

**Interreg**  
**Sudoe**



EUROPEAN UNION

**ADDI**SPACE

European Regional Development Fund

# ADDISPACE PROJECT EXTERNAL EVALUATION

## FINAL EVALUATION

27th of June 2019

To ADDISPACE Consortium



Contact :

Dr Caroline Busquet, Consultant  
10 Avenue Pythagore, 33700 Mérignac  
Tél. : 05 56126129  
Email : [cbusquet@chtech.fr](mailto:cbusquet@chtech.fr)

# Index

I	Context and Objectives .....	4
1.1	Context.....	4
1.1.1	ADDISPACE Project.....	4
1.1.2	ADDISPACE External evaluation.....	4
1.2	Objectives of the third phase report .....	5
2	Final evaluation.....	6
2.1	Effectiveness and efficiency.....	6
2.1.1	Deviations.....	9
2.1.2	Quality of management and coordination.....	9
2.2	Satisfaction level of partners and associated partners .....	10
2.3	Satisfaction level of pilots' participants.....	10
2.4	Impact of the project.....	11
2.5	Follow up of recommendations issued in the previous reports.....	14
2.5.1	Stakeholders and end-users' engagement and deep understanding (KSF n. 1) 14	
2.5.2	Effectiveness and impact of demonstrations (pilot tests) (KSF n. 2).....	15
2.5.3	Massive and effective dissemination (KSF n. 3).....	15
2.5.4	Close follow up of expenses and timetable (KSF n. 4).....	15
2.6	External Risks identified in previous reports .....	16
2.6.1	Here below some of the external risks identified and evaluated in terms of probability and impact from 1 (very low/inexistent) to 5 (very high) during the ex- ante evaluation project:.....	16
2.6.2	Early warning indicators and occurrence.....	17
2.6.3	Potential mitigation measures and implementation .....	17
3	Conclusions.....	18
4	List of abbreviations used in this report .....	19
5	Consulted Documents.....	19

# I Context and Objectives

## 1.1 Context

### 1.1.1 ADDISPACE Project

In the frame of the INTERREG Sudoe programme, a consortium led by ESTIA and composed by 9 partners and 8 associated partners from (1) research and technology centres; (2) clusters industrial associations and SMEs; and (3) training centres, proposed a project that has been accepted for financing from July 2016 to June 2019.

The aim of the project is to increase the adoption of MAM (Metallic Additive Manufacturing) technologies to manufacture metal components for the aerospace sector in the Sudoe region.

The Project subcontracted an external actor for the evaluation to the project. In order to be able to mitigate potential deviations, risks, etc. and in order to have room for improvement along the project, such evaluation will be organised around 3 phases.

### 1.1.2 ADDISPACE External evaluation

Capital High Tech is the entity chosen by the project to conduct the external evaluation of ADDISPACE. The overall goal of the external evaluation is to assess the project relevance, effectiveness, efficiency and impact.

Following the Terms of Reference produced by the project, the external evaluation program will be developed in 3 phases:

#### 1. **Ex ante evaluation → report handed in end of May 2017**

*Focus on: relevance and coherence of the project strategy and work, success factors and risks, expectations.*

This report has been provided end of May 2017.

#### 2. **Intermediate evaluation → report by the end of April 2018**

*Focus on: achievements, effectiveness and efficiency, management and coordination, partners' satisfaction, preliminary impacts...*

In agreement with ESTIA, this report was provided end of May 2018. In fact, CHT is waiting for declaration of Consortium's expenses which will be provided by end of May.

#### 3. **Final evaluation → report by the end of June 2019**

*Focus on: effectiveness and efficiency, partners' satisfaction level, assessment of project's impacts in terms of project and Interreg Sudoe program results and productivity indicators, assessment of final impact on different fields (networking, platform success and sustainability, advancements in standardization and quality certification...)*

This report will be provided before the end of the project (30<sup>th</sup> of June, 2019)

## 1.2 Objectives of the third phase report

In the context explained above, and according to relevant and detailed Terms of Reference elaborated within the project, the objective of this report - which corresponds the 3<sup>rd</sup> phase – final evaluation - is to assess the following:

- **The effectiveness and efficiency of the project**, taking into consideration the implementation of the activities and the achievement of results vis a vis originally agreed work plan and budget.
- **The satisfaction level of ADDISPACE partners and associated partners** with the project progress, results and preliminary impact.
- **The impact of ADDISPACE project**, in terms of project and INTERREG SUDOE programme result and productivity indicators.
- The **final impact** of the project on the following fields:
  - Networking and collaboration capacities of partners and associated partners for transnational cooperation.
  - Relevance and sustainability of ADDISPACE Platform for the transfer of MAM technologies in the aerospace sector.
  - Advancement on the commercial buy in of MAM parts and components in the aerospace sector.
  - Advancement on the standardization and quality certification of MAM parts and components in the Aerospace sector.
  - Progress in the Education and Training offer and mainstreaming of MAM related curricula.
  - Progress on the absorption of MAM technologies between SMEs.
  - Mainstreaming of support measures for MAM technologies into regional/national policies and programmes, including RIS3.
  - Spillover effect in terms of new interregional links, networks and initiatives promoted by subprojects.

Following such analysis, this report will provide some conclusions and recommendations to the consortium, concerning issues that deem to be closely monitored or corrected or improved to maximize chances of success for the project.

The methodology adopted by Capital High Tech includes:

- Analysis of project documents (minutes, deliverables, website, working documents...); and of any other relevant document external to the project,
- Interviews. The following 6 interviews have been performed in June, 2019:

<b>Partners</b>	ESTIA	IP LEIRA	CATEC	
<b>Associated Partners</b>	AEROSPACE VALLEY			

<b>Pilots</b>	VENTANA	ENGILE AEROENGINES		
---------------	---------	-----------------------	--	--

## 2 Final evaluation

The structure of this document reflects the objectives of the report.

### 2.1 Effectiveness and efficiency

Compare activities and results with work plan and budget<sup>1</sup>.

It is important to point out that this evaluation is based on the July 2016 – March 2019 timeline basis, as the final budget report will be delivered after the delivery of this report.

<b>G T</b>	<b>End date</b>	<b>Leader</b>	<b>Implementation</b>	<b>Status</b>	<b>Expenses declared up to March 2019</b>	<b>Eligible expenses</b>	<b>Deviation ?</b>
<b>1</b>	2.2017	PEMAS	Reports delivered	Done	160.141,45 € (99,4%)	161.112€	/
<b>2</b>	10.2018	LORTEK	4 Pilots implemented (finalization of the 4 <sup>th</sup> ) and viability studies performed	Finalized in June	531.449,09 € (94,4%)	562.664€	Delay due to the difficulties related to the 2 <sup>nd</sup> pilot
<b>3</b>	3.2019	Inst. Pol. LEIRIA	3 Workshops performed, 4 conferences performed (4 <sup>th</sup> in June 2019)	Done	266.399,85 € (72%)	369.152€	/
<b>4</b>	2.2019	ESTIA	6 Training sessions have been performed, including 4 with a level introductory and 2 with advanced levels.	Done	124.821,49 € (72%)	172.815€	Since the pilot is enrolled in a program in collaboration with the IEFB, evaluation has not been

<sup>1</sup> For this analysis we referred to the cost declarations provided to CHT by the consortium. The final declaration of expenses will be done after the delivery of this report. That's why the costs that are included are going until March, 2019.

							performed yet.
5	6.2019	LORTEK	Finalization of the last deliverable (D5.2.1 already available).	Ending on 30 <sup>th</sup> of June 2019	43.825,51€ (56%)	77.647€	/
T1	6.2019	ESTIA	Subcontractor is performing regular activities follow up, management and reporting.	Ending on June, 30 <sup>th</sup> , 2019	150.846€ (66%)	247.050	/
T2	6.2019	AFM	Communication material delivered and exploited	Done	65.638,32€ (49,5%)	132.448€	/
T3	6.2019	ESTIA	Conferences and workshops implemented	4 <sup>th</sup> conference on June 2019	24.762,03€ (83%)	29.850€	/

**Total: 1,401,821.19€ declared out of 1.774.450€ (total eligible expenses), that is 79%, at T+33**

#### General Analysis:

- Globally, since the beginning of the project, partners have declared expending 79% of total eligible expenses, which is low if compared to the number of months concerned by the declaration out of the total that is, 33 months out of 36. *This can be explained by the delay of the KoM, already explained in previous report, and the problems regarding implementation of pilot 2.*
- From March 2018 until March 2019, partners have totally spent 41% of total eligible expenses (17% over April to September 2018, 24% over the period over October 2018 to March 2019). Moreover, in this second period expenses are globally higher than during the first period, confirming the fact that the consortium caught this delay.

#### Analysis by GT

- GT 1: activities are over, and total expenses reach more than 99% of the total eligible expenses. These seems coherent.
- GT 2 : 94% of eligible resources spent, which seems coherent that were supposed to end by october. Additional expenses have to be anticipated to finish the second pilot on June, 2019.

- GT 3: expenses declared are little low (about 72% of total eligible expenses). This will be caught up in the final declaration through the final conference expenses. Thus, the amount declared seems coherent.
- GT4, on training, is over in terms of activities and deliverables, but only 72% of expenses declared. This is due to the fact that the deliverables have to be finalized in June. In addition IP Leira's training session in collaboration with IEFP started in May, another training pilot from ESTIA was also done in May (as well as two training weeks from pilot 1).
- GT T1, T2, T3 have declared quite low expenses. In particular, the GT T2 declared only 49,5% of the total budget. All material is ready. The remaining costs to be declared will concern the final conference in San Sebastian.

### Analysis by Partners

	BUDGET 36 M	Executed & Certified 1st Period (Jul16 - June17) 12 M	Executed & Certified 2nd Period (July17 - March18) 9 M	Executed & Consolidated 3rd Period (April18 - Sept18) 6 M	Executed & Verified 4th Period (Oct18 - March18) 6 M	Cumulated Expenses (Jul16-March19) 33 M	% Execution	BUDGET AVAILABLE
1. ESTIA	420.768,57 €	57.001,79 €	67.626,41 €	129.897,70 €	104.115,53 €	358.641,43 €	85,23%	62.127,14 €
2. LORTEK	386.835,44 €	64.664,61 €	82.010,34 €	87.161,38 €	130.953,05 €	364.789,38 €	94,30%	22.046,06 €
3. FADA-CATEC	225.535,24 €	61.040,01 €	38.289,71 €		98.641,12 €	197.970,84 €	87,78%	27.564,40 €
4. AFM	232.809,88 €	78.827,15 €	41.647,02 €	35.321,68 €	22.653,59 €	178.449,44 €	76,65%	54.360,44 €
5. IP Leiria	207.466,40 €	13.156,04 €	54.180,05 €	35.376,08 €	32.826,83 €	135.539,00 €	65,33%	71.927,40 €
6. PEMAS	48.343,15 €	23.970,66 €	19.434,46 €			43.405,12 €	89,79%	4.938,03 €
7. VLM	67.003,11 €	15.425,77 €	14.996,30 €		27.454,88 €	57.876,95 €	86,38%	9.126,16 €
8. MICRONORMA	67.000,85 €	14.857,51 €	17.746,17 €	9.658,48 €		42.262,16 €	63,08%	24.738,69 €
9. GNC Laser	67.031,20 €				0,00 €	0,00 €	0,00%	67.031,20 €
10. AEDCP	51.656,85 €			6.969,97 €	15.916,89 €	22.886,86 €	44,31%	28.769,99 €
<b>TOTAL</b>	<b>1.774.450,69 €</b>	<b>328.943,54 €</b>	<b>335.930,46 €</b>	<b>304.385,30 €</b>	<b>432.561,89 €</b>	<b>1.401.821,19 €</b>	<b>79,00%</b>	<b>372.629,51 €</b>
	100,00%					79,00%		21,00%

- ESTIA has declared 85,23% of eligible expenses, which is seems coherent with the expected expense (91%) and the delay that needed to be caught up. The same goes for FADA-CATEC, PEMAS, VLM.
- LORTEK is well advanced regarding eligible expenses. Some overspending budget could be pointed out regarding staff, administrative and equipment. This is balanced by the fact that only 53,7% of the external technical assistance was consumed.
- AFM has declared lower expenses than expected (76,65%).
- The same goes particularly for IP LEIRA (65%). This can be explained by the fact that initially Leiria had to finish the technical catalogue.
- No information is available regarding GNC Laser and Micronorma regarding the last reporting period.

### Deliverables

The deliverables that are due for the projects were delivered by the end of the project; the latest ones are currently under review process.



### 2.1.1 Deviations

‘Ex ante evaluation report’ had already identified a delay in GT1 due to late start of the project. The project Manager reported that this delay was mostly due to Sudoe delay in the KO of the project. **This backlog was caught up and all deliverables will be delivered by the end of the project.**

The ‘intermediary evaluation report’ identified another delay: it concerned GT 2 industrialization phase, and this delay was due to unexpected difficulties met during the previous phase. This previous phase consisted in obtaining candidatures to the open call for industries to provide components for Pilots. **Few industries answered to the open call, due to the unexpected wish of keeping information concerning components confidential.** This backlog was caught up during the project, delivering 3 pilots on time. Unfortunately, some problems were met regarding pilot 2, due to person contacts who left the company (ADIRA), leading to machine unavailability. For this pilot, the piece production is subcontracted and will be ready at the end of the project, but the feasibility study cannot be done.

### 2.1.2 Quality of management and coordination

Capital High Tech has interviewed the coordinator of the project, XX partners, XX associated partners. We asked persons to provide a qualitative evaluation towards the topics addressed.

Here below, we are summarizing the results of these interviews in terms of satisfactions towards:

#### Management and coordination

Persons interviewed **were highly satisfied of the management and coordination** of the project. They found it very effective, with a good methodology in terms of communication, deliverable management.

#### Partners involvement

Concerning the involvement of partners and associated partners, there is global satisfaction and overall high involvement.

Different levels of involvement and activities awareness within partners were pointed out in previous reports, which is quite recurrent in collaborative projects.

#### Cooperation

Cooperation among partners has **high and satisfactory level**. They want to work together again on another project which aims at promoting additive manufacturing in other industrial sector (e.g metallurgy, MIM-like technology).

Thanks to their cooperation, they improved their skills on additive manufacturing and other technologies (e.g. non-destructive tests competencies were brought by FADA-CATEC to ESTIA)

### Problems observed

The only real problem that was noticed in this domain was the Sudoe management of the contract. In fact, the Sudoe platform and program management was at the origin of a delay of several months in the KO of the project. **Partners succeeded in managing this delay.**

## 2.2 Satisfaction level of partners and associated partners

### Towards the project

High satisfaction was observed despite the initial delay of the project for the reasons explained before.

### The results

Global satisfaction has been expressed towards results.

Some examples can be quoted:

- Good level of deliverables in terms of content and timing
- Good feedbacks regarding the training pilots which were 100% recommended. In addition, the transnational module was a very good experience that rose interests among students regarding additive manufacturing.
- Good feedbacks also from industries, which were very satisfied about the demonstrations of AM capabilities in aerospace sector. In addition, they were also very interested by the training options and the industry catalogue.
- High participation to conferences and workshops.
- Partners were also satisfied by ADDISPACE project through the growth of their respective networks.
- ADDISPACE project also highlighted that other industrial sectors could be interested by additive manufacturing. For example, TOTAL Oil and Gas showed interest to integrate that process in its company.

Some less satisfactory results can be quoted here:

- Difficulties for the experiment pilot n°2.

## 2.3 Satisfaction level of pilots' participants

Two industrial pilots were interviewed in order to provide feedback regarding the pilots they participated to.

The industries were chosen thanks to close relationships with the consortium. They were interested by this approach which was complementary to their current work or addressing issues they faced.

The industries were globally satisfied by the project, as they provide a complete technical and economic study that is relevant for their activities.

- A pilot participant pointed out that the consortium considered the pilots' needs by integrating other parameters in their study (life cycle, material treatment, etc.).
- In addition, the feasibility was able to identify some technological barriers for using additive manufacturing in their processes for aeronautical pieces: e.g. use of another material that should be qualified.
- Another pilot participant highlighted the fact that this study was able to overcome and optimize manufacturing process problems, which was very satisfying for the customer. Moreover, this study could also have impact regarding other manufacturing parts, thus incentivising adoption of this technology for aerospace sectors (their main customers). Consequently, he should be interested by participating in another pilot if this opportunity was given again.

The use cases were studied on a theoretical point of view. Some participants would have preferred that the study was completed by a demonstrator manufacturing in order to validate (or not) the theory. But the manufacturing will be performed afterwards.

The participation to the workshops was satisfying, as special guests were invited from big aerospace companies and gave current status about additive manufacturing.

## 2.4 Impact of the project

The Preliminary impact of the project will be assessed by checking the achievement of Project Specific Objectives Indicators:

Project specific objectives indicator	#	WP	Achieved?
<b>Diagnostic report</b>	1	GT 1	YES
<b>SMEs involved in demos</b>	3	GT 2	YES Design: 3 PME (VLM, Micronorma and Grupo NC Laser) + associated partners: Airbus Defence and Space, ADIRA, (associated) + Lauak (external)
<b>Conferences</b>	4	GT3	Sevilla (February, 2018) Marinha Grande (October, 2018) Irun (March, 2019) San Sebastián (June, 2019)
<b>SMEs, research centers, industries concerned</b>	240	GT 3	YES, 100 to 120 participated at the conferences, around 400 stakeholders were involved in ADDISPACE

<b>Catalogue technologies</b>	of 1	GT 3	YES
<b>Workshops for TT</b>	4	GT 3	Arcachon: May 2017 during 12 <sup>th</sup> Aerospace Valley forum Sevilla : February 2018 Marinha Grande: October 2018. Irun (Ficoba): March 2019
<b>SMEs involved in TT workshops</b>	120	GT 3	Sevilla event: 50 from Basque Country and Sevilla Next: +50 in Marina Grande +80 at FICOBBA
<b>SMEs starting a TT</b>	20	GT 3	Too early to assess. From October 2018 onwards
<b>Training levels</b>	2	GT 4	YES
<b>Training Pilots</b>	6	GT 4	Lortek and Don Bosco: professional training session done in January 2018. 1 continuous education module: FADA CATEC in Sevilla in June 2018 2 continuous education modules: Training pilots at ESTIA in April 2018 opened to all profiles, in April 2019 to professionals. ESTIA and IP LEIRA: transnational module – higher training IP LEIRA: 1 training in April 2019.
<b>Students concerned</b>	20	GT 4	YES - 32 12 students for first training pilot in January 2018 20 students involved on training pilot in April 2018 at higher education level 1 transnational (France/Portugal) training pilot
<b>Workers concerned</b>	40	GT 4	YES – 52 workers concerned by the following trainings (10 for the first, 25 persons for the second, 12 and 10 for the last ones) 2 in June-July 2018 (Lortek), ESTIA in Sept 2018, Leiria in 2019.
<b>RoadMap for a PTF</b>	1	GT 5	YES
<b>Policy and strategic brief</b>	1	GT 5	Ready by the end of the project.
<b>Contacts with clusters, associations, networks, to disseminate</b>	20	GT 2	AFM: contacts with 5 entities (3 in Spain, 1 in France, 1 in Portugal) PEMA: contact with clusters in Portugal FADA CATEC: contacts in Holland and Brussels for standardization issues ESTIA: contacts with Aerospace Valley Lortek: contacts with Basque Country cluster FADA CATEC: contacts with cluster in Andalusia

CHT assessed also the achievement of Program Indicators :

Program indicator	realisation #	Achieved?
<b>Number of participating transnational companies to research projects</b>	6	YES GNC Laser, Micronorma, VLM, EADS CASA Espacio SL, ADIRA METAL FORMING SOLUTIONS SA, Instituto de Tecnologia de Moldes A.C.E.
<b>Number of research centres participating to transnational research projects</b>	6	YES: ESTIA, LORTEK, FADA-CATEC, IP LEIRIA, Centro Tecnológico da Indústria de Moldes, Ferramentas Especiais e Plásticos, Don BOSCO

Assessment in relation to other topics, obtained mainly through interviews :

(Values: From 1= very low impact to 5=very high impact)

Topic	Value	Examples
<b>Networking and collaboration capacities for transnational cooperation</b>	4,5	the participation of SMEs from different regions to workshops created a very good occasion for networking and future business opportunities for partners of the project, including out of their own country.
<b>Commercial buy in MAM</b>	4	However, one of the partners (VLM) already obtained some commercial results thanks to the project (selling of MAM equipment). In addition, SMEs involved in ADDISPACE project showed real interest.
<b>Advancement on the standardization and quality certification of MAM parts and components in the Aerospace sector.</b>	3	This is a slow process. A strategy certification is being suggested to RIS3 in SUDOE to qualify and certify MAM to aerospace sector. SMEs industries are very interested by this technology, this should be incentivised by bigger companies like Airbus.
<b>ADDISPACE PTF opening for TT</b>	3,5	First contacts were performed with industries that were interested by additive manufacturing TT. This platform will allow the projects to be concretized.
<b>Education and training offer</b>	5	1 high training, 1 professional module, 4 continuing education modules. Students evaluate the training session very well and ALL of them declared that they will recommend it. This will be kept after the project.
<b>Absorption of MAM technologies by SMEs</b>	4	One of the Associated partners (ADIRA) clearly stated that, if viability analysis results are satisfactory, they will very likely become a real MAM user and promote it towards their customers (SMEs). Micronorma also intends to adopt it. Portuguese industries showed also interest thanks

		to the expansion of the training offer. As mentioned before, lots of SMEs showed interest. In addition, even if it is a big company, it is interesting to point out that Total Oil and Gas was also interested by this manufacturing process.
<b>Mainstream support measure into national and regional policies and programmes</b>	4	No additive manufacturing training offer existed before ADDISPACE in Portugal. The nationwide protocol that was performed thanks to its project developed the first training offer, supported by Portuguese government.
<b>Interregional links and initiatives promoted by subprojects</b>	4	Networking among partners and with SMEs and stakeholders invited to Conferences is highly appreciated, notably to increase know how, and find future business and cooperation opportunities. This project is creating the “background” nourishing those opportunities. Satisfaction also in contacts with other regions’ clusters.

Capital High Tech can observe global satisfaction towards other preliminary impacts:

- **TECHNICAL IMPACT:** Concerning Pilots; associated partners are very satisfied, despite some difficulties met in the design phase.
- **DISSEMINATION:** The workshops and conferences had an excellent impact in terms of dissemination of the project content and results and in terms of communication towards SMEs, contributing to future adoption of MAM. The Press largely covered the event, contributing even more to its dissemination (CHT accessed the press articles).
- **MARKET:** the market benchmark performed within the project will be exploited by partners also for internal use in the promotion of MAM technologies.

## 2.5 Follow up of recommendations issued in the previous reports

### 2.5.1 Stakeholders and end-users’ engagement and deep understanding (KSF<sup>2</sup> n. 1)

**Recommendation n. 1→** It is recommended that in the following months the project strengthens this activity and it is recommended to pay particular attention to geographical

<sup>2</sup> Key Success Factor, some already identified in previous report.

balance in the stakeholders' identification and engagement. Their engagement is a key success factor for ADDISPACE as they will be at the base of Key Performance Indicators.

- ➔ *The consortium took care to get a geographical balance regarding the participation to the events (50 % Spanish/50% French participants for FICOBA event, 70% Portuguese/30% Spanish for Marinha Grande event).*

#### 2.5.2 Effectiveness and impact of demonstrations (pilot tests) (KSF n. 2)

**Recommendation n. 2** ➔ ensure time and resources to be committed to this activity; ensure strong involvement of each partner and of stakeholders for the success of pilots.

- ➔ *3 Pilots have been successful so far. Difficulties were met for the pilot 2 but were managed via task subcontracting, and the piece will be manufactured by the end of the project.*

#### 2.5.3 Massive and effective dissemination (KSF n. 3)

- ➔ *Satisfied.*

#### 2.5.4 Close follow up of expenses and timetable (KSF n. 4)

Concerning the timetable for the work plan, the project concretely started 4 months later (KoM in November 2016) than the official date (July 2016). The consortium cannot postpone the final date of the project, nor increase the months of the project. Thus, this imply an effort to perform the same amount of work in 32 rather than 36 months.

**Recommendation n. 3** ➔ It is recommended to early identify the activities that can be started earlier in the project calendar and/or that can easily be performed in a shorter time so to anticipate and calibrate the abovementioned effort among the partners and according to the activity.

- ➔ *This recommendation seems satisfied thanks to the good follow up performed by the coordinator (ESTIA) and his subcontractor (Iniciativas inovadoras) and to the efforts made by partners to catch the delay.*

**Recommendation n. 4** ➔ The consortium has envisaged quality control of deliverables to be performed by Clusters (Helice, Hegan, AV). In order to strengthen the credibility of the work done in the project and the credibility of its reports, it is recommended to ask that quality control is performed by **persons within the clusters with proved experience in Metallic Additive Manufacturing.**



- ➔ *The quality control was done within the consortium, who have strong experience and skills on that topic. Unfortunately, the person they wanted to contact who has a strong technical expertise in additive manufacturing left Aerospace Valley.*

**Recommendation n. 5** ➔ in order to maximise project dissemination and impacts, it is recommended to **enlarge the network of clusters** to others not being Associated Partners.

- ➔ *The partners and associated partners already include clusters involved in additive manufacturing (Helice, Hegan, AV) with strong network that were very efficient regarding dissemination activities. After the project, some relationships could be started with other clusters that are involved in aerospace sector, but not specifically in additive manufacturing, to create synergies and interdisciplinary initiatives.*

**Recommendation n. 6** ➔ We observed lower expenses than expected for the first half of the project especially in the GT T2 on communication. The project is entering a critical phase, where the pilots will be finalised (Industrial research and Training Pilots), and Viability report will be drafted. This report will address some of the key concerns of SMEs in adopting MAM: economic viability. **This information should be strongly disseminated and communicated, as well as the existence of Training sessions.** Therefore, in order to maximise impact of the project on the Sudoe Program, we recommend defining an **Additional Communication Plan which will enlarge to new/or strengthen current communication and dissemination activities** (in terms of participants, for instance, or number of activities), including through contacts with new Clusters (See recommendation 4).

- ➔ *Strong participation to workshops, conferences and training pilots proved the efficiency of the dissemination activities that were performed. All deliverables will be available on the website at the end of the project.*
- ➔ *An additional communication plan was performed, with several actions (piece of news on website, newsletter, etc.)*

## 2.6 External Risks identified in previous reports

**2.6.1** Here below some of the external risks identified and evaluated in terms of probability and impact from 1 (very low/inexistent) to 5 (very high) during the ex-ante evaluation project:

**Risk 1:** low stakeholder and end-user engagement during and after the project (in relation to ADDISPACE KPIs).

- ➔ *Efforts have been done in this sense to reduce the risk, with good results.*

**Risk 2:** low adoption of MAM by aerospace sector in the Sudoe region at the end of the project (in relation to KPIs).



➔ *Efforts have been done in this sense to reduce the risk, with good results.*

**Risk 3:** low engagement of the public sector for supporting training and TT platform replicability in other regions.

➔ *The training pilot towards unemployed people led by IP LEIRA partner was supported by the Portuguese government. The Prime Minister and two other ministers attended the ADDISPACE event dedicated for this training. This was a good way to disseminate ADDISPACE results and guarantee a good impact with sustainable outcomes. The other training pilots were also successful, but could make contacts with employment agencies and career counselling centres to increase participations for future editions.*

## 2.6.2 Early warning indicators and occurrence

**Risk 1:** Low stakeholder engagement and participation since the beginning of the project.

*Occurred? ➔ No*

**Risk 2:** economic analysis of pilots unveils prohibitive costs for the whole chain of MAM and low economic advantages for Aerospace industries comparing to conventional manufacturing.

*Occurred? ➔ No*

**Risk 3:** drastic changes in the national and regional priorities and political engagement towards AM and the aerospace sector.

*Occurred? ➔ No.*

## 2.6.3 Potential mitigation measures and implementation

**Risk 1:** increase consortium efforts in disseminating concrete results of demonstrations and results from studies on technical, environmental and economic feasibility, pilots and success stories towards stakeholders and end users.

*Implemented? ➔ Yes.*

**Risk 2:** a clear effort should be put on economic analysis and to find the right economic arguments to address end users concerns, which would complement concerns on training and technical feasibility. Another mitigation measure could be to invite to workshops funding entities (banks, consultants, other....) that may provide support to SMEs for funding their investments in MAM adoption.

*Implemented? ➔ Yes. SUDOE members and consultants were invited to workshops, as well as the Minister of the territorial development of Spanish Bask Country government (FICOBA).*

**Risk 3:** Provide arguments to convince that it is worth considering the opportunity for aerospace industries to fund (part of?) training and technology transfers.

Implemented? → *Yes, aerospace major industries were invited during workshops and conferences.*

### 3 Conclusions

The overall conclusion is very positive.

- The consortium worked with very good levels of cooperation, the partners want to continue to work together in other projects.
- Some initial delays have been caught and correctly managed.
- The massive participation on conferences and workshops testify of a true interest by industries in this project and in this technology, confirming the relevance of ADDISPACE project.
- Training pilots were successful.
- Strong attention was given to the sustainability of ADDISPACE outcomes: partners commit themselves to keep the technological offer catalogue updated, and to disseminate other project's results through ADDISPACE website that will remain available at least for the next 3 years. In addition, the training pilots will remain part of the training offer that the partners propose, guaranteeing their sustainability. A summer camp will also be setup, following the successful transnational training pilot (France/Portugal), as well as Master diploma (ESTIA, LORTEK).

## 4 List of abbreviations used in this report

AM	Additive manufacturing
ES	Spain
FR	France
KET	Key Enabling Technologies
KoM	Kick-off-Meeting
KSF	Key Success Factors
MAM	Metallic Additive Manufacturing
PO	Portugal
RIS3	Research and innovation strategies for a smart specialisation
TT	Technology Transfer
WP	Work Package

## 5 Consulted Documents

- All documents presented in the restricted area of the website and available at the 27<sup>th</sup> of June 2019
- Documents sent by the coordinator / manager
- Interreg Sudoe Program documents



[www.addispace.eu](http://www.addispace.eu)