

MSCA-ITN-EID COMETE

Next-Generation Computational Methods for Enhanced
Multiphase Flow Processes

Mid-Term Check Meeting

TU Wien, 11/02/2020



Agenda



9:30-9:40 **Introduction by REA Project Officer and the Coordinator**

9:40-9:50 **Tour de table of the participants**

- All scientists-in-charge briefly present their research team and describe their role within the network
 - Mikael Mohaupt (EHP)
 - Carlo Poloni (ESTECO)
 - Jacek Pozorski (IMP-PAN Gdansk)
 - Alfredo Soldati (TU Wien)
- Introduction of the Partner Organisations
 - AIT, CISM

9:50-11:20 **Coordinator's report**

- Research results
- Training and transfer of knowledge
- Ethics issues
- Project management and financial aspects
- Networking and dissemination

11:20-11:35 **Coffee break**

11:35-12:20 **Individual reports from the ESRs** (Each ESR will introduce himself/herself and present his/her background and training experiences within the network. Fellows will present their own project, its objectives, the methodology used and the main results/achievements obtained so far. Scientific content is thus expected in the presentations. The end of the presentation will include the ESR' expectations on the possible impact of the action on their future career.)

- 11:35-11:50 *ESR1 Eleonora Spricigo*
- 11:50-12:05 *ESR2 Gabriele Labanca*
- 12:05-12:20 *ESR3 Kevin Fernando Miranda Santa Cruz*

12:20-13:30 **Lunch break**

13:30-15:00 **REA Project Officer meetings with ESRs** (This part of the meeting is intended to allow the ESRs to discuss with the REA representative about their experiences within the network in terms of training, progress and impact on their future careers. Main focus will be on administration, supervision and integration, training, progress of research projects.)

15:00-15:30 **Feedback from the REA Project Officer and open discussion**

15:30-16:00 **Questions to REA Project Officer**



Presentation of Network

What is COMETE?



**Marie Skłodowska-Curie Actions (MSCA)
Innovative Training Networks (ITN)
H2020-MSCA-ITN-2018**

i About

Title: COMETE: Next-Generation
Computational Methods for Enhanced
Multiphase Flow Processes
Call: MSCA-ITN-2018-EID
Type of Action: MSCA-ITN-EID
Duration: 48 months
Project Start Date: 01/11/2018
Project End Date: 31/10/2022

WEBSITE:

158.110.32.35/COMETE

In this project, we aim at building a computational framework and a network of competence to extend the applicability of state-of-the-art formulations to industrially-relevant multiphase turbulent flows. We focus on applications characterized by the transport of particles/droplets in two-phase flows with gas-liquid or liquid-liquid deformable interfaces, which are ubiquitous in process, chemical, and power engineering.

Partners



- Beneficiaries

Academic

UNIVERSITY of UDINE



TU WIEN



IMP-PAN GDANSK



Non Academic

**EURO
HEAT PIPES**



**EURO
HEAT
PIPES**

ESTECO



- Partner Organizations

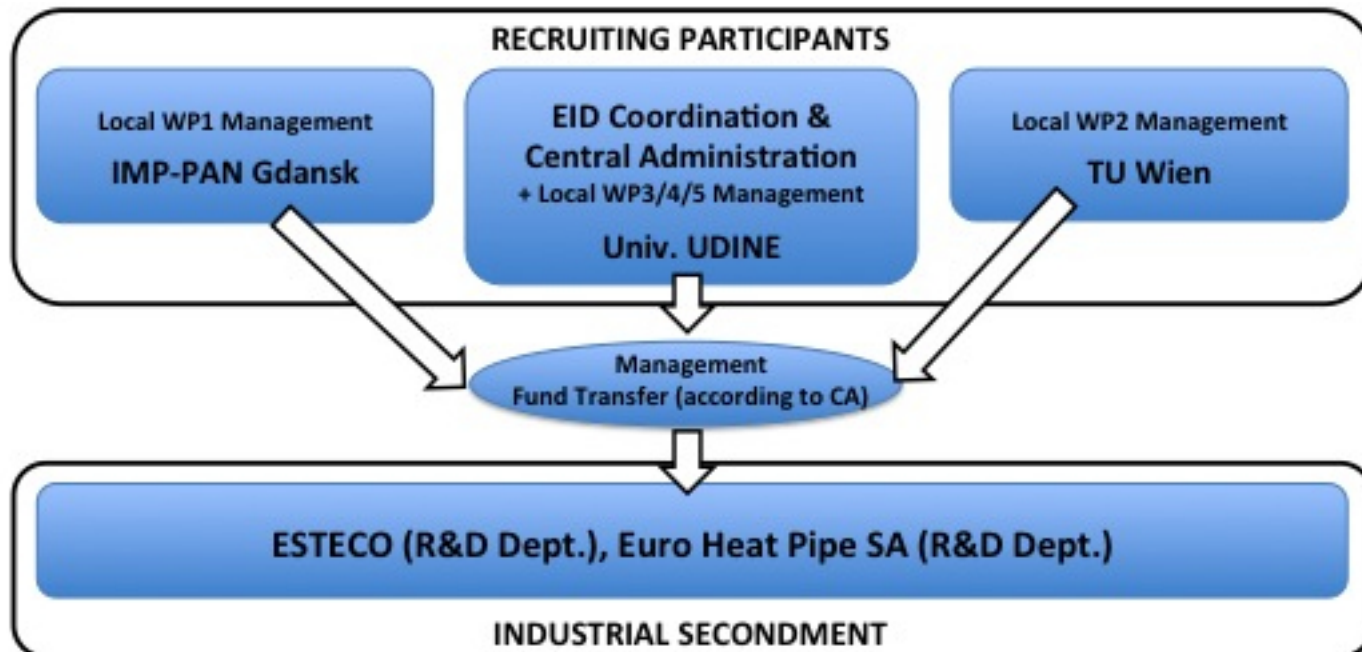


Governance



Supervisory Board

Cristian Marchioli	EID Coordinator, Outreach Coordinator, Representative of Univ. Udine
Alfredo Soldati	Research Coordinator, Representative of TU Wien
Jacek Pozorski	Training Coordinator, Representative of IMP PAN Gdansk
Mikael Mohaupt	Representative of EHP
Carlo Poloni	Representative of ESTECO
Sarah-Amalia Aronzohn	Project Officer

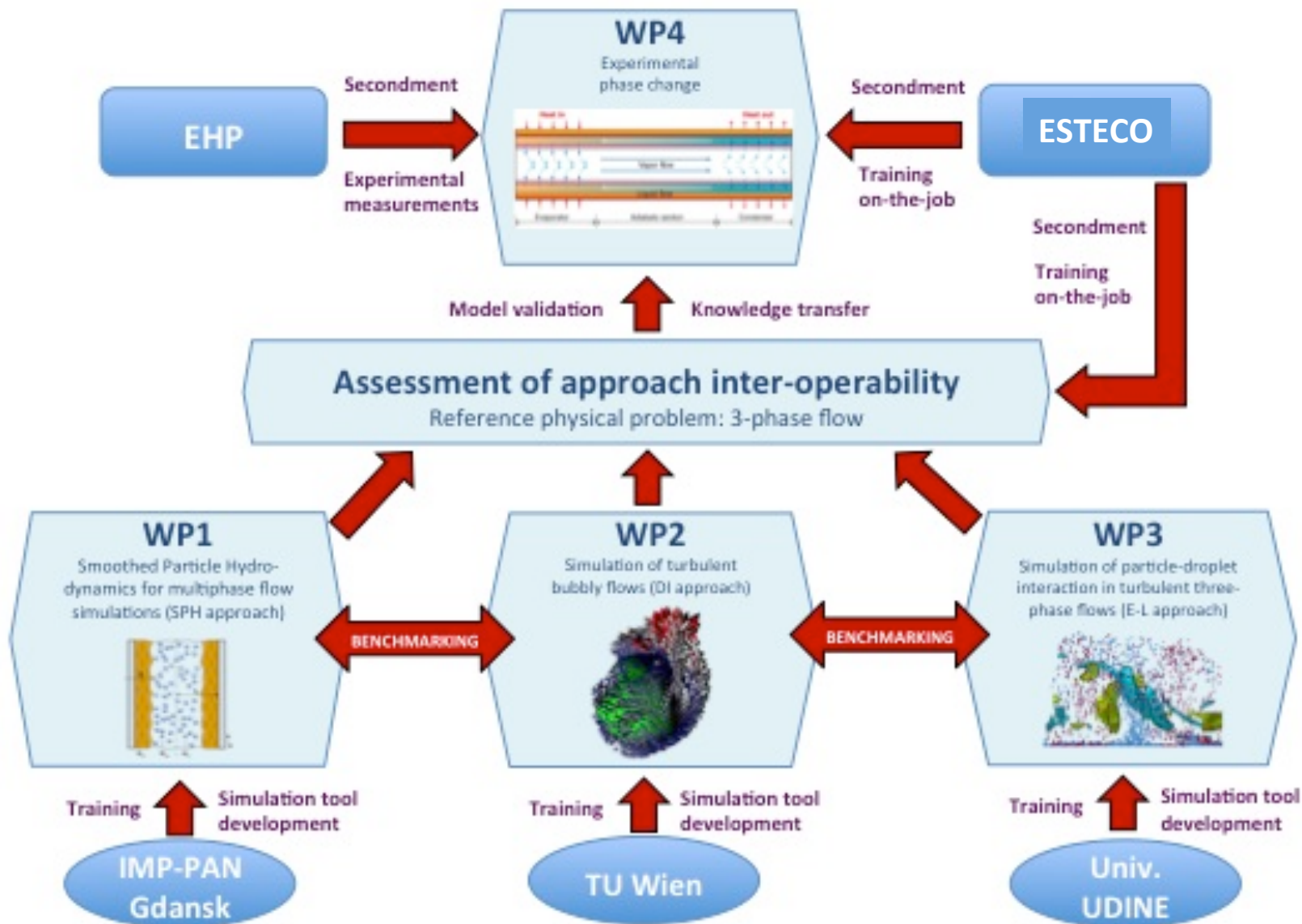


Scientific Planning



WP No.	WP Title	Lead Beneficiary No.	Start Month	End Month	Activity Type	Lead Beneficiary Short Name	ESR involvement
1	Smoothed Particle Hydrodynamics for simulation of multiphase flows	2	10	45	Research	IMP-PAN Gdansk	ESR 1
2	Simulation of turbulent bubbly flows	3	10	45	Research	TU Wien	ESR 2
3	Simulation of particle-droplet interaction in turbulent three-phase flows	1	10	45	Research	Univ. Udine	ESR 3
4	Experimental development of improved freezing /defreezing procedure of Ammonia Heat Pipes	5	22	45	Research	EHP	All ESRs
5	Coordination	1	1	48	Management, Training, Public Engagement, Dissemination, Outreach	Univ. Udine	None

Scientific Planning



Management:

1. Recruitment Report

Recruitment Report

Advertisement of open positions



Opening for PhD Position
Multiphase Flow Laboratory
Department of Engineering and
Architecture - University of Udine
Head: Prof. Cristian Marchioli



Particle-droplet interaction in turbulent three-phase flows

Description:

The Multiphase Flow Lab of the University of Udine invites applications for a PhD Position in

Simulation of particle-droplet interaction in turbulent three-phase flows

for 3 years, 40 hours per week, in the group of Prof. Cristian Marchioli. The research of the group is devoted to computational and experimental research on incompressible flows with a focus on multiphase flows.

Project description:

Aim of this project is to develop an innovative multiscale computational approach for three-phase turbulent flows that goes beyond classical RANS-based CFD methods and can be applied to flow configurations of industrial interest in a computationally efficient way. In particular, the approach must be able to take into account the effects of the different scales affecting the system. The three phases targeted are: small solid particles, large (deformable) liquid droplets and a liquid carrier fluid. We propose to study such a system via an Eulerian-Lagrangian methodology based on both direct numerical simulation (for benchmarking) and large-eddy simulation (for industrial flows) of turbulence, coupled with an extended formulation of the Phase Field method to capture droplet-interface dynamics in the presence of droplet-to-fluid viscosity and density difference.

Requirements:

The successful candidate must hold a master degree in any of the following disciplines: Aerospace, Mechanical Engineering, Chemical Engineering, Physics, Applied Mathematics or any related field.

We are looking for a motivated scientist having a profound knowledge of fluid mechanics and excellent numerical skills. Therefore, the ideal candidate should possess previous experience in Computational and/or Experimental Fluid Mechanics. It will be advantageous to have good knowledge of any of following areas: Multiphase Flows, Numerical approaches to Turbulence (Direct and/or Large-Eddy Simulation), Experimental techniques.

The successful candidate will work in a research group with cutting-edge expertise in Multiphase Flow, which will support the proposed research by providing a conducive environment. The candidate is expected to present research at conferences and participate to school and workshops. Good analytical, mathematical, project management and communication skills, as well as good command of the English language are required.

Positions advertised on:

- EURAXESS
- COMETE website
- Beneficiaries websites
- Mailing list (personal e-mails to colleagues)

28/02/2019



ITN-EID COMETE - PhD position at University of Udine

This job offer has expired

Where to apply

Application Deadline: 28/03/2019 22:00 - Europe/Athens

Contact Details

Where to send your application.

COMPANY

Università degli Studi di Udine - DPIA

E-MAIL

marchioli@uniud.it

Recruitment Report



Received applications

ESR ID	Recruiting Beneficiary	Total num. of applicants	Female	Male	Shortlisted	Non eligible	Appointed
1	TU Wien	12	1	11	2	5	1
2	IMP-PAN Gdansk	37	4	33	4 (2 females)	6	1
3	Univ. Udine	26	3	23	3 (1 female)	1	1

Table: Summary of applications received

	EU(% value)	Africa (% value)	America (% value)	Asia (% value)	TOTAL
ESR1	5 (13.5%)	5 (13.5%)	-	27 (73%)	37
ESR2	3 (25%)	-	-	9 (75%)	12
ESR3	1 (3.8%)	3 (11.6%)	1 (3.8%)	21 (80.8%)	26
TOTAL	9 (12%)	8 (10.7%)	1 (1.3%)	57 (76%)	75

Table: Summary of applicants' nationality

ESR1 - 12: India; 7: Iran; 3: Pakistan; 2: Cameroon, China, Italy; 1: Bangladesh, Chad, France, Jordan, Nigeria, Poland, Russia, South Korea, Sudan

ESR2 – 4: Iran; India; 2: Italy; 1: Sri Lanka, Turkey

ESR3 - 9: Iran; 5: India; 2: China, Lebanon, Pakistan, Sudan; 1: Azerbaijan, Chad, Greece, Peru

Recruitment Report



Received applications

	ESR1	ESR2	ESR3	TOTAL
Aerospace/Aeronautical Engineering	7	1	4	12
Chemical Engineering	2	-	3	5
Industrial Engineering	1	1	3	5
Mechanical Engineering	11	5	3	19
Other Engineering	6	2	5	13
Computer Science	2	-	2	4
Material Science	-	-	1	1
Mathematics/Math. Science	3	1	4	8
Physics	3	2	1	6
Process Technology	1	-	-	1
Tribology	1	-	-	1
TOTAL	37	12	26	75

Table: Summary of applicants' scientific background (only MSc is considered here)

Recruitment Report

Evaluation procedure



Two stages:

1. Identification of non-eligible candidates and evaluation of motivation/cover letter, CV, transcripts, recommendation letters by the scientist-in-charge at the hiring academic beneficiary and SB members.

 **OUTCOME:** Selection of short-listed candidates

Note: Non-eligible candidates and candidates not included in the short list informed at this stage

2. Oral interview with the short-listed candidates by the scientist-in-charge at the hiring academic beneficiary and SB members.

 **OUTCOME:** Selection of short-listed candidates

Note: Selected candidates and non-selected short-listed candidates informed at this stage

Recruitment Report



Selected ESRs

ESR ID	Last name	First name	Last country of residence prior to MSCA	Recruiting Beneficiary	Nationality	Academic/ Non Acad.	Recruitment start date	Recruitment end date
1	Labanca	Gabriele	Italy	TU Wien	Italy	Academic	02-05-2019	01-05-2022
2	Spricigo	Eleonora	Italy	IMP-PAN Gdansk	Italy	Academic	01-07-2019	30-06-2022
3	Miranda Santa Cruz	Fernando Kevin	France	Univ. Udine	Perù	Academic	01-10-2019	30-09-2022

Table: Recruited ESRs' details

ESR ID	Last name	First name	Contract type	Family charges	Working time commitment	PhD enrollment
1	Labanca	Gabriele	A	No	100%	Yes
2	Spricigo	Eleonora	A	No	100%	Yes
3	Miranda Santa Cruz	Fernando Kevin	A	No	100%	Yes

Table: Enrollment details

Management:

2. Deliverables

Management Planning



Deliverables, Ethics, DMP, Other Reports for Project 813948

Deliverables, Ethics, DMP, Other Reports						
WP No	Del Rel. No	Del No	Title	Lead Beneficiary	Dissemination Level	Est. Del. Date (annex I)
WP5	D5.10	D33	Supervisory Board of the network	UNIUD	Confidential, only for	31 Dec 2018
WP5	D5.12	D35	Consortium Agreement	UNIUD	Confidential, only for	31 Dec 2018
WP5	D5.14	D37	Data Management plan	UNIUD	Confidential, only for	30 Apr 2019
WP5	D5.1	D7	Overall recruitment	UNIUD	Confidential, only for	31 Jul 2019
WP6	D6.1	D32	EPQ - Requirement No. 1	UNIUD	Confidential, only for	31 Oct 2019
WP5	D5.11	D34	Progress Report	UNIUD	Confidential, only for	30 Nov 2019
WP5	D5.2	D8	Advanced training course 1	UNIUD	Confidential, only for	31 Jan 2020
WP5	D5.3	D9	Advanced training course 2	IMP-PAN	Confidential, only for	31 Jul 2020
WP5	D5.4	D10	Advanced training course 3	TU WIEN	Confidential, only for	31 Jan 2021
WP1	D1.1	D1	Technical and/or progress reports for WP1	IMP-PAN	Confidential, only for	31 Jul 2021
WP1	D1.2	D12	Transferrable skills from secondments at ESTECO	ESTECO	Confidential, only for	31 Jul 2021
WP1	D1.3	D13	Transferable skills ESR1	IMP-PAN	Confidential, only for	31 Jul 2021
WP1	D1.4	D19	Conference papers for WP1	IMP-PAN	Public	31 Jul 2021
WP2	D2.1	D2	Technical and/or progress reports for WP2	TU WIEN	Confidential, only for	31 Jul 2021
WP2	D2.2	D5	Software WP2	TU WIEN	Confidential, only for	31 Jul 2021
WP2	D2.3	D14	Transferable skills ESR2	TU WIEN	Confidential, only for	31 Jul 2021
WP2	D2.4	D20	Conference papers for WP2	TU WIEN	Public	31 Jul 2021
WP3	D3.1	D3	Technical and/or progress reports for WP3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.2	D4	Code tutorial	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.3	D6	Software WP3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.4	D15	Transferable skills ESR3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.5	D21	Conference papers for WP3	UNIUD	Public	31 Jul 2021
WP4	D4.1	D11	Transferrable skills from secondments at EHP	EHP	Confidential, only for	31 Jul 2021
WP4	D4.2	D22	Conference paper for WP4	EHP	Public	31 Jul 2021
WP1	D1.5	D23	Journal articles for WP1	IMP-PAN	Public	31 Jul 2022
WP1	D1.6	D27	Thesis of ESR1	IMP-PAN	Confidential, only for	31 Jul 2022

Management Planning



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WP1	D1.2	D12	Transferrable skills from secondments at ESTECO	ESTECO	Confidential, only for	31 Jul 2021
WP1	D1.3	D13	Transferable skills ESR1	IMP-PAN	Confidential, only for	31 Jul 2021
WP1	D1.4	D19	Conference papers for WP1	IMP-PAN	Public	31 Jul 2021
WP2	D2.1	D2	Technical and/or progress reports for WP2	TU WIEN	Confidential, only for	31 Jul 2021
WP2	D2.2	D5	Software WP2	TU WIEN	Confidential, only for	31 Jul 2021
WP2	D2.3	D14	Transferable skills ESR2	TU WIEN	Confidential, only for	31 Jul 2021
WP2	D2.4	D20	Conference papers for WP2	TU WIEN	Public	31 Jul 2021
WP3	D3.1	D3	Technical and/or progress reports for WP3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.2	D4	Code tutorial	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.3	D6	Software WP3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.4	D15	Transferable skills ESR3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.5	D21	Conference papers for WP3	UNIUD	Public	31 Jul 2021
WP4	D4.1	D11	Transferrable skills from secondments at EHP	EHP	Confidential, only for	31 Jul 2021
WP4	D4.2	D22	Conference paper for WP4	EHP	Public	31 Jul 2021
WP1	D1.5	D23	Journal articles for WP1	IMP-PAN	Public	31 Jul 2022
WP1	D1.6	D27	Thesis of ESR1	IMP-PAN	Confidential, only for	31 Jul 2022

Management Planning



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WP2	D2.3	D14	Transferable skills ESR2	TU WIEN	Confidential, only for	31 Jul 2021
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WP3	D3.4	D15	Transferable skills ESR3	UNIUD	Confidential, only for	31 Jul 2021
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WP1	D1.6	D27	Thesis of ESR1	IMP-PAN	Confidential, only for	31 Jul 2022

Management Planning



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WP3	D3.5	D21	Conference papers for WP3	UNIUD	Public	31 Jul 2021
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WP1	D1.6	D27	Thesis of ESR1	IMP-PAN	Confidential, only for	31 Jul 2022

Management:

3. Milestones

Milestones



Number ▲	Name	Lead Beneficiary	Delivery Date (Annex I)	Achieved	Delivery Date (actual)	Comments
1	Overall Recruitment	UNIUD	31 Jul 2019	<input checked="" type="checkbox"/>	01 Oct 2019	The overall recruitment was delayed with respect to the original workplan for two reasons: (1) the non-accession of EDF and the consequent amendment of the GA lead to a delay in the start of the selection process, which was anyway completed before the Delivery Date (31 July 2019); (2) the recruitment of ESR3, hired by the University of Udine, could be completed only on 01 October 2019 due to VISA- and work permit-related issues (which required more than expected to be sorted out).
2	Career Development Plan	UNIUD	31 Aug 2019	<input checked="" type="checkbox"/>	22 Oct 2019	In view of the delay with which the Overall Recruitment was completed, the definition of the CDP for each ESR was finalized only after all ESRs were hired and was completed during the kick-off meeting (held on 22 October 2019), when individual CDPs were discussed by the ESR with the Supervisory Board.
3	Advanced training courses	UNIUD	31 Jan 2021	<input type="checkbox"/>		
4	Transferrable skills	UNIUD	31 Jul 2021	<input type="checkbox"/>		
5	Thesis defense and degree a	UNIUD	31 Jul 2022	<input type="checkbox"/>		
6	Conference papers	UNIUD	31 Jul 2021	<input type="checkbox"/>		
7	Journal articles	UNIUD	31 Jul 2022	<input type="checkbox"/>		
8	Year One progress report	UNIUD	31 Jul 2020	<input type="checkbox"/>		
9	Year Two progress report	UNIUD	31 Jul 2021	<input type="checkbox"/>		
10	Software and code tutorial	UNIUD	31 Jul 2021	<input type="checkbox"/>		
11	Planned recruitment comple	UNIUD	31 Oct 2019	<input checked="" type="checkbox"/>	01 Oct 2019	The last ESR was hired on October 1,

Milestones



Number	Name	Lead beneficiary	Delivery Date (Annex 1)	Achieved	Delivery Date (actual)	Comments
1	Overall Recruitment	UNIUD	31 Jul 2019	<input checked="" type="checkbox"/>	01 Oct 2019	The overall recruitment was delayed with respect to the original workplan for two reasons: (1) the non-accession of EDF and the consequent amendment of the GA lead to a delay in the start of the selection process, which was anyway completed before the Delivery Date (31 July 2019); (2) the recruitment of ESR3, hired by the University of Udine, could be completed only on 01 October 2019 due to VISA- and work permit-related issues (which required more than expected to be sorted out).
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6	Conference papers	UNIUD	31 Jul 2021	<input type="checkbox"/>		
7	Journal articles	UNIUD	31 Jul 2022	<input type="checkbox"/>		
8	Year One progress report	UNIUD	31 Jul 2020	<input type="checkbox"/>		
9	Year Two progress report	UNIUD	31 Jul 2021	<input type="checkbox"/>		
10	Software and code tutorial	UNIUD	31 Jul 2021	<input type="checkbox"/>		
11	Planned recruitment comple	UNIUD	31 Oct 2019	<input checked="" type="checkbox"/>	01 Oct 2019	The last ESR was hired on October 1,

Milestones



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7	Journal articles	UNIUD	31 Jul 2022	<input type="checkbox"/>		
8	Year One progress report	UNIUD	31 Jul 2020	<input type="checkbox"/>		
9	Year Two progress report	UNIUD	31 Jul 2021	<input type="checkbox"/>		
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Management:

4. Ethical Issues

Ethical Issues



Deliverables, Ethics, DMP, Other Reports						
WP No	Del Rel. No	Del No	Title	Lead Beneficiary	Dissemination Level	Est. Del. Date (annex I)
WP5	D5.10	D33	Supervisory Board of the network	UNIUD	Confidential, only for	31 Dec 2018
WP5	D5.12	D35	Consortium Agreement	UNIUD	Confidential, only for	31 Dec 2018
WP5	D5.14	D37	Data Management plan	UNIUD	Confidential, only for	30 Apr 2019
WP5	D5.1	D7	Overall recruitment	UNIUD	Confidential, only for	31 Jul 2019
WP6	D6.1	D32	EPQ - Requirement No. 1	UNIUD	Confidential, only for	31 Oct 2019
WP5	D5.11	D34	Progress Report	UNIUD	Confidential, only for	30 Nov 2019
WP5	D5.2	D8	Advanced training course 1	UNIUD	Confidential, only for	31 Jan 2020
WP5	D5.3	D9	Advanced training course 2	IMP-PAN	Confidential, only for	31 Jul 2020
WP5	D5.4	D10	Advanced training course 3	TU WIEN	Confidential, only for	31 Jan 2021
WP1	D1.1	D1	Technical and/or progress reports for WP1	IMP-PAN	Confidential, only for	31 Jul 2021
WP1	D1.2	D12	Transferrable skills from secondments at ESTECO	ESTECO	Confidential, only for	31 Jul 2021
WP1	D1.3	D13	Transferable skills ESR1	IMP-PAN	Confidential, only for	31 Jul 2021
WP1	D1.4	D19	Conference papers for WP1	IMP-PAN	Public	31 Jul 2021
WP2	D2.1	D2	Technical and/or progress reports for WP2	TU WIEN	Confidential, only for	31 Jul 2021
WP2	D2.2	D5	Software WP2	TU WIEN	Confidential, only for	31 Jul 2021
WP2	D2.3	D14	Transferable skills ESR2	TU WIEN	Confidential, only for	31 Jul 2021
WP2	D2.4	D20	Conference papers for WP2	TU WIEN	Public	31 Jul 2021
WP3	D3.1	D3	Technical and/or progress reports for WP3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.2	D4	Code tutorial	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.3	D6	Software WP3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.4	D15	Transferable skills ESR3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.5	D21	Conference papers for WP3	UNIUD	Public	31 Jul 2021
WP4	D4.1	D11	Transferrable skills from secondments at EHP	EHP	Confidential, only for	31 Jul 2021
WP4	D4.2	D22	Conference paper for WP4	EHP	Public	31 Jul 2021
WP1	D1.5	D23	Journal articles for WP1	IMP-PAN	Public	31 Jul 2022
WP1	D1.6	D27	Thesis of ESR1	IMP-PAN	Confidential, only for	31 Jul 2022

Ethical Issues



Deliverables, Ethics, DMP, Other Reports						
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WP6	D6.1	D32	EPQ - Requirement No. 1	UNIUD	Confidential, only for	31 Oct 2019
WP5	D5.11	D34	Progress Report	UNIUD	Confidential, only for	30 Nov 2019
WP5	D5.2	D8	Advanced training course 1	UNIUD	Confidential, only for	31 Jan 2020
WP5	D5.3	D9	Advanced training course 2	IMP-PAN	Confidential, only for	31 Jul 2020
WP5	D5.4	D10			Confidential, only for	31 Jan 2021
WP1	D1.1	D1			Confidential, only for	31 Jul 2021
WP1	D1.2	D12			Confidential, only for	31 Jul 2021
WP1	D1.3	D13			Confidential, only for	31 Jul 2021
WP1	D1.4	D19				31 Jul 2021
WP2	D2.1	D2			Confidential, only for	31 Jul 2021
WP2	D2.2	D5			Confidential, only for	31 Jul 2021
WP2	D2.3	D14			Confidential, only for	31 Jul 2021
WP2	D2.4	D20				31 Jul 2021
WP3	D3.1	D3			Confidential, only for	31 Jul 2021
WP3	D3.2	D4			Confidential, only for	31 Jul 2021
WP3	D3.3	D6	Software WP3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.4	D15	Transferable skills ESR3	UNIUD	Confidential, only for	31 Jul 2021
WP3	D3.5	D21	Conference papers for WP3	UNIUD	Public	31 Jul 2021
WP4	D4.1	D11	Transferrable skills from secondments at EHP	EHP	Confidential, only for	31 Jul 2021
WP4	D4.2	D22	Conference paper for WP4	EHP	Public	31 Jul 2021
WP1	D1.5	D23	Journal articles for WP1	IMP-PAN	Public	31 Jul 2022
WP1	D1.6	D27	Thesis of ESR1	IMP-PAN	Confidential, only for	31 Jul 2022

D6.1 – D32: The proposers should clarify if any of the ESRs will be involved in the experimental work and, if so, confirm that they will receive appropriate training, taking into account the possible risks. This should be done prior to any new experimental work being performed associated with the proposal.

Management:

5. Management meetings (activities of the Supervisory board, etc.)

Management Meetings



Nov.
2018

Aug. 2019
Oct. 2019

Aug.
2020

Aug.
2021

Mar.
2022

Oct.
2022



		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48									
Research activity	ESR 1																						S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S													
	ESR 2																							S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S											
	ESR 3																					S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S											
Training	Workshop										IO														R																																	
	Final Conference																																																									
	Visiting Scientist																																																									
	Advanced School																																																									
Management	Management Board																																																									
	Meetings											K																																														
Dissemination/ Public engagement	Dissemination																																																									
	Public Engagement																																																									

- IO** = Initial Orientation workshop
- R** = Research workshop
- S** = Secondment of the academic ESRs into the non-academic sector (ESTECO, EHP)
- K** = Kick-off meeting
- E** = End of action

Management Meetings



Kick-off meeting and initial orientation workshop (Wien, 22 Oct. 2019)

Issued discussed:

1. Management planning
 - Deliverables
 - Reporting (continuous + periodic**)
2. Scientific planning
3. ESR secondments
4. Career Development Plans
5. Planning of training activities
6. Planning of dissemination/communication/outreach activities



Next management meeting (+ research workshop): July-August 2020

**** Report due within 60 days (deadline for Coordinator: Beneficiaries must provide input earlier!) following the end of RP1 = END OF OCTOBER 2020!!**

Management Meetings



	Main Training Events & Conferences	ECTS	Lead Institution	Action Month
1	<p>Advanced Training School (ATS): <i>Direct numerical simulations of solid particles, drops and bubbles in turbulence</i></p> <ul style="list-style-type: none"> • Direct simulation approaches to HPC of multiphase flow • Interface capturing/tracking techniques • Collective particle/drop/bubble dynamics in turbulent flows, including heat transfer and phase change phenomena 	N/A	Univ. Udine	15 Jan 2020
2	<p>ATS: <i>Deposition, resuspension and agglomeration of particles in wall-bounded turbulence</i></p> <ul style="list-style-type: none"> • Phenomenology of multiphase wall-bounded turbulent flows • Unified particle deposition models (with combined hydrodynamic and physico-chemical approaches) • Experimental/modelling issues in multilayer deposition/resuspension 	N/A	IMP-PAN Gdansk	18 Apr 2020
3	<p>ATS: <i>Fluid dynamics effects in particle formation</i></p> <ul style="list-style-type: none"> • Introduction to turbulent particle aggregation and breakage • Derivation of breakage/aggregation rates from simulations • Population balance models for multiphase flows • Fully-resolved simulations for multiphase flows 	N/A	TU Wien	21 Jul 2020
4	<p>ATS: <i>Software Optimization and Uncertainty Quantification in Multiphase Flow CFD</i></p> <ul style="list-style-type: none"> • Introduction to Design of Experiments, Optimization algorithms and Surrogate modelling • Montecarlo, Lati Hypercube, Polynomial Chaos for UQ • Process automation for engineering models 	N/A	ESTECO	27 Jan 2021

Management:

6. Financial Aspects

Financial Aspects



Estimated eligible ¹ costs (per budget category)												EU contribution		
A. Costs for recruited researchers						B. Institutional costs					Total costs	Reimbursement rate %	Maximum EU contribution ²	Maximum grant amount ³
A.1. Living allowance		A.2. Mobility allowance		A.3. Family allowance		B.1. Research, training and networking costs		B.2. Management and indirect ⁴ costs						
Unit		Unit		Unit		Unit		Unit						
Form of costs ⁵	Costs per unit ⁶	Total a ⁷	Costs per unit ⁶	Total b ⁷	Costs per unit ^{6,8}	Total c ⁷	Costs per unit ⁶	Total d ⁷	Costs per unit ⁶	Total e ⁷	f = a+b+c+d+e	g	h	i
ESR3	3,413.88	122,899.68	600.00	21,600.00	250.00	9,000.00	1,800.00	64,800.00	1,200.00	43,200.00	261,499.68	100.00	261,499.68	n/a
ESR2	2,468.85	88,878.60	600.00	21,600.00	250.00	9,000.00	1,800.00	64,800.00	1,200.00	43,200.00	227,478.60	100.00	227,478.60	n/a
ESR1	3,489.09	125,607.24	600.00	21,600.00	250.00	9,000.00	1,800.00	64,800.00	1,200.00	43,200.00	264,207.24	100.00	264,207.24	n/a
4 EDF		0.00		0.00		0.00								n/a
5 EHP		0.00		0.00		0.00	1,800.00	0.00	1,200.00	0.00	0.00	100.00	0.00	n/a
6 ESTECO		0.00		0.00		0.00					0.00	100.00	0.00	n/a
Total consortium		337,385.52		64,800.00		27,000.00		194,400.00		129,600.00	753,185.52	100	753,185.52	753,185.52

Financial Aspects



Budget repartition (as per the Consortium Agreement):

Category A (costs for recruited ESRs incurred by academic beneficiaries):

- Univ. Udine 153,499.68 €
- IMP-PAN Gdansk 119,478.60 €
- TU Wien 156,207.24 €

Category B.1 (research, training and networking costs):

- Univ. Udine 44,900.00 €
- IMP-PAN Gdansk 32,500.00 €
- TU Wien 49,000.00 €
- EHP 28,000.00 €
- ESTECO 40,000.00 €

Category B.2 (management and coordination costs incurred by academic beneficiaries):

- Univ. Udine 43,200.00 €
- IMP-PAN Gdansk 43,200.00 €
- TU Wien 43,200.00 €

First installment received from EU (75% of total budget)

Payments made by Coordinator (Univ. Udine):

- IMP-PAN 146,383.95 €
- TU Wien 186,305.43 €
- EHP 28,000.00 €

Payments to be made by Coordinator:

- ESTECO 30,000 € (exp. March 2020)

Management:

7. Critical implementation risks and mitigation actions

Critical Risks & Mitigations



Risk	WPs	Description	Status
R1	1-4	Failure to recruit ESRs at required level	Much of the effort of the first year has been devoted to the mitigation of this risk. As a result, all open positions have been filled with ESRs at the required level. All indications from the SB and the supervisors suggest that a high quality cohort has been achieved, but this will continued to be monitored through the bi-annual reporting process. For the time being, nothing critical to report.
R2	1-4	Failure of ESR or project to progress according to milestones/deliverables	So far, this failure has not occurred and the project appears to progress as expected. Each ESR has been assigned a research plan, a supervisor and a co-supervisor. In addition, an individual CDP has been develop for each recruited ESR. Nothing critical to report.
R3	1-4	Poor ESR experience	So far, none of the recruited ESRs has manifested issues with his/her experience within the network. Nothing critical to report.
R4	1-4	Numerical methods of choice not suitable to deliver requested results and inter-operability	The research activity of the ESRs has started 7 months prior to the preparation of this report for ESR1, 5 months for ESR2 and 2 months for ESR3. It is too early to address possible issues related to the inadequacy of the selected numerical methods. For the time being, there is nothing critical to report.
R5	1-4	Poor employment perspectives of ESRs at the end of project	It is too early to evaluate this kind of risk. For the time being, there is nothing critical to report.

Critical Risks & Mitigations



Risk	WPs	Description	Status
R6	All	Partner withdrawal and/or scientist in charge leaving the consortium	<p>So far, no SB member and no scientist in charge has withdrawn. Nothing critical to report on this point.</p> <p>One beneficiary (EDF) decided to leave the network by not signing the GA, but the issue has been solved by replacing EDF with ESTECO, which will provide equal secondment opportunities and, in addition, will organize a training school during the second year of the Action (event not previously scheduled with EDF). This will provide the ESRs with an additional training event of high quality.</p>
R7	All	Conflicts between ESR and supervisors	No such conflicts have emerged so far. So nothing critical to report on this point.
R8	5	Financial issues related to fund transfer to non-academic partners	Fund transfer to non-academic partners has been already agreed upon and the first installment has been paid. Nothing critical to report.
R9	5	Conflicts assigning IPR agreements	<p>The Consortium Agreement has been prepared carefully to prevent this risk. Particular care has been taken to incorporate the input provided by the non-academic partners (EHP, in particular).</p> <p>A Knowledge Transfer Coordinator has been appointed to ensure that all COMETE partners interpret standard IPR procedures properly. As far as the reporting period is concerned, nothing critical to report.</p>

Management:

8. Any proposed re-orientations of the networks' activities

Proposed Re-Orientations



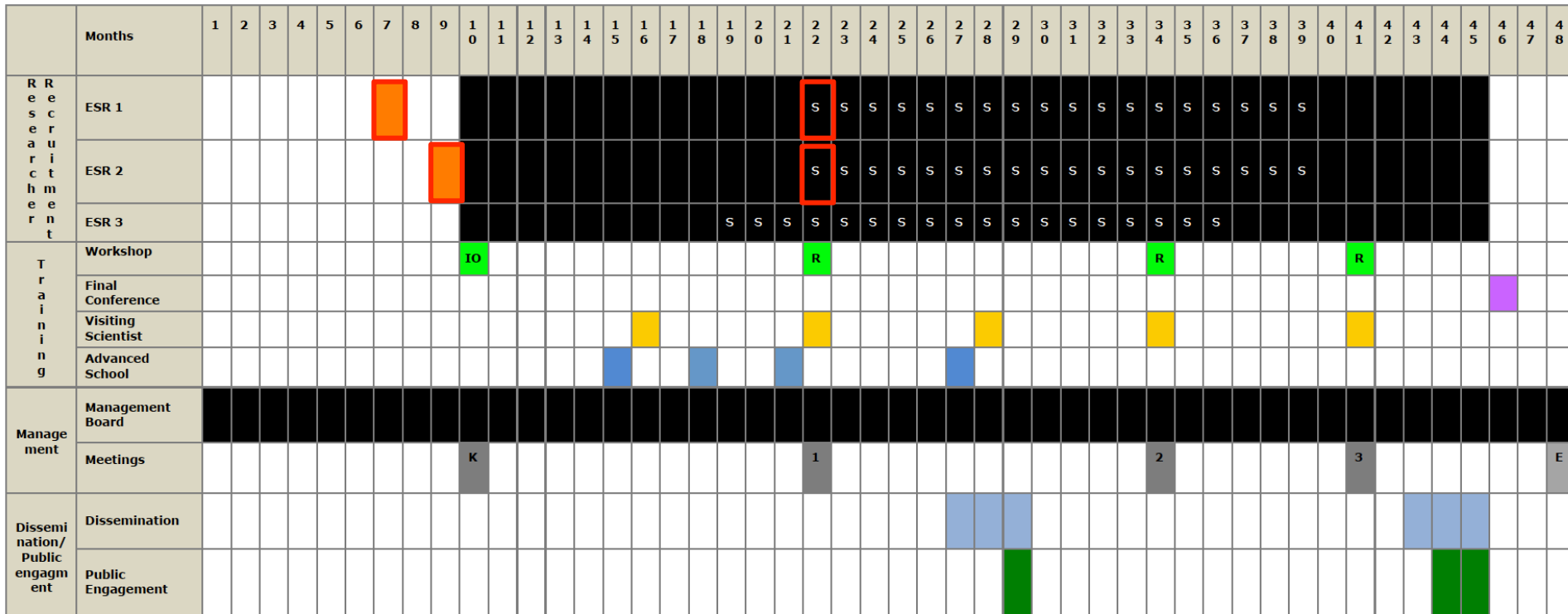
Nov. 2018

May 2019

Jul. 2019

Aug. 2020

The only change we propose is to modify the time period between start date of the PhD and start date of ESRs' secondments



- IO** = Initial Orientation workshop
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Management:

9. Document management and Open Research Data

Document management and Open Research Data



All relevant documents (not available on the ECAS portal) will be uploaded on the COMETE website, and given password-protected access if needed

Open research data issues are discussed in the Data Management Plan (D5.14, WP5)

Main points of the DMP:

- COMETE will share a large repository of scientific data (both raw data and post-processed statistics, coming from both numerical simulations – WPs 1 to 3 - and experiments – WP4)
- Data will be made openly accessible on the COMETE website and on certified open access repositories (ECOFTAC, EUDAT)
- Data will be indexed using the EU Open Data Portal (<http://data.europa.eu>)
- Data will be stored either in formatted (ASCII) files, editable with any text editor application, or in unformatted (binary) files, which will be accompanied by proper read/write instructions (including the open source fortran/C/Matlab code). No specific software tools will be needed to access the data.
- Data will be made openly accessible after their publication in peer-reviewed papers (or right after the end of the project, whichever comes first) only upon approval of the scientist-in-charge who generated the data, and according to the intellectual property right (IPR) regulations established in the GA and in the CA



Thank you very much!

Questions?