

Interreg
Sudoe



EUROPEAN UNION

ADDISPACE

European Regional Development Fund

WP1

Technical Meeting

Donostia-San Sebastián

03/04/2017

MINUTES

AGENDA

Venue: La Concha Meeting Room, Hotel Zenit San Sebastian.

Monday, April 3 rd , 2017		
Time	Item	Presenter
10:00-10:15	Welcome Technical meeting goals	ESTIA
10:15 – 11.45	GT1. DIAGNOSIS <ul style="list-style-type: none"> - Review and agreement on State of the Art Report. - Review and agreement on main findings from survey. 	PEMAS + All
11:45- 12:00	<i>Coffee Break</i>	
12:00-13:30	GT2. PILOTS <ul style="list-style-type: none"> - Presentation of Method and Framework of Terms of Reference (ToR) of Pilot Actions. 	LORTEK + All
13:30-14:30	<i>Lunch</i>	
14:30-16:30	GT2. PILOTS <ul style="list-style-type: none"> - Discussion of the Pilot Actions. - Definition of draft ToR of Pilots. 	LORTEK + All
16:30-17:10	GT3. TRANSFER <ul style="list-style-type: none"> - Arcachon Transfer Workshop: agenda, method and work plan. - Catalogue of S&T MAM offer in aerospace: status report of compiled data, method for paper and online catalogue and workplan for update. 	IP LEIRIA, AFM, ESTIA + All
17:00-17:30	GT4. EDUCATION <ul style="list-style-type: none"> - Work plan for definition of education and training overview in SUDOE 	ESTIA +All
17:30-18:00	Wrap up and Work Plan	ESTIA
18:00	End of meeting	

ATTENDANTS

	PARTNER	NAME OF THE ATTENDANT
1	ESTIA	Stéphanie Cagin
2		Pierre Diaz
3		Federico Garcia
4		Pierre Michaud
5		Olivier Larre
6		Ion Gorriti
7	LORTEK	Lexuri Vazquez
8		Alberto Etxeverria
9		Raquel Abad-Lera
10	AFM	Naiara Zubizarreta
11		Itziar Oyarzabal
12	FADA-CATEC	Fernando Lasagni
13		Antonio Periñán
14	PEMAS	Joao Romana
15	IP LEIRIA	Artur Mateus
16		Ciryl de Santos
17	VLM	Philippe Verlet
18	Micronorma	Bruno Silva
19		Tatiana Loio
20	GNC Laser	M ^a del Mar Alcázar
21	AIRBUS	Jorge Vilanova
22	Don Bosco	Asier Morán
23	HEGAN	Ana Villate

PRESENTATIONS

Presentations available at Private Area: ADDISPACE / GT1. MANAGEMENT / 3. PROJECT MEETINGS / 4. TECHNICAL MEETING 03-04-2017

1. Welcome. ESTIA.
2. GT1. PEMAS.
3. GT2. OVERVIEW. LORTEK.
4. GT2. PILOTS. LORTEK.
5. GT3. OVERVIEW. IP LEIRIA.
6. GT3. ARCAÇON. ESTIA.
7. GT4. ESTIA.

ATTENDANCE SHEET

Available at Private Area: [Attendance Sheet](#).

MINUTES

WELCOME

Pierre Diaz from ESTIA welcomes partners to the meeting and a brief round of presentations ensues.

Pierre Diaz informs about the public procurement process for the subcontracting of an external evaluator, resulting on the award of the tender to Capital High Tech company.

All partners agree on the contracting of such company. As a shared cost between ESTIA, LORTEK, FADA-CATEC, AFM, IP LEIRIA and PEMAS, according to Annex II of ADDISPACE Partnership Agreement, the following process will be followed:

- Public procurement documents will be available at Private Area:
 - Terms of Reference.
 - Invitation to submit bids to 5 companies.
 - Bids received: 1 by Capital High Tech.
 - Contract signed between ESTIA and Capital High Tech.
- Mirroring the process followed for the shared costs of the general coordination, concerned partners will sign a French and English agreement.
- Once concluded this process, and following the internal procedures needed by partners to register the expense, Capital High Tech will proceed to issue the first invoices to concerned partners.

Support documents in Private Area:

- PPT: [Welcome ESTIA](#).
- [Public procurement process for External Evaluation](#).

GT1. DIAGNOSIS

João Romana from PEMAS presents the latest version of the “State of the Art Report” (version 6), delivered to partners on April 1st, and available at Private Area.

Latest version includes the following updates:

- Technology foresight section.
- RIS3 of partner regions.
- MAM players overview: France (43), Spain (27) and Portugal (51).

The following discussions and agreements are held:

MAM players overview:

It is agreed the overview to be focused on 1) MAM players with established capabilities and 2) Aerospace players with established MAM capabilities.

As the same criteria was not followed on the 3 national mapping exercises, the review of the French and Portuguese maps will be conducted by ESTIA and PEMAS for April 21st.

RIS3:

INI will prepare for April 21st a complementary information box on the section devoted to Spanish RIS3 with a summary overview of other regions besides Basque Country and Andalusia targeting Aerospace and/or Additive Manufacturing among their priorities.

State of the Art:

LORTEK will review the section in order to complement it by April 21st with information on relation to the maturity level of addressed technologies.

Survey exploitation:

All in all, 79 surveys filled in: France (54), Spain (17), Portugal (8).

Analysis of the responses to be included on State of the Art Report. To that end, the following is agreed:

- PEMAS will make a preliminary quantitative analysis of all the responses of the survey. To that end PEMAS will use the piecharts and tables provided by the Google Form Report, making a first analysis of such data by April 14th.
- Partners will feedback and make a qualitative analysis of responses by April 26th.
- PEMAS will produce a final version of the document with quantitative and qualitative analyses and extract main findings and conclusions by April 28th.
- PEMAS will integrate this chapter on latest version of the State of the Art Report by April 28th.

This final version of the State of the Art Report will be translated to French, Spanish and Portuguese.

The French and Portuguese versions are the ones more pressing, to be available by Arcachon and Marinha Grande Transfer Workshops:

French Report:

- Translation to French: ESTIA has a budget of 3.000 € for translating the report.
 - Lay out and printing French Report: ESTIA has a budget of 6.000 €.
- All in all, 9.000 € for the translation, and printing of the report.

Portuguese Report:

- Translation to Portuguese: PEMAS has a budget of 1.764 € for translating the report.
 - Lay out and printing Portuguese Report: PEMAS has a budget of 6.000 €.
- All in all, 7.764 € for translation and printing.

AFM will be enquired about the possibility of taking in charge the layout of the Report.

Support documents in Private Area:

- [PPT: GT1. PEMAS.](#)
- [State of the Art Report version 6.](#)
- Links to surveys:
 - EN:
<https://docs.google.com/forms/d/1Ib4o-nNAvbuNOGfD5A68r4Q0B5mwwFqN5m2I7TtL-sl/edit>
 - PT:
<https://docs.google.com/forms/d/183sYncJtHs2XNPHvfVIGqXD5Ho7fMA45IXvIIHekbYg/edit?ts=58b032a9>
 - FR:
https://docs.google.com/forms/d/1od_IH0pQoVZ0zgGbJxxiHA_I5f3IDNCgUCUboM2x3PI/edit
 - ES:
<https://docs.google.com/forms/d/15swav1blyXN3yrPjpxVE0qPlmV9lQKJ2Zfr3HAK5p0E/edit?ts=58b0329b>

GT2. PILOTS

Lexuri Vazquez and Raquel Abad present the GT.

First, an overview of GT2 is made, with indication of the goals, tasks and main deliverables on the 3 planned stages:

- Definition of Terms of Reference of Pilots.
- Technology development stage.
- Feasibility stage in SMEs.

In this regards it should be noted that only Partners and Associated Partners are to take part on the definition of Terms of Reference and on the technology development stage. Only on the feasibility studies stage will the partnership be opened to the addition of new stakeholders, SMEs interested on being the beneficiaries of the feasibility study carried out for the potential transfer of the improvements achieved on the technology development stage.

The template of the Terms of Reference for Pilot is also presented (available at Private Area), as well as the Pilots governance model, based upon 2 main documents:

- Pilot Agreement: Signed between ADDISPACE participants (partners and associated partners) on the Pilot, establishing the governance structure, access rights (IP,...), non-disclosure of Information, etc.

- **Implementation Agreement:** Signed on Stage 3, between ADDISPACE participants on the Pilot, and 4 SMEs beneficiaries from the feasibility study.

On this regards, the following should be noted:

- A proposal is made to regulate IP issues at 3 levels at ADDISPACE project:
 - A general Consortium Agreement besides the Partnership Agreement, ruling the IP issues (access to research results) of ALL partners and associated partners on a general basis, coming up from the Pilots mainly. This will be addressed in next Steering Committee meeting.
 - The Pilot Agreement, at pilot level, ruling the specific access rights to knowledge and results between specific partners and associated partners taking part on the Pilot.
 - The Implementation Agreement, where the access of SMEs to Pilot research results will be regulated.
- On regards to IP issues, the Pilot Agreement is to rule the protectable results as well as those research results which will be considered as Open Research results, and therefore, subject to be transferred in the framework of ADDISPACE Transfer Workshops and Conferences in WP3.
- Finally, it is remarked that in stage 3, the services and knowledge transferred to SMEs beneficiaries from the feasibility study will be considered as subjected to state aid regulation, so such services must be economically valued by ADDISPACE and communicated to the beneficiary SME as a minimis aid. This regulation will have to be clearly defined in the Call for Expressions of Interest that following publicity and transparency principles will have to be openly disseminated. ADDISPACE will have to issue a declaration for SMEs beneficiaries of the feasibility study, stating the estimated amount of € of the services provided.

For the definition of the 4 Pilots during the meeting, the following method is followed:

- Technology centres and SMEs make a pitch on the technologies and areas of their interest.
- A summary table of the areas of interest from technology partners and SMEs compiled by LORTEK is shared. Available at WP2. OVERVIEW PPT.

Partner	Technology	Expertise	Interests	Proposals
ESTIA	LMD-P	simulation in carbon composite	desing	desing or redesign metallic part
	CMT	AM composites	modelling and simulation	optimize process control
	LMD-W		LMD (P and W)	comparation traditional processes to AM
				tooling
IPLeiria	SLM	Ti, Al, Ni alloys	SLM	compare AM processes
	TLM	memory shape alloys (Nitinol)	LMD/DED powder	
		hybrid manufacturing	ADIRA for TLM	
FADA-CATEC	SLM	Scalmalloy AlMgSc	conventional machining	fabrication of aeronautic and space demonstrators by SLM and inspection to be agreed with HELICE and CASA-ESPACIO respectively
		Al, Ti alloys		
		topologic optimisation		
		material development or characterisation		
GNC Laser	high powder diode and fibre laser	Inconel	work with fada catec and lortek	
	LMD	laser for cladding and hardening	control of process	
LORTEK	LMD (W and P)	WAAM		
	CMT	SLM		
	SLM	Al, Ti, Ni alloys		
	laser, diodo, fibre y disc			
MICRONORMA	CNC and conventional milling, conventional turning, WEDM, Grinding, Polishing, CAD/CAM/CAE seats.]	Al alloys and Ti	work with fada catec and lortek	SLM
		SLM and LMD		sustractive
		end user		hybrid manufacturing

- 4 Pilot Work Groups are created following the proposal made by LORTEK considering the links identified on referred table in order to start working on the definition of Terms of Reference:

Group N°	1	2	3	4
Technology	SLM	LMD Powder	Wire based LMD	SLM Optimisation
Leader	FADA-CATEC	IP Leiria	ESTIA	LORTEK
Participants	IP Leiria	ESTIA	LORTEK	FADA-CATEC
	Micronorma	ADIRA	GNC	AIRBUS
	ADIRA		VLM	ADIRA

Following the work in groups, leaders present in plenary the preliminary definition of target Pilots. The following information is provisional and it will be updated with a summary provided by Pilot Leaders:

GROUP 1: SLM: FADA-CATEC. <ul style="list-style-type: none"> • GOAL: Redesign and MAM manufacturing of a part fulfilling all necessary standard specifications following the use of SLM technology in different materials and chambers from participants. • Part to be selected by HELICE and Airbus D&S. • Optimisation focusing on the redesign for integration of different parts on a single one, focusing on final shape finishing.
GROUP 2: LMD Powder: IP Leiria. <ul style="list-style-type: none"> • Development chain of LMD-powder technology. • Comparison between the prototype machine of ADIRA (TLM) vs. standard. • Simulation, topological optimization, HIP, NDT
GROUP 3: Wire based LMD: ESTIA. <ul style="list-style-type: none"> • GOAL: Optimisation control of robotic MAM of large part (bigger than 500 mm). • 2 Technologies to be used for comparing results: wire based plasma technology and laser/wire technology. • Parts: 2 parts considered: one sophisticated (powder) and one simple. • Materials: Aluminium and Titanium. • Large amounts of materials might be needed, which demands a check-up of participants' budget for powder purchase.
GROUP 4: SLM Optimisation: LORTEK. <ul style="list-style-type: none"> • GOAL: Topological optimisation of parts manufactured by SLM technology by thermal and mechanical process. • Design: risky designs by the use of sophisticated lattice and fractals structures. • Field: design, calculation and fabrication. • Impact: <ul style="list-style-type: none"> - Current equipment capabilities to be pushed to the limit, making recommendations to machine equipment providers. - Demonstration of MAM capabilities for new design of parts to companies and students.

This preliminary information will also be shared with all Partners and Associated Partners giving the possibility of joining any Pilot.

The following work plan is agreed:

- The 4 Work Groups to work internally under the direction of the Leader, on the Terms of Reference. Preliminary ToR proposal by Leaders by April 27th.
- Skype Technical Meeting called by LORTEK for sharing preliminary ToR and doubts: May 3rd.
- Dissemination of preliminary ToR to all: May 10th.
- Final ToR of the Pilot Actions agreed by: May 12th.
- Presentation of ToR in Arcachon and Marinha Grande Transfer Workshops, as well as an advance on the procedure to join (open call): May 17th.

Support documents in Private Area:

- [PPT: GT2. OVERVIEW. LORTEK.](#)
- [PPT: GT2. PILOT. LORTEK.](#)
- [Terms of Reference template.](#)

GT3. TRANSFER

Artur Mateus from IP Leiria makes an overview of the Workshop. Two main tasks are addressed:

Transfer Workshops

Two Transfer Workshops will be held in May: one originally planned in France, and another one, not originally planned, in Portugal.

Transfer Workshop in Arcachon, France.

Coincident with Aerospace Valley members Technical Forum, taking place on May 16th and May 17th in Arcachon. Official agenda in Private Area and in [link](#). The following is remarked:

Agenda:

- May 16th: Full day ADDISPACE Steering Group meeting. Preliminary timetable: From 09.00h to 17.30h. Venue: meeting room at Palais des Congrès d'Arcachon. Final agenda will be delivered by the end of April.
- May 17th: ADDISPACE Transfer Workshop: 15 minutes presentation of ADDISPACE project and Pilots to Aerospace Valley companies attending the Aérostructures Matériaux et Procédés Workshop, from 08.45h to 10.30h.

Registration:

Number of participants to the event is limited by Aerospace Valley. The following spots have been negotiated by ESTIA (25-27 people all in all).

- 2 person per partner.
- 2 person for Iniciativas Inovadoras.
- 1 person per associated partner.

In order to make good use of available spots, we thank you if you can confirm as soon as possible the number of people respecting this limit, and name of people attending the meeting, using to that end the [ADDISPACE registration form](#) to be delivered by INI. If you cannot attend the meeting just let us know. This will allow us to make room from

other stakeholders who might be interested on the event such as PEMAS, HEGAN or HELICE companies.

This same information will be shared with Associated Partners not present in the meeting. In the case of Portuguese Associated Partners, participation on the event will depend on the agreement of an internal procedure within IP Leiria for affording such travel expenses for external stakeholders.

For confirmed attendants, you are kindly requested to officially register at the event, in this [link](#). Registration fee is 80 € per person (all tax included). This is an eligible expense for SUDOE.

Hotel accommodation:

In Private Area and in this [link](#) you will find a list of hotels in Arcachon with a pre-arranged fare for event attendants. This special fare is applicable for reservations made before April 14th.

Stand/booth:

ESTIA has requested a stand/booth for the 2 days of the event, where roll-up and project info will be available. It will comprise 3m² of exhibition + 1 table + 3-4 chairs. It will be possible to use it to arrange bilateral meetings with companies and other stakeholders.

Transfer Workshop in Marinha Grande, Portugal.

IP Leiria will hold an ADDISPACE Transfer Workshop in the framework of the International Conference on Direct Digital Manufacturing and Polymers (ICDDMAP2017), taking place in Marinha Grande from May 15th to May 18th, organised by IP Leiria and Karnataka University (India) and coincident with Entrepreneurship Week in Marinha Grande organised among others by IP Leiria and CETIMFE.

Information on ICDDMAP2017 on this [link](#).

ADDISPACE Transfer Workshop will take place in the framework of the official programme. The date and time is not decided yet, but IP Leiria will inform the partnership in time.

Coincident with Arcachon Transfer Workshop, the following is settled:

- A representative from IP Leiria will attend the Steering Group Meeting and Transfer Workshop in Arcachon.
- Partners and Associated Partners are invited to take part on Marinha Grande's Workshop, if agenda allow it. Anyone interested please contact IP Leiria, ESTIA and INI.
- Both Transfer Workshops will follow a similar approach: project information, presentation of State of the Art Report and survey findings and presentation of Pilots. If the timetable of both events allows it, some kind of connection might be planned.

Catalogue of MAM for Aerospace

IP Leiria and AFM with expertise on the lay out and production of catalogues have worked on a preliminary template for compiling the Scientific and Technology Offer on MAM. Template available in Private Area.

The following is agreed:

- Design template by AFM is considered as agreed, as it sums up the main information proposed by IP Leiria.
- IP Leiria and AFM will make a proposal for the scope of the catalogue. Proposal is to limit it to: Research, Technology and Industry established capabilities of the territories on MAM, with indication of aerospace experience.
- AFM considers the design of a catalogue of around 50 pages. Depending on the number of players to be reported, 1 actor by page or 2 actors by page designs are envisaged. These numbers are consistent with the final number of players that might result from the review of the mapping exercise of MAM players in WP1.

The following work plan is proposed:

- Agreement of template: April 3rd.
- Catalogue scope indications by IP Leiria and AFM: April 27th.
- Compilation and reporting of S&T offer of partners and non-partners: End July 2017.
- Delivery of 1st complete catalogue in English: September 2017.
- Translation of catalogue and lay out: October 2017.
- Development of online database with catalogue: October-December 2017.
- Launch of online database with catalogue: January 2018.

Support documents in Private Area:

- [PPT: GT3. OVERVIEW. IP LEIRIA.](#)
- [PPT: GT3. ARCAÇON. ESTIA.](#)
- [Aerospace Valley Technoforum agenda.](#)
- [Archachon Hotel Listings.](#)
- [MAM for Aerospace Catalogue template proposal by AFM.](#)

GT4. EDUCATION

Pierre Diaz from ESTIA presents this GT, making an overview of the following 2 tasks:

Joint training ESTIA-IP Leiria

ESTIA and IP Leiria are working on the organisation of a joint training on MAM for Aerospace atergetting Engineering cycle 3rd year (Master 2) students, to take place in 2018.

10 students from ESTIA and 10 from IP Leiria will follow a 2 weeks training, one at each centre, entailing thus the mobility of students. Two alternative weeks are being considered in March and April 2018.

Travel and subsistence expenses of students will be afforded by IP Leiria and ESTIA. IP Leiria is analysing the internal procedures to be followed in order to be able to afford such expenses.

IP Leiria and ESTIA will keep partnership informed on the task.

Diagnosis Study on Training Needs

ESTIA is to elaborate a Diagnosis Study with 2 sources of information:

- Findings from the survey on relation to the training needs and training offer in MAM, as well as the profiles demanded in this field and the difficulties encountered for hiring such profiles.
- Findings to be checked up against the current education and Training Offer on MAM in SUDOE.

In order to conduct the mapping of the current Education and Training Offer, ESTIA has elaborated a template, available at Private Area.

The following work plan is proposed:

- Feedback if any to ESTIA template: April 21st.
- Compilation and reporting of MAM offer by ESTIA, LORTEK, AFM, FADA, IP LEIRIA and PEMAS: May 19th.
- Diagnosis Study by ESTIA: May 27th.

Support documents in Private Area:

- [PPT: GT4. ESTIA.](#)
- [Template for mapping Education and Training offer on MAM.](#)

WORK PLAN

WHAT	WHO	WHEN
GT1		
Upload to Private Area of public procurement process documents leading to subcontracting of external evaluator	ESTIA & INI	12/04/2017
Signature of contract sharing the external evaluation costs	ESTIA, LORTEK, FADA, AFM. IP Leiria & PEMAS	21/04/2017
Agenda of May 16 th Steering Group meeting in Arcachon	ESTIA & INI	28/04/2017
GT1		
Review of MAM players on State of the Art Report	ESTIA & PEMAS	21/04/2017
Summary of Spanish RIS3 considering MAM 6 Aerospace	INI	21/04/2017
Review of State of the Art section for including maturity level analysis of technologies	LORTEK	21/04/2017
Preliminary quantitative analysis of surveys	PEMAS	14/04/2017
Feedback with qualitative analysis of surveys	All partners	26/04/2017
Integrated and summary analysis of surveys	PEMAS	28/04/2017
Delivery of final version of State of the Art Report including surveys analysis	PEMAS	28/04/2017
Translation of State of the Art report to French and Portuguese	ESTIA & PEMAS	By 12/05/2017
Layout for digital version of French and Portuguese Reports	TBD	By 12/05/2017
GT2		
Delivery of preliminary ToR	ESTIA, FADA, LORTEK & IP Leiria	27/04/2017
Skype Technical Meeting for sharing ToR	All. LORTEK calls	03/05/2017
Dissemination of ToR to all partners and associated partners	LORTEK	10/05/2017
Agreement of final ToR	All	12/05/2017
Presentation of ToR in Transfer Workshops	ESTIA and IP Leiria	17/05/2017

WHAT	WHO	WHEN
GT3		
Delivery of ADDISPACE Registration form for Arcachon meeting	All	ASAP
Official registration to Aerospace Valley event	All	ASAP
Progress on dates and agenda of Arcachon and Marinha Grande Transfer Workshops	ESTIA & IP Leiria	15/05/2017
Agreement of template for MAM catalogue	All	03/04/2017
MAM Catalogue scope indications	IP Leiria and AFM	27/04/2017
Compilation and reporting of S&T offer for catalogue	All	30/07/2017
GT4		
Feedback to ESTIA template for mapping MAM Education and Training offer	All	21/04/2017
Reporting of MAM Education and Training offer	ESTIA, LORTEK, AFM, FADA, IP LEIRIA and PEMAS	19/05/2017
Education and Training Diagnosis Study	ESTIA	27/05/2017

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