

ADDOPTML
Optimized 3D printed structures

ADDOPTML

at a glance

NIKOS D. LAGAROS

Secondments

- **Between which kinds of participating organisations do the secondments take place?**
Eligibility aspects of RISE require that secondments of staff members between MS/AC must be from/to organisations:

that are **located in different countries** and

are from different sectors ("intersectoral" exchanges between academic and non-academic organisations).

Moreover, staff member exchanges shall always take place between **legal entities** (organisations).

Staff

- ❑ **Which type of staff can be seconded?** Exchanges can be for both early-stage and experienced researchers' levels and can also include administrative, managerial and technical staff directly involved or supporting R&I activities of the project.
- ❑ **Which staff member exchanges are eligible for funding?** Secondments of staff members between organisations **located in the same country or between two or more different TCs** will not be supported by EU funds. As stated above, staff member exchanges between MS/AC organisations must be intersectoral, whereas **MS/AC staff members sent to TC will be eligible for funding, regardless of the sector.**
- ❑ Secondment for each staff member will have a **minimum duration of one (1) month** and a **maximum duration of twelve (12) months.**

		"HOSTING" (Receiving seconded staff members)		
		Academic organisation in MS/AC (1)	Non-academic organisation in MS/AC (2)	Organisation in TC
"SENDING" (seconding staff members <u>from</u> organisation)	Academic organisation in MS/AC (1)	✘	✔	✔
	Non-academic organisation in MS/AC (2)	✔	✘	✔
	Organisation in TC*	✔	✔	✘

Staff cont...

Condition	Explanation
<p>1. Be considered <i>staff</i>¹⁶ of the sending organisation</p>	<ul style="list-style-type: none"> ☑ Type of relationship (employment contract, fellowship or other) between the staff member and the sending organisation must comply with the applicable national law and internal practices. Being a registered PhD candidate is sufficient to be considered staff member at the organisation where they are registered. ☑ Staff member must be under the direction and instructions of the sending organisation for the duration of the secondment; ☑ Sending organisation must be able to ensure the implementation of the activities in compliance with the Grant Agreement obligations.
<p>2. Be actively engaged in – or linked to – R&I activities at the sending institution</p>	<ul style="list-style-type: none"> ☑ For at least one month (full-time equivalent and continuously), immediately prior to the first period of secondment. In the case of part-time work, the duration must be calculated on a pro-rata basis (e.g. if working on a 50% schedule, the staff member must have worked for at least two months before the secondment)¹⁷. Note that all secondments must be performed on a full-time basis. Before the secondment, the above staff member must conclude a contract/ supplementary agreement with their sending organisation to be able to implement the secondment on a full-time basis
<p>3. Have one of the following research experience or staff profiles</p>	<ul style="list-style-type: none"> ☑ Early-stage researchers (ESR) (see Definitions – Box 2); ☑ Experienced researchers (ER) (see Definitions – Box 2); ☑ Administrative (ADM), managerial (MNG) or technical staff (TECH) supporting the R&I activities of the action. <p>⚠ Important! Staff members shall have appropriate competence to implement the project. Moreover, those with a purely administrative role (e.g. accountants) are not considered to be actively involved in the R&I activities of the organisation. Therefore they are not eligible for secondments (see Section 6.1). See below selected examples of ADM, MNG, TECH staff eligible for secondment.</p>

Obligation of **sending** entity

- ❑ **Justify of the eligibility** its staff.
- ❑ **Keep the record** of the documentations concerning its staff, at least the following:
 - **Boarding passes**,
 - **Signed Certificates (per month)** issued by the host entity,
 - **Signed lab sheets (per month)** issued by the host entity,
 - **Report of the work** carried out during the secondment (prepared by the secondee),
 - any other document.
- ❑ Add the information in the **portal for each secondment**:
 - **staring – ending date**
 - **Name**
 - **etc.**

Obligation of **hosting** entity

- ❑ **Provide the required documents** for the hosting staff:
 - **Signed certificate** of attendance for each month,
 - **Signed lab sheet per month** denoting the time and dates of working in the hosting entity
- ❑ **Provide a place and facilities** where the hosting staff will be able to work.

Open access publications

- ❑ All publications should be open access.
- ❑ All deliverables (publications, reports, etc) should be uploaded to zenodo (<https://zenodo.org/>).

WPs

Work Packages

Number		Title	Lead Beneficiary	Start Month	End Month	Deliverables No.
1	✓	Development of topology-sizing design optimization methodology incorporating nonlinear FEM analyses and machine learning	NTUA	1	24	1, 2
2	✓	Determination of material constitutive relations for 3D printed metal and concrete specimens, using also recycled consumables, by means of tests and machine learning	POLITO	1	36	3, 4
3	✓	Development of the ADDOPTML optimization and machine learning aided additive manufacturing framework, application to characteristic case studies and experimental verification	UCY	13	48	5, 6
4	✓	Application of the ADDOPTML framework to the generative design concept	UCY	25	48	7, 8
5	✓	3D printed optimized metal deployable structures to address humanitarian crisis	NTUA	13	48	9, 10
6	✓	3D printed optimized concrete human shelter structure for post-disaster housing	IDONIAL	13	48	11, 12 ...
7	✓	Space application of the ADDOPTML framework	SPACEAPPS	25	48	15, 16 ...
8	✓	Seminars/workshops and an international conference on 3D printed optimized structures - Communication, dissemination and exploitation activities	NTUA	1	48	17, 18 ...
9	✓	Management and coordination	NTUA	1	48	21, 22 ...
10	✓	Ethics requirements	NTUA	1	48	28
			Total:			

WPs cont...

Work Package	Lead Beneficiary	Task Coordinator
WP1 Development of topology-sizing design optimization methodology incorporating nonlinear FEM analyses and machine learning	NTUA	Ath. Stamos & E. Boni
WP2 Determination of material constitutive relations for 3D printed metal and concrete specimens, using also recycled consumables, by means of tests and machine learning	POLITO	N. Kallioras & P. Tsakalis
WP3 Development of the ADDOPTML optimization and machine learning aided additive manufacturing framework, application to characteristic case studies and experimental verification	UCY	M. Karambatsis & Ch. Fragoudakis
WP4 Application of the ADDOPTML framework to the generative design concept	UCY	G.-Fivos Sargentis
WP5 3D printed optimized metal deployable structures to address humanitarian crisis	NTUA	Ch. Gantes
WP6 3D printed optimized concrete human shelter structure for post-disaster housing	IDONIAL	E. Frangedaki & P. Psarropoulos
WP7 Space application of the ADDOPTML framework	SPACEAPPS	S. Triantafilou
WP8 Diploma theses, seminars/workshops and an international conference on 3D printed optimized structures - Communication, dissemination and exploitation activities	NTUA	N.D. Lagaros & E. Boni

WPs leaders

- ❑ Should follow up the progress of the WPs that they lead, in terms of:
 - development,
 - Deliverables.

- ❑ Notify coordinator for any delays or difficulties.

Deliverables

Deliverables

Number	Relative Number in WP		Title	Lead Beneficiary	Type	Dissemination Level	Due Date (in months)
D1	D1.1	✓	Software prototype	NTUA	OTHER	CO	20
D2	D1.2	✓	Publications to scientific journals WP1	NTUA	ORDP	PU	24
D3	D2.1	✓	Publication to conference WP 2	POLITO	ORDP	PU	24
D4	D2.2	✓	Publications to scientific journals WP 2	POLITO	ORDP	PU	36
D5	D3.1	✓	Publications to conferences WP 3	UCY	ORDP	PU	48
D6	D3.2	✓	Publications to scientific journals WP 3	UCY	ORDP	PU	48
D7	D4.1	✓	Publications to conferences WP 4	UCY	ORDP	PU	48
D8	D4.2	✓	Publications to scientific journals WP 4	UCY	ORDP	PU	48
D9	D5.1	✓	Report WP 5	NTUA	R	PU	30
D10	D5.2	✓	Report, drawings and 3D printed prototypes WP 5	NTUA	R	PU	48
D11	D6.1	✓	Publications to conferences WP 6	IDONIAL	ORDP	PU	36
D12	D6.2	✓	Publications to scientific journals WP 6	IDONIAL	ORDP	PU	40
D13	D6.3	✓	3D printed prototypes	IDONIAL	OTHER	CO	48
D14	D6.4	✓	Workshop WP 6	IDONIAL	OTHER	PU	42
D15	D7.1	✓	Report A	SPACEAPPS	R	CO	36
D16	D7.2	✓	Report B	SPACEAPPS	R	CO	48
D17	D8.1	✓	Publications to conferences WP 8	NTUA	ORDP	PU	17
D18	D8.2	✓	Publications to scientific journals WP 8	NTUA	ORDP	PU	48
D19	D8.3	✓	D8.3 ADDOPT2024 conference	NTUA	OTHER	PU	44
D20	D8.4	✓	D8.4 ADDOPT Workshops and Seminar	NTUA	OTHER	PU	46
D21	D9.1	✓	ADDOPTML Website	NTUA	DEC	PU	2
D22	D9.2	✓	Data Management Plan	NTUA	R	PU	6
D23	D9.3	✓	Progress report 1	NTUA	R	PU	13
D24	D9.4	✓	Mid-term Meeting	NTUA	OTHER	PU	18
D25	D9.5	✓	Progress report 2	NTUA	R	PU	37
D26	D9.6	✓	Consortium meetings	NTUA	OTHER	CO	48
D27	D9.7	✓	Periodic technical reports	NTUA	R	CO	48
D28	D10.1	✓	NEC - Requirement No. 3	NTUA	ETHICS	CO	1

Secondments (1st Year)

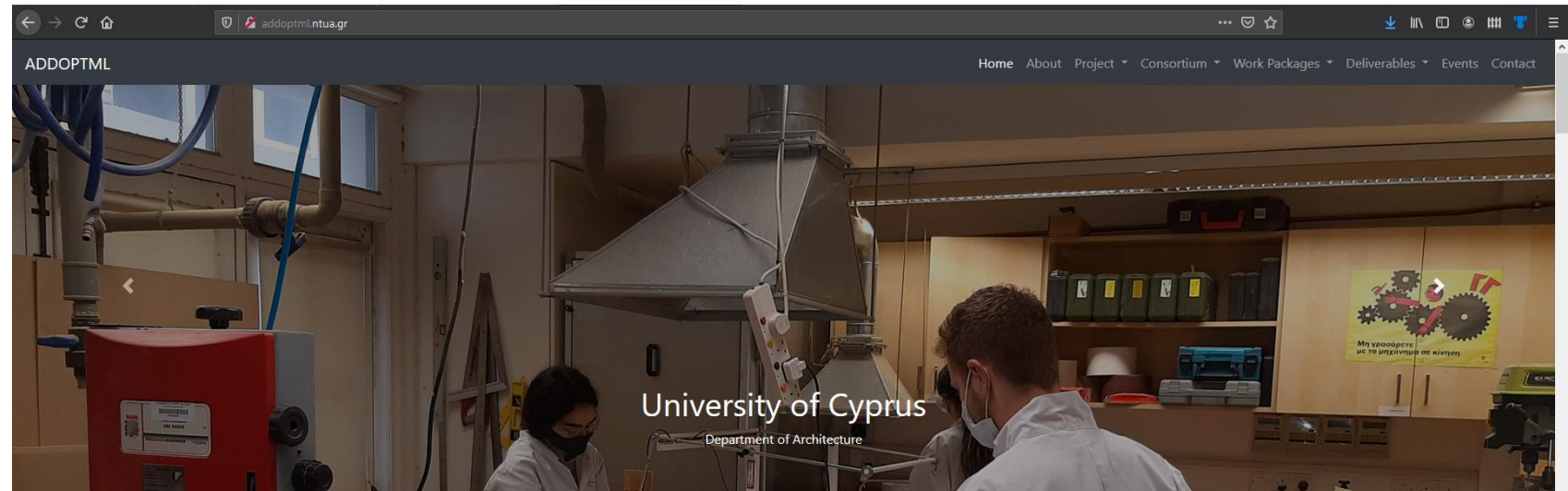
Second	Research	Research	Sending Partner	Sending	Sending	Sending	Seconded to Partner	Second	Second	Second	Starting Month	Duration	Work Package
1	1	ER	1. NTUA (BEN)	Greece	EU/AC	Yes	11. RISA (BEN)	Germany	EU/AC	No	2	6	1. Development of top
3	2	ESR	1. NTUA (BEN)	Greece	EU/AC	Yes	5. IDEA75 (BEN)	Italy	EU/AC	No	13	6	1. Development of top
5	3	ESR	1. NTUA (BEN)	Greece	EU/AC	Yes	8. EWF (BEN)	Belgium	EU/AC	No	13	12	5. 3D printed optimize
8	6	ESR	1. NTUA (BEN)	Greece	EU/AC	Yes	11. RISA (BEN)	Germany	EU/AC	No	13	12	5. 3D printed optimize
10	8	ER	1. NTUA (BEN)	Greece	EU/AC	Yes	5. IDEA75 (BEN)	Italy	EU/AC	No	13	12	1. Development of top
13	11	ESR	1. NTUA (BEN)	Greece	EU/AC	Yes	5. IDEA75 (BEN)	Italy	EU/AC	No	13	12	1. Development of top
16	14	ER	2. POLITO (BEN)	Italy	EU/AC	Yes	10. S&S (BEN)	Greece	EU/AC	No	13	5	1. Development of top
17	15	ER	2. POLITO (BEN)	Italy	EU/AC	Yes	13. INFERENCE (BEN)	Greece	EU/AC	No	13	5	2. Determination of m
20	17	ESR	2. POLITO (BEN)	Italy	EU/AC	Yes	8. EWF (BEN)	Belgium	EU/AC	No	13	6	5. 3D printed optimize
21	18	ESR	2. POLITO (BEN)	Italy	EU/AC	Yes	11. RISA (BEN)	Germany	EU/AC	No	13	6	6. 3D printed optimize
35	28	ER	5. IDEA75 (BEN)	Italy	EU/AC	No	1. NTUA (BEN)	Greece	EU/AC	Yes	13	5	1. Development of top
55	44	ER	10. S&S (BEN)	Greece	EU/AC	No	14. JUST (OPE)	Jordan	TC	Yes	13	6	1. Development of top
64	49	ER	11. RISA (BEN)	Germany	EU/AC	No	1. NTUA (BEN)	Greece	EU/AC	Yes	7	8	1. Development of top
65	50	ER	11. RISA (BEN)	Germany	EU/AC	No	1. NTUA (BEN)	Greece	EU/AC	Yes	7	8	2. Determination of m
71	55	ER	12. VUB (BEN)	Belgium	EU/AC	Yes	10. S&S (BEN)	Greece	EU/AC	No	13	1	1. Development of top
73	57	ER	12. VUB (BEN)	Belgium	EU/AC	Yes	13. INFERENCE (BEN)	Greece	EU/AC	No	13	2	3. Development of the
74	58	ESR	12. VUB (BEN)	Belgium	EU/AC	Yes	13. INFERENCE (BEN)	Greece	EU/AC	No	13	8	5. 3D printed optimize
78	62	ER	13. INFERENCE (BEN)	Greece	EU/AC	No	2. POLITO (BEN)	Italy	EU/AC	Yes	13	12	1. Development of top
79	63	ER	13. INFERENCE (BEN)	Greece	EU/AC	No	2. POLITO (BEN)	Italy	EU/AC	Yes	13	12	2. Determination of m
86	67	ER	14. JUST (OPE)	Jordan	TC	Yes	1. NTUA (BEN)	Greece	EU/AC	Yes	2	12	1. Development of top
87	68	ER	14. JUST (OPE)	Jordan	TC	Yes	1. NTUA (BEN)	Greece	EU/AC	Yes	2	12	2. Determination of m
88	69	ER	14. JUST (OPE)	Jordan	TC	Yes	1. NTUA (BEN)	Greece	EU/AC	Yes	13	12	3. Development of the
89	70	ER	14. JUST (OPE)	Jordan	TC	Yes	1. NTUA (BEN)	Greece	EU/AC	Yes	13	5	3. Development of the

Cost break-down

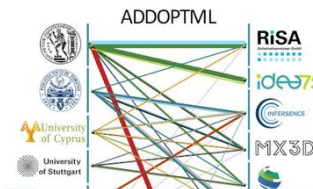
		Amount [EUR] per PM of secondment	Description of implementation of RISE funds
Staff member unit cost	Staff member unit costs	2,100	<ul style="list-style-type: none"> Is a top-up allowance to be fully used to support travel, accommodation and subsistence costs for the staff member during the secondment. The Staff member unit cost contribution can be managed centrally to pay for the costs linked to the individual staff member on secondment (e.g. moving costs, accommodation, etc.) or paid directly to the staff member or a combination of the two approaches. On request, the Beneficiaries must be able to show that the total amount (2,100 EUR) was fully used for the direct benefit of the seconded staff member. <p>⚠ Important! The salary of the seconded staff members or any other type of remuneration is not covered by the EU contribution. Therefore, the Beneficiaries and TC Partner organisations are expected to continue paying the staff member's salary (or any other type of remuneration) during their stay abroad.</p>
	Research, training and networking costs	1,800	<ul style="list-style-type: none"> Cover the costs of R&I related activities of the action such as purchasing of consumables, laboratory costs, participation to conferences, workshops, coordination and review meetings and networking activities.
Institutional unit cost	Management and indirect costs	700	<ul style="list-style-type: none"> Cover all general costs connected with the organisation and implementation of the secondments (administrative and financial management, logistics, ethics, human resources, legal advice, documentation, etc.). <p>⚠ Important! Note that any secondments planned to do "purely management activities" (e.g. project coordination meetings, report drafting, etc.) will not be supported.</p>

Website

<http://addoptml.ntua.gr/>



About

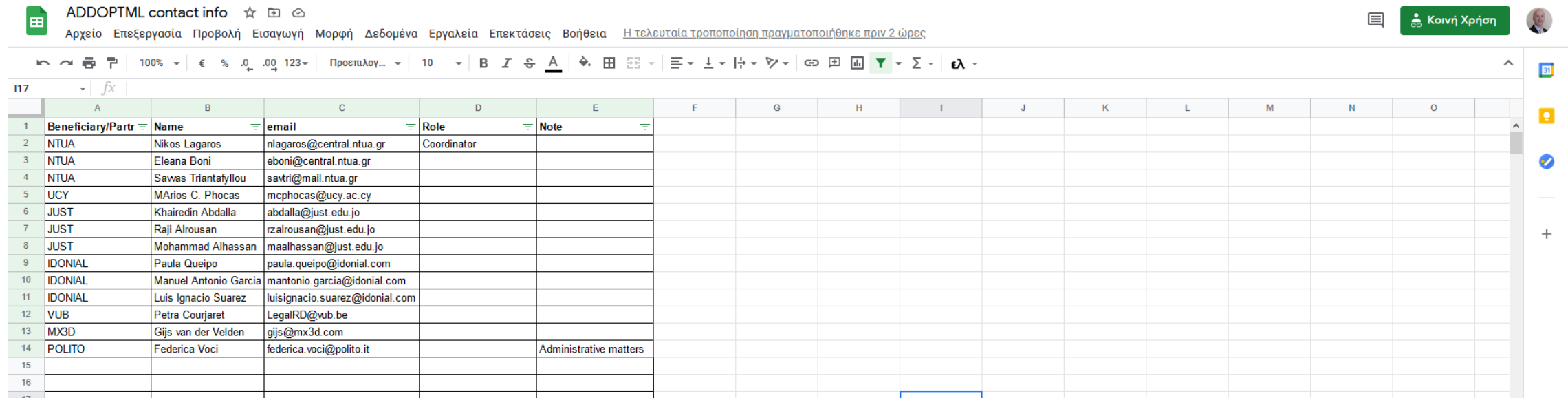


Additive Manufacturing (AM) has attracted the interest of industry due to its potential for flexible and automated production of complex geometry objects, in combination with minimizing time required to develop new products. According to recent analysis, the market for AM products is projected to grow annually by 18%. Although AM technologies are an integral part of digitized industrial production and therefore the 4th industrial revolution; Architectural, Engineering & Construction Industry (AECI) is reluctant to adopt AM technologies in design and construction of buildings, bridges etc. Since 80's AECI has been a pillar industry, now its scale expands and its impact on the global economy is significant. Nevertheless, some issues are exposed to its rapid development, which contributes to a large amount of waste production, huge energy consumption and severe environmental pollution. The recent Green New Deal for Europe sets as a primary objective the reform of heavy industry, including AECI, which accounts for 40% of the energy consumed on the continent. The main tools for achieving this objective are to minimize both materials used and amount of AECI waste. The principal aim of ADDOPTML Network is to create and test an holistic machine learning aided optimum design-

Communication




Fill the information for any person involved in the project:

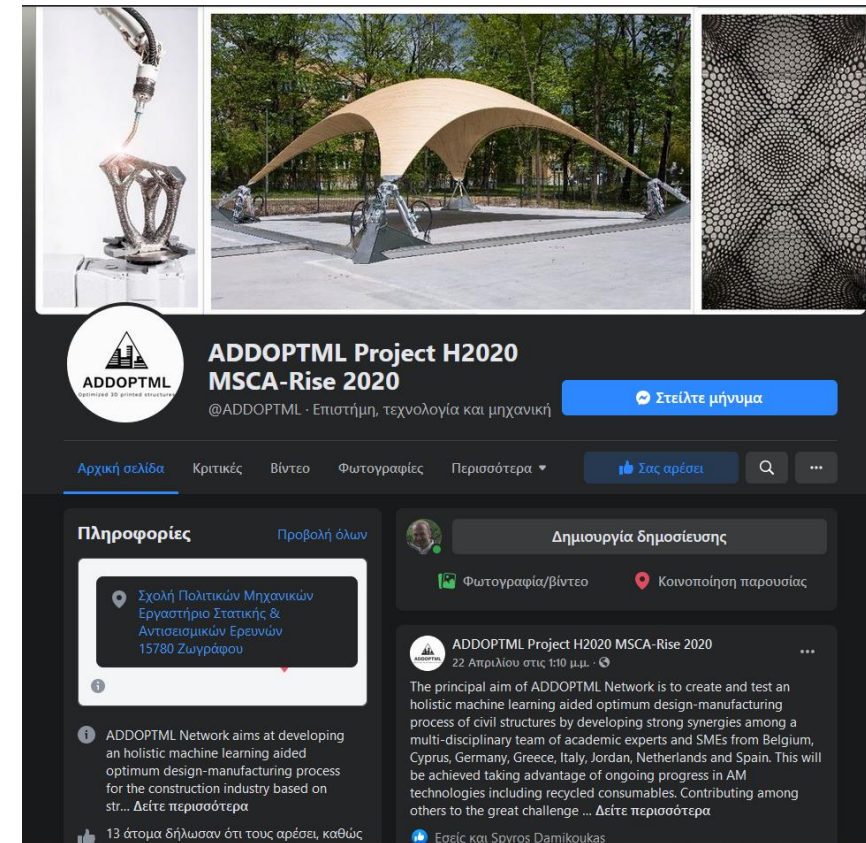
https://docs.google.com/spreadsheets/d/1aCGTLW7RYzY3Upav5PGa5fzPZyRc-TFOC_0qaH5GJVM/edit#gid=0



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Beneficiary/Partnr	Name	email	Role	Note										
2	NTUA	Nikos Lagaros	nlagaros@central.ntua.gr	Coordinator											
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5	UCY	MArios C. Phocas	mcphocas@ucy.ac.cy												
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7	JUST	Raji Alrouzan	rzalrouzan@just.edu.jo												
8	JUST	Mohammad Alhassan	maalhassan@just.edu.jo												
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12	VUB	Petra Courjaret	LegalRD@vub.be												
13	MX3D	Gjjs van der Velden	gjjs@mx3d.com												
14	POLITO	Federica Voci	federica.voci@polito.it		Administrative matters										
15															
16															
17															

Social Media

- ❑  [ADDOPTML Project H2020 MSCA-Rise 2020](#)
- ❑  @addoptml
- ❑  ADDitively Manufactured OPTimized Structures by means of Machine Learning-ADDOPTML



Activities

- **Workshops. 1st workshop at 27th of May**

3D Printing in Construction Industry

Past, Present and Future



Webinar

Thursday 27th May 2021
14:00 - 16:30 CET

KEYNOTE SPEAKERS

Philippe Block
(ETH)

"3D-Printed Masonry"

Christian Cremona
(Bouygues Travaux Publics)

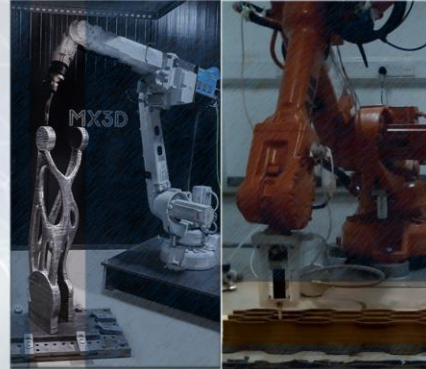
"3D printing - Issues and challenges from
a construction company's point of view"

Gijs van der Velden
(MX3D)

"The opportunities for Metal 3D Printing
in Construction"

Josh Mason
(Foster + Partners)

"A Journey of Digital Manufacture at Foster + Partners"



The workshop is co-organized by:
Nikos D. Lagaros
National Technical University of Athens

Giuseppe Marano
Politecnico di Torino

Bruno Briseghella
Fuzhou University

Humberto Varum
Universidade do Porto

Foster +
Partners

MX3D

ADDOPTML

ETH
Zürich

Register now free of charge

Event Registration form :
<https://bit.ly/3gMlclP>

Under the auspices of
ADDOPTML project
and EU Commission



Sponsored by
OptiStructure

1st Workshop 3d Printing



- The purpose of this workshop is to present **the progress** achieved so far and **the challenges** of the integration of 3D printing technology into AECI.
- Under the auspices of ADDOPTML project (<http://adoptml.ntua.gr/>) and EU Commission
- Sponsored by OptiStructure (<http://optistructure.com/>): Optimizing Structural Design
- Form: <https://docs.google.com/forms/d/1219n7jG-6QvHVs9Xc5xCMQiJYTmIMdAnYf9HPFCTiOM/edit>
- Participate: <https://centralntua.webex.com/centralntua/j.php?MTID=m021f861a5363854a25940d9cfa8d9f9c>

Thank you for you attendance

BE IN TOUCH WITH ADDOPTML PROJECT MANAGER

ELEANA BONI (EBONI@CENTRAL.NTUA.GR)