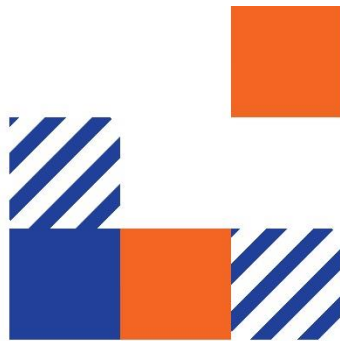




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of the European Union

Project title:

Creating know**L**edge and skill**L**s in **A**dditive **M**anufacturing



CLLAIM

Reference number:

2017-3309/591838-EPP-1-2017-1-ES-EPPKA2-SSA

Working Package 7

Working Package Leader EWF

Deliverable 7.6

Mid Term Conference & Evaluation



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Index

Index.....	3
Introduction.....	4
1. CLLAIM Mid Term Conference – TWI & LLOYDS (21 st July 2020).....	5
1.1 Invitation for the Event and the Agenda.....	5
1.2 CLLAIM project’s presentation	9
1.3 Mid Term Conference Evaluation.....	10
2. CLLAIM Mid Term Conference – CESOL & IDONIAL (29 th September 2020).....	12
2.1 Invitation for the Event and the Agenda.....	12
2.2 CLLAIM project’s presentation	17
2.3 Mid Term Conference Evaluation.....	18
3. CLLAIM Mid Term Conference – LZH Laser Akademie GmbH (1 st July 2019).....	19
3.1 Invitation for the Event and the Agenda.....	19
3.2 CLLAIM project’s presentation	21
3.3 Mid Term Conference Evaluation.....	23
4. CLLAIM Mid Term Conference – Fraunhofer IGCV (25 th September 2019)	24
4.1 Invitation for the Event and the Agenda.....	24
4.2 CLLAIM project’s presentation	27
4.3 Mid Term Conference Evaluation.....	29
5. CLLAIM Mid Term Conference – DVS German Welding Society (November 12 th , 2020)	32
5.1 Invitation for the Event and the Agenda.....	32
5.2 CLLAIM project’s presentation	38
5.3 Mid Term Conference Evaluation.....	40
6. CLLAIM Mid Term Conference – EWF (October 30 th , 2019)	43
6.1 Invitation for the Event and the Agenda	43
6.2 CLLAIM project’s presentation.....	47
6.3 Mid Term Conference Evaluation	47

Introduction

The aim of this document is to report the Mid Term Conference events which occurred in consortium countries during the project duration. The impact expected with those events will also be evaluated through a questionnaire applied to Participants. The results will be highlighted here, and the lessons learned will be applied in future events conducted by project Partners.

CLLAIM project fostered its dissemination across Consortium Countries through Mid Term Conferences held both presential and online. Due to covid 19 pandemic situation events that were scheduled for 2020 had to be held online, while all events held in 2019 were held presential.

In all events CLLAIM results were presented, with a special focus on the International AM Qualification System and CLLAIM Qualifications for the professional profiles of AM Operators, AM Designers, AM Inspectors and AM Supervisors.

During the project duration 5 Mid Term Conferences were held: 1 in Spain, 1 in Portugal, 2 in the UK and 3 in Germany. In total 188 participants joined the Conferences with representatives from industrial and educational sectors.

Overall feedback from the conferences was positive and participants were engaged in CLLAIM project activities and the International AM Qualification System.

1. CLLAIM Mid Term Conference – TWI & LLOYDS (21st July 2020)

1.1 Invitation for the Event and the Agenda

CLLAIM midterm conference on Metal Additive Manufacturing was an online event (due to covid) agenda and invitation to access our online event were distributed by email.

The CLLAIM midterm conference on Metal Additive Manufacturing was hosted and organised by LLOYDS and TWI. A total of 27 participants joined the event.

An introduction by TWI was presented to open the event, during this introduction the CLLAIM project was explained and the objectives of the project were discussed, during this presentation all the CLLAIM professional profiles were addressed.

During the following presentations an introduction to AM link to the CLLAIM project was delivered to then move to more specific topics on AM delivered by TWI and LLOYD'S experts on AM.

A couple of presentations on important AM topics were presented to address AM standards and requirements and the developments and use of Non-destructive testing on AM. This was done to raise participants awareness of AM and to introduce the topic of CLLAIM project.

To close the event, a presentation on the vision for the future of AM was presented, this presentation address the need of an International Harmonized Qualification System on AM and linked the CLLAIM project and profiles to the benefits for AM.

CLLAIM midterm conference on Metal Additive Manufacturing

21st July 2020
Online MS Teams

Agenda

09.00 – 09.30	Welcome and introduction CLLAIM presentation
09.30 – 10.00	Introduction to AM <i>Adrian Addison, TWI</i>
10.00 – 10.30	Fatigue of PBF-LB <i>Zhang Meng, Lloyd's Register</i>
10.30 – 11.00	Coffee break
11.00 – 11.30	Numerical modelling for AM <i>Valerio Carollo, TWI</i>
11.30 – 12.00	Certification of Wire Consumables <i>Adam Saxty, Lloyd's Register</i>
12.00 – 13.00	Lunch break
13.00 – 13.30	AM standards and requirements <i>David Hardacre, Lloyd's Register</i>
13.30 – 14.00	NDT of AM parts <i>Ian Cooper, TWI</i>
14.00 – 14.30	Coffee break
14.30 – 15.00	Vision for the future of AM <i>Adrian Addison, TWI</i>
15.00 – 15.30	Conference closure and feedback

Registration open now:

https://www.surveymonkey.co.uk/r/CLLAIM_ConferenceRegistration



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Figure 1 Agenda Mid Term Conference UK



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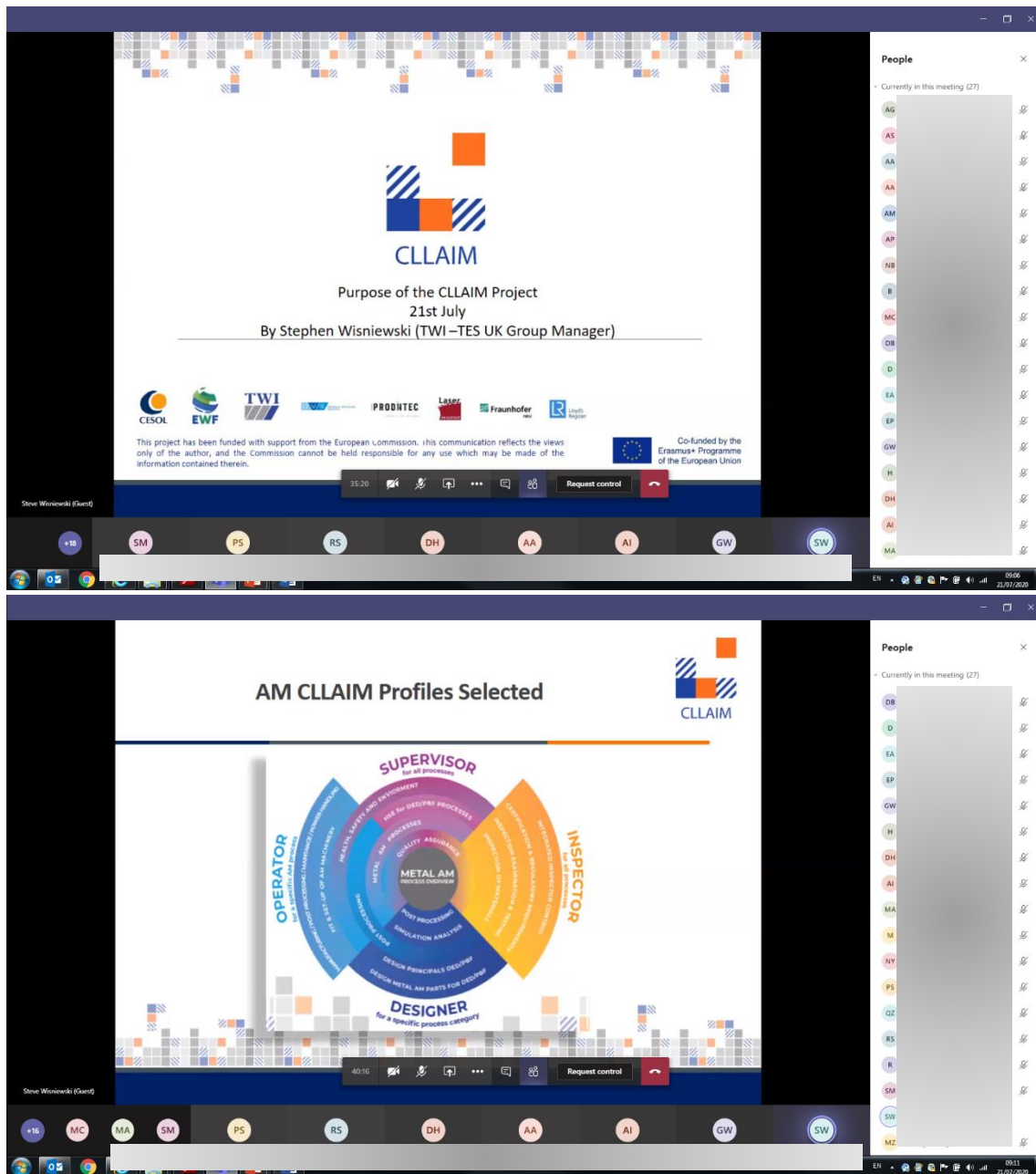


Figure 2 Attendance List Mid Term Conference UK

CLLAIM midterm conference on Metal Additive Manufacturing Lloyd's & TWI			18	Registered
Email address:			19	Attended
Answered	61		20	Registered
Skipped	0		21	Registered
Feedback_CLLAIMmidterm			22	Registered
			23	Registered
			24	Registered
Respondents	Responses	Tags	25	Registered
1 i		Registered	26 <td>Registered</td>	Registered
2 a		Registered	27 <td>Attended</td>	Attended
3 r		Registered	28 <td>Registered</td>	Registered
4 c		Attended	29 <td>Attended</td>	Attended
5 f		Registered	30 <td>Attended</td>	Attended
6 b		Attended	31 <td>Registered</td>	Registered
7 t		Attended	32 <td>Registered</td>	Registered
8 r		Registered	33 <td>Registered</td>	Registered
9 r		Attended	34 <td>Attended</td>	Attended
10 j		Registered	35 <td>Attended</td>	Attended
11 y		Registered	36 <td>Registered</td>	Registered
12 j		Registered	37 <td>Registered</td>	Registered
13 j		Registered	38 <td>Registered</td>	Registered
14 y		Attended	39 <td>Registered</td>	Registered
15 v		Registered	40 <td>Registered</td>	Registered
16 c		Attended	41 <td>Registered</td>	Registered
17 f		Attended	42 <td>Registered</td>	Registered
			43 <td>Attended</td>	Attended
			44	Registered
			45	Registered
			46	Registered
			47	Registered
			48	Attended
			49	Registered
			50	Registered
			51	Registered
			52	Registered
			53	Registered
			54	Registered
			55	Registered
			56	Registered
			57	Registered
			58	Registered
			59	Registered
			60	Registered
			61	Registered

Figure 3 Attendance List Mid Term Conference UK

1.2 CLLAIM project's presentation

The event was offered online and the access was given only by email invitations. The attendance was in average 20-30 people per presentation.

The first half an hour on the event was focus on introducing CLLAIM and talking in more detail about the qualification system and profiles.

To close the event, a 30 minutes presentation on the future of AM was given, in this presentation it was highlighted the profiles developed by CLLAIM partners and the importance of an International Qualification System on AM.

Presentation to open the event, welcome candidates and introduce the CLLAIM project was given by Alicia Gonzalez, project coordinator of CLLAIM, Senior Project Leader on the department of examinations and training services for TWI. See presentation attached (**'00 - CLLAIM midterm conference intro – AG'**)

Presentation to explain in detail the qualification system and profiles was given by Stephen Wisniewski, Group Manager for the department of Training and Examinations Services on TWI. See presentation attached (**'01 - CLLAIM Project Overview Steve Wisniewski'**)

Presentation on the vision for the future of AM and the roles and activities in AM through CLLAIM was given by Adrian Addison, programme manager on AM and supporting technologies in TWI. See presentation attached (**'08 - Vision for the future of AM'**).

Please have a look at the presentations attached:

'00 - CLLAIM midterm conference intro



00 - CLLAIM midterm
conference intro.pdf

'01 - CLLAIM Project Overview



01 - CLLAIM Project
Overview.pdf

'08 - Vision for the future of AM'



08 - Vision for the
future of AM.pdf



1.3 Mid Term Conference Evaluation

A specific questionnaire was passed along the participants in order to assess the quality of the event.

Feedback from 19 attendees. The evaluation was provided online via survey Monkey, in general the feedback was very good we scored 3.5 out of 4 for all questions and received good comments from the event.

Individual evaluations can be found on WP07

Attendee feedback - CLLAIM midterm conference on metal AM

Attendee feedback - CLLAIM midterm conference on metal AM

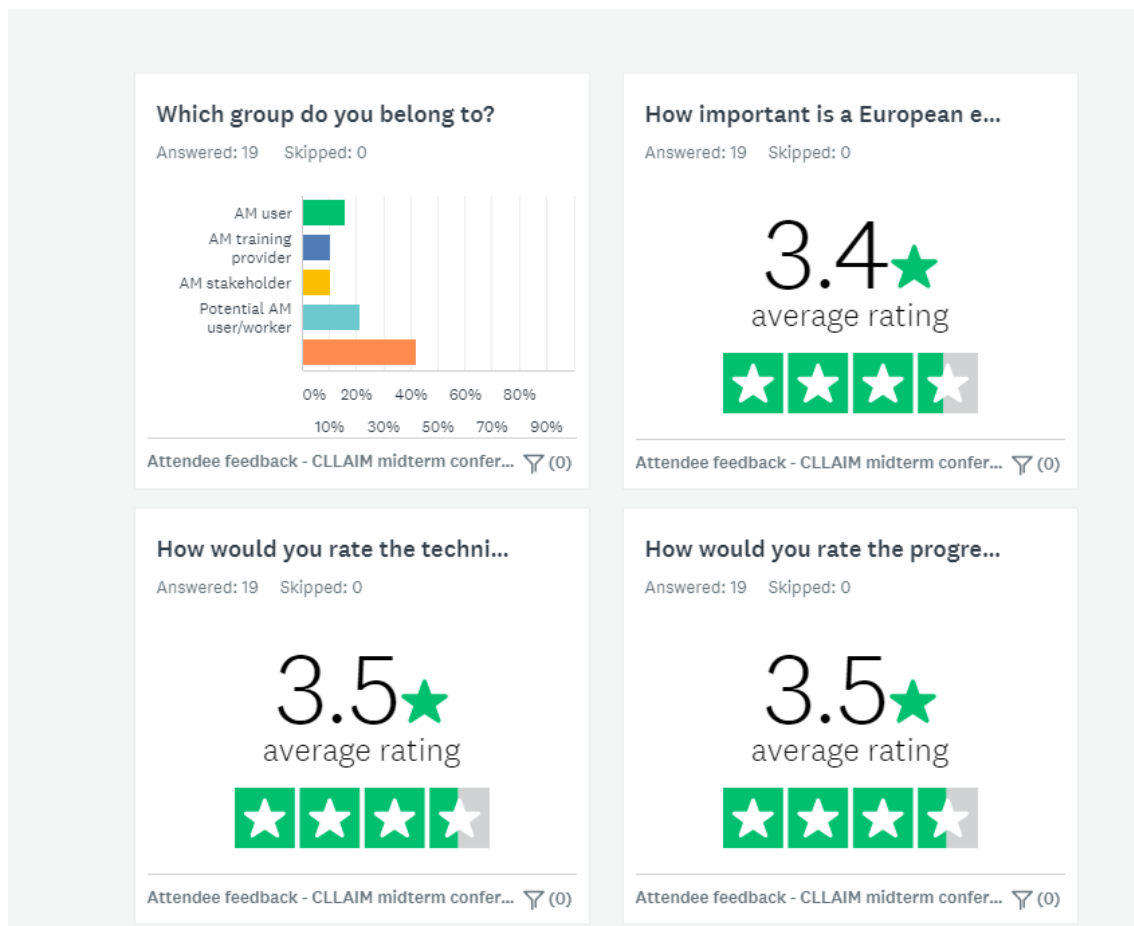


Figure 4 Feedback Questionnaire Mid Term Conference UK

Attendee feedback - CLLAIM midterm conference on metal AM

Do you have suggestions for improvement or notes for the team?

Answered: 7 Skipped: 12

Thank you for sharing the slides Just wondering gif can have access to recordings of the presentation? Thanks Hossein

Thanks for organizing this webinar, it was interesting. Maybe the next webinars could be more thematic, e.g. focused on NDT for AM or application examples, etc.

Thank you for the organisation, it worked out really well. I unfortunately had to leave the conference to attend meetings, but I rejoined successfully and it was very straight forward Project very interesting

A good conference where detail was presented on key questions regarding the technical roadmap. A future challenge for AM is the challenging application areas and the required certification. This is the problem of everybody in AM. Fatigue limitations will need definition and demonstration. These tend to be time limited so getting started on a demonstration is key.

Proper breaks (coffee & lunch) were great during the webinar

Overall the presenters and presentations for both the AM Inspector Training CU's and the Conference were good to very good. If I had to be critical at all it would be 1. The colours used in the slides. Soft colours in the text did not stand out well and made them difficult to read. 2. Crowding one slide with text, rather than using two slides, also did not make for easy reading. You can appreciate that we were not viewing in full-screen because areas like the chat window were on view. If I can make the the time available I would like to assist where despite my lack of experience, this may also be an advantage, I can be of use. My untrained eye may very well bring things down to a level where a newbie can more easily understand what is being delivered.

Great results and well presented.

Attendee feedback - CLLAIM midterm conference on metal AM

🗑️ (0)

Figure 5 Participants Feedback Mid Term Conference UK

2. CLLAIM Mid Term Conference – CESOL & IDONIAL (29th September 2020)

2.1 Invitation for the Event and the Agenda

CLLAIM Midterm Conference on Metal Additive Manufacturing in Spain was an online event (due to Covid-19 measures) agenda and invitation to access our online event were distributed by email to all the registered attendees.

The CLLAIM midterm conference on Metal Additive Manufacturing was hosted and organised by CESOL and IDONIAL. A total of 40 people participated in the Conference.

To open the event, CESOL conducted a presentation of the CLLAIM project as well as the main objectives that have been achieved, such as the different profiles and qualifications developed.

Following the presentation of CLLAIM project, an overview of the needs of industrialisation in Additive Manufacturing was provided by Lloyd's Register, in addition to qualified personnel and the corresponding application standards.

The event continued with a presentation by the EWF explaining the importance of International Qualification Systems, based on the qualification guidelines and profiles (Designer, Operator, Inspector and Supervisor) developed during the project.

Finally, presentations were made to get to know the real vision of a company (ACITURRI AM) that is dedicated to Additive Manufacturing, explaining the work they do with the possibilities offered by this new manufacturing method. In addition to this presentation, IDONIAL explained the necessary skills that may arise in the future within the field of Additive Manufacturing together with the qualifications and profiles developed in the project.

To close the event, CESOL conducted a conference closure in which a round of questions was asked to resolve any doubts that may have arisen from attendees at the event.

CLLAIM Midterm Conference on Metal Additive Manufacturing

29th September 2020

Due to the COVID measures applied, the event will be held fully
online, via Microsoft Teams

Registration open now:

<https://cesol.es/formuMidTerm.html>

Agenda

09:30 – 10:00	Welcome and introduction CLLAIM presentation (CESOL)
10:00 – 10:20	Additive Manufacturing industrialization: qualified personnel, AM standards, etc. (Lloyd's Register)
10:20 – 10:50	The importance of an International Qualification System (guidelines, profiles, etc.) (EWF)
10:50 – 11:10	The view of a company (ACITURRI AM)
11:10 – 11:40	Future in Additive Manufacturing Technologies: tracking the needed skills (IDONIAL)
11:40 – 12:00	Conference closure (CESOL)

One week before the event, you will receive the invitations via email to
access through Microsoft Teams.



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Figure 6 Agenda Mid Term Conference Spain



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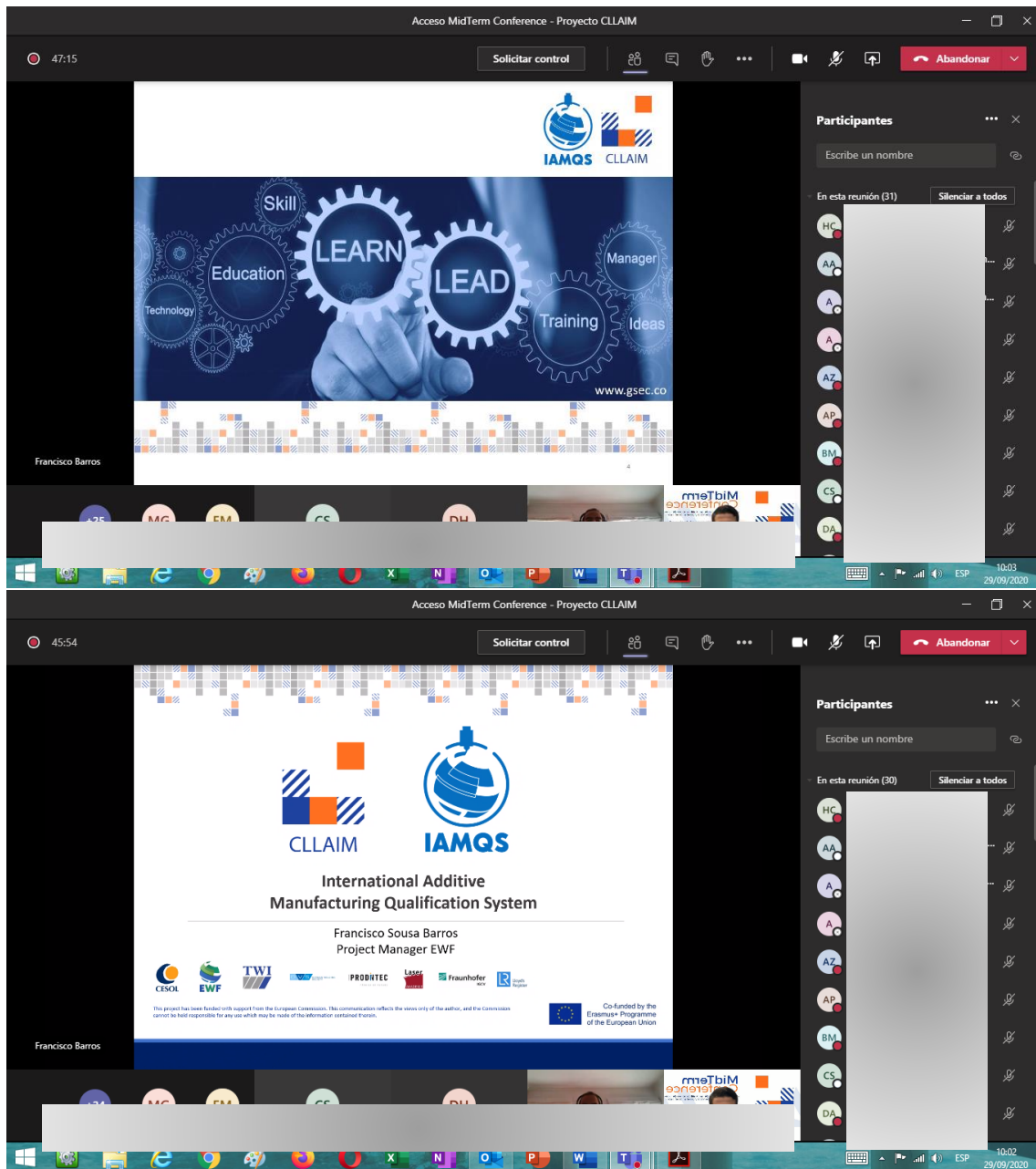


Figure 7 Attendance List Mid Term Conference Spain

B	D	E
CLLAIM MIDTERM CONFERENCE		
	EMAIL	ATTENDANCE
1		YES
2		YES
3		YES
4		
5		YES
6		YES
7		
8		YES
9		YES
10		YES
11		YES
12		
13		YES
14		YES
15		
16		
17		
18		YES
19		YES
20		YES

B	D	E
21		YES
22		YES
23		
24		
25		YES
26		YES
27		
28		YES
29		YES
30		YES
31		YES
32		YES
33		
34		YES
35		YES
36		YES
37		
38		
39		YES
40		

B	D	E	
40			
41		YES	
42			
43			
44		YES	
45			
46			
47			
48		YES	
49		m	
50			
51		YES	
52		YES	
53		YES	
54		YES	
55		YES	
56		YES	
57		YES	
58		YES	
59		YES	
60		YES	
61		YES	

Figure 8 Attendance List Mid Term Conference Spain

2.2 CLLAIM project's presentation

The event was conducted online, and the access was given only by email invitations from the registrations obtained. The attendance was in average 28-35 people per presentation.

The first half an hour on the event was focus on introducing CLLAIM and reviewing the qualifications and profiles developed in the project.

During the following presentations, the objectives achieved in the project continued to be related to standards, qualifications and industry needs in the future of Additive Manufacturing.

To conclude the event, the attendees asked some questions related to the profiles developed and their influence on the industry.

To start the event, a welcome was given to all the attendees thanking them for their participation and their desire to be part of the conference, by Fernando Mañas, General Director of CESOL.

Presentation to explain in detail the qualifications and profiles developed during the project with the roles of each project partner in its development, by Héctor Carballo, Coordinator of the CLLAIM project and responsible for R&D projects at CESOL.

The presentations of the Conference can be found on the following attachments:



CLLAIM_Mid Term
Conference Spain_IAN



Proyecto CLLAIM.pdf



CLLAIM_MidTerm ES
Conference.pdf



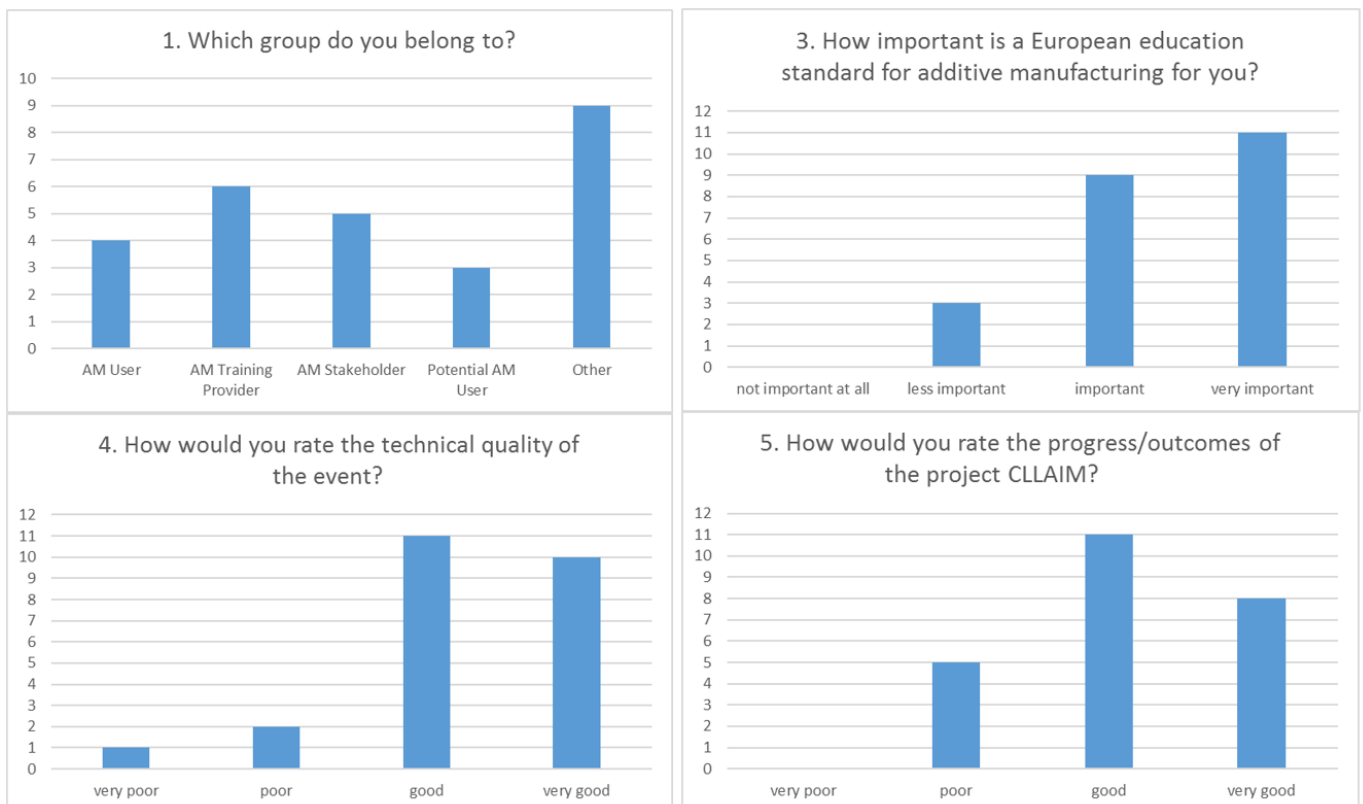
CLLAIM ES Midterm
Conference - Standard

2.3 Mid Term Conference Evaluation

A specific questionnaire was passed along the participants in order to assess the quality of the event.

Feedback was collected from 24 attendees. The evaluation of the Mid Term Conference was sent and carried out through Microsoft Forms, obtaining in general very good feedback with a score of 4.2 out of 5 in the questions asked.

Individual evaluations can be found on WP07.



3. CLLAIM Mid Term Conference – LZH Laser Akademie GmbH (1st July 2019)

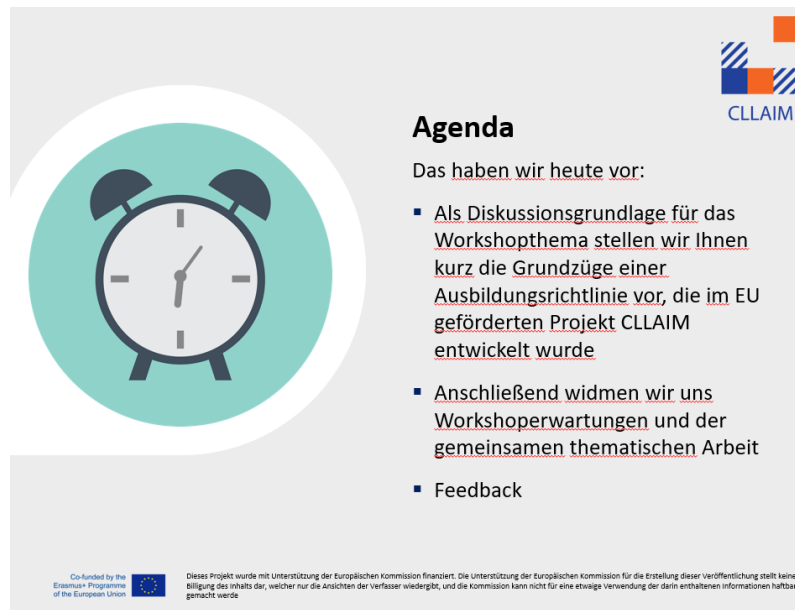
3.1 Invitation for the Event and the Agenda

LZH Laser Akademie GmbH hold a German CLLAIM Mid Term Conference in combination with a workshop on qualifications in Additive Manufacturing (AM) on 1st July 2019 in Hannover. To promote the event, the workshop invitation was sent via email to known contacts. Furthermore, there were online news articles with the invitation on the homepages of LZH Laser Akademie, of PhotonicNet (innovation network for optical technologies) and of the IHK (Industrie- und Handelskammer, engl.: CCI, Chamber of Commerce and Industry). The invitation was also shared on the social network XING.

The CLLAIM workshop (Mid Term Conference) started in the afternoon after another event on Additive Manufacturing (AM) where the participants could gather insights in different methods of AM and an overview of the current status of education in AM in Germany. The agenda for the workshop event was prepared without given timeslots to be flexible in the workshop. As a basis for discussion, a short introduction was given into the objectives of the CLLAIM project (the project itself was presented in the event in the morning) and the status and content of guidelines and professional profiles developed within CLLAIM project. Next, the discussion with all participants started on expected. Topics were educational standards for Additive Manufacturing, defining key qualifications and requirements for now, in 6 months and in 2 years and to think about the most important challenges of AM (vocational) education and training. The workshop was finished with giving feedback and an evaluation of the workshop by the participants.

An image of the agenda is attached below.





Agenda

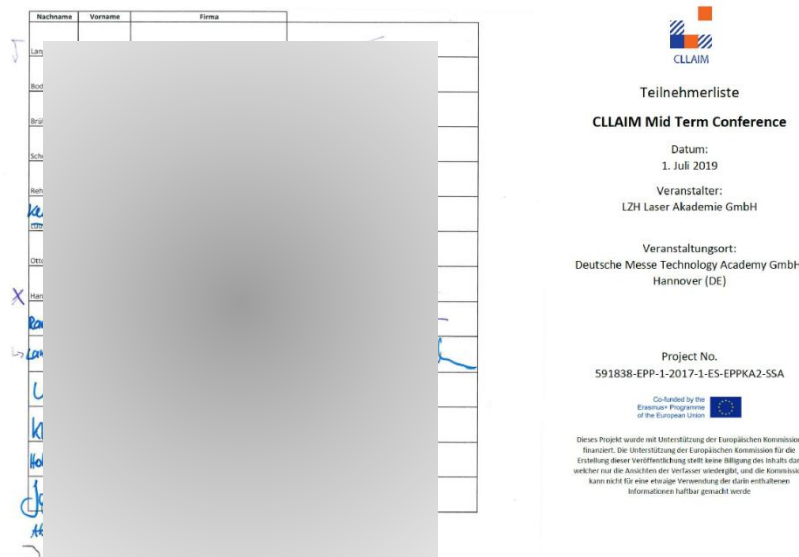
Das haben wir heute vor:

- Als Diskussionsgrundlage für das Workshopthema stellen wir Ihnen kurz die Grundzüge einer Ausbildungsrichtlinie vor, die im EU geförderten Projekt CLLAIM entwickelt wurde
- Anschließend widmen wir uns Workshopervartungen und der gemeinsamen thematischen Arbeit
- Feedback

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Figure 9 Agenda of the CLLAIM Mid Term Conference of LZH Laser Akademie GmbH

About 13 people from industry, VETs, stakeholders and decision makers joined the CLLAIM Mid Term Conference of LZH Laser Akademie on 1st July 2019. The event attendance list can be seen below.



Nachname	Vorname	Firma
Jan		
Ben		
Brig		
Sch		
Ben		
Ka		
Mu		
Dir		
X Han		
Lo		
Ca		
U		
Ki		
Ho		
Gl		
At		

Teilnehmerliste
CLLAIM Mid Term Conference

Datum:
1. Juli 2019

Veranstalter:
LZH Laser Akademie GmbH

Veranstaltungsort:
Deutsche Messe Technology Academy GmbH,
Hannover (DE)

Project No.
591838-EPP-1-2017-1-ES-EPPKA2-SSA

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Figure 10 Event Attendance List of CLLAIM Mid Term Conference of LZH Laser Akademie GmbH

3.2 CLLAIM project's presentation

The Mid Term Conference in Germany, organized by LZH Laser Akademie, took place on 1st July 2019 in Hannover, at Deutsche Messe Technology Academy GmbH, Pavillon 36. It was integrated into an event on vocational education and training in AM (“Additive Fertigung: Qualifizierung und berufliche Bildung”) launched by the German project “Niedersachsen Additiv – Zentrum für Additive Fertigung” that started in the morning.

In the afternoon, there was a CLLAIM workshop session (13:30 – 16:00 CET) on qualification of professionals in Additive Manufacturing. AM specialists and trainers as well as managers of small and medium-sized companies from Hannover and the surrounding area were invited to discuss how training standards in AM should look like and which current and future requirements AM workers have to face up to. In this workshop session, Ilka Zajons gave an overview on the status and some content of the CLLAIM guidelines and professional profiles and directed the following discussion with the attendees of the workshop on qualification in Additive Manufacturing. Ilka Zajons is Prokuristin (authorised officer) of LZH Laser Akademie GmbH. 13 participants signed the list of attendance. The German slides of the presentation are attached and Pictures of the presentation, the participants and the results of the CLLAIM Mid Term Conference of LZH Laser Akademie can be seen below.



Clclaim_WP7_Midter _CLLAIM_2019-07-0 Clclaim_WP7_Midter
m conference_2019- 1_LAK_Midterm Coni m conference_2019-



Figure 11 Pictures of the presentation and participants of the CLLAIM Mid Term Conference

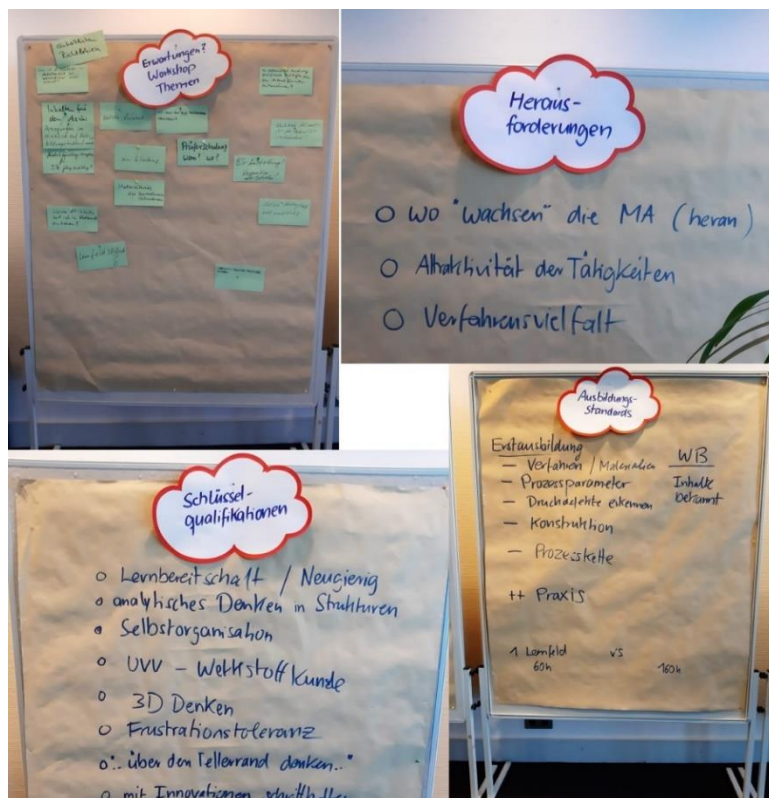


Figure 12 Pictures of the results of the CLLAIM Mid Term Conference discussion of LZH Akademie

3.3 Mid Term Conference Evaluation

To evaluate the quality of the Mid Term conferences, a questionnaire was prepared by the CLLAIM consortium. The questionnaire was given to the participants after the information event and the workshop. 12 filled out questionnaires were handed in. The first question asked to which group the participants belong to. 9 participants said they are AM training providers, 2 said, they are AM users, one didn't tick a box, one added that he is also a Master's student for mechanical engineering. All participants joined the German conference, one ticked also the boxes for Portugal and Spain. None of the participants wrote further suggestions for improvements or notes for the team on the evaluation sheet.

Asked about their opinion on the importance of a European education standard for additive manufacturing, 6 participants stated, that it is important for them, 3 stated it is very important and 3 stated, it is less important. 8 of the participants rated the technical quality of the event as "good", 3 rated it as "very good" and 1 participant rated it as "poor". The progress and outcomes of the CLLAIM project were rated as "good" by 6 participants and as "very good" by 3 participants. One rated it as "poor" and noted, he hasn't had heard about CLLAIM project before, two further participants didn't tick a box. In conclusion, all participants came from Germany, and were AM training providers or AM users. The majority of the participants (6 out of 12) said that a European standard for additive manufacturing is "important" for them and rated the technical quality of the event as "good" (8 of 12) and the progress / outcomes of the CLLAIM project also as "good" (6 of 12). As a recommendation, the visibility of CLLAIM project in Germany should be enhanced.



_CLLAIM_2019-07-0
1_LAK_Midterm Cont



4. CLLAIM Mid Term Conference – Fraunhofer IGCV (25th September 2019)

4.1 Invitation for the Event and the Agenda


On 25th September 2019, Fraunhofer IGCV held a German CLLAIM Mid Term Conference in Augsburg in combination with a workshop on perspectives of additive manufacturing (AM) and further education in this field. To promote the event, the workshop invitation was sent by e-mail to well-known contacts. In addition, there were online news articles with the invitation on the homepages of Fraunhofer IGCV.

The CLLAIM (Mid Term Conference) workshop started in the morning. The CLLAIM workshop illuminated the perspectives of additive manufacturing regarding the reproducibility of established AM processes and the state of further education in the field of AM in Germany.

The basis for discussion was a brief introduction to the objectives of the CLLAIM project as well as the status and content of guidelines and occupational profiles developed within the CLLAIM project. Subsequently the topics were discussed with all participants. The topics included educational standards for additive manufacturing, the definition of key qualifications and educational requirements in the field of AM for now and in the future. The workshop was concluded with feedback and an evaluation by the participants.

The pictures of the agenda are attached below.

Aktuelle Forschungsprojekte IGCV
Weiterbildung in der additiven Fertigung





Projektziel:
Entwicklung eines standardisierten Ausbildungssystems innerhalb der EU für eine Fachkraft für additive Fertigung mit den vier Profilen:

- Operator (Anlagenbediener/in),
- Designer (Konstrukteur/in),
- Specialist („Aufseher/in“) und
- Inspector (Qualitätskontrolleur/in).

Laufende Aktivitäten:

- Vorbereitungen für internationale Standardisierung (ISO-Ebene)
- Regelmäßige internationale Workshops mit Fachkräften aus ganz Europa (> 30 Teilnehmer)
- Vorbereitung eines Pilot-Trainings auf nationaler Ebene
Ab Februar 2020: Durchführung von Pilot-Trainings

Aufnahme aus dem ersten EU-weiten Workshop

Seite 21
 © Fraunhofer-Einrichtung für Gießerei-, Composite- und Verarbeitungstechnik IGCV






Figure 13 Agenda FhG Mid Term Conference



Figure 14 Agenda FhG Mid Term Conference

Around 19 people from industry and decision-makers took part in the CLLAIM Mid Term Conference at Fraunhofer IGCV on 25th September 2019. The list of the participants and photos of the event can be seen below.



VERTRAULICH

Anmeldungen 23. Augsburger Seminar für Additive Fertigung 25. September 2019

	Titel	Anrede	Vorname	Nachname	Email	Firma	Abteilung	Straße	Postleitzahl	Ort
Pro										
Dr.										
Dr.										
Dr.										
Dr.										
Pro										
Dr.										
Dr.										
Dr.										

Figure 15 Attendance List of the CLLAIM Mid Term Conference of Fraunhofer IGCV

4.2 CLLAIM project's presentation

The Mid Term Conference in Germany, organized by Fraunhofer IGCV, took place on 25th September 2019 in Augsburg, at Messe Augsburg. It was launched with an event about the perspectives of additive manufacturing: reproducibility and new technologies in the morning (09:00 - 10:10).

AM specialists and trainers as well as managers of small and medium-sized enterprises were invited to discuss how training standards should look like in the field of AM and what current and future requirements AM employees must fulfill. During the workshop, Prof. Dr.-Ing. Christian Seidel gave an overview of the status quo of the project and the contents of the CLLAIM guidelines. He explained the occupational profiles and led the following discussion with the participants of the workshop on qualifications in the field of additive manufacturing. Simone Dietrich also presented and promoted the CLLAIM project in the hall within the day. The German slides of the presentation are attached as follows:



05_Keynote_AM-Seminar_2019_Presentation

Pictures of the workshop and the trade fair stand can be seen below.





Figure 16 Pictures of the presentation and participants of the CLLAIM Mid Term Conference

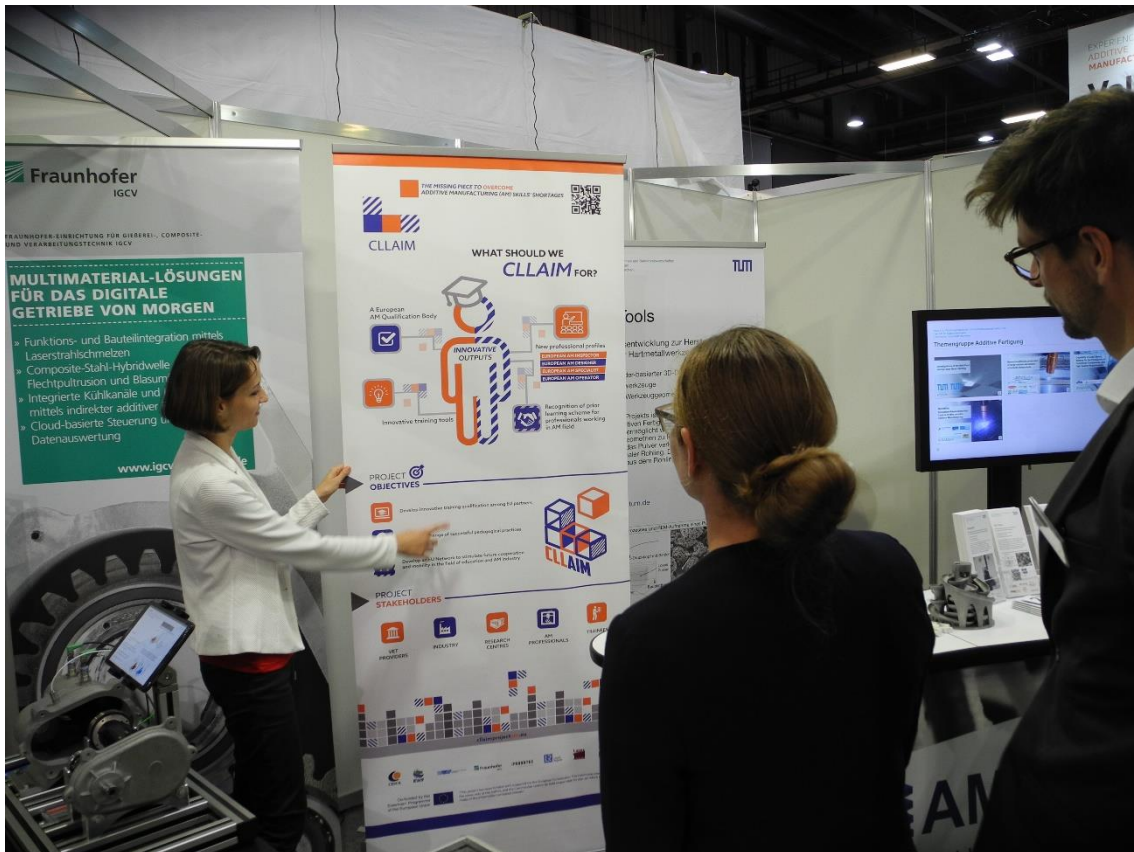
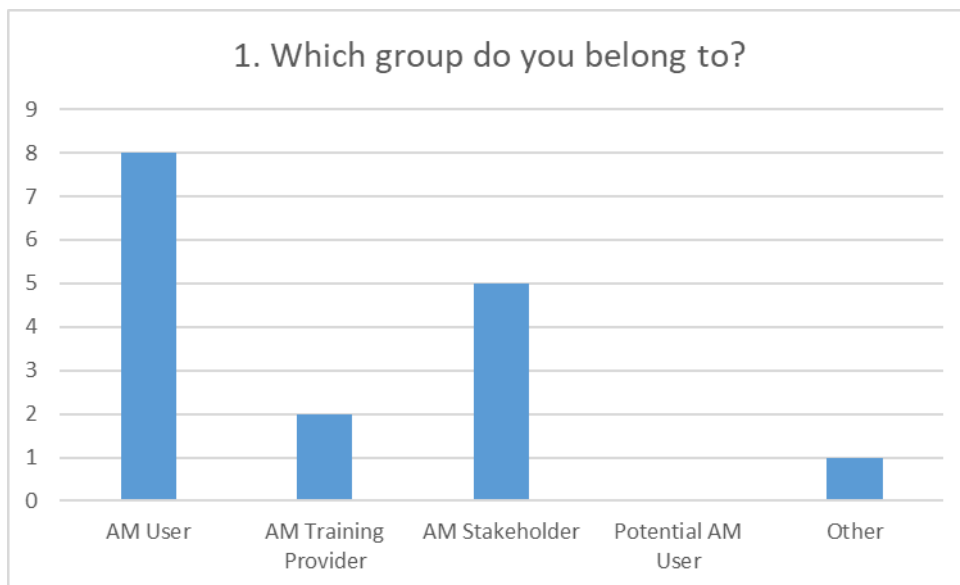


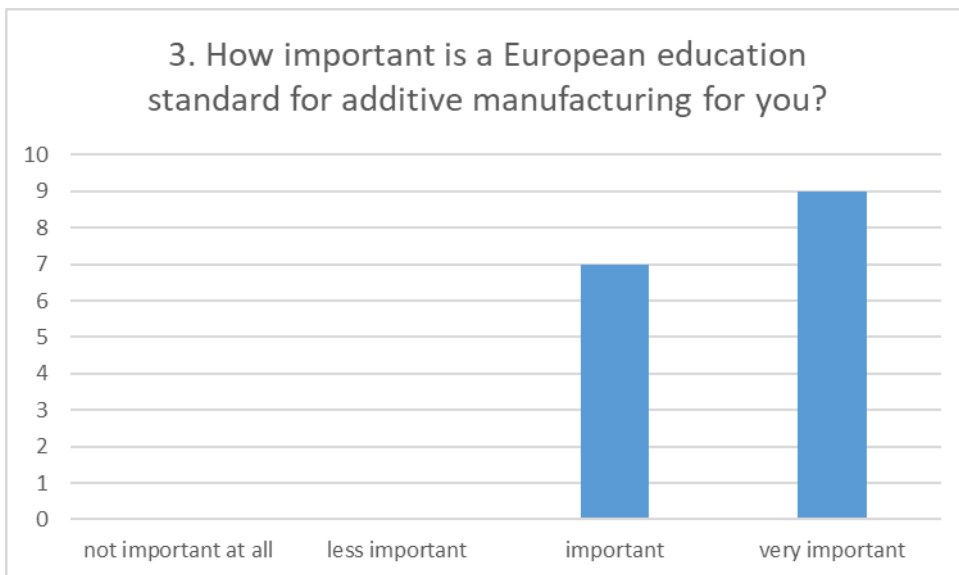
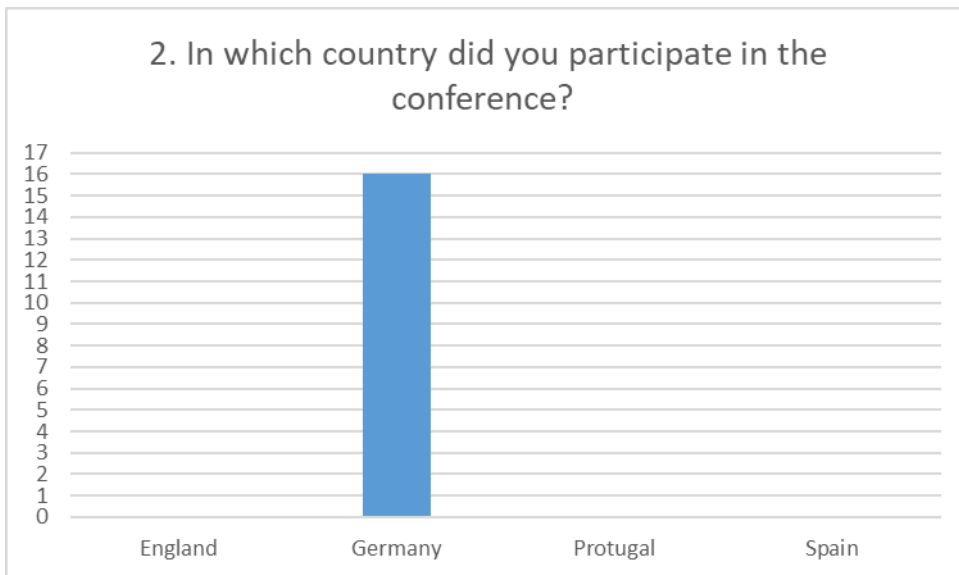
Figure 17 Pictures of the presentation of the CLLAIM-Project in the hall of the Messe Augsburg

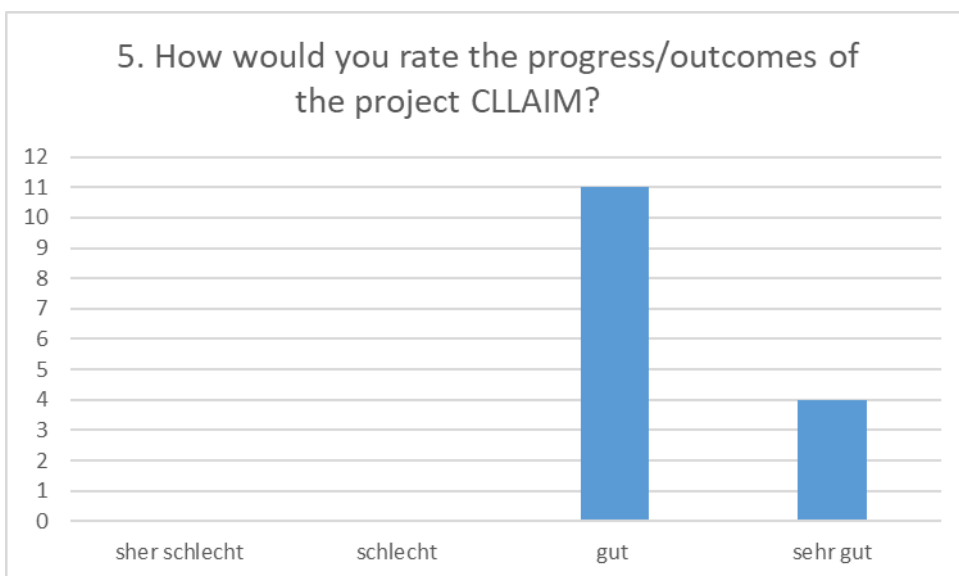
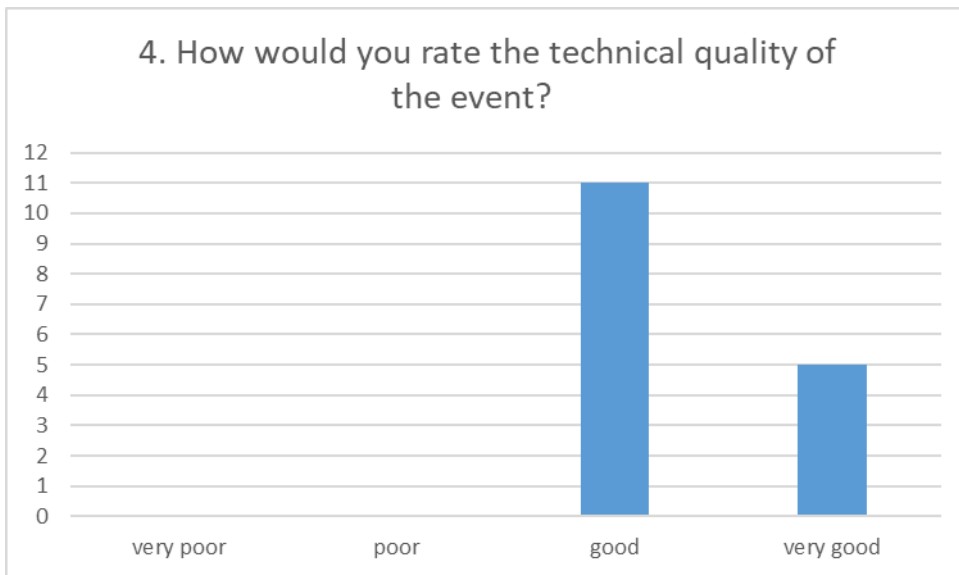
4.3 Mid Term Conference Evaluation

In order to assess the quality of the mid-term conferences, a questionnaire was prepared by the CLLAIM consortium. The questionnaire will be handed over to the participants after the information event and the workshop. 16 questionnaires were submitted. The compilation of the results can be found below. All participants were from Germany.

When asked what they thought about the importance of a European educational standard for additive manufacturing, participants said they were between "important" and "very important." The technical quality of the event was rated as "good" on average, 3.3. The progress and results of the CLLAIM project were rated as "good" 3.3 on average. As a recommendation, the visibility of the CLLAIM project in Germany should be strengthened and improvements should be made in the area of hospitality.







5. CLLAIM Mid Term Conference – DVS German Welding Society (November 12th, 2020)

5.1 Invitation for the Event and the Agenda

The event was held at the Schweißtechnische Lehr- und Versuchsanstalt (SLV Halle GmbH) in Halle as a face to face meeting. The centre for generative joining was opened, which concerns itself with the Directed Energy Deposition – Laser Beam and Arc (DED-LB and Arc) Technology. For DED-Arc the following term is also used as a synonym Wire and Arc Additive Manufacturing (WAAM). The participants were invited to the opening ceremony and the midterm conference via e-mail.



Home > Artikel > Feierliche Eröffnung des Zentrums für Generatives Fügen (ZGF)



Sie interessieren sich für Neuigkeiten aus dem DVS-Verband oder seinen Tochtergesellschaften? Dann orientieren Sie sich einfach am Logo der DVS-Group. Alle Artikel mit diesem Logo haben inhaltlich einen direkten Bezug zum DVS oder zu mit ihm verwandten Unternehmen.



Figure 18 Grand opening of the centre for generative joining (ZGF)

In the following some machines and applications of the SLV Halle are presented.



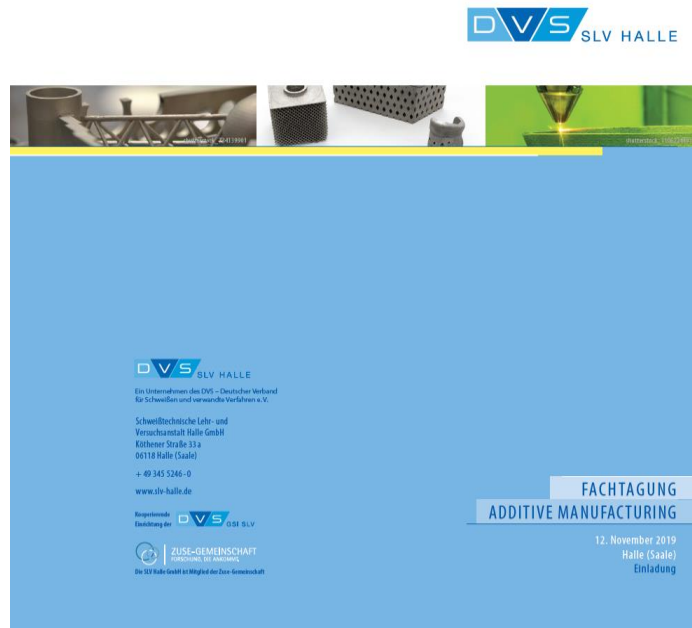
Current Investment Project in SLV Halle

Equipment
(Status
12/2019)



Subtractive
5 axes
Machining
Milling

Additive
Manufacturing
WAAM



DVS SLV HALLE		MONTAG, 11. NOVEMBER 2019		DIENSTAG, 12. NOVEMBER 2019	
<p>Sehr geehrte Damen und Herren,</p> <p>die Schweißtechnische Lehr- und Versuchsanstalt Halle GmbH wird am 12. November 2019 die</p> <p>Fachtagung „Additive Manufacturing“ durchführen.</p> <p>Die Additive Fertigung (AM) ist ein neuer Wirtschaftszweig, der mit seiner gesamten Wertschöpfungskette in viele Branchen ausstrahlt. Dies beinhaltet neue Herstellungsprozesse und Maschinen und reicht von der Werkstoffentwicklung über die Kleinteilfertigung bis hin zum Anlagenbau. Die durch AM mögliche Konstruktionsvielfalt wird an Kunststoffen, aber auch an Metallen praktiziert.</p> <p>Deutsche Firmen zählen zu den Schrittmachern dieser Entwicklung. Die prinzipielle Verfügbarkeit AM-gelieferter Bauteile wird bereits heute durch spezialisierte Dienstleister gewährleistet.</p> <p>Die Frage „Wofür ist der Einsatz Additiver Fertigungsverfahren in meinem Betrieb sinnvoll?“ kann von den Unternehmen oftmals nur deshalb nicht beantwortet werden, weil Informationen zu Möglichkeiten, Regeln und Grenzen der Verfahren fehlen.</p> <p>Deshalb sollen Informationslücken geschlossen und der Erfahrungsaustausch initiiert werden.</p> <p>Dabei werden Fügetechnologien des drahtbasierten Schweißens mittels Lichtbogen (WAAM) und Laser (WLAM) einen Schwerpunkt bilden. Neben den Anforderungen an die Prozessplanung (CAD-CAM-CNC) sind Prozesskontrolle und Qualitätssicherung, aber auch die begleitende Normung und die Ausbildung von Personal Themen des Programms.</p> <p>Vorführungen zu den Verfahren WAAM und WLAM in dem neu gestalteten Labor für AM und Lasertechnologie der SLV Halle runden die Veranstaltung ab.</p> <p>Wir laden Sie herzlich zum Gedankenaustausch nach Halle (Saale) ein!</p> <p><i>Roband Boecking</i> Dr.-Ing. Roband Boecking Hauptgeschäftsführer DVS – Deutscher Verband für Schweißen und verwandte Verfahren e. V.</p> <p><i>Steffen Kettel</i> Prof. Dr.-Ing. Steffen Kettel Geschäftsführer SLV Halle GmbH</p>	<p>17.00 Uhr - Vorabendtreffen und gleichzeitig Eröffnungsfeier des Zentrums Generatives Fügen in der SLV Halle GmbH</p>	<p>12.10 Uhr Leistungssteigerung des WAAM-Verfahrens durch effektive Kühlung und Mehrdrahttechnik Prof. Dr.-Ing. Uwe Reisinger, Lucas Oster, Samuel Mann, Rahul Sharma, RWTH Aachen University</p>	<p>12.10 Uhr</p>	<p>12.10 Uhr</p>	<p>12.10 Uhr</p>
	<p>08.00 Uhr Anmeldung der Tagungsteilnehmer</p> <p>09.00 Uhr Eröffnung der Fachtagung Prof. Dr.-Ing. Steffen Kettel Geschäftsführer der SLV Halle GmbH</p> <p>09.10 Uhr Aktuelle Entwicklungen im Bereich der Additiven Fertigung für metallische Komponenten Dr.-Ing. Simon Jahn, Sebastian Matthes, Daniel Scheller, Miriam Huber, Günter-Köhler-Institut für Fügetechnik und Werkstoffprüfung GmbH, Jena</p> <p>09.40 Uhr Industrialisierung der Additiven Fertigung - Effektivität und Sicherheit durch eine durchgängige Prozesskette Helmut Zeyn, Siemens Industry Software GmbH, Hamburg</p> <p>10.10 Uhr Aus- und Weiterbildung von Personal in der Additiven Fertigung im DVS Marvin Keinert, DVS – Deutscher Verband für Schweißen und verwandte Verfahren e. V., Düsseldorf</p> <p>10.40 Uhr Herstellung von topologieoptimierten Tragwerksnoten mittels Lichtbogenbasierter, Additiver Fertigung mit MSG-Schweißprozessen Jan Reimann, Philipp Henckel, Yarop Ali, Stefan Hammer, Dr.-Ing. Jörg Hildebrand, Prof. Dr.-Ing. habil. Jean Pierre Bergmann, Technische Universität Ilmenau</p> <p>11.10 Uhr Kaffeepause</p> <p>11.40 Uhr Stand Übersicht nationale und internationale Normung im Bereich Additiver Fertigung – Schwerpunkt DED-Verfahren Holger Krüger, DahmsConsult, Buxtehude</p>	<p>12.40 Uhr Offline-Programmierung für Additive Manufacturing Andreas Schroeder, S.K.M. Informatik GmbH, Schwerin</p> <p>13.10 Uhr Mittagspause</p> <p>14.10 Uhr Simulation & Additive Fertigung – Leichtbaupotenziale nutzen durch innovative Technologien Andreas Veitz, CADFEM GmbH, Chemnitz</p> <p>14.40 Uhr Additives Metallschutzgasschweißen von Duplexwerkstoffen Benjamin Wittig, Prof. Dr.-Ing. Sven Jüttner, Otto-von-Guericke-Universität Magdeburg</p> <p>15.10 Uhr Herstellung und Qualifizierung von Anschlussstrukturen mittels formgebendem Schweißen Falk Häschel, Häschel Metalltechnik GmbH & Co. KG, Ingenieurbüro + Schweißfachbetrieb, Heidenau; Dr.-Ing. Bernd Kranz, Andreas Ehrlich, SLV Halle GmbH</p> <p>15.40 Uhr Kaffeepause</p> <p>16.10 Uhr Laserdrahtauftragschweißen – Anwendungen, Werkstoffe, Prozessregelung Dr.-Ing. Michael Schnick, Dr.-Ing. Frank Silze, OSCAR PLT GmbH, Klipphausen; Dr.-Ing. Ekehard Hensel, ALOTec Dresden GmbH</p> <p>16.40 Uhr</p> <p>EM-BeSt: Elektromagnetische Messmethode zur in-line Messung von remanenter Spannung oder Microrisse in den Lagen bei der Metall Additiven Fertigung mit dem Ziel der Vorbeugung von Fertigungsfehlern Hauke Springer, Springer New Technologies GmbH, Bad Wildbad; John Hansen, EtherNDE Limited, UK</p> <p>17.10 Uhr</p> <p>Schlusswort Prof. Dr.-Ing. Steffen Kettel Geschäftsführer der SLV Halle GmbH</p>	<p>PROGRAMM</p>	<p>PROGRAMM</p>	

Figure 20 Agenda DVS Mid Term Conference

1. Fachtagung Additive Manufacturing

Nachname, Vorname	Firma	Ort
R		
R		
S		
S		
S		
S		
S		
S		
S		
S		
S		
S		
T		
V		
V		
V		
V		
V		
V		
Z		
Z		
Z		

Figure 21 Attendance List DVS Mid term Conference

5.2 CLLAIM project's presentation

58 people from industrial companies, training centres and universities participated in the event on additive manufacturing. The lecture on the CLLAIM project was presented from 10:10 to 10:40.

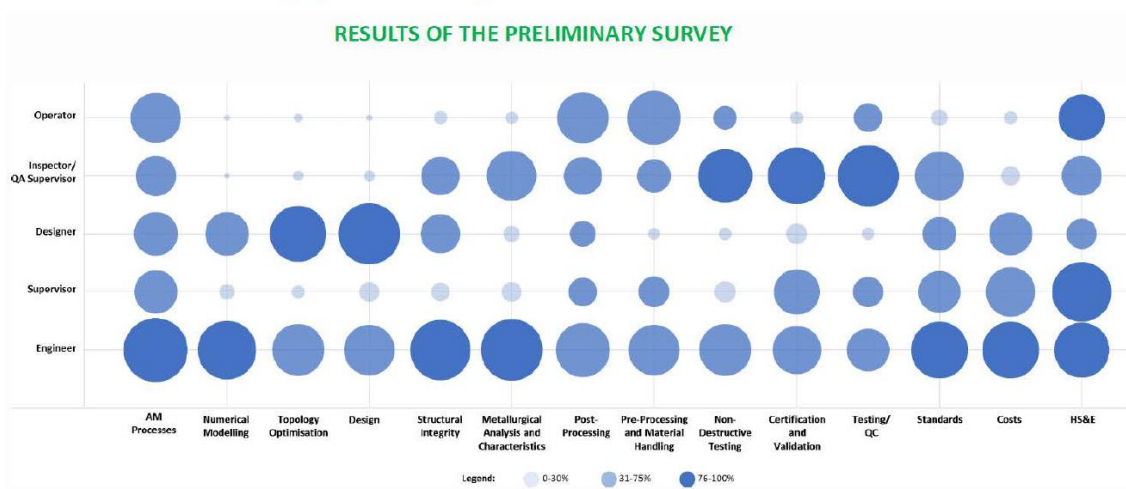
The lecturer was Marvin Keinert, M.Sc. IWE and has been active as a teacher and scientist in the CLLAIM project since its start in 2018. Mr. Keinert has been employed by DVS for 5 years as a mechanical engineer and is involved in beam processes and additive manufacturing in the fields of research, technology, standardization, and training and further education.

For a full overview of the presentation please see the following attachments).



Midterm Conference SLV Halle Program.pd
 Midterm Conference SLV Halle Questionna
 Midterm Conference SLV Halle Presentatio

Creating KnowLedge and Skills in Additive Manufacturing (CLLAIM)



www.claimprojectam.eu



Figure 22 Presentation on CLLAIM project Results



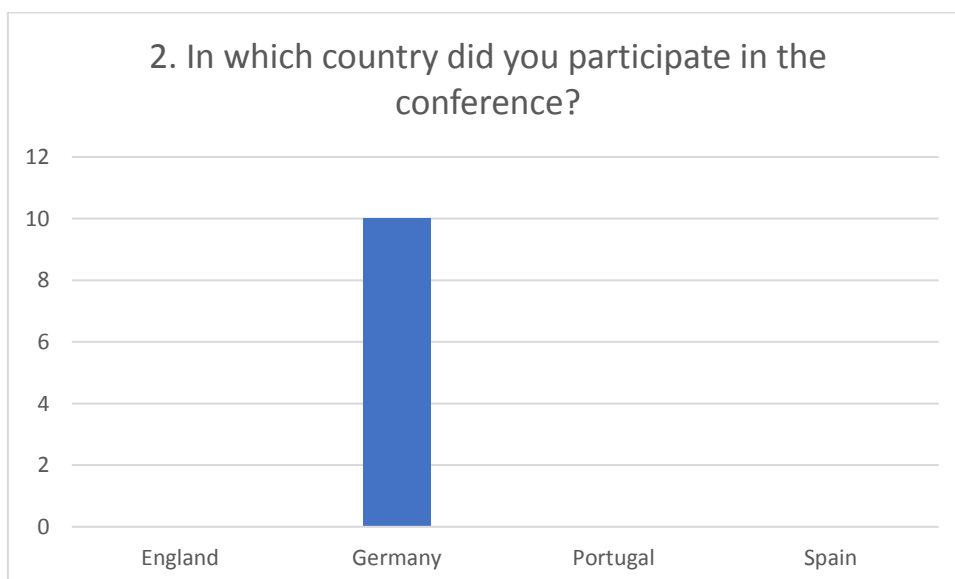
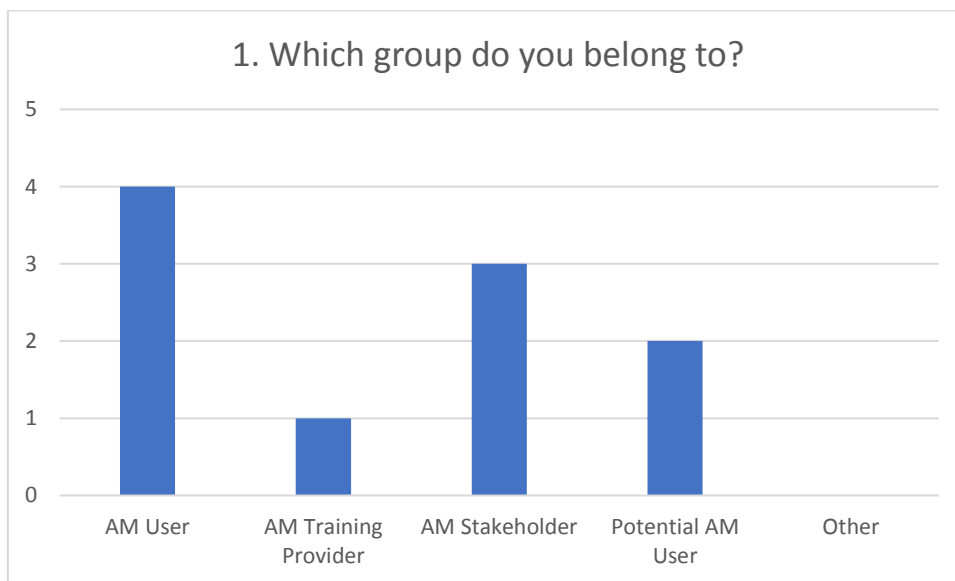
Co-funded by the Erasmus+ Programme of the European Union

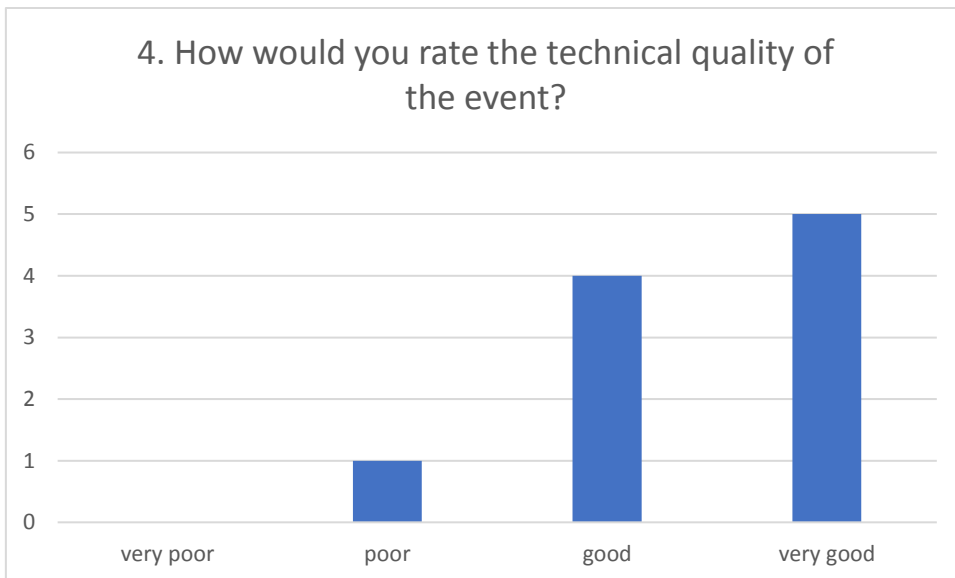
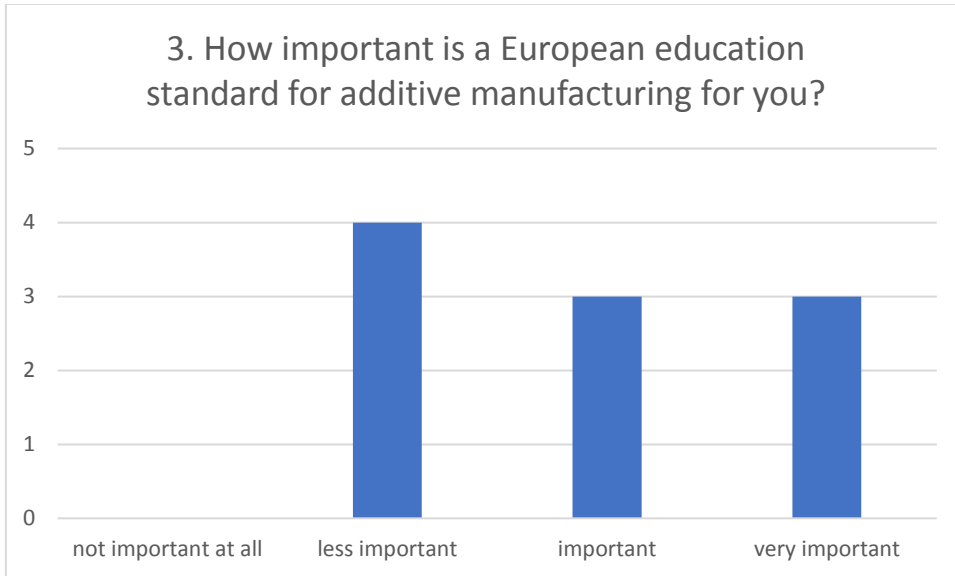
This project has been co-funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

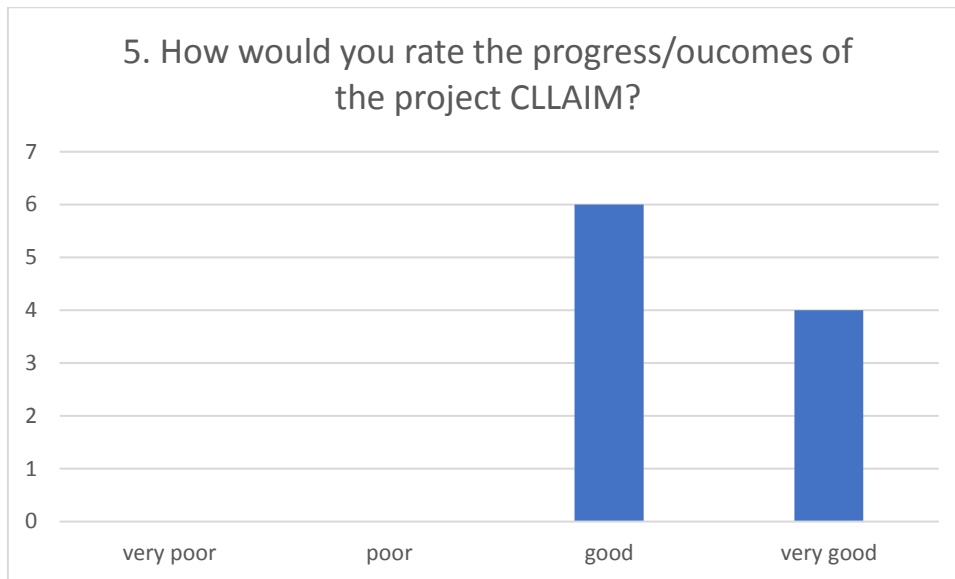
5.3 Mid Term Conference Evaluation

A specific questionnaire was passed along the participants in order to assess the quality of the event.

58 people from industrial companies, educational institutions and universities took part in the event. 10 people completed the CLLAIM questionnaire with a positive result. The quality of the event and the project results from the project are rated as “good” to “very good”. The summary of the results is presented below.







6. CLLAIM Mid Term Conference – EWF (October 30th, 2019)

6.1 Invitation for the Event and the Agenda

The Conference was held presential during EWF General Assembly 2019 in Porto Salvo, Oeiras.

31 people attended the Conference and the overall perspective was that it was a success. Participants from several European Countries attended the Conference, being most of them members of EWF Qualification System for the Welding sector.



Figure 24 Mid Term Conference Presentation

The meeting was awarded together with the EWF General Assembly and the Workshop on Additive Manufacturing Processes Overview (CLLAIM CU00).



AGENDA - 30th October 2019
 International Conference on EWF Qualification Systems

⌚	Agenda
8:30	Registration and welcome coffee
9:00	Opening (EWF)
9:05	EWF Qualification System – Welding
	<p>Apprenticeship in the EWF System - How to foster the adoption of WBL Quality Assurance System and its tools to other EWF members? *Presentation of WOW project outputs: Guideline for Quality Assurance, Arrangements for WBL, WOW Platform; Tutorials and Recommendations Adelaide Almeida (EWF) WOW consortium</p>
	<p>FSW European Qualifications - How to implement European training within Friction and Stir Welding Technology? * FSW TECH project results: EFSW Operator, Specialist and Engineers training Guidelines, Training and assessment tools, Recommendations Peter Durik (VUZ) FSW-Tech Consortium</p>
10:30	Coffee break
10:40	EWF Qualification System – Additive Manufacturing
	<p>New Professional Profiles/Qualifications in AM National and European Implementation and Recognition * CLLAIM & ADMIRE projects results Rute Ferraz (EWF)</p>
12:30	Networking Lunch

Co-funded by the
 Erasmus+ Programme
 of the European Union



Projects 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 25 EWF Mid Term Conference Agenda

In the afternoon was conducted a Workshop on CU00 (developed in CLLAIM).



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.

	<ul style="list-style-type: none"> • Directed Energy Deposition • Powder Bed Fusion
12:30	Networking Lunch
13:30	<ul style="list-style-type: none"> • Material Extrusion • Material Jetting • Binder Jetting • Vat Photopolymerization
16:00	Coffee break
16:30	<ul style="list-style-type: none"> • Sheet Lamination
17:00	Comfort Break/Prepare to exam
17:30	Exam
18:00	Closure

Figure 26 EWF Mid Term Conference Workshop CU 00

The attendance list is as follows.

	NAME	ORGANISATION	COUNTRY
1			Portugal
2			Portugal
3			Portugal
4	E		Portugal
5			Portugal
6			Italy
7			Spain
8			Portugal
9			Netherlands
10			Portugal
11			Portugal
12			Portugal
13			Spain
14			France
15			Portugal
16	M		Portugal
17			Russia
18			Spain
19			Portugal
20			Portugal
21			Portugal
22			Portugal
23			Portugal
24			Turkey
25			Italy
26			Turkey
27			Portugal
28			Portugal
29			Portugal
30			Portugal
31			Czech Republic

Figure 27 Mid Term Conference EWF Attendance List

6.2 CLLAIM project’s presentation

CLLAIM project was presented during the conference in the afternoon after an introduction to Qualification Systems in Manufacturing was conducted. The presentation engulfed CLLAIM’s objectives in terms of Qualifications development and the creation and implementation of an International Qualification System directed to Additive Manufacturing.

The target groups were the ideal groups to tackle since most of them are members of EWF Qualification System for the Welding sector and are keen on extending their scope of activities under the Additive Manufacturing sector, and therefore be part of the International AM Qualification System developed in CLLAIM.



CLLAIM_EWF_Mid
Term Conference.pdf

6.3 Mid Term Conference Evaluation

The Conference was evaluated in the end and most of the Participants rated it as positive. The hosts concluded that the conference was a success and CLLAIM project outputs and results were well disseminated across relevant target groups.

CLLAIM Mid Term Conference Questionnaire Results

About the pertinence of the contents	Strongly disagree	Mostly disagree	Mostly agree	Strongly agree
CLLAIM Project’s Methodology and Results are adequate for the implementation the AM harmonised Qualification System in Europe	0	0	6	13
CLLAIM Project’s Qualification Guidelines will allow to promote the number of qualified personnel in AM	0	0	5	14

