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-the-art 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)

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 Apr/May 2014	ESRs/ERs	CERN
WS KTT Benchmarking Best Practice Guidelines	Apr/May 2014	ESRs/ERs	WU-Wien
Final Conference	Oct 2015	Open HEP community worldwide	CERN

The exact dates subject to discussion!

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 open 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

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 semiconductor processing, packaging technologies in micro-electronics	WP 3 disciplines: Micro-electronics
WU-Wien	Project management, Knowledge transfer	WP 6 disciplines: knowledge transfer, complementary skill training, Technological competence leveraging
Wuppertal, UNIGE, NIKHEF	Tests and QA on CF structures Tests with evaporative CO_2 cooling system	WP 4 disciplines: mechanical engineering
uBonn	ASIC design, testing of VLSI and production of pixel modules,	WP 2, 3 disciplines: applied physics, electronics
uWuppertal	Readout electronics	WP 3: electronics
CiS	Sensor fabrication, manufacturing, process monitoring, QA	WP 2, 3 disciplines: sensors, micro-electronics

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
CNM	Sensor fabrication, training on manufacturing, process monitoring and sensor manufacturing, QA, micro-electronics integration	WP 2, 3 disciplines: sensors, micro-electronics
CIVIDEC, A.D.A.M.	Application of semiconductor sensors for beam monitoring and accelerator instrumentation, medical instrumentation, techniques in proton cancer therapy	WP 1, 2, 3,6 disciplines: sensors, electronics, project management, industrialization, applications in other fields, knowledge transfer, funding instruments
Bgator	Technology transfer, Funding instruments, Project Management	WP 6 knowledge transfer, funding instruments, complementary skill training