





## **D7.4 ITN Training Programme**

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## 1. Training Programme

As set out in Annex 1 (part A) to the Grant Agreement (see page 3), the training programme will combine the scientific investigation of specific aspects of cloud physics and related turbulent dynamics with training in key professional skills. This comprises an exceptional experimental programme that includes field experiments, laboratory and numerical simulations, the design and development of advanced fast temperature probes, velocity MEMS and innovative atmospheric mini radio-sondes; all aimed at the production of new, Lagrangian based, cloud fluctuation datasets, required to reduce the fragmentation of results and knowledge in this field.

The Director of Training will oversee the timetabling and course development of the Training Programme with support of the Network Manager. Opportunities for intersectorial visits and secondments to exchange knowledge within the network will be evaluated, and ESRs and hosts are supported by the Network Manager in organizing the intersectorial visits and secondment periods.

The aims of COMPLETE training activities, as set forth in Annex 1 (part A) to the Grant Agreement (see page 28), are:

- To develop an Innovative Training Network of host institutions delivering a structured state of the art training programme to support ESR career development based on a Cloud Microphysics, Turbulence and Telemetry research focus
- To develop a network of highly employable, highly skilled scientists with academic and entrepreneurial skills
- To create a networking and collaborative legacy beyond the ITN project period

## Local host training of ESRs and Network Opportunities

In particular, training through research by means of individual, personalized projects, including exposure to different sectors. ESRs are registered in a PhD programme by a host organization and they participate in local training. The Director of Training and Network Manager are overseeing the Local Training. The Network Manager and Hosts built a Network resource of local course materials including study aids, videos and on-line tutorials (WIKISPACE). Supervisors and ESRs will work with the Network Manager to identify ITN or other opportunities when required skills not available locally are identified. All ESRs will be encouraged and supported in attending further courses outside the network.

## 2. Quality and Innovative aspects

As expressed in Annex 1 (part B) to the Grant Agreement (see page 11), the quality and innovative aspects of the training programme are to strengthen and structure initial training of researchers in cloud processes at the European level, to attract students to scientific careers, to provide trained researchers with the necessary skills to work in industry and environmental monitoring agencies. All ESRs will be trained in key and inter/multidisciplinary aspects of the research in the physics of cloud processes, in remote sensing, monitoring and measurement engineering, in climate modelling and weather forecasting, including management/administrative principles, effective communication and wide international collaboration with the fully committed COMPLETE participants. This will be integrated with career development skills to give ESRs a solid background in the area they are researching. This interdisciplinary approach creates new opportunities for both research and training. The latter will include a broad scope of methods, concepts, and expertise, giving ESRs genuine context for their work. ESRs will receive in-depth training in one project, they will also gain a considerable overview of several disciplines and ways of thinking, and experience working in

different sectors and countries, enhancing their future employability. The European added value of COMPLETE is substantial as PhD-programs with a specific focus on cloud dynamics presently do not exist.

## Overview and content structure of the training (ETN)

The project works towards a coordinated approach to the research training at an international level by inviting the students involved in the specific research areas to participate in the network-wide workshops and summer schools. The network agrees on a common training framework to unfold the planned training including network-wide and local training and agrees to mutually recognise the training modules carried out in one of the participating institutions. The following structure of the training programme was agreed by the participants: Training through individual ESR projects 75% of total recruitment period – both at the host institution and through secondments. Secondments will have a minimum duration of 6 months. Training through education 25% of which 20% of the time will be focused on the scientific training and approximately 5% on the complementary skills training. The training programme will combine the scientific investigation of specific aspects of cloud physics, related turbulent dynamics and application to climate modelling with training in key professional skills. This includes an extensive experimental program that includes field experiments, laboratory and numerical simulations, the design and development of advanced fast temperature probes, velocity MEMS and innovative atmospheric mini radio-sondes aimed at the production of a new cloud (Lagrangian based) fluctuation datasets required to reduce the fragmentation of results and knowledge in this field.

## 3. Training Objectives

As described in Annex 1 (part B) to the Grant Agreement (see page 11), the 8 training objectives are:

1) ESRs will be able to apply new knowledge and technologies in a broad range of research areas, including an enhanced and specific insight on cloud transport and related coupling with thermodynamics, aerosols, droplets formation; the conception, design, prototyping and testing of novel cloud probes, the advancement of measurement techniques and novel numerical procedures for massively parallel numerical simulation.

2) ESRs will be able to apply relevant methodological skills and training in research design highly relevant for their further career.

3) ESRs will gain experience in cloud dynamics practice through co-operative work experience in the framework of the European Research Area (ERA) while carrying out collaborative measurement campaigns in the field, mainly at UFS.

4) ESRs will be capable of responding to environmental, social, political, ethical and economic constraints to improve the quality of life through advanced knowledge, data, models and instrumentation for the study and the scientific and technological observation of cloud dynamics, one of the important and yet not well understood classes of phenomena in our Earth's atmosphere. Considerations of the economics and environmental impact of experimental and computational activities on society (e.g. international and/or national normative entities) will generate collaborations with departments and research institutions not part of this ETN, and will contribute to create a new set of complementary skills for the researchers.

5) ESRs will be capable of working independently and in multicultural teams and be proficient in written, oral and graphical communication. The ESRs will be skilled in creative, independent problem

solving under time and resource constraints typical of a scientific and technical working environment.

6) ESRs will gain access to a rapidly expanding scientific knowledge base and changing technological environment internationally.

7) ESRs will also prominently receive complementary skill training in R&D, intellectual property rights and its importance to researchers, proposal writing, commercial exploitation of results, research policy, entrepreneurship, outreach and public engagement.

8) ESRs will develop transferrable skills needed to support their career development such as communication and presentation skills, language skills and project management.

As set out in the Annex 1 (part B) to the Grant Agreement (see page 11, 12), the training programme will be carried out by: i) Network-wide Research Knowledge and Scientific Research Skills training on core topics via multidisciplinary workshops and summer schools; ii) Network-wide Complimentary and Transferable skills training during summer schools and workshops; iii) Local project Research Knowledge and Scientific Research Skills, Transferable Skills and Career Development; iv) Training at host institutions and on secondment and in the form of distance learning modules. Presentation opportunities allow ESRs to develop their own research profiles and communicating science skills. **Researcher Personal Career Development Plan**: Individually, each ESR will have a Student Advisory Panel comprising his/her Supervisor, Co-supervisor (from a secondment partner), and the Director of Training (DoT).

#### 4. PhD courses provided by the network

As described in Annex 1 (part B) to the Grant Agreement (see page 12), ESRs will be able to attend the highly customised and innovative courses developed for the recently awarded EPSRC Centre for Doctoral Training in Fluid Dynamics across the Scales28, of which Christos Vassilicos is the Director. POLITO: Polito hosts a PhD programme on Fluid Dynamics including lectures on Climate Fluid Dynamics, Turbulence, Hydrodynamic Stability and Numerical Methods for Nonlinear Systems and a PHD programme on Electronic Engineering and Telecommunications. Polito's PhD school SCUDO also offers complementary skills lectures on how to write a scientific article and prepare oral presentations, on the intellectual property development and creation of enterprise. TAU: Porter School of Environmental Studies (PSES) offers a PhD programme on environmental studies that include the course on Climate of the Earth. The Faculty of Engineering has a PhD programme in Fluid Mechanics and Heat Transfer which includes access to a Turbulence Structure Laboratory. UW: The Faculty of Physics offers a four-year programme of PhD studies, these with focus on atmospheric physics are led by Institute of Geophysics and the Atmospheric Physics Division. Courses on Atmospheric Modelling and Application, Cloud Physics, Atmosphere and Ocean Dynamics, Atmospheric Turbulence, Atmospheric Remote sensing and Atmospheric Aerosols (including anthropogenic and organic) can be attended. MPG: The Max Planck Institute for Dynamics and Self-Organization offers PhD opportunities in complex systems such as Turbulence in Clouds and Turbulence Dynamics. Students can attend any of the various lecture series offered by the Physics and other departments of the GeorgAugust University in Göttingen. Opportunity to practice presentation skills in an informal setting with immediate feedback is available as well as introductions to research management. In addition, **MPIDS** is the coordinator of the European High Performance Infrastructure in Turbulence Research, and thus provides a stimulating environment and connection to many researchers from academia and industry in turbulence research. LMD: the Laboratoire de Meteorologie Dynamique of the CNRS at École Normale Supérieure in Paris offers

training in climatology pollution and planetary atmospheres and related investigation approaches based both on theory and on the development of observation and numerical simulation instruments. MPIM: the Max Planck Institute für Meteorologie, independent research group on Turbulent Mixing Processes in the Earth System offers training on the dynamics of the atmosphere and of the ocean as the result of the interaction among very diverse complex phenomena, such as large-scale motion, chemistry, radiation, clouds, and turbulence. CNR-ISAC: Consiglio Nazionale delle Ricerche - Istituto di Scienze dell'Atmosfera e del Clima offers training on the modelling of geophysical fluid dynamical processes, climate dynamics and variability, numerical modelling of the global climate and of high-mountain climates, downscaling techniques and analysis of climate change impacts. SIT: SIT will offer local training on Design and Development of Innovative sensors for the measurement of concentration of the chemical species and Design and Development of microelectronic systems for innovative sensors control. MTF: MTF offers training on "Numerical simulations of multiphase flows in OpenFoam". Each attendee will receive in-depth instruction on the basics of OpenFOAM and complete a collaborative mini-project (e.g. modelling flow around cloud sensor, reactions at cloud-clear air interface) which involves interactive, hands-on programming and code development on computers with parallel architecture. Participants receive a set of course notes and educational materials. ENV will offer training on electronic device design, telecommunications, sensor design and measurement instrumentation prototyping.

# 4.1 Contribution to structuring doctoral / early-stage research training at the European level and to strengthening European innovation capacity

As set forth in Annex 1 (part B) to the Grant Agreement (see page 19), COMPLETE will effectively contribute to structuring doctoral / early-stage research training at the European level since PhD programmes focusing specifically on Cloud Dynamics are not present in Europe. Current programmes tend to have a more general focus, e.g. on Atmospheric and Climate Science. The strengthening of European innovation capacity is demonstrated by the big effort the ETN is putting on the innovation and new conception of measurement instruments and probes, from the production of new infield and numerical simulation fluctuation Lagrangian database to the transfer of the body of research results and data produced by infield, laboratory and numerical simulation experiments to the climate modelling community. This will potentially lead to the reduction of the gap present in the cloud microphysics understanding correlated to the intense turbulence background always present in such physical systems. In particular, the mini floating expendable radiosondes we propose to design, prototype and test are a new idea and are not present nowadays in the infield experimental practice in Europe.

## **Training Recognition**

Upon recruitment in Doctoral Schools or PhD programmes, submission and examination of a Doctoral Thesis, the 14 ESRs will receive PhDs in the universities that are COMPLETE academic beneficiaries. The ESRs will also receive Continuing Professional Development certificates endorsed by all COMPLETE partners to formally recognize the skills portfolio and training received during the project. We will work towards comparable practices and procedures for student monitoring and assessment of the ESRs. The delivery of comparable courses and programmes of related studies will be developed and CPD certification will be available to other staff and students undertaking the courses.

### Contribution of the non-academic sector to the doctoral/research training

The industrial partners are highly dedicated to the training aims of COMPLETE, they all elected to host and train ESRs. The training programme, jointly developed in partnership with the SMEs, will better suit future employers' needs than a purely academic programme. Industry involvement will also help adapting the programme to changing market needs as outlined by the EC. This "cluster" approach will promote multidisciplinarity and interdisciplinarity to increase national and international cooperation between researchers and sectors. Non-academic partner organisations will provide complimentary skill training, secondments or infrastructure to all ESRs.

## 5. Network-wide training activities

COMPLETE is designed to use resources and strengths from all participants to provide the best training available. Traditional academic training is combined with industry and market oriented training to expand ESRs' skills and enhance their employability. The Network-wide training is structured in eight principal events (see Table 1.2 b): four Network-wide research workshops, three Sping/Summer Schools and one Euromech Colloquium on Cloud Dynamics followed by the final network conference. Each Network-wide workshop will include short intensive courses, each 1-2 day long. (Annex 1, part B to the Grant Agreement, see page 14)

**Network-wide Training Events** are exploiting the inter/multi-disciplinary and intersectorial aspects of the project and they expose the ESRs to different schools of thought. The proposed network training events will be coordinated by the Network Manager who with the Director of Training ensure the course development is timely and of high standard utilizing appropriate resources within the ETN. The Network Manager supports participants with the logistics of attending Network-wide Training Events.

Table 1.2 b (enumeration according to the proposal) Main Network-Wide Training Events, Conferences and Contribution of Beneficiaries (see Annex 1, part B to the Grant Agreement, page 13)

Ν.	Main Training Events & Conferences	E	Lead	Project
		С	Institution	
1	1 <sup>st</sup> Workshop and 1 <sup>st</sup> Training School/Kick-Off meeting	2	POLITO	4
2	1 <sup>st</sup> Summer School	6	MPG	10
3	2 <sup>nd</sup> Network workshop and 2 <sup>nd</sup> training school	2	TAU	12
4	2 <sup>nd</sup> Spring School	6	LMD	18
5	3 <sup>rd</sup> Workshop	6	UW	24
6	3 <sup>rd</sup> Spring School	6	ICL	30
7	4 <sup>th</sup> workshop	2	ICL	36
8	Euromech Colloquium and final network conference	2	POLITO	40

The course content reflects the multidisciplinarity of the COMPLETE ETN, in particular the interaction of physical and engineering disciplines. The content ranges from applied physics (fluid, turbulence, climate, aerosols dynamics) to measurement techniques (Lidar systems, aerosol spectroscopy), to remote sensing and satellite navigation and to control sensor engineering. Workshops, training and spring/summer schools will contain a range of practical sessions, research training involving problem based learning in teams and feature high levels of industry alongside scientific and career

development training. A selection of activities organized by the ESRs will also be available to the public for maximum impact of this research. The network-wide workshops and training schools will comprise a presentation of the individual ESR projects, their discussion and assessment by external representatives, a review of the personal Career Development Plans (CDP). The themes and scientific subjects of the training and spring/summer schools have been chosen to complement the local training ESRs receive at their host institution.

Invitation of visiting Researchers is originating from the academic or non-academic sector in order to improve the skills and know-how of the ESRs, as well as their scientific writing, personal development, team skills, multicultural awareness, gender issues, ethics and research integrity. COMPLETE teams and leading experts external to the network (Zelmann Warhaft - Cornell Univ., Bernhard Mehlig – Univ. of Gothenburg, Alain Pumir – ENS Lyon) will contribute to the teaching of the Training and Spring/Summer Schools. The main aim of the three Summer/Spring Schools on Microphysics and Cloud Dynamics, Cloud Parametrization in Climate Models and Small-Scale turbulence in clouds is to bring new ideas into running ESRs projects exploiting the views of scientists outside the network. For inter-multidisciplinary research this is an important activity to stimulate new ideas and concepts formulations. Leading experts external to the network will also be invited to lecture during the summer schools to ensure the participants will be aware of the most recent developments in the particular research field. The scientific-technical part of the school programs runs over 5-days and consists of lectures implemented by detailed description of case studies. The schools will be open both to the researchers recruited in the network and to external researchers interested in the field concerned.

In occasion of the network final conference, COMPLETE will also organize a Euromech Colloquium (<u>http://www.euromech.org/colloquia</u>) where the ESRs will have the opportunity to exchange ideas and knowledge with worldwide scientist invited to the Colloquium. The focus will be on Warm Cloud Dynamics at large, the participants will belong to the scientific community active in remote sensing of the atmosphere, atmospheric radiative measurements, cloud microphysics, in-cloud turbulence, inertial particles and aerosols dynamics, cloud condensation nuclei.

			4 <sup>th</sup> Annual Meeting (final report)	Torino	May 2020
ETN	1. ESR Presentations, 2. Student Board, 3. All participants meeting	Day 4	Final meeting	Organizer: UW	2020)
Public	Session 5: Session 5: Cloud droplets and precipitation.	Day 3		Organizer: POLITO	(May
Public	Session 3: Numerical models for moist convection, Session 4: Aerosol-Cloud interaction.	Day 2	Dynamics		M48
Public	Session1. Warm boundary layer clouds. Session 2: Physics of stratocumulus too: turbulence, mixing, entrainment	Day 1	Euromech Colloquium on Cloud	Location: Torino	8
	Intellectual property rights in the technology transfer *** FORMER TRAINING AT TAU***	Day 4		Organizer: RAMOT	(6107
	1. MEMS technology, 2. Micro hot/cold wire/film probes for small scale turbulence *** FORMER TRAINING AT TAU***	Day 5		Organizer: TAU	Jupo Jupo
ETN	1. Data mining and Data Sharing 2. Exchange between numeric and experimental data	Day 3		3	M4U
ETN	Big Data Analysis and high performance computing	Day 2	<ul> <li>A TRADUCTION ACTIVICIONAL AND ORDER AND AND AND AND AND AND AND AND AND AND</li></ul>	Organizer: ICL	7.
ETN	1. ESR presentations 2. All participants meeting	Day 1	4th Workshop	Location: London	ı.
			3rd Annual Meeting	Göttingen	May 2019
				http://www.to.isac.cnr.it/aosta/	
Open	Active versus passive scalar turbulence. Afternoon: ESR presentations.	Day 5		****NOTE: Valsavarenche	(Summer 2019)
Open	Physical models for small-scale structures.	Day 4	(Cornell)		M36
Open	Correlation between small-scale velocity, temperature, vapor and liquid water concentration fluctuations. Afternoon: ESR presentations.	Day 3	Invited speaker: Z.Warhaft	Organizer: MPG, POLITO	6.
Onen	Eduy suucuues airu ineinintairuy in nie scale uuduleirus. Aiteiniruuni, Eori presentaarunis. Stronoly anisotronic hirbulence structure and cascade: stabilu statified and intafinn flows	Day 1	scale Turbulence in clouds	Valsavarenche	
Onen	Eddy structures and intermitteness in fina scale turbulance. Aftern our ECD measurtations	Dav 1	and Chring Cohool on Small	I anation: (Cättingen) or	
ETN	1. Control sensor engineering. 2. Atmospheric radiosondes and LiDAR technology *** FORMER TRAINING AT TAU***	Day 5			
ETN	Langrangian experimental measurements in turbulence	Day 4			(Feb 2019)
ETN	Aerosol and cloud chemistry (aerosol processing by clouds)	Day 3		Organizer: MPG	M33
ETN	Cloud microphysivs	Day 2		Organizer: UW	57
ETN	1. ESR presentations 2. Outreach and public engagement.	Day 1	3rd Workshop /Training School	Location: Warsaw	
ETN	1. Project Management 2. EU bid writing	Day 6		Organizer: BAYFOR	
Open	Remote sensing of atmospheric data. Satellite navigation. Afternoon: ESR presentations.	Day 5	(ENS,Lyon)		(or n Z Anne)
Open	Application to Meteorology and Climatology	Day 4	Invited speaker : A.Pumir		M26
Open	Applied Boundary Layer Meteorology. Afternoon: ESR presentations.	Day 3	clouds	Organizer: ENV	4
Open	Cloud Microphysics and meso-scale dynamic.	Day 2	Microphysics and dynamics of	Organizer: MPG,MPIM	
Open	Inertial particles. Droplet collision models. Afternoon: ESR presentations.	Day 1	2nd Summer School on	Location: Zugspitze (UFS)	
			2nd Annual Meeting Mid Term Report Meeting	Paris	May 2018
Open	The frontier: errors in climate models, incertitude in observing systems. Afternoon: ESR presentations.	Day 5	ISAC)		
Open	The physics of clouds. Radiation, dynamics, microphysics. Physical parameteriation of clouds. Observing systems	Day 4	Invited speaker: A Lanotte (CNR-	organizor. Lind, 1000	for a 7 and
Open	The physics of convection and its parameterizatoin in climate models. Observing systems. Afternoon: ESR presentations.	Day 3	Models	Ormanizer I MD ISAC	(zo ilidy - 1 lime 2012)
0	Dynamics and physical parameterization	3	Parametrization in Climate		MZ4
Open	Fundamental elements of dynamics and physics of climate. The role of clouds in the climate system. Afternoon: ESR presentations. Modelling climate: Structure of current models of the atmosphere, ocean and of the climate system. Weather prediction, climate simulations.	Day 1 Day 2	1st Spring School on Cloud	Location: Paris	μ
					(13-16 Feb 2018)
the second se	2. ESRs 11 - 14 presentations	Day 2		Organizer: POLITO	Early 2018
ETN	1. ESRs 1 – 10 presentations *** FORMER TRAINING AT TAU***	Day 1	ESRs presentations meeting	Location: Torino	2
opon	<u>спортатовлятирати возпосо риллиту, трричают от на сволносо сапаса ниског</u>	047 0 1	1st Annual Meeting	Torino	40 June 2047
Onen	Extra reasourchin and husiness planning Ambiention of the Business Canyas Model	Dav 2.4		Organizer: ISD	
Open	Atmospheric turbulence, convection and clouds	Day 2	1st Training School	Organizer: UW	() TUZ
Open	<ol> <li>Delivering present uter research and Scientific Board meeting</li> <li>4. Dissemination Board and Scientific Board meeting</li> </ol>	afternoor			(19-22 June
	2 Danofaninina aranaat thair ananarah anti-itina				M13
ETN	1. ESR students Board kick-off meeting 2. Introduction to COMPLETE project (ESRs)	Day 1	Student's Kick-Off Meeting 1st Workshop	<b>Organizer:</b> POLITO	-
Audience	ule Topics	Schedu	Event Type	Location	No.
	escription of Main Network-Wide Training Events and Conferences	etailed d	Table 1.2 c D		

Table 1.2 c (enumeration according to the proposal) Detailed description of Main Network-Wide Training Events and Conferences (see Annex 1, part B to the Grant Agreement, page 15)

As expressed in Annex 1 (part B) to the Grant Agreement (see page 16), the training events will see the active involvement of non-academic COMPLETE partners. In particular, during the training events, three sets of technology/industry oriented courses (EU bid writing, project management, technology transfer/IPR, business planning and entrepreneurship) will be held by **BayFOR**, **I3P** and **RAM**, to give all ESRs a common background of complementary and transferrable skills: **I3P** will contribute with an entrepreneurship and business planning course. At the end of the course students will be able to: understand the role of entrepreneurship in economic development; differentiate between wage employment, self- employment and entrepreneurship; differentiate the roles of entrepreneur and a manager; learn about the functions performed by entrepreneur; inculcate the desire to take up entrepreneurship as career; understand the difference between business undertaken by startup companies and by established firms; understand analytical processes required to develop a business plan; translate market evidence into operational plans for a new business venture. **RAM** will contribute with the following two course modules: Technology transfer basics – the route from academic research to successful product; Intellectual property in the technology transfer.

BayFOR will offer a module on "EU bid writing", which will cover the practical details on grant writing, such as forming a consortium, structuring the proposals according to the call for proposals, support for non-research requirements in the proposals, budget calculation and the common mistakes made when writing grants. BAYFOR will also offer a module on "Project management" which will focus on management of European (research) projects. A special and central role in the ETN COMPLETE is played by **UFS** which will host the field measurement campaign, the first Network Spring School and many secondments of ESRs: 10 out of 14 ESRs will spend some time during their projects at the UFS to perform experiments making UFS the ideal place to present their own results and demonstrate field measurements. Due to its organization as a virtual institute, the UFS has excellent contacts to experts in all fields of atmospheric sciences and can easily recruit lecturers and other external participants. UFS hosts a wide range of experiments dealing with cloud dynamics performed by institutes that are not part of COMPLETE: for example, groups from the University of Cologne and the Karlsruhe Institute for Technology. The German Aerospace Agency operate cloud radars, microwave instruments (HATPRO, DPR), hydrometers, Micro Rain Radars and Lidar systems on a continuous basis. UFS thus acts as a catalyst for the scientific exchange across different institutes and fields of research. Furthermore, UFS provides excellent facilities for conferences and workshops. Several conferences have been organized at the UFS previously. The location offers a unique scientific atmosphere and secludedness ideal for open end discussions.

#### Role of non-academic sector in the training programme

It is recognized by industry that many graduate and post graduate students coming directly from university lack the ability to work in a commercial environment where financial aspects are so important in terms of cash flow, profit, share value, cost effectiveness, meeting (not necessarily exceeding) clients' expectations. Experience about commercial pressures in the "real world", acquired during the training period with an industrial partner is of great benefit for the rapid incorporation to the industrial world and it ultimately increases the chances of obtaining employment in a desired industrial environment. This is especially true in small companies, where new graduates are not going to generate revenues (in fact the opposite) for the first months of employment. The aim of this project is to reverse this situation by linking tightly the academic and industrial partners within the consortium: training contents will be carefully agreed and developed for the benefit of the recruited researchers in terms of scientific, technological and commercial/industrial aspects. Team leaders and representatives of the industrial partners are members of the Supervisory Board, Science and Training Committee and of the Exploitation and IP Committee (this last taking care also for dissemination/communication).

According to the Annex 1 (part B) to the Grant Agreement (see page 17), secondments hosted by industrial partners (ENV, SIT, MTF) and industrial training will improve the trainees' ability to work in a commercial environment, make easier the adaptation to the "real world" and ultimately, they increase the chances of employment in industrial R&D sector. This is the central goal of this ETN to drastically improve the situation by tightening the link between the academic and industrial partners within the consortium: research topics and training contents are jointly and carefully developed for the benefit of the recruited researchers in terms of scientific, technological and commercial/industrial aspects. The two university incubators, I3P and RAM, will yield courses in entrepreneurship, business planning, technology transfer basics and intellectual property in the technology transfer. Non-academic partner organizations such as Regione Piemonte will provide insight into regulatory and policy frameworks relevant for future employment and subsequent research of the ESRs. BayFOR will offer training on bid writing and project management of R&D projects to enable ESRs to secure follow-up funding.