



TALENT Training Programme and Outreach Activities WP7

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TALENT Kick-Off Meeting

CERN, 16th Jan, 2011









TALENT Training Program









Marie Curie ITN Action

- Make research careers more attractive to young people
- (ITN) offer early-stage researchers the opportunity to
 - improve their research skills
 - join established research teams
 - enhance their career prospects









TALENT ITN

- Career development of ESRs on
 - scientific design
 - construction manufacturing
 - testing and commissioning of advanced instruments for very high radiation environments
- excellent training opportunities to early-stage researchers in the field of
 - applied physics
 - microelectronics
 - mechanical engineering
 - software engineering







TALENT Training Program

- Scientific and non-scientific training
- On-site training and joint training events
- Career Development
 - Individual Career Development Plans
 - Follow up and updating the plan in the course of the project









Objectives

- Give ESRs skills fostering their academic career:
 - Technical skills
 - Academic skills
 - Complementary skills
- Adjusted to special needs and interests of ESRs
- Networking





ESR Personal Career Development Plan



- Contains Scientific and training objectives and milestones
- A short report, updated regularly
- The trainee is expected to write internal reports, make internal presentations and take part in internal reviews.
- Academic publications and presentations to an international conference or workshops
- Induction interview and regular contact with the supervisor
- Feedback on the quality of the training from the ESRs







Scientific-technological training

- Possibility to do a doctorate (ESRs)
- Courses and coaching in the field of experimental physics
- Academic lectures and specialized courses
- Hands-on training to acquire practical experience in all aspects of high-tech projects, using the unique state-of-theart infrastructure
- Scientific training on
 - system integration
 - Testing
 - signal processing
 - design and manufacturing of composites and composite mechanics
- Presentations at workshops or conferences







Complementary skills training

- For ESRs and ERs
- Project management, presentation skills, language courses, financial planning & budgeting, preparing publications and proposal writing
- In later stages, coaching and "entrepreneurial business incubation"
- Mechanisms
 - Individual on-site training
 - network-wide events
 - Knowledge transfer events will ensure maximum exposure of ESRs and ERs to all disciplines and to their mutual experiences.

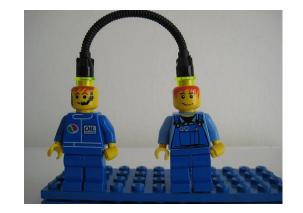






Visits and Secondments

- Visits and secondments of ESR's within the network
- Intercultural interaction between academic and industry partners – insights from the two worlds
- Transfer of Knowledge and Technology









Secondments

- Up to 10 months in total over a 3 year period
- January 2013 to September 2015
- The first secondment is a 2-4 month immersion period with an industrial or academic partner
- The 2nd secondment will take place, towards the end of the 3rd year of the programme for 2-6 months
- The ESRs assigned to CERN as host organisation will be seconded to other partners for a period and return to CERN towards the end of the training programme







Joint Training Events

- Kick-off courses
- Case workshops
- A dedicated summer school



- The participants will obtain a certificate for the training in which they participate
- It's recommended that the academic institutions will accept the training events as a part of PhD studies (supplementary ECTS credits)







WU-Wien

CERN

Schedule, main training events

Training	Time	Participants	Responsible
Kick off meeting vol. 2	June 2012	Network members, ATLAS IBL selected	CERN
Case study workshops	Apr/May 2013 and Oct 2014	Network members	WU-Wien
Summer School	Apr/May 2013	ESRs, ERs, VRs, international research community	CERN
Joint Training courses	Oct 2013	ESRs/ERs	CERN

ESRs/ERs

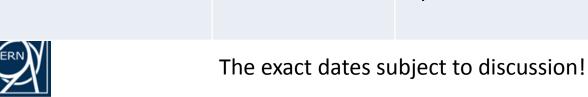
Open HEP community worldwide

Apr/May 2014 Apr/May 2014 **WS KTT**

Benchmarking Best

Practice Guidelines

Final Conference



Oct 2015



Kick-Off training

- Takes places at CERN June 2012 (CERN)
- An exhaustive introduction to the IBL, ATLAS and CERN
- Introduction to the TALENT project
 - WPs, individual research package presentations (ESRs)
- Project management and academic presentation skills







Case study workshops

- In Apr/May 2013 and Oct 2014 (WU-Wien)
- Team work activities to exchange best practices within own field of research
- Case studies and problem-based learning from secondment appointments
- Networking and transfer of knowledge among young researchers







Summer School

- In Apr/May 2013 (CERN)
- Midway milestone of the project
- 50%-50% of scientific-non scientific skills
- Attendance will be <u>open</u> to external participants such as visiting senior researchers and the international research community





Summer School – Technical Content



- Electronics design: Advanced VHDL for FPGA Design, Certified LabVIEW developer, Radiation effects on electronic parts and systems
- Mechanical design: Introduction to and follow-up of Classical ANSYS
- Software and systems technologies: C++, Engineering data management system
- Office software: MS Office, Dreamweaver, Latex, Sharepoint
- General: working in clean rooms
- Physics courses with the Ecole Doctorale of the Suisse Occidentale





Summer School – Non-Technical Content



- Project management in custom software development
- Increasing productivity by use of new parallel programming techniques
- CERN complementary skills training programme
- Market overview for medical detectors
- Entering medical markets with new products
- Managing the commercialization process from research to markets
- Starting new business to commercialize research results







Joint training courses

- In Oct 2013 and in Apr/May 2014 Scientific and technological content (CERN)
- Subjects to defined later according to the needs and interests of the ESRs
- Input from the Visiting Researchers







Workshop KTT Benchmarking Best Practice Guidelines (WP6)



- In Apr/May 2014 (WU-Wien)
- Focus on technology and knowledge transfer
- IPR issues
- Industry-Academy relations
- Entrepreneurship and business incubators









The Final Conference

- "Grande Finale" of the TALENT project
- In Oct 2015
- Presentation of the project results
- Open for the worldwide HEP community









Summary for 2012

- Recruiting
- ESR Career Development Plan (all partners hosting ESRs)
- Kick-Off meeting as the ESR's have arrived (June), networking for ESRs (CERN organizes)
- Preparing next year's events
- Outreach activities (all!)









TALENT Outreach Activities







TALENT Outreach

- www.cern.ch/TALENT
 - Internal and external meeting and networking space
- TALENT flyer (downloadable on the web page)
- Academic conferences, events, lectures and

journals









In-house outreach

- Articles, interviews, posters, multimedia...
 - In organization's own journal, newsletter, lecture series, Youtube channels etc.
 - Researchers' nights and similar occasions
 - Recruitment events, conferences, workshops...
- Responsibility of every partner (You!)









Outreach by the ESRs

- A poster about his/her work to be displayed at the host organization and in external events
- A leaflet about his/her work for local and international events
- Presentations or lectures to wider public about the goal and developments of TALENT in his home country or other partner's locations at universities and schools









Questions and comments?











Thank you!

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Extra





WP 6 disciplines: knowledge transfer,

competence leveraging

WP 3: electronics

ASIC design, testing of VLSI and production WP 2, 3 disciplines: applied physics, electronics

complementary skill training, Technological

WP 4 disciplines: mechanical engineering

WP 2, 3 disciplines: sensors, micro-electronics

Secondments 1/2				
Institute:	Secondments on:	Work package Relevance:		
CERN, UNIGE	System integration, Thermo-mechanical engineering of carbon-fibre structures Sensor qualification in irradiation & test beams	WP 2,4,5,6 disciplines: applied physics, mechanical engineering, multi-disciplinary training, complementary skill training		
Fraunhofer	Micro-electronics integration, Wafer level	WP 3 disciplines: Micro-electronics		

semiconductor processing, packaging

Project management, Knowledge transfer

Tests with evaporative CO₂ cooling system

technologies in micro-electronics

Tests and QA on CF structures

Sensor fabrication, manufacturing,

of pixel modules,

Readout electronics

process monitoring, QA

WU-Wien

Wuppertal,

UNIGE,

NIKHEF

uWuppertal

uBonn

CiS

WP 2, 3 disciplines: sensors, micro-electronics

WP 1, 2, 3,6 disciplines: sensors, electronics,

applications in other fields, knowledge transfer,

WP 6 knowledge transfer, funding instruments,

project management, industrialization,

funding instruments

complementary skill training

Secondments 2/2				
Institute:	Secondments on:	Work package Relevance:		
Atostek	Signal processing and simulation	WP 5: software management and device simulation, signal processing		
CERN, UiO	Sensor characterisation Data analysis	WP 2,3,5: applied physics (sensors), electronics, device modelling and simulation		
IBA	Beam instrumentation, dosimetry Technology transfer studies	WP 2 discipline: applied physics WP 6 discipline: knowledge transfer		
IFAE	Sensors, Technology transfer, national funding instruments	WP 2,5,6 disciplines: sensors, knowledge transfer		

Sensor fabrication, training on

beam monitoring and accelerator

Project Management

techniques in proton cancer therapy

integration

manufacturing, process monitoring and

Application of semiconductor sensors for

instrumentation, medical instrumentation,

Technology transfer, Funding instruments,

sensor manufacturing, QA, micro-electronics

CNM

CIVIDEC,

A.D.A.M.

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