



2.8 Kit for workshops and working sessions M34

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1. Introduction

The current kit is produced in the framework of WP2, comprehending SAM’s forecast methodology for the assessment of current and future skills in AM.

D2.8 encompasses guidelines to organise and deliver the workshops that will be held during the analysis and validation phases of industry needs concerning AM professionals’ skills development. It also includes guidelines to organize and deliver working sessions aiming to review and/or develop Professional Profiles, Qualifications and Units of Learning Outcomes for the International AM Qualification System (IAMQS).

A set of best practices and working templates are presented to support the delivery of workshops and working sessions, including for the online context.

The implementation of the current *Kit for workshop and working sessions* serves as input for the workshops conducted in the AM Observatory (WP4) and in the working sessions conducted in the Piloting of the methodology for creating and revising professional profiles and skills deployment (WP5) and the Implementation of SAM’s final methodology for creating Professional Profiles (WP6).

In summary:

D2.8 Kit for workshops and working sessions	
AIM	To guide the organisation and delivery of workshops and working sessions conducted in the scope of the AM Observatory
TOOLS USED	Group dynamics (e.g. Hands-on; real-time queries, etc.) Evaluation questionnaire to assess participants satisfaction Relevant supporting documents
TO WHOM	Industry experts from different sectors (Members of International AM Qualification (IAMQC) and Industrial (IAMIC) Councils Representatives from Trade Union, Employers’ Associations and Recruitment Agencies VET and organisations; Technology Centres National Qualification Agencies
INDICATOR/LEVEL OF IMPACT	At least 10 participants in each workshop At least 5 experts per working group involved in the working sessions
INPUT	Data gathered from desk research, interviews, surveys addressing the different scenarios Reports on the analysis and validation of data in AM related to skills needs for the different scenarios Feedback report on existing qualifications and training modules
OUTPUT	Fulfilled templates for revising and/or developing new professional profiles /qualifications/ Competence unit Updated or new training guidelines (if applicable)
TIMELINE	2 workshops conducted every year 1-2 working sessions to review/update existing Profiles /Qualifications/Competence units/Training modules conducted every year 2-5 working session to develop new Profiles /Qualifications/Competence units/Training modules conducted every year

2. Methodology

The methodology applied to the kit is illustrated in figure 1 and includes the following information:

- to whom is each tool targeted at;
- inputs and outputs of the tool;
- steps to be implemented and resources (e.g. online, e-mail, using a software),
- timeframe to use the tool;
- expected stakeholders and targets involved.

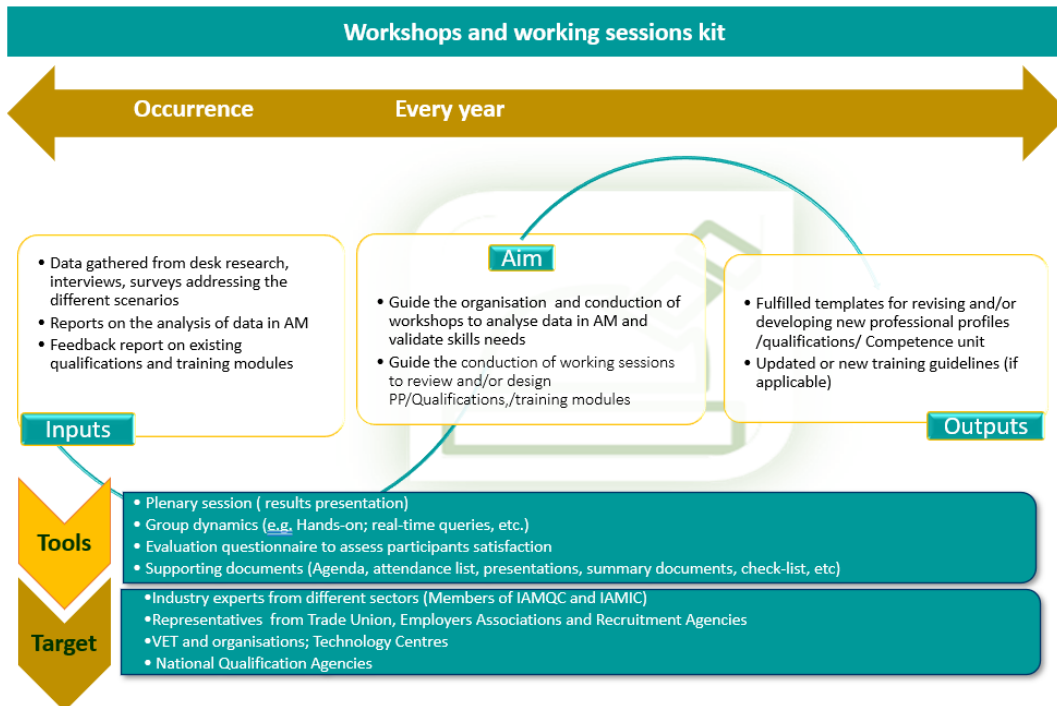


Figure 1 - Methodology applied in the Kit 2.8

3. Guideline to conduct Needs Analysis and Validation Workshops

The **Needs Analysis Workshops** take place with both industry and education experts, both full partners and associated partners to **analyse and discuss the results from the auscultation** conducted through surveys, interviews and/or desk research, in order to conclude about the **AM skills gaps and Professional Profiles** to be addressed within the different scenarios: 1 year (real case scenarios – immediate needs), in less than 3 years (short-term scenarios – near future needs) and within 10 years (foresight scenarios – long future needs).

Annual workshops are held with AM industry experts, being the input and output described below:

<i>AM Skills Needs Analysis Workshops</i>	
Inputs	Data from surveys, interviews, desk research
Tools	Plenary session Group discussion

	Reporting templates to summarise the results/findings in each group
Output	Preliminary Report on Needs/Data Analysis delivered 2 weeks after the workshop

In order to facilitate the results analysis, different groups are set to discuss the survey’s results conducted with the different targets: training centres, industry workers and companies, etc. Participants are equally grouped to guarantee expertise and gender balance.

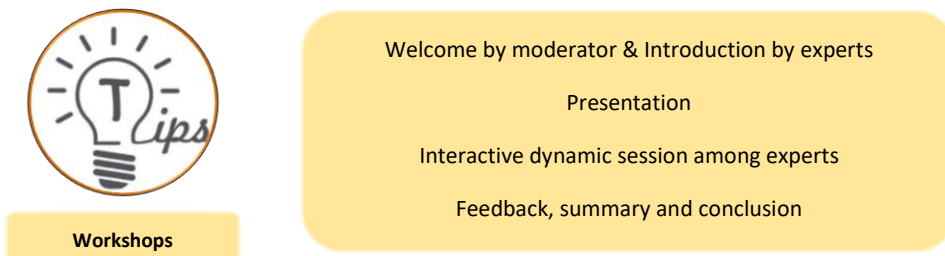
The **Validation Workshops** take place with industry experts, both full partners and associated partners, usually members of the International AM Industrial Council (IAMIC), Trade unions and Employers’ associations, National Employment Agencies, National Qualifications Agencies, VET organizations and Recruitment Agencies, **to validate the priority of existing skills’ gaps and future Professional Profiles, Qualifications and/or Competence Units**, as well as **technological trends** (when applicable) for the growth of the sector, thus according to the different scenarios.

Annual workshops are held in the timeframe of 3 months from the Needs Analyses Workshop, being the input and output described below:

<i>AM Skills Needs Validation Workshops</i>	
Inputs	Preliminary Report on the Needs Analysis
Tools	Plenary session Hands-on discussion Online queries (Slido, Polly, Microsoft forms) Reporting templates to summarise the overall results/findings
Output	Report on the Analysis and Validation of Skills Needs delivered 1 month and half after the workshop

The validation workshops use a combined approach consisting of a **plenary** to introduce participants to the results followed by a **hands-on** activity to discuss in detail the results and define the priorities in terms of required AM skills.

As a general structure for workshops, a combined approach of the following parts is recommended:



3.1 Agenda for workshops

Below are examples of agendas that can be used, respectively, for workshops aiming to analyse the results collected through surveys and interviews and to validate the skills needs priorities for the different scenarios.

3.1.1 Workshop to analyze AM Skills needs

Internal workshop to analyze AM Skills needs

Date [day /month /year]

AGENDA

10:00 (CET)*	Welcome	Meeting link
10:10-10:30	Common presentation of results (20')	
10:30 -11.50	Group discussion (1.20')	
11.50-12.00	<i>Coffee- break</i>	
12:00-12.20	Wrap up by each group (20')	

3.1.2 Workshop to validate AM Skills needs

External workshop to validate AM Skills needs

Date [day /month /year]

AGENDA

10.15 (CET)	Welcome & Opening
10.20	Ice-break / Presentation <i>(Moderation: Adelaide Almeida, EWF/ SAM project Coordination)</i>
10:45	The European Sector Skills Strategy for AM – SAM Project <i>(Speaker: Adelaide Almeida)</i>
11.00	SAM results regarding skills needs and gaps in AM: <i>Which are the trends concerning AM training courses? Which formats and levels of training are available? Which skills are required by professionals and companies?</i> <i>(Speaker: Yvonne Wessarges, LAK / Leader for Piloting the Methodology for creating and revising Professional Profiles)</i>
11.35	1st International AM Qualification System & the role of the AM Councils <i>(Speaker: Beatriz Lopez, EWF / AM System Manager)</i>
12.00	Coffee STOP (10 minutes)
12.10	Hands on for the Validation of Skills in AM (Breakout rooms) <i>(Moderation: Paula Queipó, IDONIAL / Martin Schaefer, SIEMENS)</i>
	Group discussion – Industrial Council Experts Defining the trends and priorities for qualified personnel working in AM industry
13:15 -13.30	Wrapping up on the skills priorities for the AM Sector in Europe

3.2 Supporting documents for workshops

The supporting documents for the workshops are directly connected to the AM Observatory activities, enabling to sustain the analysis and validation of AM skills needs, professional profiles and technological trends. There are three types of supporting documents:

-The **background/summary documents**, such as the *excel files containing data from surveys and interviews, Skills strategy roadmap, etc.*, which are sent prior to the event for participants to make a pre-reading and, therefore, to be prepared for the event activities.

-The **draft /preliminary documents**, such as *Preliminary reports and fact sheets*, which serve as basis for discussions during specific workshops

-The **reporting documents /templates**, such as the one *for reporting groups results*, which supports the development process and enable to capture the main outcomes. See examples in annex 1 and 2.

3.3 Workshop results

The list of outcomes achieved from the workshops is below:

- a. Rapporteur notes
- b. Queries/pools results
- c. Minutes
- d. Evidences (List of attendees, pictures)
- e. Report on AM skills needs analysis and validation

The structure and content of the report to be developed is presented below:

Report on the Analysis and Validation of Needs

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6. CONCLUSION

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Report on Needs Structure

3.4 Evaluation and collecting feedback for workshops

A satisfaction questionnaire is applied at the end of the workshops to gather the feedback of participants, which can be found in Annex 3. Results are then analysed in order to evaluate participants satisfaction and to identify improvement area of future and similar events.

4. Guideline for working sessions

Working sessions take place with both industry and education experts belonging to the Qualification Council (IAMQC) to **review and/or develop** new Professional Profiles, Qualifications and Competence Units.

The number of working session to be conducted each year will vary according to the event purpose and scope. In the case of **reviewing/updating** existing Profiles/Qualifications/Competence units/Training modules, around 1 to 2 working sessions are recommended to be conducted. While for developing **new** Profiles /Qualifications/Competence units/Training modules, at least 2 to 5 working sessions are recommended.

The inputs and outputs of the working session are described below:

<i>Working sessions</i>	
Inputs	Report on the Analysis and Validation of Skills Needs Feedback reports on existing qualifications and training modules
Tools	Plenary session Hands-on discussion Online queries (Slido, Polly, Microsoft forms) Methodology and templates for designing and revising Professional Profiles and developing skills (WP3)
Output	Fulfilled templates for revising and/or developing new professional profiles /qualifications/ Competence unit Updated or new training guidelines (if applicable)

The working sessions use a combined approach consisting of a **plenary session** to introduce participants and provide a background and baseline information for the review and /or development processes, followed by a **hands-on** activity to discuss, validate and agree towards the updated/revised and/or new professional profiles /qualifications/ Competence units /training modules to be addressed by the IAMQS training guidelines. The tips to conduct working sessions are given below:

Description of the **revision process** for Professional Profiles /Qualifications/Competence units/Training modules

- Introduction of experts / WG members and main findings
- Alignment regarding the Methodology and templates though:
 - Briefing sessions
 - Training session for metal working groups chairs
 - Detailed alignment session for the PBF-LB Chair (step-by step)
 - Working session for review (step-by step)
- Documental review of the European Metal AM Eng. PBF-LB Qualification Guideline
 - Changes into the Guideline
 - General recommendations (Action plan)
- Validation session with experts
- Feedback on the review process
- Conclusions

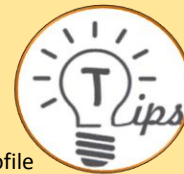
How to conduct review sessions?



Description of the **development process** for new Professional Profiles /Qualifications/Competence units (CU)/Training modules

How to conduct development sessions?

- Introduction of experts / WG members and main findings
- Alignment regarding the methodology and templates
 - Kick off meeting for the development of content for the CU (development process)
 - Validation session(s) with experts
- Documental description for the development of new Qualification /Professional Profile
 - Qualification Structure
 - Competence units / Units of learning outcomes
- Assessment



4.1 Agenda for working sessions

Below are examples of agendas that can be used, respectively, for sessions aiming to review professional profiles /qualifications and for designing new competence units.

4.1.1 Review of an existing Qualification

1st Review Session Metal AM WG PBF- LB

Date [day /month /year]

AGENDA

11:00 (CET)*	Welcome	Meeting link
11:00-12:20	<p>Working session for the review of AM Process Engineer PBF -LB</p> <p>Introduction by Metal AM Leading Experts <i>David Wimpenny</i> MTC (UK) / Leading Expert of the Metal AM Working Group</p> <p>Collection of review results, decision on changes into the Qualification and reporting <i>Johannes Schleifenbaum</i> Fraunhofer-Institut für Lasertechnik ILT (DE) / PBF -LB Chairman (EAMQC) <i>Gustavo Menezes de Souza Melo</i> RWTH Aachen University (DE) / Operationally supporting the Chairman</p> <p>Validation of working Group procedures and review methodology <i>Adelaide Almeida</i> EWF (PT)</p>	<p>Join Microsoft Teams Meeting</p>
12:30	Farewell	

4.1.2 Kick off meeting to design a new Competence Unit

ONLINE SAM/IAMQC - BINDER JETTING WG MEETING - AGENDA

Date [day /month /year]

AIM: Define a draft **proposal** for the **Metal AM Binder Jetting Process CU/UOs**

10.00	Welcome & Opening (Adelaide Almeida, EWF & David Wimpenny, MTC) <ul style="list-style-type: none"> • Introduction of participants - 10 min • Purpose of the meeting • Agenda
10.15	SAM Project and the setting up of the AM Qualification Council Aim, activities and composition of the working groups IAMQS presentation and AM Guidelines <ul style="list-style-type: none"> • Terminology / concepts of the methodology (contents of CU; Contact hours WL; Proficiency levels – link to the EQF framework) • CU assessment methods (focus on the added value for harmonization – how it is conducted)
10.25	SAM Methodology to review and design qualifications <ul style="list-style-type: none"> • Aim and purpose of the CU and its integration in the International AM Qualification System IAMQS) • Overview on the methodology (gap drivers) • Best Practices for the design of Qualifications / Professional Profiles and Competences Units • Templates
10.40	Hands-on for defining the content for the CU Metal AM Binder Jetting Process <ul style="list-style-type: none"> • Analyse knowledge and skills for the CU • Analyse the detailed knowledge for each subject • Define contact hours allocated to each subject and overall time for the CU
12.00	Closing and Next Steps <ul style="list-style-type: none"> • Assignment of development process • Scheduling next working sessions • Draft CU on Binder Jetting • Validation Session with Binder Jetting WG

4.1.3 Validation meeting to design a new Competence Unit

ONLINE SAM/IAMQC - BINDER JETTING WG MEETING - AGENDA

Date [day /month /year]

AIM: Review and validate the **proposal** for the **Metal AM Binder Jetting Process CU/UOs**

10.30	Welcome & Opening (Adelaide Almeida, EWF & David Wimpenny, MTC) <ul style="list-style-type: none"> • Introduction of participants - 10 min • Purpose of the meeting • Agenda
10.40	Context of the Metal AM Binder Jetting Process CU (Adelaide Almeida, EWF) <ul style="list-style-type: none"> • Terminology / concepts of the methodology (contents of CU; Contact hours WL; Proficiency levels – link to the EQF framework) • CU assessment methods (focus on the added value for harmonization – how it is conducted) • Aim and purpose of the CU and its integration in the International AM Qualification System IAMQS)
10.50	Presentation and Discussion of CU Metal AM Binder Jetting Process (Bianca Colosimo, POLIMI & all)

	<ul style="list-style-type: none"> • What do you think about the MBJ CU structure for the independent and advanced levels? subjects covered? Any subject missing? • What about the contact hours allocated to each subject and overall time for the CU ? • Are the expected level of knowledge and skills to be achieved adequate for the allocated teaching time? • Is the detailed knowledge clear and comprehensive? And what about the time devoted/balance to theoretical and practical training?
12.00	Closing and Next Steps

4.2 Supporting documents for working sessions

The supporting documents for the working sessions are connected to the AM Observatory activities, thus enabling the review and/or development of Professional Profiles, Qualifications and/or Training modules. There are three types of supporting documents:

-The **background/summary documents**, such as the summary of *the Needs Analysis and Validation Report* or the summary of the *Feedback report on existing qualifications and training modules from students*, which are sent prior to the event for participants to make a pre-reading and, therefore, to be prepared for the event activities.

-The **draft /preliminary documents**, such as *Draft Guideline with the content for a new or revised Professional Profile, Qualification and or Competence Unit*, which is the baseline document for the discussions during the specific Working Session.

-The **reporting documents /templates**, such as *Kit of templates for Revision and Creation of Professional Profiles (WP3)* which supports the development process and enable to capture the results.

4.3 Working sessions results

Depending on the topics covered by the working session, the summary of results and documental outcomes to be achieved are:

- a. Rapporteur notes
- b. Queries/pools results
- c. Evidences (List of attendees, pictures)
- d. Fulfilled templates for revising and/or developing new professional profiles /qualifications/ Competence unit
- e. Updated or new training guidelines (if applicable)

The working sessions training guidelines and methodology templates are presented below:

4.3.1 Methodology Templates Structure for revising and/or developing new professional profiles /qualifications/ Competence unit

Structure of templates to **review and develop new** Professional Profiles /Qualifications/Competence units/Training modules

Kit of templates for revising and designing a professional profile:

- 1. Technological process
 - 1.1. Review professional profile
 - 1.2. Designing professional profile
- 2. Material
 - 2.1. Reviewing professional profile
 - 2.2 Designing professional profile
- 3. Qualification
 - 3.1. Reviewing professional profile
 - 3.2 Designing professional profile



Methodology
Templates Structure

4.3.2 Training Guideline Structure

Structure of a training **Guideline for new** Professional Profiles /Qualifications/Competence units/Training modules

- Introduction
- Qualification /Professional Profile for AM Designer for Polymers
- Qualification Structure
- Competence units / Units of learning outcomes
- Assessment



Guideline Structure

4.4 Evaluation and collecting feedback for working sessions

At the end of the working sessions, open reflection/feedback on the **working group procedures and methodology** is conducted regarding, based on SWOT analysis: positive and negative aspects and areas of improvements for future sessions. An example can be found below and the template in Annex 4:



Feedback

Feedback on working session procedures and methodology

- What went well, and shall be kept for the next sessions?
- What do we need to improve / avoid in future sessions?
- Please suggest 2 activities that could contribute to improve the working group sessions.

5. General recommendations

When organising events for a considerable number of participants, whether from Education or Industry backgrounds, there are some aspects to consider, for example to choose the person responsible for conducting the events in general (e.g. Time management, Ice Breaking Activities, audience engagement and management), speakers (who will present the contents of each event) and the moderator (responsible for managing the discussions held by the working groups).

This choice should be made having in consideration the involvement of the participants, invited and partners organization/representatives on the project (due to its knowledge on the event's purpose for SAM project) and considering the gender balance among speakers/moderators (e.g. one male and one female speakers/moderators whenever possible).

Do not underestimate the time of the event, it is suggested to avoid the early afternoon, which is considered one of the less productive time of day, and prioritize the morning hours.

The duration is another important aspect. Enough time should be saved /planned in the agenda for the interactive dynamic session and discussion to enable a fruitful discussion that doesn't need to be finished by the moderator because of the elapsed time and to have attentive participants during the summary part.

Moreover, before the effective start of the workshop activities, it is recommended to gather people into a shared communication platform to share helpful materials and reports about the analysis phase. This preparatory initiative can be also a good way to facilitate the icebreaker and reduce the number of non-active participants during the workshop.

It is recommended that the planning occurs at least three months prior to the date of the event, which is crucial to define and develop the proper content and notifying participants.

5.1 Agenda

Preparing the agenda depends on the event's scope and objectives, on what needs to be analysed/ validated, thus depending on the phase of the project (hence the annual scheduling of each Workshop/Working Session).

When preparing the agenda, the organisers need to set the date and venue for the event. The agenda needs to indicate the title of the event (e.g. Needs Analysis Workshop/Validation Workshop/Working Session) indicating the number of the event's edition (i.e. 1st, 2nd 3rd or Final), date, hour and place of the event, as well as the name of the hosting partner and the address of the venue. This information is placed on the head of the agenda.

The agenda shows the starting hour, information about the activities to be carried out in the respective time slot and the closing hour of the event.

It needs to be sent to stakeholders from the contact list with an invitation (see 5.3 Invitations), even if in its initial phase. It is important that the stakeholders invited have a clear idea of the topics to be discussed and of the agenda. If needed, a first draft can be sent in an initial phase (around 3/4 months anticipation) of the event's organization process, as long as the stakeholders invited are informed that a final version of the agenda will be sent, before the events take place. The template for the agenda can be found in Annex 5.

5.2 Contact List

An important step in organising Workshops/Working Sessions is to elaborate a list of contacts with data (i.e. name, entity, address, e-mail and telephone contact) from stakeholders who will receive an invitation to participate, based on the scope and objectives of those events.

The list allows keeping track of the stakeholders who received the invitations and agendas (*Contacted*) and the ones who already confirmed their attendance in the events (*Confirmed*). The template for the contact list can be found in Annex 6.

A reference to GDPR and its procedure is to be included in the Contact List, according to each country's legislation.

Personal details of our partners/clients/members are provided voluntarily and will not be revealed to third parties. In accordance with Portuguese law, all partners/clients/members have the right to access, rectify or delete their personal details, by contacting EWF®. EWF® undertakes to adopt all necessary measures to guarantee the safekeeping of its partners/clients/members' personal data against any possible abuse or against unauthorized access. The present privacy policy may be amended without prior notice. For any additional clarification, please contact ewf@ewf.be



GDPR Reference

5.3 Invitations

After assembling a contact list and setting the agenda for the event, the next step is to send the invitations to stakeholders. This is done via email, addressing the person and/or the entity he/she represents. The invitation needs to focus on:

- Brief presentation of the project;
- The main purpose of the event and its objectives;
- Place and date of the event;
- Importance of one's presence in the event for the project.
- Deadline for registration /attendance confirmation

The agenda of the event is sent together with the Invitation, which also needs to explain how the person can register (if needed) for attending the Workshop/Working Session. The registration can be made by using an online platform such as EventBrite¹, where partners who are organising the event can:

- Describe the event (main purposes, participants, activities);
- Provide information about date, time and location of the event;
- Provide a link for online registration.

This platform allows to monitor the number of registrations in real-time, which helps to decide whether to reinforce the invitation (i.e., resend it, depending on the number of registrations).

¹ Please refer to [EventBrite](https://www.eventbrite.com) website for more details.

A banner might be created with an attractive layout reminding invitees to SAVE - THE – DATE. The banner should indicate the date, place, hour and have a link for registration. It might be sent attached to the email invitation or be used as image in the online registration tool.



Invitation email

Dear [name of the person to invite],

SAM project is a blueprint for the Additive Manufacturing Sector that aims to tackle the current increasing labour market need for AM demands. The project will develop an Observatory in AM that will identify and anticipate the required set of skills for AM professionals and promote their development to the Industry/Companies through a solid network of European Training Centres (for further details, please visit our website www.skills4am.eu).

To achieve this purpose, the project's consortium is currently organising a Workshop that will gather [type of participants] in order to [brief description of the activities to develop in the event], which will allow SAM to take a step forward towards its objectives.

In this sense, we would like to invite you, as an expert in [Industry/Education] to take part in our [edition number] [Validation of Needs Workshop/ Data Analysis Workshop], in which SAM consortium will present [indicate the scope and objectives of the workshop: the main results from the surveys carried out to collect information on skills needs/will present the Professional Profiles developed during this phase of the project/validate the structure of the qualification, etc].

This event, hosted by [...], will take place in [...], on [date].

We do believe it will be an interesting event, by invitation only, that will allow networking as well as exchanging ideas related to skills needs and future qualifications in AM. Also, we will organize small working groups in each workshop that will allow to have more focused discussions on the topic brought by this event.

Please note that your presence is of much relevance, and your contribution is much appreciated. Thus, we kindly ask you to confirm your attendance by [deadline] by registering on EventBrite [add link of the platform].

In attached, you can find the agenda of this Workshop. If you have any questions do not hesitate contacting us.

Best regards,

Because one of SAM project's purposes is to promote and achieve gender balance in AM sector, it is important to translate also this concept in the organisation of Workshops/Working Sessions. Therefore, there are some measures to consider for ensuring a balance between the gender of speakers/moderators and of participants who register to SAM's events.

Gender balance also needs to be taken into account when organising the working groups, in order to ensure that men and women have the same opportunities to contribute for the discussions.



Gender Balance

Making sure participants are represented by the same number of men and women when participating actively in the events (e.g. speakers/moderators in the Workshops/Working Sessions),

Counting the number of men and women attending the event(s) and strengthening invitations to the gender that may be underrepresented at the registration list

In case the contact list also has an imbalanced number of women and men, partners can contact the organizations asking for additional names, explaining the consortium's purpose to foster gender balance among participants.

5.4 Group Dynamics

The way participants interact with each other and in groups is an important aspect to consider when organising an event as it is crucial for their engagement with speakers, moderators and the subjects that are being approached, and also for the event's success (i.e., to achieve the proposed objectives).

To promote a positive and fruitful interaction among all people involved in the Workshops and Working Sessions, and a sense of community among participants, it is suggested to use Ice Breaker Activities in the beginning of an event.

Anticipating the Ice Breaker Activities at a very initial stage of the event (i.e. before the expert introduction) is a good way to foster the interactions among participants also in the following phases of the event, since the first minutes of an event define the audience expectations.



Ice-breaker

Ask participants to briefly introduce themselves, ask for their expectations for the day, or state a question they would like to see answered by the end of the session.

The moderator will need a Flip-Chart or a Cardboard, Post-its and pens to register the inputs.

Ice Breaker activities allow participants to know each other and engage with the event (and with each other), thus promoting their important contributions for the project's outcomes.



Interactive Response System

Recommended for medium and large audience (> 50 participants)

In order to improve participants engagement during presentations and/or discussions, interactive response systems can be a useful tool to be used during the Workshops/Working Sessions.

One example of such a tool is [SLIDO](#)¹, an online platform that allows to previously upload questions for participants so they can reply in real-time. By using such a tool partners can make closed (directive) questions or open questions during the Workshop/Working Session, where participants can write their answers, which will appear on the screen through easy-to-understand visualisation tools such as word cloud or graphs, allowing SAM partners to collect inputs and store that information to be used later on for the elaboration of reports and other deliverables.

Their answers can also be used to dynamize the session, depending on the questions and its importance for the work carried out during Workshops/Working Sessions.

This tool can be used for the assessment of the session as well. The assessment of the session is useful to understand positive aspects of the event in terms of organisation, activities carried out and impact of the whole event on participants' engagement in SAM project's future activities. It also allows to understand what needs to be improved for the next Workshops/Working Sessions to be carried out, so this is a very helpful tool to use.

5.5 Setting Groups

To organise discussion groups for the workshops and working sessions, the background and experience of participants need to be considered in order to ensure diversity and enriched contribution among participants. Thus, it is recommended, when possible, that these groups are established prior the events take place, based on the final list of participants, which shall indicate names and backgrounds (e.g. position, organisation and sector).

It is advised that each working group has the same number of participants, and that there is an effort to foster gender balance in each group, in accordance with SAM project's aim to promote gender balance (as previously mentioned). Moreover, the groups should be made of a limited number of participants (ideally not more than 6) to make all the people comfortable in expressing their opinions and interact with each other. The template for the group setting up can be found in Annex 7.

To be noted that in the case of the working sessions, the working groups (WG) are already established, thus corresponding to the Metal AM and Polymers AM WG, and sub-groups.

5.6 Attendance List

The attendance list is an important tool as it allows keeping records of participant's presence in the Workshops/Working Sessions as well as information regarding the different sectors involved in the project, also contributing for documenting SAM's Qualitative and Quantitative Indicators.

This tool needs to collect the following data from participants: in addition to the name and surname, it must register the entity to which the participant belongs and the country.

Participants must sign the Attendance List and indicate whether they allow pictures to be taken of them during the event to be published in SAM project's (and the hosting partner's) media channels. This is a very important item to consider, following the recommendations for GDPR. The Attendance List must also include a disclaimer for GDPR, as mentioned in **5.2 Contact List**.

A specific/new attendance list should be prepared and signed per workshop day, in the case of having more than one day workshop/working sessions.

In order to assure that all participants sign the Attendance List, it should be used during welcome and registration phase of the events. By the end of the event, the Attendance List must be sent to SAM project's coordinator by email and the original must be kept by the hosting partner.

It is important that during Workshops/Working Sessions, participants are aware that SAM project's partners, namely EWF as project coordinator, undertake all the necessary measures to ensure the safekeeping of all data against unauthorised access and possible abuse.

The template for the attendance list can be found in Annex 8.

5.7 Presentations

For each topic to be addressed in the Workshop/Working Session, a slide presentation or pdf format is made by the partners responsible for carrying out the event in order to synthesise information in a clear and visual manner.

In order to be appealing and interesting, and to deliver the most important information, there are some things to consider when building slides presentation.

Address the audience by using understandable language/terminology and focusing on the topics they are interested in;

Have short sentences and/or paragraphs, preventing slides to be full of text;

Use infographics, images and charts whenever possible/applicable.



Slides Presentations

The person making the presentation should be engaging and use the presentation as a tool, which means that it should contain only the essential ideas; thus to maintain participants' motivation along the session.

The template for the slides presentation can be found in Annex 9.

5.8 Results

The outcomes of the Workshops/Working Sessions correspond to the feedback provided by participants and inputs collected by partners in the process, which are essential to the work to be carried out during SAM project's lifetime towards its purposes.

Therefore, these results should consist of:

- Notes taken during sessions by partners;
- Templates to be filled/written by participants with their comments or suggestions on a given topic;
- Photos taken during the events.
- Short descriptive reports (e.g. transcripts) of the development process and highlights on the conclusion

To guarantee that relevant information provided by participants during the Workshops and Working Sessions is not lost, it is suggested that organising partners can record the sessions, always in compliance with GDPR requirements



Recording

5.9 Evaluation and collecting feedback

After each workshop a questionnaire must be applied to the participants to determine their level of satisfaction regarding the event organisation and conduction, as well as to determine its impact. It is suggested not to distribute the questionnaires at the end of the event, but to plan a final brief activity right after the summary to avoid participants leaving the event without giving feedback.

5.10 Check-list

In order to ensure that all recommendations made throughout this kit are contemplated and all tools are used when organising and conducting a Workshop/Working Session, this table provides all aspects to take in consideration by the organising partner(s):

Tool	Check ²	To-do /Observation
Invitation		
Contact list (with GDPR)		
Email invitation		
Dissemination on media channels /Banner		
Online Registration		
Agenda		
Draft Agenda		
Define speakers		
Define moderators		
Sent to registered participants		
Participants list (with GDPR)		Verify list to avoid repetitions
Activities and documents		
Discussion Groups set-up		
Ice Breaker Activity		
Materials for the sessions		
PowerPoint Presentation(s)		
Collecting feedback		
Satisfaction Questionnaire (link)		
Catering/Coffee break		
Pictures		For dissemination purposes

² To mark with X if done/accomplished

6. Best Practices for Online Events

The pandemic has changed the way to organise events, therefore online/virtual workshops or working sessions have been widely used. The opportunity to organise this kind of events, involving people from different places of the world is helpful and it will be used also after the health emergency.

The events follow the same objectives highlighted in **3. Guideline to conduct Needs Analysis and Validation Workshops** and **4. Guideline for working sessions**, thus are only converted into a digital format either for the Need Analyses or Validation Workshops and for the working sessions.

However, the online engagement can be tricky and in order to avoid a lack of participation and interactions, the organisers should re-think the structure of the experience using specific interactive exercises and tools.

6.1 Preparation

The structure should be modified and the plan of an in-person workshop divided into different time frames. It is recommended to organise the activities in the following way:

- Plan a kick-off session
- Pre-working individual session
- Online Workshop
- Feedback & Evaluation

When organising an event, it is crucial to identify the human resources needed to make the workshop or working session successful. For online workshops, the roles required are the same as in physical ones. However, the responsible for conducting the event, would be replaced by a technical supervisor who deals with the technical issues such as video-conferencing app, troubleshooting, virtual break-out rooms' creation, polls, and question boxes management, etc. The more people will participate, the more problems could emerge. Therefore, the assistance of a further responsible would be possible, especially for more than 50 participants.

6.2 Group Dynamics and Engagement

The group dynamics seen in section 5 are difficult to replicate during an online venue. Therefore, it becomes a priority to re-create the group experiences with the help of online tools. Lists of working groups will be replaced /distributed by break-out rooms and worksheets by online whiteboard.

Miro³, with more than 20M users worldwide, is an online tool which provides different solutions for an engaging experience for virtual workshop participants with several options for real time

³ Please refer to [Miro](https://miro.com) website for more details.

collaboration (agendas, digital sticky notes, virtual whiteboards, etc.). It also offers software integrations with Zoom, Slack, Trello and other platforms.

Moreover, it can be beneficial to the participants' satisfaction to give the possibility to organise virtual coffee chats during the breaks to generate networking opportunities. Indeed, informal networking is one of the most difficult things to re-create during an online event.

6.3 Adapted Workflow and Objectives

- **Plan a kick-off session** some days before the main event. It is an efficient way to make participants familiarise with each other and test the platform. The kick-off session is mainly a trouble-shooting activity planned to answer the audience's technical questions, explain the on-boarding procedures and make the main event smoother.
- **Pre-working individual session.** Stakeholders should be provided with online learning materials, i.e. part of the "analysis phase" resources, especially surveys, interviews and desk research which are not sectoral. In this session, participants are updated about data collected and maximise their knowledge about the wide picture of the project generating a more reliable and reasoned validation phase for the main working session.
- **Online Workshop.** During the event, make sure that every tool is ready, and the facilitator can help participants for technical problems. Plan breaks between different activities to keep the attention span as high as possible. Invite participants to join the workshop with their camera on to facilitate an effective non-verbal communication (it is important to advise them in advance during the kick-off session).

6.4 Feedback and Evaluation

Use the same questions you would use for the live workshops but add a section for the technical feedback in order to adjust some problems or identify possible bottlenecks in the preparation of the workshop (platform, tools approval rating, etc.).

Questions for the technical part can be:

- Did the technology work appropriately?
- Did the online workshop have the right level of interaction and involvement?
- Was the online mode an effective way for me to understand the data provided and interact successfully with the other experts?

7. Annexes

The annex section, contains templates to enable to organize and conduct Workshops and Working Sessions, it is important to have harmonized tools (i.e. templates and supporting documents) so that each partner can organize and develop the events under the same conditions, using the same documents

Annex 1 | Templates for workshops reporting and discussion

WORKSHOP ON DATA ANALYSIS _ DATA ANALYSIS GRID / WORKSHOP ON VALIDATION OF NEEDS ANALYSIS _ NEEDS VALIDATION GRID			
Group X - Analyze data / validate skills gaps			
1. Relevant data about AM skills gaps			
Skills types / categories:			
Technological:	Entrepreneurship:	Green:	Digital:
2. Data to be further explored (e.g. through interviews; surveys for next period, other method)			
3. Priorities (identify the skills in AM)			
Scenario 1	Scenario 2	Scenario 3	
4. Comments			

WORKSHOP ON DATA ANALYSIS _ DATA ANALYSIS GRID / WORKSHOP ON VALIDATION OF NEEDS ANALYSIS _ NEEDS VALIDATION GRID		
Group X - Analyze data / validate Professional Profiles and or/ Competence Units		
1. Relevant data about AM Professional Profiles and or/ Competence units		
2. Data to be further explored (e.g. through interviews; surveys for next period, other method)		
3. Priorities (identify the Professional Profiles and/or Competence unit in AM)		
Scenario 1	Scenario 2	Scenario 3
4. Comments		

WORKSHOP ON DATA ANALYSIS _ DATA ANALYSIS GRID / WORKSHOP ON VALIDATION OF NEEDS ANALYSIS _ NEEDS VALIDATION GRID		
Group X - Analyze data /Validate technology trends and related skills		
1. Relevant data about Technology Trends and related skills		
2. Data to be further explored (e.g. through interviews; surveys for next period, other method)		
3. Priorities for the SAM scenarios (identify the skills; PP and Competence units in AM)		
Scenario 1	Scenario 2	Scenario 3
4. Comments		

Annex 2 | Templates for workshops reporting and discussion

SAM ONLINE WORKSHOP FOR VALIDATION OF SKILLS NEEDS IN AM

**Defining the trends and priorities for qualified personnel working in AM industry
Results)**

Group (Number) - Industrial Council Experts	Moderator:
Group composition:	
1. Priorities regarding the Sector Skill Strategy (gap drivers and actions) – collect in slido	
1.1 Which of the gap drivers foreseen in the European AM Strategy do you consider as a priority?	
1.2 Which of the implementing and supporting activities do you consider as a priority?	
2. Emergent trends in terms of process	
2.1 Which are the emergent process in AM for the next 3 years?	
2.2 Are there any other trends to be reported?	
Others....	
3. Priorities linked to the different set of skills categories. - collect in slido	
3.1 Which Digital Skills are a priority to be addressed for AM?	
3.2 Which Green Skills are a priority to be addressed for AM?	
3.3 Which Entrepreneurship Skills are a priority to be addressed for AM?	
3. Conclusion / Wrap up	

Annex 3 | Evaluation Questionnaire

[Number and Title of the Workshop]

EVALUATION QUESTIONNAIRE

Venue: _____ Date: _____

We would appreciate if you would take a few moments to fulfil this workshop evaluation questionnaire. Your feedback will be analysed and considered when organising future events.

You are/work at a...

- Industry representative
- Trade Union
- National Qualifications Agency
- Employers association
- National/Regional Employment Agency
- VET organisation
- Recruitment Agency
- Sector representative (please indicate which sector: _____)
- Other: _____

What is the main reason for attending this event?

- To obtain and share new ideas and perspectives on Additive Manufacturing (AM) industry needs
- To discuss existing skills' gaps
- To make new contacts (networking)
- For professional development
- To have a say in the European strategy SAM project is working on
- Other: _____

How did you hear about this event?

- By invitation
- Project website
- Another website
- By email
- Through a colleague
- Other: _____

How would you rate...

1 = Worst rating, 4 = Best rating

- +

A. Event Organisation	1	2	3	4
A1. The organization of the event (including registration process)				
A2. The program/agenda of the event				

A3. The arrangements for the event (venue, catering, equipment, work templates, etc.)				
A4. The amount of information received prior to the event				
A5. The relevance of the other participants to the purpose of the event				
Comments/suggestions:				
B. Speakers/Facilitators	1	2	3	4
B1. The performance of the facilitators in conducting the event				
B2. The adequateness of the material presented (Professional Profiles, Competence Units, Data on skills gaps, ...)				
B3. The quality and format of the materials presented (presentations, handouts, etc.)				
B4. The discussions raised and the way the speakers addressed each issue				
C. Event relevance	1	2	3	4
C1. The relevance of the topics/data presented to AM industry				
C2. The relevance of the topics/data presented to AM education and training /skills development				
C3. The relevance of the discussions to the European strategy SAM project is designing				
C4. The relevance of AM qualifications to my organisation				
C5. The relevance of skills needs identification to my organisation				
C6. The relevance of SAM project to the sector I work in				
Comments/suggestions:				

D. Summing up...	NO	YES
D1. Did you learn anything new/useful/helpful?		
D2. Did you network with others from whom you expect to hear in the future?		
D3. Do you think this AM blueprint is relevant to your organisation?		
D4. Do you think there were enough sectors represented at the event?		
D5. Do you agree with the conclusions coming out of this event?		
D6. Do you think you gained new perspectives?		
D7. Did you have fun?		
D8. Overall, was the event worthwhile?		
Comments/suggestions:		

Thank you for taking the time to complete this questionnaire.

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Annex 4 | Feedback Questionnaire

[Number and Title of the Working Session]

GATHERING FEEDBACK CONCERNING PROCEDURES AND METHODOLOGIES

Venue: _____ Date: _____

We would appreciate if you would take a few moments to give your feedback regarding the working sessions procedures and methodologies.

A. What went well, and shall be kept for the next sessions?
Comments/suggestions:
B. What do we need to improve / avoid in future sessions?
Comments/suggestions:
C. Please suggest 2 activities that could contribute to improve the working group sessions.
Comments/suggestions:

Annex 5 | Agenda

|

[Number & Title of Workshop]

[Hosted by (...)]

[Date of the event & hour]

Venue: [Place & Address]

	[Date]
09h00	Welcome & Registration
09h30	
10h30	
11h30	Coffee break
12h15	Working session
13h00	Conclusions and wrap up

Note: Partners should edit the Agenda according to activities' schedule.

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Annex 7 | Groups Discussion list / sheet



Working Session Groups

[Identification of the Workshop in which the session is taking place]

Group 1 – [Topic]	Group 2 – [Topic]	Group 3 – [Topic]	Group 4 – [Topic]
Name of Participant/Sector	Name of Participant/Sector	Name of Participant/Sector	Name of Participant/Sector
Name of Participant/Sector	Name of Participant/Sector	Name of Participant/Sector	Name of Participant/Sector
Name of Participant/Sector	Name of Participant/Sector	Name of Participant/Sector	Name of Participant/Sector
Name of Participant/Sector	Name of Participant/Sector	Name of Participant/Sector	Name of Participant/Sector

Annex 9 | Presentations

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

Train the Trainers – 2021-04-14
Group Session 1: Teaching Methods
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