



# **ARTISAN: Marie Curie European Industrial Doctorate programme**

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# Initial Training Network (ITN)

- ❖ Marie Curie Actions aim to make research careers more attractive to young people.
- ❖ ITN offer early-stage researchers the opportunity to improve their research skills, join established research teams and enhance their career prospects.
- ❖ ITN types:
  - **Multipartner ITN** of at least three participants - universities, research centres or companies (large or small).
  - **European Industrial Doctorates (EID)** - only two participants: one academic and one from the private sector.
  - **Innovative Doctoral programmes (IDP)** - single participant (university or research centre) offers interdisciplinary training.

# European Industrial Doctorate (EID)

- ❖ EID opened in 2012 as a new form of joint PhD training by academic institutions and industry.
- ❖ The goals are to
  - strengthen the links between academia and industry;
  - develop research careers based on synergy of research excellence and business innovation.
- ❖ Fundamental requirements include that ESRs:
  - be enrolled in a PhD study at the academic partner;
  - spend at least 50% time at the private sector partner.

# Evaluation Criteria

❖ Scientific & Technological Quality

❖ Training

❖ Implementation

❖ Impact

Evaluation Criterion	Weighting (in %)	Threshold (max 5)	Priority in case of <i>ex aequo</i>
S&T Quality	30	3	3
Training	30	4	1
Implementation	20	3	4
Impact	20	4	2

An overall threshold of 70% is applied to the total weighted score in addition to the individual thresholds.

❖ Capacities of the Hosts

❖ Project plan

# Scientific & Technological Quality

- ❖ Executive summary: Scientific merits of the proposed research training programme
- ❖ Scientific and technological objectives
- ❖ Review of state-of-the-art
- ❖ Details of the research training programme: methodology, originality and innovative aspects
- ❖ Key research & research training outcomes
- ❖ Contribution of private sector

# Training

- ❖ Description of the training programme
  - Research training
  - Structured educational and specialist courses
  - Complementary and transferable skill development
- ❖ Topical workshops, seminars & conferences
- ❖ Personal Development Plan (PDP)
- ❖ Importance and timeliness of the training
- ❖ Benefits of the joint training activities

# Implementation

- ❖ Research environment, complementarities and synergies among partners: capabilities & resources
- ❖ Management arrangement
  - Governance structure
  - Operational management
  - Financial management strategy
  - Intellectual property rights (IPR)
- ❖ Work & training plans: deliverables, Gantt chart, ...
- ❖ Recruitment strategy

# Impact

- ❖ Impact of the EID programme for the Fellows
- ❖ Contribution of ARTISAN research training programme at European level
- ❖ Public-private sector collaboration
- ❖ Delivering impact: dissemination, exploitation and outreach



# EID project ARTISAN



<http://www.artisan-itn.net/>

Title: “**A**adaptive **RF** front-end for 4G communication systems **and beyond**” (**ARTISAN**)

Participants:

- Academic partner: QUB, UK
- Industrial partner: Alcatel-Lucent/Bell Labs Ireland

Project Duration: 4 years (Dec. 2012 – Dec. 2016)

4 ESRs:

- Employed by QUB for 3 years as RAs
- Enrolled in the QUB PhD programme

Budget: €1,174,366.71



# ARTISAN



Adaptive RF front-end for 4G communication systems and beyond

European Industrial Doctorate programme supported by the Marie Curie Actions and EU 7th Framework Programme



**The primary goal** of ARTISAN programme is to train **Early Stage Researchers (ESRs) to PhD level** in the area of Radio Frequency (RF) technologies for wireless communications



Queen's University  
Belfast

## Participants:

The Institute of Electronics, Communications and Information Technology (ECIT)



Alcatel-Lucent

Bell Labs Ireland

Multiband transmitter and power amplifier architectures

Adaptive antennas for interference mitigation in cellular wireless networks

## Research topics

Novel materials for tunable devices

Passive intermodulation in passive and tunable components and devices

## Objectives:

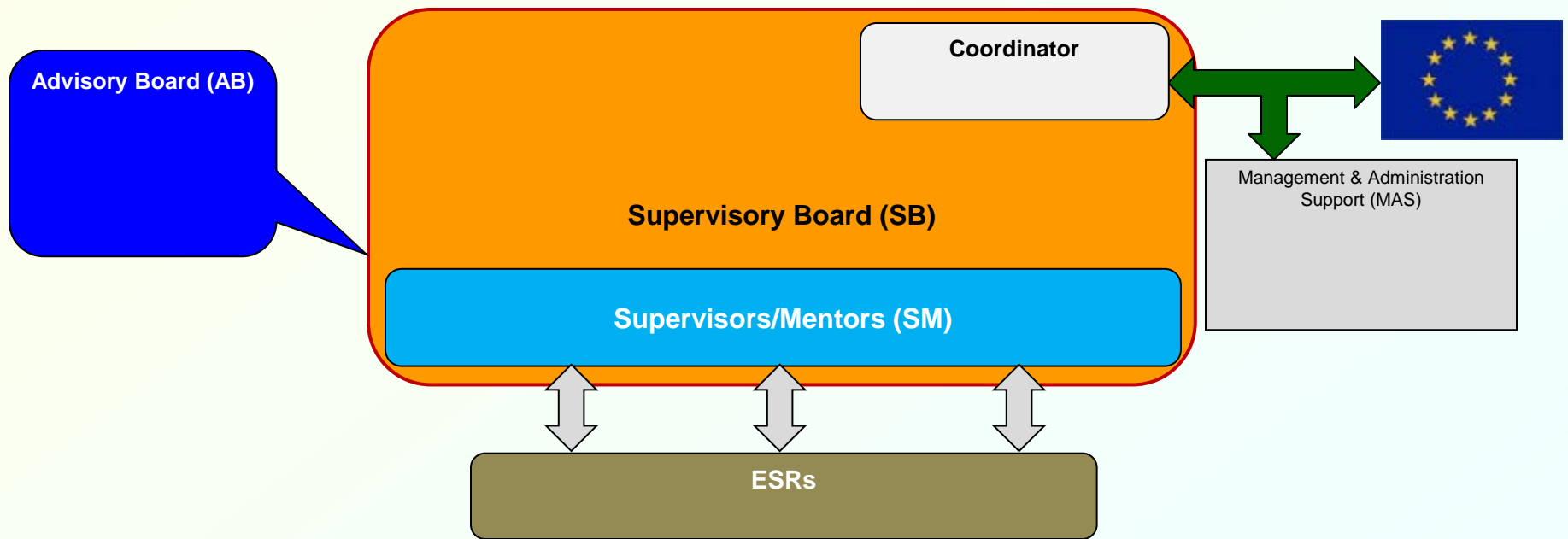
- develop ESR skill base and expertise in tackling complex technical problems of system-oriented RF technologies and their applications in academic research and industrial design;
- investigate, develop and implement innovative technologies and circuit designs for adaptive RF front end which can address the challenges of future wireless communications.

## Targeted outcomes:

Flexible, low cost RF technologies and hardware solutions for the development of the next generation of wireless systems and the efficient re-use of the electromagnetic spectrum.

[www.artisan-itn.net](http://www.artisan-itn.net)

# Network organization and management structure



# Training activities

	<b>Training events, workshops &amp; conferences</b>	<b>Lead Organising Institution</b>	<b>Planned date (month)</b>	<b>Planned venue</b>
1	Induction & lab training - 1	QUB	13,15	QUB
2	Induction & lab training - 2	Bell Labs	15, 18	Bell Labs
3	Collocated Educational Course, Workshop and Seminar	QUB	14	QUB
4	Collocated Educational & Specialist Courses & Seminar	QUB	24	QUB
5	Workshop	Bell Labs	24	Bell Labs
6	Collocated Educational & Specialist Courses, Workshop & Seminar	QUB	32	QUB
7	Specialist Course	QUB	41	QUB
8	Workshop	Bell Labs	41	Labs

# First year on...

- ❖ ESR Recruitment
- ❖ Rolling out the new type (EID) project
- ❖ Consortium Agreement (mandatory element)
- ❖ ESR mobility vs. UK/Ireland visa regime
- ❖ Logistic of ESR's working at the 2 locations
- ❖ Academic research vs. industrial dynamics
- ❖ Work in progress
  - Technical scope updated and agreed
  - **A training week will be held on 27-31 January 2014.**

# 1<sup>st</sup> ARTISAN training event

27-31 January 2014, ECIT, Belfast

## Seminar, Lectures & Training Courses

27 January		Start: 11am
Registration & setting up		11:00-11:30
ESR presentations (2×40 min)		11:30-12:50
<i>Lunch</i>		13:00-14:00
ESR presentations (2×40 min)		14:00-15:20
<i>Coffee break</i>		15:20-15:40
ESR individual meetings with supervisors		15:40-17:40
29 January		
Specialist lecture	Florian Pivit (Bell Labs)	09:00-09:50
Specialist lecture	Florian Pivit (Bell Labs)	09:50-10:40
<i>Coffee break</i>		10:40-11:00
Specialist lecture	Pawel Rulikowski (Bell Labs)	11:00-11:50
Specialist lecture	Pawel Rulikowski (Bell Labs)	12:00-12:50
<i>Lunch</i>		13:00-14:00
Specialist lecture	Martin Gimersky (Bell Labs)	14:00-14:50
Specialist lecture	Martin Gimersky (Bell Labs)	14:50-15:40
<i>Coffee break</i>		15:40-16:00
Specialist lecture	Mury Thian (QUB)	16:00-16:50
Specialist lecture	Alexey Shitvov (QUB)	16:50-17:40
30 January		
Specialist lecture	Jan Hesselbarth (University of Stuttgart)	09:00-09:50
Specialist lecture	Jan Hesselbarth (University of Stuttgart)	09:50-10:40
<i>Coffee break</i>		10:40-11:00
Conclusion		11:00-11:30
31 January		
QUB PhD training course 1		09:00-11:00
<i>Coffee break</i>		11:00-11:20
QUB PhD training course 2		11:20-13:20

# Concluding Remarks

- ❖ Marie Curie Actions - excellent opportunities for the duly qualified researchers
- ❖ EID blends industrial R&D and academic training
- ❖ Individual fellowships are more academic focussed
- ❖ Synergy between application and curiosity driven research is critical for future advancements
- ❖ Only sustainable long term academic research can provide the foundation for future industrial R&D
- ❖ Fetish of **Impact & Knowledge Based Economy** - we should wary of long-term effect on Science...