+ in Oeiras

	28 th October	29 th October
09:00		Welcome & Registration
09:30		Metal AM Designer Case studies validation
10:45		Coffee break
12:00		Metal AM Designer Scope + Contact Hours Validation Case studies validation
12:30	Welcome & Registration	Lunch
13:00	EFW Metal AM Qualifications overview AM Process Operators AM Process Engineers AM Coordinator	Metal AM Supervisor Structure Validation Professional Profile Job Functions and Job Activities
14:00	Metal AM Designer Scope + Contact Hours Validation	
15:45	Coffee break	Coffee break
16:00	Metal AM Designer Scope + Contact Hours Validation	Metal AM Supervisor Structure Validation Professional Profile Job Functions and Job Activities
17:00	World cafe	Conclusions and wrap up
18:00	Conclusions and wrap up	
20:00	NA	GALA Dinner (with bus)

Evid.44_4thAgenda_EFW_Workshop.

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



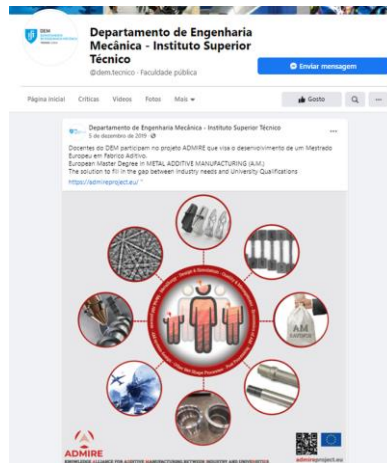
Evid.45_EWF_BoothFORMNEXT 2019_FB



Evid.46_Flyer_Distribution-Formnext2019



Evid.47_PicturesMSTAM2019



Evid.48_IST_FB_2019



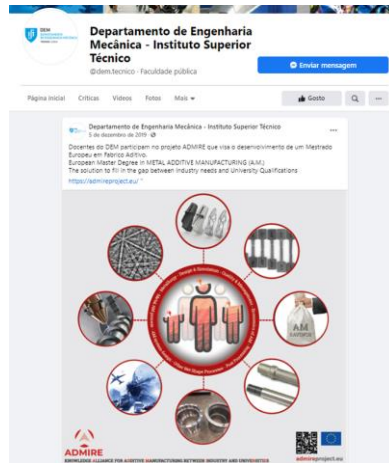
Evid.49_EWF_FB_11TPMs



Evid.35_ADMIRE MSc presentation at IST_linkedin

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Evid.48_IST_FB_2019



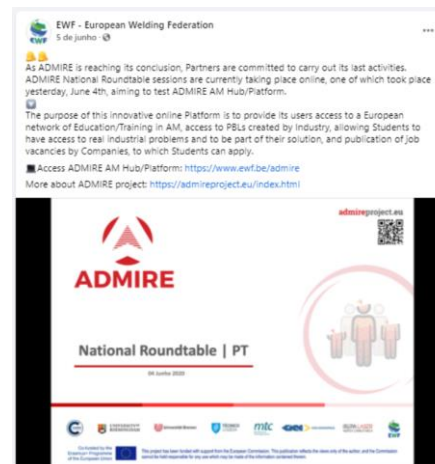
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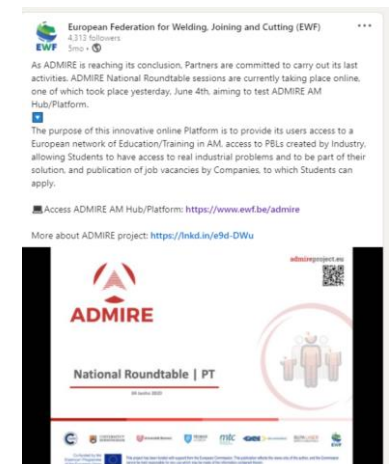
Evid.50_ADMIRE_11TPMs_Linkd.



Evid.51_EWF_GA_ADMIRE



Evid.52_ADMIRE_NR_PT_FB



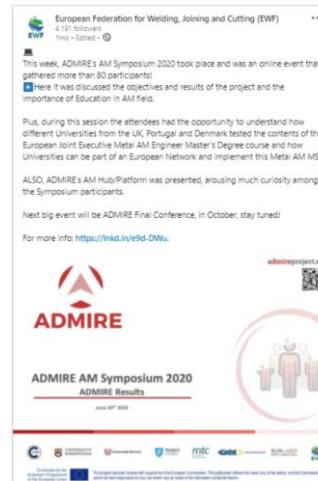
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TITLE: WP7 Dissemination and Exploitation of Results

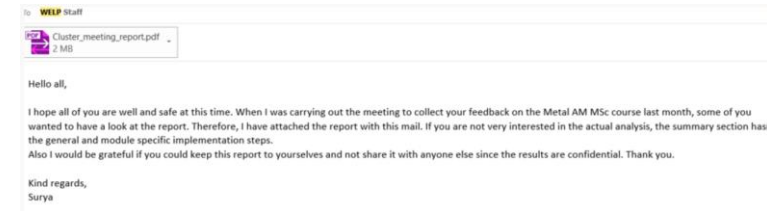
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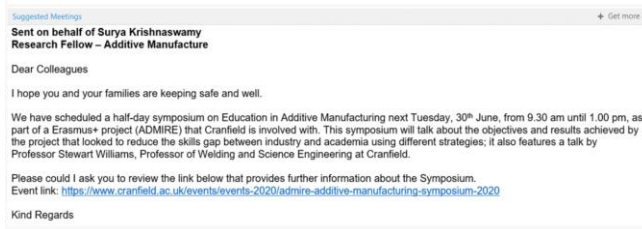
Evid.54_ADMIRE Symp. Facebook



Evid.55_EWF_LkdIn_Symposium 2020



Evid.56_Clust.Meet.Report



Evid.57_Cranfi.Intranet_Symp.

Symposium on AM education as part of the ADMIRE project

When Jun 30, 2020 from 09:30 AM to 01:00 PM (Europe/London / UTC+00)
Where Online
Contact Name Surya Krishnaswamy
Web Visit external website
Add event to calendar iCal

The ADMIRE project was established to reduce the skills gap between the Higher Educational Institutions' approach and industry's needs in the field of additive manufacturing (AM). This project, comprising of eight partners from five European countries, developed and piloted various tools and techniques that aimed to build a strong relationship between all the parties interested in the successful implementation of AM. Examples include the development of an European master's degree in Metal AM Engineering and an online hub where teachers, students, researchers and companies can connect and share information easily. The ADMIRE Additive Manufacturing Symposium aims to provide an in-depth look at the project's objectives, the relevant materials associated with their achievements and how can they be implemented. The event will also include a presentation by Professor Stewart Williams on the need for AM education.

Evid.58_NEWAM



Tweet

Cranfield University
@CranfieldUni

Tomorrow: join our online ADMIRE Additive Manufacturing Symposium 2020

Find out more and register here cranfield.ac.uk/events/events-...

#manufacturing #mfg #ukmfg

8:15 PM · Jun 29, 2020 · Sprout Social

2 Retweets 2 Likes

Evid.59_Symp._Cranf.Twitter

TITLE: WP7 Dissemination and Exploitation of Results

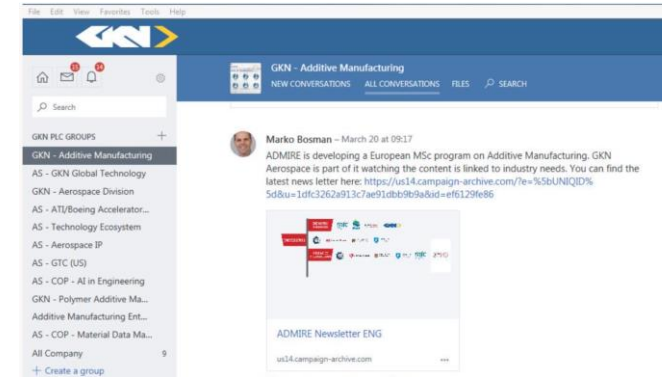
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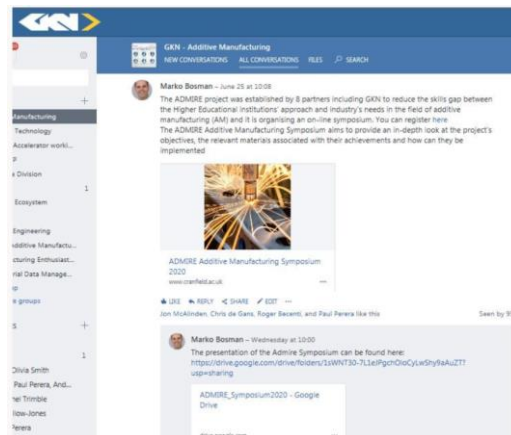
Evid.60_Symposium_Linked.



Evid.61_Symposium_SS_Linkedin



Evid.63_GKN_Intranet



Evid.64_AMSympos._GKN_Intra



Evid.65_FinalConf._Cranf.



Evid.66_FinalConf._Cranf_Linkedin

TITLE: WP7 Dissemination and Exploitation of Results

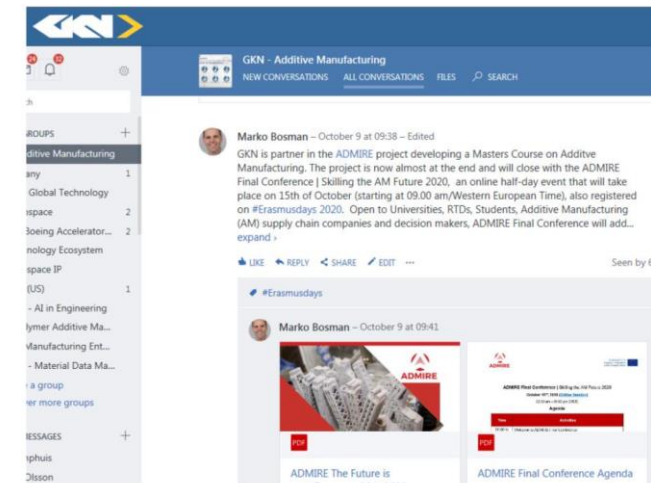
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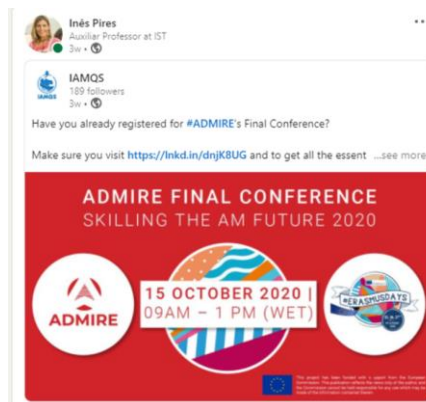
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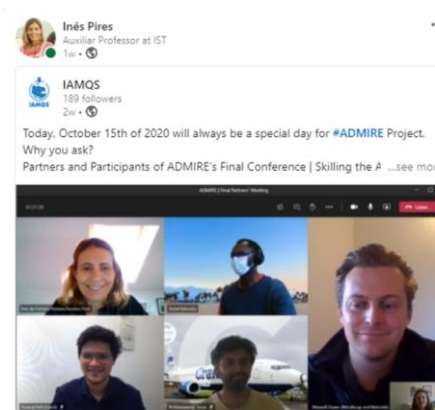
Evid.68_IST_Final Conference ADMIRE



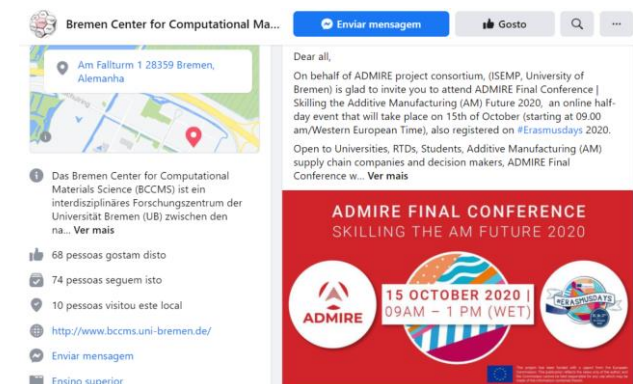
Evid. 69_ADMIRE Booklet_GKN_Intra



Evid.70_FinalConf.ADMIRE_IST_Linkedin



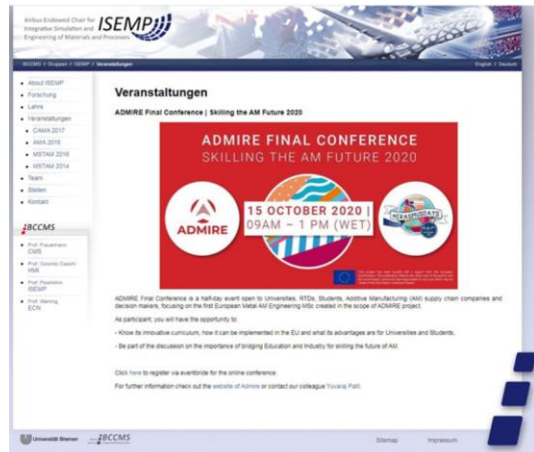
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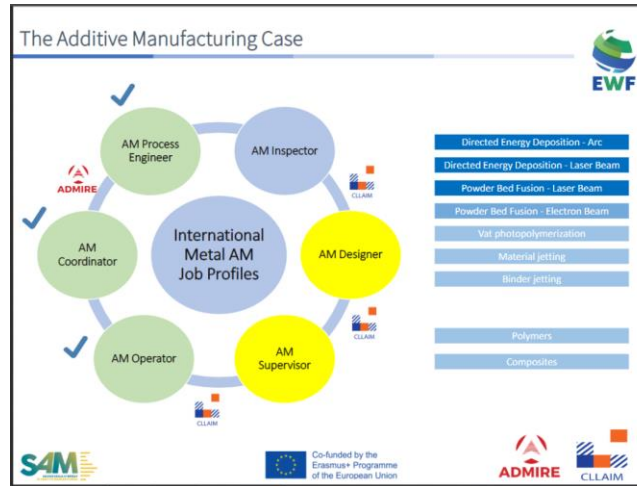
Evid.72_ADMIRE FinalConf_BremenFacebook

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Evid.73_ADMIREFinalConf_ISEMPsite



Evid.74_EFFRA_Presentation

3. Other EU projects			
	SAM	Sector Skills Strategy in Additive Manufacturing	www.skills4am.com
	CLLAM	Creating knowledge and skills in Additive Manufacturing	http://cllamprojectam.eu/
	3DPRISM	3DPrinting Skills for Manufacturing	www.3dprism.eu
	METALS	Machine Tool Alliance for Skills	www.metalsalliance.eu
	SAMT SUDOUE	Spread of Additive Manufacturing and Advanced Materials Technologies for the promotion of KET Industrial Technologies in plastic processors and mould industries within Sudoe Space	www.samtudoe.com
	ADDISPACE	Implementation of Additive Manufacturing technologies in the Aerospace sector	http://www.addispace.eu/
	ADMIRE	European Master Degree in: METAL ADDITIVE MANUFACTURING (AM)	http://admireproject.eu/

Evid.75_AMPlatform_ADMIRE



Evid.76_ADMIREatCLLAM_MTConf.



Evid.77_EWF_FBewf_FinalConf 2020



Evid.78_EWF_FBiamqs_FinalConf 2020

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Evid.80_WF_Lkdlniamqs_FinalConf 2020

Evid.81_EWF_FBiamqs_EFFRA 2020

Evid.82_EWF_FBewf_EFFRA 2020

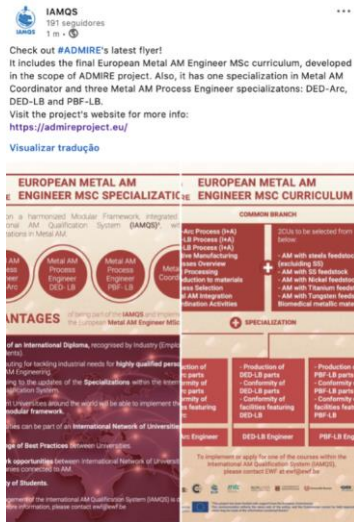
Evid.83_EWF_Lkdlnewf_EFFRA 2020

Evid.84_EWF_FBewf_launchFinalFlyer

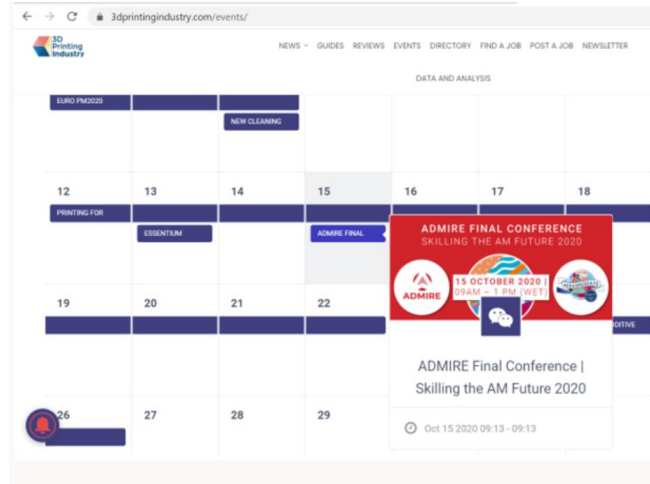
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TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Evid.87_EWF_LkdIniamqs_launchFinal Flyer



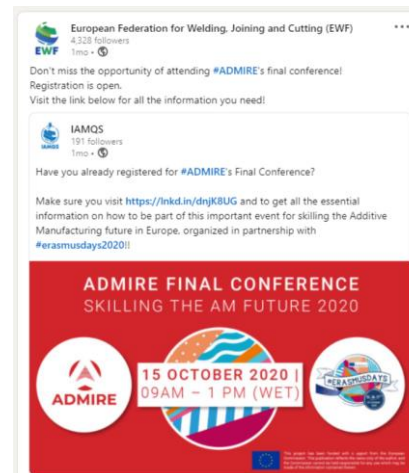
Evid.88_EWF_3DPI_Final Conf,



Evid.89_EWF_FBewf_FinalConf 2020



Evid.90_EWF_FBIamqs_FinalConf 2020



Evid.91_EWF_LkdInewf_FinalConf 2020



Evid.92_EWF_LkdIniamqs_FinalConf 2020

TITLE: WP7 Dissemination and Exploitation of Results

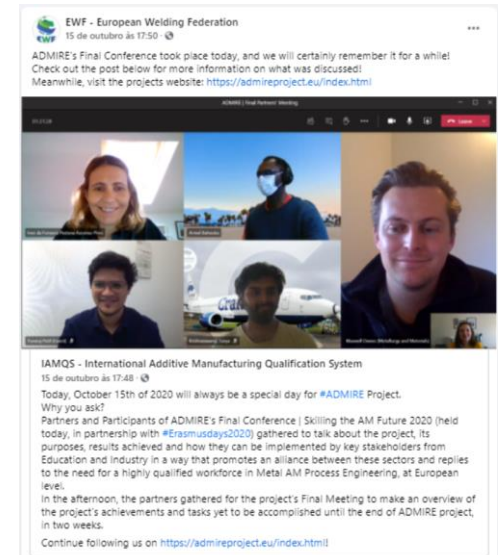
Subject/Deliverable: D7.5 Dissemination Portfolio



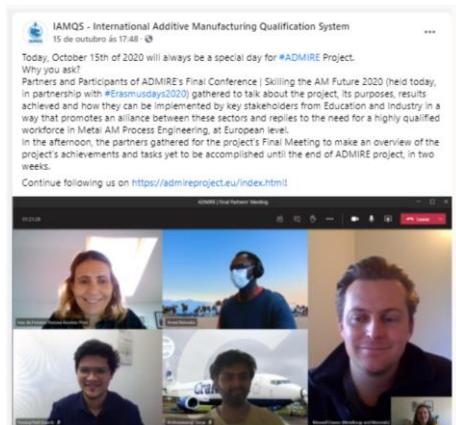
Evid.93_EWF_FBewf_FinalConf 2020



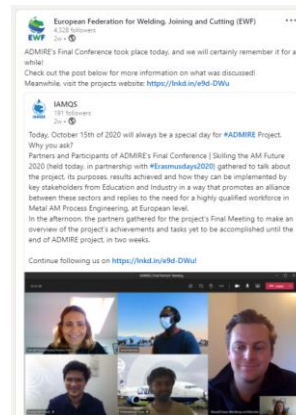
Evid.94_EWF_Lkdlnewf_FinalConf 2020



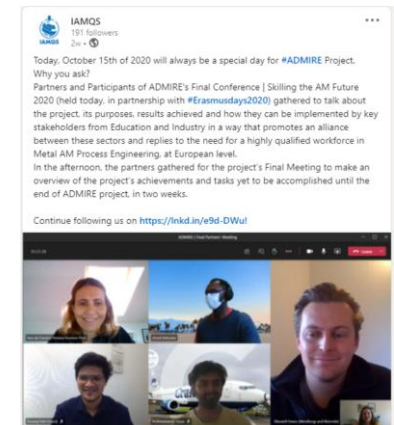
Evid.95_EWF_FBewf_FinalConf&FPM2020



Evid.96_EWF_FBiamqs_FinalConf&FPM2020



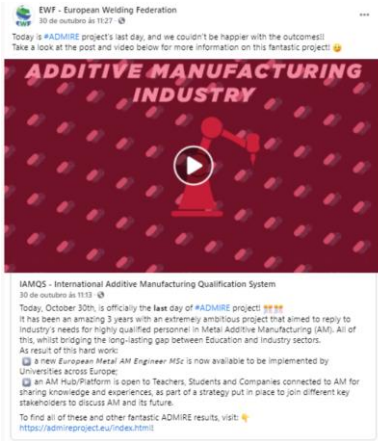
Evid.97_EWF_Lkdlnewf_FinalConf&FPM2020



Evid.98_EWF_Lkdlniamqs_FinalConf&FPM 2020

TITLE: WP7 Dissemination and Exploitation of Results

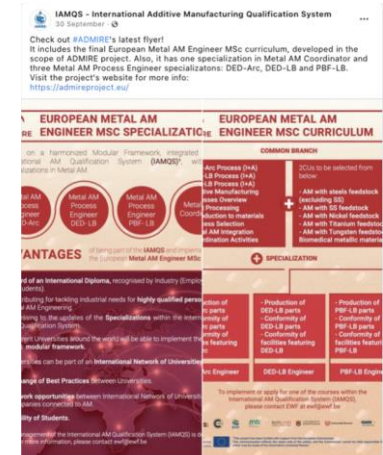
Subject/Deliverable: D7.5 Dissemination Portfolio



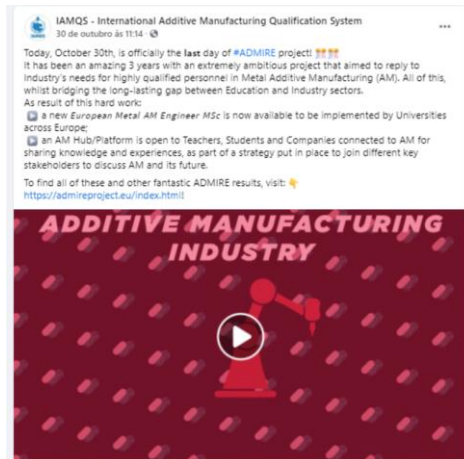
Evid.99_EWF_FBewf_LastDay 2020



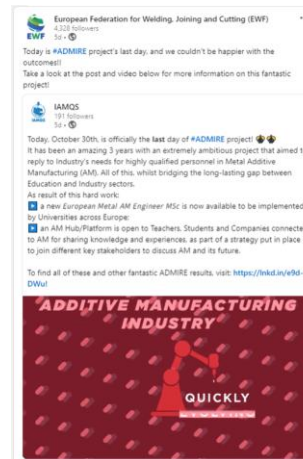
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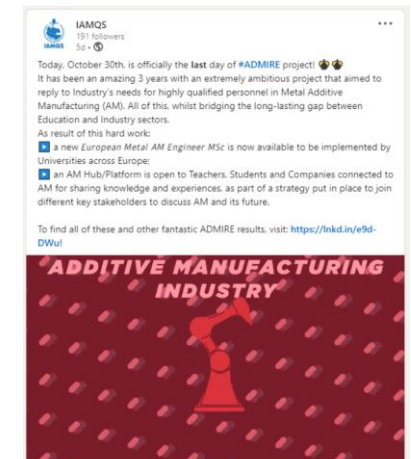
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Evid.100_EWF_FBiamqs_LastDay 2020



Evid.101_EWF_Lkdlnewf_LastDay 2020



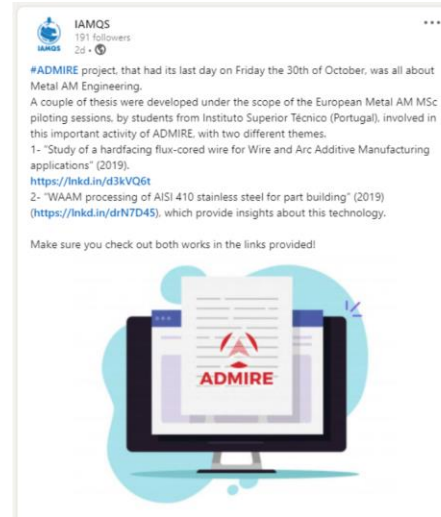
Evid.102_EWF_Lkdlniamqs_LastDay 2020

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Evid.103 B'ham_MSc_LkdIn



Evid.104_ADMIRE_ThesisIST_IAMQSLinkd.



Evid.105_Joint FAA_Presentation



Evid.106_JointFAA_Agenda



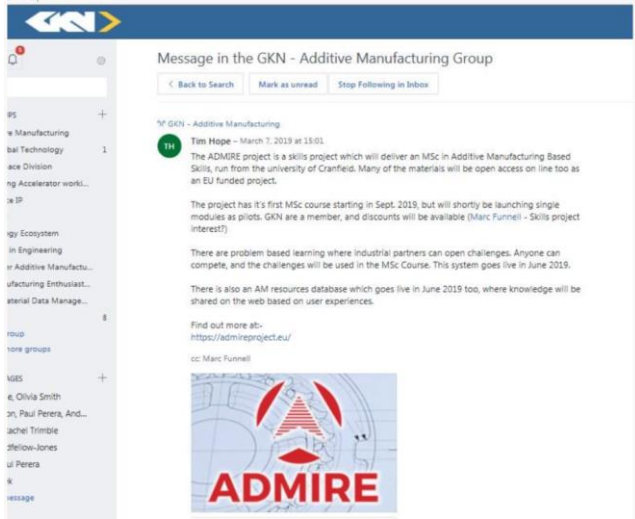
Evid.107_EWF_PPT_ICAAM2020



Evid.108_EWF_CBMAdiPresent.

TITLE: WP7 Dissemination and Exploitation of Results

Subject/Deliverable: D7.5 Dissemination Portfolio



Evid.109 GKN_Intranet



PPT Evid.110 Presentation_ClusterMeeting



Evid.85_EWF_FBewf_launchFinalFlyer



Evid.83_EWF_Lkdlnewf_EFFRA 2020



Evid.84_EWF_FBewf_launchFinalFlyer



Evid.85_EWF_FBewf_launchFinalFlyer

TITLE: WP7 Dissemination and Exploitation of Results

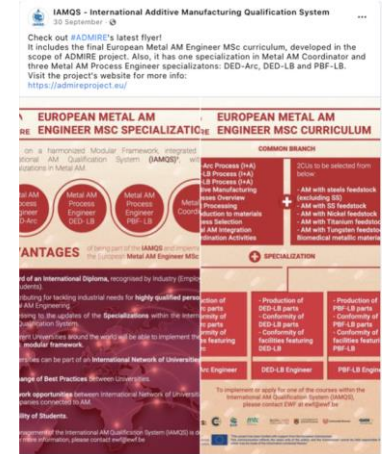
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Evid.83_EWF_Lkdlnewf_EFFRA 2020



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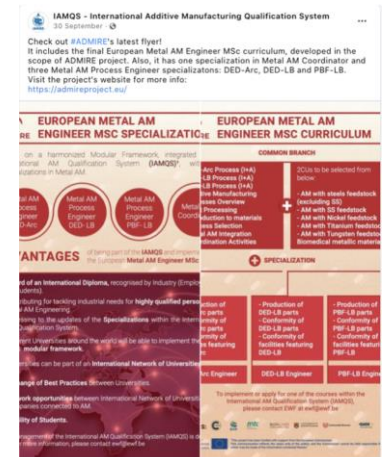
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Evid.83_EWF_Lkdlnewf_EFFRA 2020



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TITLE: WP7 Dissemination and Exploitation of Results

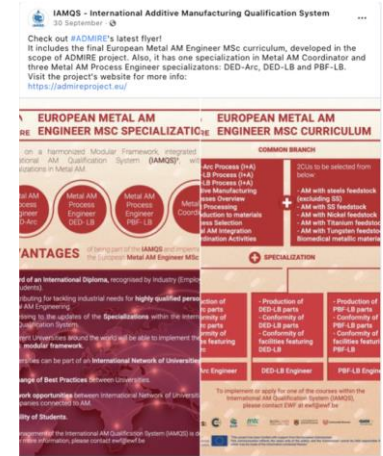
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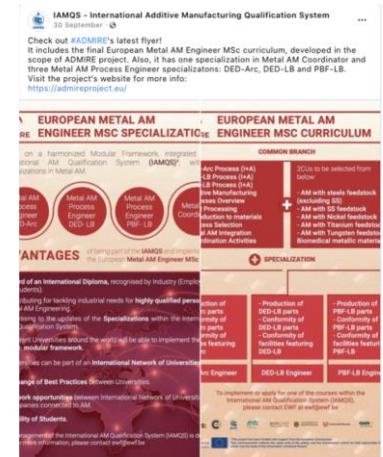
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Evid.83_EWF_Lkdlnewf_EFFRA 2020



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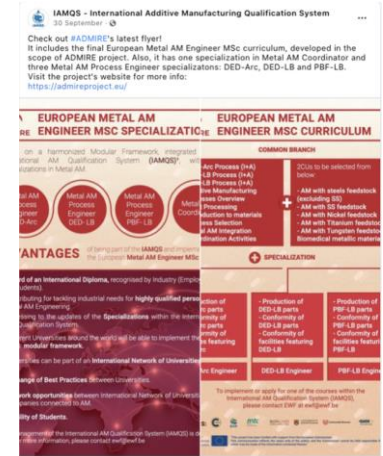
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Evid.83_EWF_Lkdlnewf_EFFRA 2020



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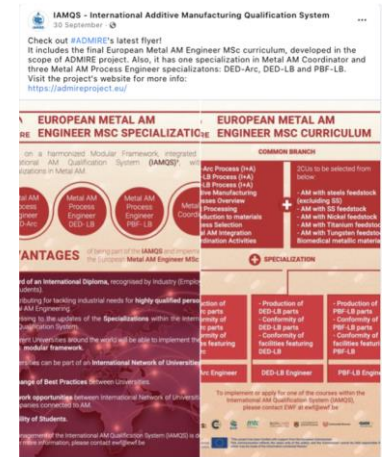
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Evid.83_EWF_Lkdlnewf_EFFRA 2020



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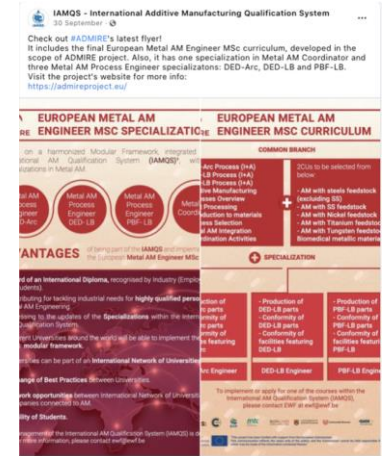
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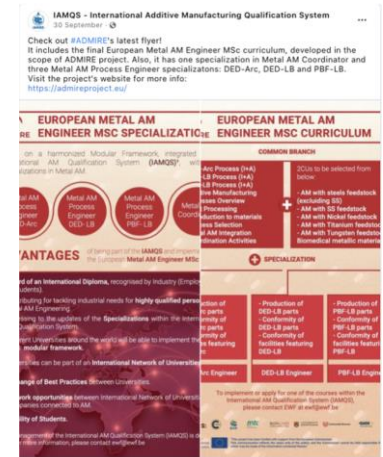
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Evid.83_EWF_Lkdlnewf_EFFRA 2020



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