



## **Education in the EIT**

Europe's need for highly skilled and entrepreneurial graduates, in particular Masters and PhDs, will continue to grow in the years ahead. Europe not only needs employees but also future employers and entrepreneurs. The EIT will encourage higher education institutions within the KICs to focus on developing innovative curricula that give students the knowledge and necessary skills, especially in the fields of entrepreneurship, creativity and leadership.

Through the KICs, the EIT has the opportunity to act as a test-bed for future developments in this area. To achieve 'world-class' levels, it is also important to tap into developments outside Europe. The EIT will not interfere with the design and implementation of curricula but will support and challenge the KICs in this area.

### **KICs and the development of new curricula**

Higher education institutions within the KICs will take a lead role in introducing innovative approaches to graduate education by developing new European masters, doctoral and post-doctoral curricula, integrating scientific progression with entrepreneurial and creativity skills. Such an approach is not only relevant to technical universities; entrepreneurial educational programmes in medicine, social sciences, humanities and arts are also needed to foster new learning outcomes and multi-disciplinary skills. These new approaches will reflect the diversity of actors in the innovation web.

The EIT will monitor and reward the impact of KICs' new curricula. Examples of measurement could include world-class best practices, transversal skills, multidisciplinary curriculum design, assessment based on learning outcomes and new models of entrepreneurship education, encompassing the rich spectrum of innovation models and approaches.

### **EIT labelled degrees and diplomas**

Degrees and diplomas awarded by higher education institutions within the KICs will be based on clearly identified excellence and the key EIT educational activity will be to work with these institutions to implement coherent quality criteria for the EIT labelled degrees. EIT labelled degrees will form a major element of the EIT's intent to deliver a unique brand of excellent and relevant education, responsive to both business and societal demands, including entrepreneurship education with highly integrated and innovative curricula and approaches to learning combined with mobility and outreach. The criteria, and simple and effective processes for their application, are currently being developed together with the KICs.

Existing high-profile Community programs, such as Erasmus Mundus and Marie Curie, will be used as benchmark for joint curriculum development and international mobility to enhance the EIT's reputation for excellence in innovation and entrepreneurship.

### **Quality criteria for EIT labelled degrees and diplomas**

The EIT labelled degrees build on the experience gained in the context of other EU actions and be in line with the main achievements of the European Higher Education Area (Bologna Process), in particular in the field of Quality Assurance (European Standards and Guidelines) and recognition tools like the European Qualifications Framework, the European Credit Transfer and Accumulation System (ECTS) and the Diploma Supplement.

The following quality criteria for EIT labelled degrees shall be applied to degree programmes in order to foster excellence in innovation and entrepreneurship. In order to apply the EIT labelled degrees and diplomas, the higher education institutions participating in a KIC will fulfil the following quality criteria:



## 1. Robust entrepreneurship education, through:

- An open concept to innovation and entrepreneurship, encompassing but not confined to setting up a business or running an SME.
- In view of enhancing employability of graduates across sectors, coherent Master programmes and structured Ph.D. trajectories, in order to facilitate the acquisition of transferable skills, in particular entrepreneurial skills. These skills could include personal skills (e.g. team working, communication, self-confidence, taking initiative, problem-solving, taking calculated risk, leadership) and business skills (e.g. basic economics, financial literacy, developing market research, drafting a business plan, raising finance, sales techniques, running a business meeting).
- Entrepreneurship embedded in the curricula and learning offer in order to provide relevant training for future entrepreneurs.
- A climate in which entrepreneurship is nurtured and where students are offered a comprehensive array of technical, financial and human services and means (e.g. incubators, mentoring and coaching, "business angels", seed money) to test out the commercial potential and viability of their ideas/research outcomes.
- Structured opportunities for on-the-job learning, exposing students to the reality of professional life in industry and business.

## 2. Highly integrated, innovative "learning-by-doing" curricula, through:

- A strong trans-disciplinary approach (e.g. via joint courses across sectors) going beyond the borders of science and technology but also reaching out to social sciences to address broad societal challenges and to link up with new business and innovation processes.
- Responsible partnerships between universities and enterprises in the development of curricula, in teaching activities and by joint supervision of Master and Ph.D. projects.
- Use of the latest developments in innovative teaching by e.g. favouring interactive learning methods.
- A coherent support structure for knowledge transfer (e.g. knowledge transfer units, incentives schemes for researchers, co-location centres).
- The promotion of joint or multiple degrees and qualifications awarded by the different partner universities of the KIC on the basis on jointly agreed curricula involving different strands of the KIC partnership (education-research-business and industry).

## 3. Mobility, European dimension and openness to the world, through:

- An approach oriented on "learning outcomes" in the development of the EIT labelled curricula in accordance with the European Qualifications Framework and the common transparency instruments (learning outcomes, ECTS, DS), thus facilitating recognition, at least in the countries of the awarding universities.
- Integration of "mobility windows" or structured opportunities for international mobility integrated in each study programme, both for intra-KIC and international mobility (within and outside KICs), with built-in mechanisms for the recognition of periods of study undertaken in partner institutions, based on the European credit transfer and accumulation system.
- Smooth transitions between academia and industry via e.g. student internships, recruitment of teaching staff from the industry and business sector, etc.
- A culture of quality in alignment with recent developments in the European Higher Education Area (Bologna Process) in European cooperation in quality assurance by defining procedures for internal and external evaluation of quality of the study programmes. On top of this new European and international approaches to quality of entrepreneurship education could be developed.
- A strategy for global cooperation.

## 4. Outreach strategy and access policy, through:

- A joint strategy involving the different strands of the KIC partnership (universities, research bodies, business and industry) for knowledge sharing with society at large. In this context provision of open educational resources could be encouraged.
- An equitable access merit-based access policy with defined entry requirements in view of attracting entrepreneurial talent.
- Structured links with future "EIT" alumni.



## Climate KIC Education

Creating a community of knowledgeable and entrepreneurial climate change innovators

Climate-KIC's education and training programmes will instil climate-change entrepreneurship into hundreds of top students and leading practitioners every year by combining climate change science and entrepreneurship with a strong programme of active learning and exposure to KIC innovation. This process has already begun with the Climate-KIC Summer School 2010 and will be further developed in 2011 through scholarships, fellowships, and executive education.

### Climate-KIC Summer School

The first Climate-KIC Summer School, covering a broad range of climate science and business topics, ran from the 5<sup>th</sup> of July to the 13<sup>th</sup> of August 2010. Top international students were selected to undertake this contextual learning journey across Paris, London, and Zurich. 44 students successfully completed the Summer School, with 9 teams developing promising business ideas. Three of these ideas have already been taken forward into active projects:

- Cloud Factory: Master thesis started (project: Re-use waste heat / Aquasar)
- DeCo!: coaching and access to grant organizations to finance pilot
- ElectricFeel: coaching and 3 months stipend from ETH Zurich

### Climate-KIC education programmes

#### 1. Scholars programme

A programme for Climate-KIC Masters students that is implemented with existing Masters courses.

Overview of the scholars programme:

- The programme will select international scholars from top talent for entrepreneurial aptitude
- Students enrol at partner institutes and the final award is from the home University with EIT label
- Modules consist of: Face-to-face and e-learning courses taught by academic and non-academic lecturers, a contextual learning journey across two European locations focusing on two R&I themes, and internships or research projects with partner organisations

#### 2. Fellows Programme

Climate-KIC PhD students participate in the scholars programme and it is optional for other Climate-KIC researchers.

Overview of the fellows programme:

- The programme will select international scholars from top talent for entrepreneurial aptitude
- Students enrol at partner institutes, participate in the scholars programme in their first year, and the final award is from the home University with EIT label
- Student teams work on problem-oriented research projects defined by the KIC
- Collaboration across nodes via virtual environments and regular face-to-face skill building modules

#### 3. Executives Programmes

Programmes for managers and change agents in private and public sectors.

Overview of the executives programme:

- Aims to attract 100 Associates per year
- Courses taught at partner institutes leveraging e-learning environment and block taught courses shared with Scholars and Fellows
- Facilitation of community building with academics, e.g. through secondments and joint events
- KIC Festival to mark the end of the first year courses and attract Executive Associates

#### 4. Learning support and outreach

A set of electronic materials will be developed to provide background learning for Scholars and Fellows, and ensure access to learning at other sites. This material will be made open source and available to the wider community.



## **EIT ICT Labs - Education Strategy**

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EIT ICT Labs has the strategic ambition to equip students, researchers and teachers with skills for creativity, risk taking and entrepreneurial capacity by catalyzing and renewing the key educational programs at master and PhD level. The guiding principles are (i) robust entrepreneurship education, (ii) broad stake-holder integration to educational programs, and (iii) hands-on experience on innovation and entrepreneurship. The aim is to breed entrepreneurial talent through broad educational activities.

A number of coherent and joint European wide catalyst will be deployed to existing and new local educational programs , which are integrated at European level to innovation action lines in (i) Master School, (ii) Graduate School, (iii) Post-doctoral program, and (iv) Outreach towards the stakeholders outside the KIC. In catalyst development and deployment joint work and partnership with Business Schools, which have strong background and programs in innovation and entrepreneurship, is utilized. Critical element of the execution of the program is the strong integration with co-location centre activities in innovation and research and using co-location centre for co-operation and crossover between various stakeholders in KIC. Hands-on experience is provided by extensive embedded project work, with external projects owners, and integrating innovation and entrepreneurship content to these projects in form of Business Development Lab execution.

EIT ICT Labs Master School has a comprehensive collection of M.Sc. programs covering the thematic and competence needs of EIT ICT Labs. It also includes development and maintenance of EI ICT Labs defined Innovation and Entrepreneurship educational modules towards robust entrepreneurship education. The I&E module can be seen as a deeply embedded minor in engineering curricula, where the major comes from the technical focus of the master program. At this stage 6 such core master program has been identified and under joint development in partnership of 3-6 partner universities within EIT ICT Labs.

These core M.Sc. programs provide the EIT specific diploma supplement to accompany the M.Sc. degree certificate granted by the host university. Similarly, but formally simpler arrangements are provided for the Graduate School as well as Graduate Programs within EIT ICT Labs. The Master School and Graduate School action lines additionally integrate (i) various mobility instruments for teachers and students, especially towards organizational mobility like internships, (ii) summer/winter schools and camps for interdisciplinary work and for more advanced I&E training, (iii) coordinated usage of co-location centers and innovation and research activities within co-location centers for increased integration and "buzz" towards forming the innovation hot-spots.



## **KIC InnoEnergy** **Education for a sustainable future**

The KIC InnoEnergy has as strategic goal to implement the Knowledge Triangle Education-Research-Innovation into the mindset of European energy students. InnoEnergy aims to become the world's foremost energy educational platform. InnoEnergy will world-wide attract the most talented students and will offer different educational material to university students globally as well as to engineers and businesses active in the energy area. InnoEnergy will educate several hundred new energy students every year into the perspective of sustainability, their technical implications and especially look into how existing and future technologies can be implemented much faster, through modern research into innovation and entrepreneurship than has historically been the case. The basic InnoEnergy principles are robust engineering and entrepreneurial education, coupled with industrial internships on different levels throughout the educational programmes and the life-long career.

InnoEnergy has identified a number of Master and PhD programmes that will be implemented in 2011. These programmes cover different aspects of the InnoEnergy portfolio and give the students both the basic energy training as well as an in-depth analysis of how the knowledge can be translated into the market. Industrial training is an omnipresent element in these programmes. One of these MSc programmes already started in September 2010, and recently launched a "*Product of the year*"-project in which 28 students work coherently towards the establishment of a free-standing "Rescue Module Container" during their complete MSc studies. The project includes combined supervision from all six InnoEnergy Co-location Centres, a significant industrial component as well as business-plan creations. This "Rescue module" will be fully operational by 2015, on the market and produce electricity, heat, cooling and clean water out of renewable energy sources for catastrophe regions. The module will, in a somewhat different setting, like-wise be a stand-alone unit for the large parts of the world where large-scale electricity infrastructure is not yet operational (remembering that 2.4 billion of the world's population do not yet have access to any, or reliable, electricity supply). On the road towards the full module on the market by 2015 there are already "specialized spin-offs", with shorter development time, identified.

Another example of an already launched educational programme is the PhD School in Smart Grids, which combines education at the different co-location centres with innovation research projects performed jointly between industry and university.

InnoEnergy Education is also preparing an extended educational programme for post-university education, in which short courses, self-e-learning and blended learning will be incorporated towards "learning modules", which professional engineers can undertake to become more acquainted with specific technologies in the energy area and especially to identify which of these has a short- and long-term market possibility. InnoEnergy offers students, scholars and industry a significant cultural experience, both related to specially designed courses and mobility as well as towards virtual mobility in the European multi-cultural environment.



## **Discussion Paper - Thematic session 1:** **Education for entrepreneurship, leadership and creativity**

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### Panel:

**Moderator:** *Dr. Stephan Vincent-Lancrin*, Senior Analyst, Centre for Educational Research and Innovation (CERI), OECD

### **Participants:**

*Dr. Daria Tataj* - EIT Governing Board and Executive Committee

*Dr. Javier Garcia Martinez* - Co-Founder, Director, Chief Technology Officer of Rive Technology Inc

*Dr. Damini Kumar* - Award winning designer & Director of Design & Creativity at National University of Ireland Maynooth

*Vinit Nijhawan* - Managing Director, Technology Development Office, Lecturer School of Management & Director Enterprise Programs, ITEC, Boston University

*Richard Hebly* - Student, Climate-KIC summer school

**Rapporteur:** *Nadja Dokter* - KICs Project Officer, EIT

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### **The objective:**

The objective of this session is to discuss how to provide students and teaching staff with the necessary creative, leadership and entrepreneurial skills in the context of EIT education activities, specifically EIT labelled degrees. The discussions should lead to 3-5 recommendations from the panel and audience to the EIT.

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### **The context:**

The world is moving to a new rhythm. The economic crisis, globalisation, technological changes, ageing populations and the shift to a low-carbon economy are challenging us to find new ways of thinking and acting.

In order to progress and create a more competitive, innovative and sustainable environment, Europe needs to increase its investment in knowledge and people, as well as foster the diversification and exploitation of knowledge. Europe's need for highly skilled graduates, in particular Masters and PhDs, will continue to grow in the years to come. It is essential to prepare these future graduates for a learning society and provide them with the relevant skills, especially entrepreneurial, creative and leadership skills to foster the creation of new ideas and turn them into innovative products, services and jobs.

For this, Europe not only needs employees but also future employers and entrepreneurs.

This requires changes along several lines, such as curricula design, learning, teaching and assessment methods, as well as in the composition of teaching staff within Europe's universities. Problem-solving, learning by doing and the entrepreneurial can-do approach need to be especially encouraged and businesses should be more involved in curricula development and doctoral training so that graduates' skills better match labour market needs.

Creativity, as a fundamental dimension of human activity, is at the heart of culture, design and innovation. It thrives in a free, open and diverse environment where there is dialogue between cultures. We need to ensure the creation of such environments for students and teaching staff is supported, through the creation for interdisciplinary teams, for example.



To steer in times of rapid change, we need “change agents”. Today’s students are tomorrow’s decision makers and we need to equip them with the skills necessary to lead the way.

The EIT’s goal is to promote excellent and relevant education, responsive to both business and societal demands, including entrepreneurship education with highly integrated, innovative and multidisciplinary curricula and approaches to learning combined with mobility and outreach. The universities participating in the KICs are developing master and PH.D programmes and other KIC education activities, to equip students, researchers and teachers with skills for creativity, risk taking and entrepreneurial capacity. Through its KICs, the EIT has the opportunity to act as a test-bed for future developments in this area.

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### **Discussion Questions:**

- What essential elements should be taken into account by the KICs in order to foster the development of entrepreneurial, leadership and creative capacities and mindsets throughout the learning itinerary?
- What are the challenges in building interdisciplinary teams? What should the KICs do to overcome obstacles?
- To what extent should practitioners and students in the KICs be involved in the teaching and learning process and in the development of new curricula?
- How can KICs ensure that educators are equipped with the necessary skills to stimulate entrepreneurship, leadership and creativity? How can learning methods be designed to foster a more rapid and sustainable uptake of these skills (for educators and students)?
- What are the respective advantages and disadvantages of entrusting the teaching of entrepreneurship to business schools? By which other means can the acquisition of entrepreneurial skills throughout the curriculum be guaranteed?
- What additional activities, beyond Master and PhD programmes, could the EIT promote in order to foster the acquisition of entrepreneurial, creative and leadership skills?



**Discussion Paper - Thematic session 2:**  
**Across sectors and disciplines: the mobility of talent**

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Panel:

**Moderator:** *Jordi Currell Gotor* - Director of Life-long-learning, Higher Education and International Affairs, DG Education and Culture, European Commission

**Panellists:**

*Dr. Giovanni Colombo* - EIT Governing Board and Executive Committee

*Mika Helenius* - Aalto University, Director of Service Design and Engineering Master programme and EIT ICT Labs representative

*Danny Goderis* - Vice-President, Bell Labs Belgium

*Alexa Mabonga* - Global Vice-President, Information Management, AIESEC International

**Rapporteur:** *Christian Tauch* - Head of the Education Department, German Rectors conference

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**The objective:**

This session's objective is to underline the importance of inter-sectoral and inter-disciplinary mobility for students, academic staff and employees in the context of the KICs and their co-location centres. The discussions should lead to 3-5 recommendations from the panel and the audience to the EIT.

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**The context:**

Mobility as a term has several meanings in relation to higher education institutions and industry. Firstly it can refer to inter-disciplinarily, i.e. exposing students, academic staff and employees to issues and problems outside their core discipline. This mental concept can contribute to the creation of an open-mindedness and sensitivity that should be explicitly encouraged as it will help Europe to live up to the big challenges it is facing.

Secondly, physical mobility is widely used as a tool to promote knowledge transfer between both sectors through the mobility of researchers and post docs who spend time in short and long term industry placements. Another popular form of mobility is the placement of students in companies to get first-hand working experience, to help industry improve their understanding of the types of skills available among students and to instil a sense of entrepreneurship and innovation into students and postgraduates.

Other types of mobility include on the one hand the placement of teachers and lecturers in firms and on the other hand the use of industry staff to teach short academic courses with direct relevance to their industry to increase students' direct knowledge and understanding of labour market needs. Finally, the mobility of talent also includes the move of practitioners, such as engineers, managers, etc., from business to academia. All these different types of inter-disciplinary and cross-sectoral mobility can of course be combined with trans-national mobility, since intercultural competences can underpin a mobile and creative mindset.

A lot has happened in this regard in the past years but the overall level of contact, interaction and mobility between universities and businesses is still far too low. Targeted action needs to be taken, and the KICs can take a leading role in this.

The KICs should ensure that internships, research mobility programmes and collaborative projects, which allow students to work with or within a company, alone or in interdisciplinary groups, become an integral part of learning programmes in all disciplines and should carry ECTS credits.





However, mobility within the KICs should also involve academic and university management staff, thereby allowing universities to build up the networks from which future internships, employment and projects for students can be developed. The direct exposure of staff to the reality of business will help to understand and anticipate the changing training and innovation needs of industry.

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**Discussion Questions:**

- How should the mobility-related needs of the participating businesses be communicated to higher education institutions within the KICs and vice versa? How can KIC co-location centres facilitate this communication?
- How is learning mobility of students/graduates (internships) viewed and supported by the universities and by industry?
- What are the respective benefits and obstacles for academics spending time in industry and for practitioners spending time in academia?
- How can partnerships within KIC co-location centres facilitate a smooth transition of students and staff between academia and business as well as optimise the placement of students in the participating companies?
- How can an interdisciplinary mobility be encouraged among students, academic staff and employees?
- How can mobility periods, both geographical and inter-sectoral be incorporated into the KIC study programmes as part of the curriculum and accredited?



### Discussion Paper - Thematic session 3:

## "A new faculty" - collaboration between academia and industry

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#### Panel:

**Moderator:** *Prof. Rosette S'Jegers* - Secretary General of the Flemish Universities' Association

#### Participants:

*Dr. Yrjö Neuvo* - EIT Governing Board and Executive Committee

*Bert Vandenkendelaere* - President of the European Students' Union

*Prof. Robert Zemsky* - Chair of the Learning Alliance for Higher Education, University of Pennsylvania

*Francois Weiss*, Advisor of the President, Grenoble Institute of Technology and KIC InnoEnergy – CC Alps Valleys  
Education Manager

**Rapporteur:** *Peter Baur* - Deputy Head of Unit EIT and Economic Partnerships, DG EAC, European Commission

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#### The objective:

This session's objective is to discuss and explore how academia, industry and other stakeholders can collaborate in the education process and how this could be applied in the context of the EIT in general and EIT KICs in particular. The discussions should lead to 3-5 recommendations from the panel and the audience to the EIT.

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#### The context:

The competitiveness of economies is increasingly dependent on the availability of a qualified and entrepreneurial workforce. The *New Skills and Jobs* initiative has confirmed that the EU's need for highly-qualified and entrepreneurial graduates will continue to grow in the years ahead. At the same time, enterprises have for many years been reporting a mismatch between the competences of graduates as they emerge from universities and the qualifications which they seek as employers.

In the European higher education landscape, a consensus has emerged over the past years on the need for a comprehensive change to curricula and learning methods and notably for the inclusion of transversal skills, such as communication and presentation skills, team and leadership skills, etc.

Examination methods should also be more geared towards the assessment of learning outcomes and competences, i.e. what a person knows, understands and is able to do. Traditional boundaries between disciplines have become obsolete in many regards when it comes to tackling new and often global challenges. This development should be reflected by more inter-disciplinarity and trans-disciplinarity in education and research agendas. This requires a departure from traditional concepts of designing and delivering study programmes, with a far more intensive collaboration between academia and business.

The EIT will play an exemplary role in putting these approaches into practice, as one of the EIT's "*raison d'être*" is to improve the working of the knowledge triangle of education, research and innovation. A "new faculty" that overcomes the traditional boundaries between disciplines as well as between places of teaching, of research and of application is needed. The purpose of this thematic session is to explore how the KICs can provide an environment that will stimulate the much needed collaboration both within academia and between academia and business.

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### **Discussion Questions:**

- How can the different KIC partners, students and professional bodies be engaged in the design and delivery of the curriculum in order to ensure that the study programmes become more relevant to the labour market and provide the right mix of (transversal) skills and competences for employability across sectors?
- How can the KICs ensure they provide a stimulating research environment and innovative research training, particularly for PhD candidates, preparing them for later research careers in and/or with companies?
- How can the KICs ensure that all participants – i.e. universities, business and research centres – see the added value of a strong involvement of the business side in curricular development? What would be a balanced division of responsibilities in this respect?
- How can the KICs demonstrate the added value of such cooperation? Which criteria should be used to measure the impact?
- There are a number of challenges and barriers to the development of cooperation between academia and industry. A crucial issue is the management of IPR. How can the KICs and their collocation centres overcome these challenges and stimulate knowledge sharing among KIC partners, staff and students?
- How could the KICs serve as role model for promoting the spirit of a “new faculty” (e.g. by offering teaching assignments to practitioners from businesses, by inciting academics to upgrade their knowledge and experience through stays in enterprises, etc.)?



## Discussion Paper - Thematic session 4: Quality assurance for EIT degrees

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### Panel:

**Moderator:** *Dr. Achim Hopbach* - President, European Association for Quality Assurance in Higher Education

### Panellists:

*Prof. Anders Flodström* - Vice Chairman of the EIT Governing Board

*Dr. Lena Adamson* – Associate Professor of Psychology, KTH and expert on quality in education

*Prof. Sebastião Feyo de Azevedo* - Vice- President of the European Network for Accreditation of Engineering Education

*Prof. Dr. Harris* - Director of the Intel Higher Education & Research Programs for the EMEA and EIT ICT Labs representative

**Rapporteur:** *Dr. Marie-Anne Persoons* - Policy officer, DG Education and Culture, European Commission

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### The objective:

The objective of this session is to have an exchange of ideas and explore how to best provide quality assurance for EIT degrees. The discussions should lead to 3-5 recommendations from the panel and the audience to the EIT.

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### The context:

The development of an adequate quality culture for universities is an important element in building up the European Higher Education Area. Sound quality assurance systems create transparency and enhance trust in the programmes evaluated, both facilitating international recognition of degrees and qualifications.

The adoption of the European Standard and Guidelines for Quality Assurance (ESG) by the European Ministers in charge of Higher Education at their meeting in Bergen in 2005 was a milestone in the history of the Bologna Process and has directly led to the establishment of the European Register for Quality Assurance (EQAR) by ENQA, EUA, Eurashe and ESU in 2008.

The ESG have also shaped recent EU decisions in the field of European cooperation in quality assurance for higher education, in particular the Recommendation of the European Parliament and of the Council of 15 February 2006 on further European cooperation in quality assurance in higher education, where the Council and the European Parliament recommend Member States to introduce internal quality assurance systems in accordance with the standards and guidelines adopted in Bergen in the context of the Bologna Process.

In the recent discussions on quality assurance both in the national contexts as well as in European gremia there is a growing consensus that definition of study programmes in terms of learning outcomes is a crucial instrument to enhance transparency in the context of quality assurance and recognition of qualifications. In this perspective the Ministers in charge of higher education at their meeting in Leuven and Louvain-la-Neuve, 28-29 April 2009 also reasserted "the importance of the teaching mission of higher education institutions and the necessity for ongoing curricular reform geared toward the development of learning outcomes".

### Towards a quality culture for EIT programmes and degrees

The EIT Regulation stipulates that EIT degrees shall be awarded by the participating higher education institutions in the KICs in accordance with national rule and accreditation procedures.



The objective of this thematic session is to explore how this requirement of recognition and compliance with quality assurance procedures can be met in an efficient way.

Particular attention will be given to the question whether the traditional quality assurance mechanisms should be complemented by other methods and perspective in order to create a more specific quality approach for the EIT degrees, which are fully anchored in the knowledge triangle (education-research-innovation) and will therefore require particular attention on e.g. the development of creativity and the ability to transform research findings into innovation.

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### **Questions:**

- What specific tools do the KICs need to develop a quality culture in relation to teaching and learning in the knowledge triangle?
- Are the regular higher education quality assurance procedures sufficient to grasp the specificity of EIT programmes that operate in the knowledge triangle? Can the evaluation of specific activities in the scope of EIT education, e.g. in the field of business creation and technology transfer, benefit from quality assurance methods developed in a business and/or industry setting?
- If so, how should the integration of different methods take shape in order to guarantee academic and professional recognition of the EIT degrees awarded by the universities participating in the KICs?
- What should the universities participating in the KICs do in order to assure general acceptance both at national and international level? In this endeavour, how will they cooperate with the other partners in the KICs, especially businesses and industry, and how can they better involve students and graduates in view of enhancing the relevance of the EIT degrees for the labour market?
- If the EIT's ambition is to become a role model in the European Higher Education Area, how should the quality assurance mechanisms for EIT degrees match with the European Standards and Guidelines and the EQAR?
- How can the quality culture for EIT programmes and degrees plug into the learning outcomes oriented approach as promoted via the qualifications framework for the EHEA and the EQF? Are the descriptors/generic learning outcomes as defined in the context of those qualifications framework broad enough to encompass not only skills and competences in the narrow sense but also attitudes acquired throughout the training?



## Plenary Session 3: How to attract and keep talent in Europe?

### **Panel:**

**Moderator and contributor:** *Dr Giovanni Colombo* - EIT Governing Board and Executive Committee

### **Panellists:**

*Ling Tong* - International Ph.D student, Katholieke Universiteit Leuven

*Prof. Mary Bownes* - Vice Principal, University of Edinburgh - LERU Representative

*Naeem Zafar* - Haas Business School - University of California Berkeley

Deutscher Akademischer Austausch Dienst (DAAD) representative (tbc)

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### **The context:**

The competitiveness of Europe is dependent on a sufficient supply of a qualified, entrepreneurial and creative workforce and this need will continue to grow in the years ahead. The EU will, for example, need at least one million new research jobs if it is to reach the R&D target of 3% and the number of researchers necessary is significantly higher, as many researchers will retire over the next decade. Also, the number of researchers in Europe as a share of the population is well below that of the US, Japan and other countries.

In order not to lose innovative investments and keep and attract talent in Europe, these workers should be offered attractive careers and easy mobility across sectors and countries. However, most European universities do not attract enough top global talent and relatively few universities are in leading positions in existing international rankings.

The recently published European Commission communication "Innovation Union" underlines that more needs to be done to address „innovation" skills shortages as this is crucial to accelerate the development and the adoption of innovative business models by European enterprises, especially SMEs. Businesses should also be more involved in curricula development and doctoral training so that skills better match industry needs.

It will also be important to attract investment and to create an attractive job space for talented people to stay in Europe and pursue challenging careers.

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### **Questions:**

- What are the strengths that Europe can build on in order to attract and keep talent?
- What are the weaknesses that need to be addressed in comparison with countries like the U.S, Japan, India and China?
- How can Europe brand itself better in order to attract talent, including aspects such as cultural diversity, creativity and leadership?
- How can the KICs become a magnet in attracting international top talent?
- What support can the EIT offer in order to encourage young people to become researchers and that these are offered internationally competitive careers in order to attract and keep them in Europe?
- How can the EIT/KICs support the creation of an attractive job space to incentivize young talented people to stay in Europe?



## **Artistic Performances Programme**

### 2 December 2010 - 10:00 am: **Sven Dehens - 'Indian - indian'**

→ *Sven Dehens will bring an oral speech performance who might refer to a kind of a Speakers' Corner with a shift.*

Sven Dehens is studying in the Experimental Studio of Sint-Lucas Visual Arts Ghent. Sint-Lucas Visual Arts is one of six faculties of the Institute for Higher Education in the Sciences and the Arts and is a partner in the K.U.Leuven Association. The Experimental Studio is a platform for static and dynamic sensations. In a continuous dialogue with teachers and fellow students, students are stimulated to develop their own artistic practice by means of experiment and research. 'Trial and error' is the basic principle; errors often lead to more intense images. The studio is a think-tank and sound board: ideas develop and results are evaluated. Students operate in an interdisciplinary environment. (Group) projects, workshops and intense study weeks will contribute to the development of the students' personal work. Students are expected to exhibit their work from the beginning, both in and outside Sint-Lucas. These public 'shows' are a vital element in the students' artistic development. In order to make these exhibitions possible, Sint-Lucas cooperates with art centres, galleries, alternative platforms and festivals in Belgium and abroad. Four staff members, all of them artists with a specific expertise, are responsible for the organisation of the studio. In addition, guest professors from various backgrounds, all renowned in their area of expertise, are invited to teach for shorter or longer periods during the academic year.

### 2 December 2010 - 12:40 pm: **Soplarte - 'Le Soir'**

→ *Soplarte as a tritete with Berlinde Deman, Maja Jantar and Charlotte Van Wouwe*

With a passion for glassblowing as well as for wind instruments, she started to explore the possibilities of glass made wind instruments. Meanwhile the project resulted in quite a sizeable collection of playable instruments. They all are very distinctively slender, cone-shaped and vary in size and curves, with a unicity following from permanent experimenting and from the 'will' of the material itself. The glassblower moulds the glass but the process is moulded too by the nature of the material. With a cone-shaped tube and a glass mouthpiece based on that of a trumpet, the glass made wind instrument is reminiscent of the first valve-less trumpet or of some older ethnic wind instruments. The sound however is completely new: both clear and throaty, with a sonic spectrum reaching from rich and warm to razor-sharp. Every instrument has its own tonic too due to its own unique shape. Dependent on his technique, embouchure... the musician can then from this tonic on produce a limited range of other tones.

Soplarte is composed of Charlotte Van Wouwe, Berlinde Deman, Bart Maris and Marie-Anne Standaert who perform in a quartet. *Matin* and *Soir* are specially written for the quartet by composer Peter Vermeersch.

### 2 December 2010 - 15:30 pm: **Soplarte - 'L'Univerre'**

→ *Soplarte as a duet: Maja Jantar and Charlotte Van Wouwe*

Due to the need to enrich the audio colour palette, new instruments for two people, one player and one voice, have been created. This double use of the instrument creates an extra dimension of intimate space. The breath of both players is interconnected and each one influences the other. The performers move in space, apart and together, and therefore create a visual-spatial equivalent to the musical effect that they are producing.

**Evening Performance Programme:**

19:00 pm - Salons Georges

**Ana Naqe - 'Sequenza III' (Lucio Berio - Sequenza III for woman's voice)**

Colourful instrumental writing is the dominant feature of his Sequenza cycle, a sequence of (to date) fourteen pieces for different solo instruments, the first written in 1958, the most recent in 2000. Spanning virtually the whole of Berio's composing career, the Sequenzas constitute an innovative investigation into the virtuosic and dramatic possibilities of musical performance. Some of the early Sequenzas, such as those for flute (1958) and piano (1966), are classic examples of the abstract avant-garde language of mid-twentieth century music; others show a love of the theatrical which is more obviously Berio-esque, such as the instrumental buffoonery of Sequenza V for trombone (1965) or the vocal acrobatics of Sequenza III.

**Ana Naqe - 'L'Aurore' (Eugène Ysaÿe - Sonata no. 5 for Solo Violin 1st movement)**

Eugene Ysaÿe was born in Liège, Belgium on July 16, 1858. He was a Belgian violinist, conductor, and composer, the foremost interpreter of the string works of French and Belgian composers of his time. As a performer, Ysaÿe was compelling and highly original. Pablo Casals claimed never to have heard a violinist play in tune before Ysaÿe, and Carl Flesch called him 'the most outstanding and individual violinist I have ever heard in my life'. Possibly the most distinctive feature of Ysaÿe's interpretations was his masterful rubato. Rubato is literally 'stealing' of time; it usually implies a mere flexing of tempo for expressive purposes. Ysaÿe's rubato is something apart; whenever he stole time from one note, he paid it back in another place, allowing his accompanist to maintain strict tempo under his free cantilena.

**Ana Naqe and Charlotte Van Wouwe - 'Improvisation' (glass-blown wind instrument and voice)**

The Albanian Ana Naqe has a rare, warm, deep mezzo voice which well lends itself both for opera, song and oratorium. She has an excellent musical insight and has already a variety of musical experiences behind the back, always with extremely favourable comments concerning its unique voice and song capacities. She studied first violin of 1986-1998 in the Jakov Xoxa institute of Fier in Albania. Thereafter violin to the university of Tirana. She gained her master diploma violin to Lemmens conservatory of Leuven in the class of Elisa Kawagutti. She also got her master diploma song in the same institute in the class of Lieve Jansen. She followed masterclasses by Jard Van Nes, Axel Everaert, Alexander Oliver and Udo Reinemann. With Margarida Nativida and Leandra Overmann she follows private song lessons. For several times she has cooperated with Wim Lambrecht.

**- The performance programme for the EIT Conference is curated and supervised by Wim Lambrecht -**

Visual artist Wim Lambrecht is a lecturer at Sint-Lucas Visual Arts in Ghent, a visiting lecturer at the Lemmensinstituut (Faculty of Music, Performing Arts and Education of the Hogeschool voor Wetenschap & Kunst) and a researcher at the Research Platform for Architecture and the Arts (OPAK). He and his team are developing an innovative, audiovisual interpretation of the Song, in which the human voice has a pivotal position as an intermediary between the visible and the invisible. They aim to conceptualize the audiovisual fusion of image and sound as a scenography of the gaze approaching the individual aural sensory experience.